

ABSTRACTS

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Oral Communications

Abstract # 1

AREA: Acute hospital care

Improved outcomes with delayed admission to post-acute care: results of a natural experiment

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The high cost of providing inpatient care in an acute hospital and increased demands on beds have led to pressure to avoid hospital admission or reduce length of hospital stay (LOS), especially for older patients. One approach is bed-based intermediate care often to facilitate early discharge to a variety of post-acute care (PAC) facilities including community hospitals and care homes for those not completely recovered from acute illness. The effectiveness of post-acute care (PAC) schemes to facilitate early discharge of older people from hospital after acute illness is unclear. We used a reduction in funding for an Irish PAC scheme based in private nursing homes as a natural experiment to explore the effectiveness of this scheme in a single large general hospital. Compared with an equivalent 3-month period in 2017 (pre-change, N = 169), those admitted to PAC in 2019 (post-change, N = 179), spent a median 6 days longer in acute care, although total duration spent in healthcare settings was the same. Compared with 2017, readmissions to hospital within 90 days of discharge (43/179 (24.0% v 58/169 (34.3%), p = 0.03) and discharge to long-term care from the PAC facility (3 (1.7%) v 14 (8.3%), p = 0.004) were significantly lower in 2019. Our results suggest that the longer stay in acute care was beneficial for patients and led to improved outcomes.

Abstract # 2

AREA: Acute hospital care

Nurse staffing practices and postoperative atrial fibrillation among cardiac surgery elderly patients: a multisite cohort study

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Background: Postoperative atrial fibrillation (POAF) is a frequent complication of cardiac surgery among elderly patients that is associated with increased morbidity, mortality, and costs. Recent studies suggest that surgical nurse staffing practices are associated with adverse postoperative events, but whether these practices are related to POAF occurrence is unknown. We therefore estimated the simultaneous associations of four common staffing practices—registered nurse (RN) understaffing, RN education, RN experience, and non-RN skill mix—with POAF occurrence.

Methods: A cohort of 6401 cardiac surgery elderly patients admitted to two Canadian university health centers (UHC) between January 1, 2014 and December 31, 2018 was assembled (UHC A: 2067 patients; UHC B: 4334 patients). Patients’ exposure to measures of RN understaffing, education, experience and non-RN skill mix, each relative to nursing unit and shift means, was cumulated over the first six postoperative days, where 96% of POAF cases occur. We then

used site-specific multivariable logistic regression models to estimate the associations between these exposure measures and the odds of in-hospital POAF, while adjusting for patient characteristics. Last, we re-estimated these associations using a mixed-effect logistic regression model combining data from both sites and treating the hospital site as a random effect.

Results: Overall, 563 (27.2%) cases of POAF occurred at UHC A, and 1336 (30.8%) at UHC B. In site-specific multivariable logistic regression models, every 5% increase in the cumulative proportion of understaffed shifts over the first six postoperative days increased the odds of POAF by 3.5% (adjusted OR UHC A: 1.035; 95% CI 1.000–1.070, p = 0.0472; adjusted OR UHC B: 1.035; 95% CI 1.013–1.057, p = 0.0019). Moreover, at UHC B only, every additional year to the cumulative mean number of years of experience held by RNs over the first six postoperative days decreased the odds of POAF by 10.2% (adjusted OR 0.898; 95% CI 0.826–0.976, p = 0.0112). Last, in the model combining data from both sites, only understaffing remained significant, being associated with a 3.1% increase in the odds of POAF (adjusted OR 1.031; 95% CI 1.014–1.048, p = 0.0003).

Conclusion: Reducing the frequency of understaffed shifts postoperatively could decrease POAF occurrence among cardiac surgery elderly patients.

Abstract # 3

AREA: Acute hospital care

Development of a predictive score for mortality after discharge from an acute geriatric unit as a trigger for advanced care planning

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Background: There is a need for a mortality score that can be used to trigger advanced care planning among older patients discharged from acute geriatric units (AGUs).

Objective: To develop a prognostic score for 3- and 12-month mortality after discharge from an AGU, based on a comprehensive geriatric assessment, in-hospital events, and the exclusion of patients already receiving palliative care.

Methods: DAMAGE is a French multicentre, prospective, cohort study. The broad inclusion criteria ensured that the cohort is representative of patients treated in an AGU. The DAMAGE participants underwent a comprehensive geriatric assessment, a daily clinical check-up, and follow-up visits 3 and 12 months after discharge. Multivariable logistic regression models were used to develop a prognostic score for the derivation and validation subsets.

Results: 3509 patients were assessed and 3112 were included. The patient population was very older and frail or dependant, with a high proportion of deaths at 3 months (n = 455, 14.8%) and at 12 months (n = 1014, 33%). The score predicted an individual risk of mortality ranging from 1 to 80% at 3 months and between 5 and 93% at 12 months, with an area under the receiving operator characteristic curve in the validation cohort of 0.728 at 3 months and 0.733 at 12 months.

Conclusions: Our score predicted a broad range of risks of death after discharge from the AGU. Having this information at the time of hospital discharge might trigger a discussion on advanced care planning and end-of-life care with very old, frail patients.

Abstract # 4

AREA: Acute hospital care

The impact of SARS-CoV-2 on emergency presentations and admissions among older patients

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Introduction: The outbreak of Severe Acute Respiratory Syndrome Coronavirus 2 (COVID-19) in Ireland prompted significant changes in healthcare services. Public health services advised elderly people to 'cocoon' to reduce risk of exposure to COVID-19. This study analyses trends in presentations to an Irish teaching hospital's emergency department (ED) among elderly patients, commencing with the initial outbreak of COVID-19, compared with previous years. We wished to analyse the impact of lockdown on presentations and admissions among elderly patients, and on the types of presentations to ED.

Methods: All patients aged > 70 years presenting to the ED of an Irish teaching hospital from March–August 2020, 2019 and 2018 inclusive were reviewed retrospectively. Data regarding presentations per month, demographics, Manchester Triage Score, presenting complaint, and admission decision were collated. Data were analysed using Stata version 14.1 (Stata[®], College Station, TX).

Results: From March to August 2020 there was a 16% reduction in acute presentations among > 70 year-olds compared to the 2018/2019 average (4146 vs 4922). Much of this reduction was concentrated in late March/April, the initial period of 'lockdown', with a 35% reduction in presentations throughout March. There was a marked reduction in stroke/cardiac presentations in the 2020 cohort. An initial decline in presentations with delirium, orthopaedic injuries and falls was followed by an increase when elderly people were advised they could leave their houses again in June. Older patients presenting from March–August 2020 were more likely to be admitted compared to 2018/2019 (57% vs 55%, $p = 0.022$).

Conclusions: Presentations to ED among elderly patients declined during the first 6 months of the COVID-19 outbreak in Ireland compared to previous years. Total admissions were also reduced, though the mean admission rate increased slightly. Presentations with falls, delirium and orthopaedic problems increased following easing of restrictions. This data should inform the distribution of resources across healthcare services in the case of future lockdowns and healthcare crises.

Abstract # 5

AREA: Acute hospital care

Mental capacity assessment in hospitalised older adults

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Introduction: Since rates of cognitive impairment are high in the older hospital population, assessment of decision-making capacity is likely to be frequent but most existing studies are from psychiatric services. In unselected medical inpatients, we therefore determined

the rate of capacity assessment and for which decision, the underlying cognitive/mental health diagnosis, outcome and details of assessors.

Methods: The study included consecutive patients admitted (October–November 2018 and November–December 2019) to the complex medicine unit which provides acute medical and multidisciplinary care for frail, multimorbid patients with unplanned hospital admission. Data, including mental capacity assessment details, were extracted retrospectively from electronic patient records.

Results: Among 888 patients, 142 (16%) (mean/SD age = 80.9/14.9, 70 male) required mental capacity assessment, and 41 (28.9%) had > 2 assessments with 207 assessments performed in total. Decisional incapacity was observed in 59% of assessments: delirium with/without dementia (94/118, 80%), dementia/mental health disorder without delirium (23/38, 61%), no formal diagnosis of brain/mind disorder (5/51, 10%). Specific decisions assessed were most often discharge planning-related (48.8%) followed by treatment (28.5%), discharge against medical advice (11.6%) and others (11.1%). Most assessments (80%) were done by doctors: consultant geriatricians (21%), junior doctors in geriatric medicine (24%), psychiatrist (21%) and other (14%).

Conclusion: Mental capacity assessment was performed frequently and was often repeated, and most assessed patients had delirium, perhaps unsurprisingly given the acute hospital setting. Our findings have implications for staffing ratios, and evidences the need for robust training in the assessment of decision-making capacity for geriatricians and members of the wider multidisciplinary team.

Abstract # 6

AREA: Acute hospital care

Risk factors for hospital readmission and death after discharge from an acute geriatric unit in older adults from the DAMAGE study: taking the rank of the admission into account

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Context: Recurrent hospital admission is a major problem among older people. Each hospital readmission increases the risks of further hospital readmissions and death. However, the importance of the number of hospital readmissions (relative to other known risk factors) has not previously been determined. The objective of this study was to analyze the impact of the number of hospital readmissions on the risks of further hospital readmission and death after adjustment for a range of risk factors.

Methods: We performed a multicentre prospective study of the DAMAGE cohort in the Hauts-de-France region of France. Patients aged 75 and over hospitalized initially in an acute geriatric unit (AGU) were included. The risk of hospital readmission was analyzed using a Cox model and its extension for recurrent events, and the risk of death was analyzed using a Cox model for time-dependent variables.

Results: 3081 patients were included (mean (SD) age: 86.4 (5.5)). In the multivariate analysis, the relative risk (95% confidence interval [CI]) of hospital readmission rose progressively to 2.66 (1.44; 5.14), and the risk of death rose to 2.01 (1.23; 3.32) after five hospital admissions, relative to a patient with no hospital readmissions. The number of hospital readmissions during the follow-up period was the primary risk factor and the best predictor of the risk of hospital readmission and the risk of death.

Conclusion: Hospital readmission is the primary risk factor for further hospital readmissions and for death in older subjects discharged from an AGU.

Abstract # 7

AREA: Acute hospital care

A systematic and universal artificial intelligence method for oropharyngeal dysphagia screening: accuracy of machine learning is higher than classic multivariate analysis

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Background and aims: Diagnosis of OD requires a three-step approach starting by clinical screening. Patients who have failed the screening test are at risk of OD and need further clinical and/or instrumental assessment. Machine learning (ML) and the digitalization of medical records enable the development of risk management algorithms for systematic OD screening. The aim of this study is to develop an expert system (ES) based on ML that estimates the risk of OD from the clinical records of all hospitalized older patients during admission. In the present study we compare the performance of our ES against those of conventional statistics.

Methods: Our database has data from 3881 hospitalized older patients (mean age 81.68 ± 10.28 , mean Barthel 47.67 ± 31.09) with a 72.26% prevalence of OD according to the Volume-Viscosity Swallowing Test. We studied the prediction power of 17,732 variables using their ICD codes with the resulting ES—patent PCT/ES2020/070723—(random forest and Bayesian Networks) and conventional statistics. We compared the performance metrics of ES with those obtained against logistic regression (LR) (multivariate analysis).

Results: The psychometrics to assess the risk of OD for the ES vs the LR analysis were: sensitivity for OD (ES = 0.94 vs. LR = 0.96), specificity (ES = 0.42 vs. LR = 0.19), positive predictive value (ES = 0.83 vs. LR = 0.79) and diagnostic accuracy defined as receiver operating characteristic area under curve (ES = 0.840 vs. LR = 0.734).

Conclusions: In our study the ES predicts OD risk with higher accuracy than RL in older patients admitted to hospital. It provides a

systematic and universal system for OD screening in real time on nurses' and physicians' workstation screen during admission, allowing the most appropriate diagnostic and therapeutic strategies to be selected for each patient. Ideally, this massive screening will lead to more OD diagnosis and a reduction in OD complications and an improvement in the quality of life of dysphagic patients.

Abstract # 8

AREA: Cardiovascular medicine

Are novel biomarkers of inflammation and immune modulation useful in vascular disease studies?

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Introduction: In a prior study, currently in review we identified novel biomarkers of inflammation and immune modulation associated with sedentary behaviour. In this study we investigated how these biomarkers were associated with future death and recurrent ischemic stroke (ISR).

Methods: Patients from the Norwegian Cognitive Impairment After Stroke (Nor-COAST) study, included on admission for acute stroke from May 2015 until March 2017, with ischemic stroke and available blood samples at 3 months follow-up were included in this sub-study. Biobank samples were analysed for neopterin, pyridoxal acid ratio index (PAr-index: 4-pyridoxal acid: (pyrioxal + pyridoxal-5'-phosphate)) and kynurenic acid (KA). The KA/neopterin-ratio was calculated. ISR and death after the 3-month follow-up were identified by the Norwegian Stroke Registry and the Cause of Death Registry up until 31.12.2018. A cox regression model (age, sex, waist circumference, prior cerebrovascular disease, modified Rankin scale at 3 months and creatinine) was applied, results were given in hazard ratios (HR).

Results: 354 patients (57% male, mean age 73 years, mean NIHSS 2) were included. Neopterin (HR 3.43, $p = 0.006$) and the KA/neopterin-ratio (HR 0.40, $p = 0.019$) was associated with mortality. We found no associations between the PAr-index and KA, and mortality. We found no associations between any of the biomarkers and recurrent ischemic stroke.

Key conclusion: Neopterin and the KA/neopterin-ratio were associated with an increased risk of death. Neopterin might have a value as a prognostic biomarker and the usefulness of the novel KA/neopterin-ratio as an expression of anti-inflammatory capacity needs further investigation.

Abstract # 9**AREA: Cardiovascular medicine****Arterial stiffness in the prediction of fatal and non-fatal cardiovascular events in a european population of middle-aged and older adults with or without metabolic syndrome. Comparison between two methods: cf-PWV and CAVI**

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Introduction: Arterial stiffness (AS) is a biomarker of aging and atherosclerosis. It can be evaluated with two different approaches: the ‘classic’ carotid-femoral pulse wave velocity (cf-PWV) and the Cardio-ankle vascular index (CAVI) of the Vasera system. This study compares cf-PWV and CAVI on the prediction of cardiovascular events (CVEs) and total mortality (TM) in a sample of middle-aged and older subjects with and without metabolic syndrome (MetS).

Method: We prospectively followed, by remote and/or out-patient controls, the French and Italian cohort (N = 215) of Triple-A study [1] for CVEs (including coronary and cerebrovascular disease, arrhythmia, and atherosclerotic disease) and TM. After 3 years, the second measure of AS was obtained for 93 patients.

Results: Both cf-PWV and CAVI values showed higher AS in the group with CVEs than in the group without ($p < 0.01$), whereas only CAVI was higher in the group of patients who died ($p < 0.01$). MetS patients had a higher risk for CVEs ($p < 0.01$) but not for TM. Only cf-PWV, but not CAVI, after adjustments for sex, age and MetS was associated with increased risk for CVEs (RR = 3.00, 95% CI 1.24–7.26, $p = 0.015$). Cf-PWV and CAVI increased at visit 2 compared to visit 1 in MetS patients (respectively, $p < 0.001$, and $p < 0.05$), but only the cf-PWV in patients without MetS ($p < 0.05$). **Conclusions:** Cf-PWV is an independent indicator of CVEs, while CAVI showed a weaker association. MetS is involved in the progression of AS, as evidenced by both measurement methods. Further studies should investigate the informativity of CAVI in the prediction of TM.

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1. J. Topouchian et al, “Effects of metabolic syndrome on arterial function in different age groups: The Advanced Approach to Arterial Stiffness study,” J. Hypertens, vol. 36, no. 4, pp. 824–833, 2018, <https://doi.org/10.1097/HJH.0000000000001631>

Abstract # 10**AREA: Cardiovascular medicine****The role of prognostic stratification on prescription of anticoagulants in older patients with atrial fibrillation: a multicenter, observational, prospective european study (EUROSAF)**

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Background: Literature suggests that different risks of mortality could influence the attitude of physicians in prescribing anticoagulants in older patients with atrial fibrillation (AF). The Multidimensional Prognostic Index (MPI) can give reliable information regarding the risk of mortality. The aim of this cross-sectional study was to evaluate whether prescription patterns of oral anticoagulants exist, based on MPI values.

Methods: Older hospitalized patients (age > 65 years) with non-valvular AF were included across 24 European centers. MPI was calculated using validated and standardized tools derived from comprehensive geriatric assessment. Other functional and clinical information were collected to calculate indexes specific for hemorrhagic and thromboembolic risk in AF.

Results: Altogether, 2021 participants affected by AF (mean age was 83.2 ± 7.5 , range: 65–104 years), with a higher presence of women (57.0%), were included. Overall, 440 took vitamin K antagonists VKAs (22.0%), 667 (33.4%) direct oral anticoagulants (DOACs), whilst 44.6% did not take any anticoagulant treatment. Prescription of anticoagulants was associated with MPI values, with people taking anticoagulants having lower mean MPI values. Anticoagulant therapy was not used in 53.1% of the group with the highest risk of mortality, compared with 32.3% of those in the group with the lowest mortality risk.

Conclusions: The EUROpean study of Older Subjects with Atrial Fibrillation (EUROSAF) suggested that almost half of the older persons with AF do not receive anticoagulants and that MPI is an important determinant in prescribing or not anticoagulants.

Abstract # 11**AREA: Cardiovascular medicine****Development and Application of a Prognostic Frailty Index for predicting complications after transcatheter aortic valve implantation (TAVI): PARTNER-HULP Index**

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Background: Frailty is a geriatric syndrome characterized by decreased of functional reserve and response to stressors. It is

frequently present in geriatric patients with severe aortic stenosis (SAS) screened for transcatheter aortic valve implantation (TAVI) and leading to increased vulnerability for adverse health outcomes.

Objective: To develop a frailty prognostic index, based on the Partner-Trial, adapted to the Spanish population to predict the results after TAVI.

Methodology: Design: prospective study from July-2016 through October-2019. Participants: Patients with SAS, evaluated in Cardio-Geriatric appointments at La Paz University Hospital (HULP). Measures: Functional status [Barthel Index (BI); Functional Ambulation Category (FAC)]; cognitive status [Mental Red Cross Scale (CRM)], nutritional variables [Body Mass Index (BMI)], frailty [gait speed < 0.8 m/s; Hand Grip Strength < 23 kg in men or < 13 kg in women; [Short Physical Performance Battery (SPPB) < 10]; Partner-HULP index was developed introducing the cut-off points for the health area in the studied population; its score ranges from 0 to 9 points.

Results: We included 183 patients; 136 (74.31%) underwent TAVI, the mean age was 81.17 ± 6.72 years; 50.7% were female; 26.1% were classified as fragile with Partner-HULP Index. Results during hospitalization in frailty and fit patients were: infections 34.3% versus 11.3% [OR 4.2 (1.6–10.78)], renal failure 37.1% versus 12.2% [OR 4.33 (1.7–10.8)], hospital stay 17.7 ± 14.5 days versus 9.02 ± 4.45 days ($p < 0.001$).

Conclusions: A frailty prognostic index was developed. Patients detected as frail with Partner-HULP have a higher rate of infections, kidney disease, longer hospital stays compared to fit patients.

Abstract # 12

AREA: Cognition and dementia

Long-term effects of a specific multinutrient intervention in the prodromal Alzheimer's disease LipiDiDiet clinical trial

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Introduction: Alzheimer's disease (AD) is the most common age-related neurodegenerative disease, and dietary and nutritional interventions as part of broader lifestyle changes may contribute to improve cognitive performance. The LipiDiDiet trial 1 investigates the effects of the specific multinutrient combination Fortasyn Connect on cognition and related measures in prodromal AD. It is a 6-year,

randomized, double-blind, placebo-controlled clinical trial, and here we report on the first 36 months of intervention.

Methods: Participants (n = 311) were randomized to receive either active product (125 ml once-a-day drink; Fortasyn Connect) or a calorie-matched placebo control drink.

Results: 162 participants completed the 36-month period [1]. After 36 months, a significant benefit was observed on a neuropsychological test battery (NTB) cognition score and on clinical and MRI secondary endpoints. With increasing treatment duration, the absolute benefit of the multinutrient group over the control group clearly exceeded what had been observed for the first 2 years [2], and more endpoints reached statistical significance. Compliance and safety results previously observed were confirmed in the current analyses, indicating that high tolerability and good safety profile were maintained during longer term use of the active product.

Conclusions: The LipiDiDiet clinical trial provides clear evidence that the 3-year use of the multinutrient intervention slowed progression of prodromal Alzheimer's disease as characterized by slowed decline in the key cognitive and functional parameters as well as by reduced brain atrophies. The intervention was safe and well tolerated over 3 years, with safety and tolerability of prolonged intervention beyond this duration currently being evaluated. This novel intervention strategy broadens the arsenal for the management of this condition.

References:

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Abstract # 13

AREA: Comprehensive Geriatric Assessment

Gait speed reference values in community-dwelling older adults – results from the Rotterdam study

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Background: Gait speed is a simple, inexpensive and clinically useful marker of physical function in older adults. We aimed to establish gait speed reference values for community-dwelling older adults. To this end, we further explored the association of age, sex and height with gait speed.

Methods: This study included community-dwelling participants aged 50 years and over enrolled in the Rotterdam Study. Participants completed the gait protocol between 2009 and 2015. Mean gait speed was calculated for age and height groups, stratified by sex. Reference values for gait speed were calculated using a quantile regression model adjusted for sex, the non-linear effects of age and height and the interaction between age and sex and age and height.

Results: The study population included 4656 participants with a mean (standard deviation) age of 67.7 (9.5) years, comprising 2569 (55.2%) women. Mean height of the participants was 169.3 (9.5) centimetres

and the mean gait speed was 119.7 (20.2) cm/s. Gait speed decreased with older age and increased with taller stature, but the effect of height disappeared above the age of 80 years. Sex did not affect gait speed after accounting for age and height. Age-, sex-, and height-specific reference values for gait speed are available for use at https://dommershuijsen.shinyapps.io/reference_values_gait_speed.

Key conclusions: We found that height explains the commonly noted difference in usual gait speed between sexes and that neither height nor sex impacts gait speed above the age of 80 years. We developed reference values for usual gait speed in community-dwelling older adults.

Abstract # 14

AREA: Comprehensive Geriatric Assessment

A comprehensive model of geriatric domains for mortality among older patients with cancer: a structural equation approach

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Background: Geriatric parameters are well-established prognostic factors in older cancer patients, independently from oncological factors. Yet, little is known about the causal pathways linking such factors to mortality. We assessed the direct and indirect pathways between six main geriatric domains and 6- and 12-months mortality in older cancer patients.

Methods: Cancer patients aged ≥ 70 years recruited in the ELCAPA cohort for geriatric assessment (GA), between 2007 and 2016, were included. We examined the relationships between the six geriatric domains (function and mobility, nutrition, cognition, mood, comorbidities and polypharmacy, and social support) and their direct and indirect effects, together with stage, cancer site and anti-cancer treatment, on 6- and 12-months mortality following GA with structural equation modelling (SEM).

Results: This analysis included 1434 patients (mean age, 80 years (± 5.6); female, 48%; main localizations: colorectal (19%), upper digestive tract (17%), and breast (17%); metastasis, 48%; curative treatment: 44%). The 6- and 12-months overall survival rates were 68% [95% CI 66–71%] and 56% [53–58%], respectively. Significant direct pathways to 6- and 12-months mortality were identified for functional impairment (standardized coefficient (SC): 0.37; $p < 0.001$ and 0.32; $p < 0.001$), poor nutritional status (SC: 0.11; $p = 0.005$ and 0.14; $p = 0.001$) and poor social support (SC = 0.07; $p = 0.08$ and 0.09; $p = 0.02$), along with tumour site, metastatic status and anti-cancer treatment. The effects of comorbidities, cognitive impairment and depression on mortality were mediated by functional and nutritional status.

Conclusion: In older patients with cancer, functional and nutritional impairment were the strongest direct prognostic geriatric factors for mortality independently from oncological factors.

Abstract # 15

AREA: COVID-19

Magnitude, change over time, demographic characteristics and geographic distribution of excess deaths among nursing home residents during the first wave of COVID-19 in France: a nationwide cohort study

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Background: The objectives were to assess the excess deaths among Nursing Home (NH) residents during the first wave of the COVID-19 pandemic, to determine their part in the total excess deaths and whether there was a mortality displacement.

Methods: We studied a cohort of 494,753 residents in 6515 NHs in France exposed to COVID-19 pandemic (from March 1st to May 31st, 2020) and compared with the 2014–2019 cohorts using data from the French National Health Data System. The main outcome was death. Excess deaths and standardized mortality ratios (SMRs) were estimated.

Results: There were 13,505 excess deaths. Mortality increased by 43% (SMR: 1.43). The mortality excess was higher among males than females (SMR: 1.51 and 1.38) and decreased with increasing age (SMRs in females: 1.61 in the 60–74 age group, 1.58 for 75–84, 1.41 for 85–94, and 1.31 for 95 or over; males: SMRs: 1.59 for 60–74, 1.69 for 75–84, 1.47 for 85–94, and 1.41 for 95 or over). No mortality displacement effect was observed up until August 30th, 2020. By extrapolating to all NH residents nationally ($N = 570,003$), we estimated that they accounted for 51% of the general population excess deaths ($N = 15,114$ out of 29,563).

Conclusion: NH residents accounted for half of the total excess deaths in France during the first wave of the COVID-19 pandemic. The excess death rate was higher among males than females and among younger than older residents.

Abstract # 16

AREA: COVID-19

Characteristics and outcomes of older hospitalized patients in the first and second wave in COVID-19 pandemic in the Netherlands: a Dutch multi-center cohort study

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Introduction: As the COVID-19 pandemic progressed, many developments took place in knowledge and diagnosis of disease and complications, treatment regimens, testing and disease control. The aim of the present study was to investigate differences in patient characteristics, disease presentation and outcomes of older patients with COVID-19 infection between the first and the second COVID-19 waves in The Netherlands.

Methods: This was a multi-center retrospective cohort study in 15 hospitals in the Netherlands including all patients aged 70 years and more, hospitalized with COVID-19 infection between February and May 2020 (first wave) and September 2020 and January 2021 (second

wave). Data were collected on demographics, co-morbidity, indicators of disease severity and Clinical Frailty Scale (CFS). The main outcome was in-hospital mortality.

Results: A total of 1376 patients in the first wave (median age 78, 60% male) and 946 patients in the second wave (median age 79, 61% male) were included. There was no relevant difference in presence of co-morbidity or frailty. Patients in the second wave were admitted earlier (after a median of 6 symptomatic days versus 7 days in the first wave ($p < 0.001$)). In-hospital mortality decreased from 38.1 to 27.0%. Age, male sex, being a patient during the first wave, higher CFS and higher respiratory rate were independently associated with in-hospital mortality.

Key conclusions: In-hospital mortality of older patients hospitalized with COVID-19 infection was significantly lower in the second COVID-19 wave, despite similar patient characteristics. This suggests more effective in-hospital treatment of older patients in the second wave.

Abstract # 17

AREA: COVID-19

SaRS-Cov-2 antibodies following exposure to COVID-19 and/or vaccination in nursing homes

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Background: Presence of SaRS-Cov-2 antibodies following exposure to COVID-19 and/or vaccination is a major indicator of immunization. Few data exist about serology response in nursing homes (NHs), i.e. in the most vulnerable population for developing severe forms of the disease.

Methods: Residents and health professionals in 9 nursing homes (NHs) had SaRS-Cov-2 antibodies detection 74 ± 38 days after their last exposure (either COVID-19 or COMIRNATY Pfizer-BioNTech vaccine).

Results: 486 residents (87 ± 9 years), 75% women and 122 professionals (43 ± 11 , 84 women) were studied. According to the antibody levels, individuals were classified in 4 groups: Gr1 = negative, Gr2, Gr3 and Gr4 were positive with respectively low, medium or high antibody levels. Among residents, 467 (96%) have been exposed to at least one of "COVID-19/Vaccine 1/2 injections", and among them 92% presented antibodies. Those with history of COVID-19 and 2 injections of vaccine ($n = 86$) showed higher SaRS-Cov-2 antibodies levels compared with all other exposed groups ($p < 0.001$, adjusted for age-, sex- and duration of exposure). Among health professional, 80 (66%) have been exposed to at least one of "COVID-19/Vaccine" and among them 95% presented antibodies. Mean serology response was not different as compared with the residents. Interestingly in

health professionals the serology response was the same in all vaccinated groups but was lower in the "yes-COVID/no-vaccine" group. **Conclusions:** NHs residents develop SaRS-Cov-2 antibodies at equivalent level as middle-age individuals. However, contrary to younger individuals, residents, showed highest antibody levels with "three" stimuli (yes-COVID plus 2 injections) showing the interest for 2-vaccine injections in post-COVID NHs residents.

Abstract # 18

AREA: COVID-19

The impact of COVID-19 on mortality in patients with dementia

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Background: Cognitive impairment is not conclusive risk factor for severe outcome of the coronavirus disease 2019 (COVID-19). We aimed to determine whether the presence of dementia is associated with higher in-hospital mortality in patients with COVID-19.

Materials and methods: We conducted an open-cohort observational study Stockholm in participating hospitals for older adults from pandemic start until January 8th, 2021. In total, we identified 4715 patients, out of which 480 (10.2%) patients had diagnosis of both COVID-19 and dementia, 2362 (50.1%) had COVID-19 and were dementia-free and 1873 (39.7%) had dementia without COVID-19. Patients' age, sex, oxygen saturation, comorbidities, and medication prescription (cardiovascular and psychotropic medication) were registered at admission. The hazard ratios (HR) with 95% confidence intervals (CI) of in-hospital mortality associated with dementia were obtained using proportional hazards regression with time since entry as time scale.

Results: After adjustment, dementia was independently associated with 59% higher in-hospital mortality among COVID-19 patients compared to patients who were dementia-free at admission [HR 1.59 (1.26–2.01)]. In addition, the prescription of antipsychotic medication was associated with substantially higher mortality, however only in patients who were dementia-free [2.79 (2.05–3.81); vs dementia 1.32 (0.84–2.09)].

Conclusions: Dementia is an independent risk factor for short-term mortality in patients hospitalized due to COVID-19. Our results may help identify high-risk patients in need of more specialized care when infected with COVID-19. The study was supported by Swedish Research Council 2020-06101 (WISER project) and Demensförbundet. We acknowledged StockholmGeroCovid group.

Abstract # 19

AREA: COVID-19

Computed tomography findings and prognosis in older COVID-19 patients

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Background: In older and multimorbid patients, chronic conditions may affect the prognostic validity of computed tomography (CT) findings in COVID-19. This study aims at assessing to which extent CT findings have prognostic implications in COVID-19 older patients.

Methods: 380 hospitalized COVID-19 patients aged 60 years or more enrolled in the multicenter, observational and longitudinal GeroCovid study (NCT04379440) who underwent chest CT were included. Patients were stratified by tertiles of age and pneumonia severity to compare CT findings. Hierarchical clustering based on CT findings was performed to identify CT-related classificatory constructs, if any. The hazard ratio (HR) of mortality was calculated for individual CT findings and for clusters, after adjusting for potential confounders.

Results: Ground glass opacity (GGO), consolidation, and pleural effusion were the three most common CT findings, with GGO prevalence decreasing from younger to older patients and pleural effusion increasing. More severe the pneumonia more prevalent were GGO, consolidation, and pleural effusion. Pleural effusion and clusters with a high prevalence of GGO and a high (“HH”) or intermediate prevalence (“HI”) of pleural effusion and a low prevalence of GGO and a high prevalence of pleural effusion (“LH”) showed a HR of mortality of 1.94, 2.16, 3.23 and 13, respectively, with “LH” remaining the only independent predictor in the multivariate model.

Conclusions: Pleural effusion qualifies as a distinctive prognostic marker in older COVID-19 patients. Research is needed to verify whether pleural effusion reflects COVID-19 severity or a coexisting chronic condition making the patient at special risk of death.

Abstract # 20

AREA: Delirium

Delirium diagnostic uncertainty in a real-world setting: prevalence and associations with mortality, length of stay and discharge destination

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Introduction: Delirium can be difficult to diagnose due to its variable presentation and fluctuating course. The objective was to determine real-world rates of certain vs uncertain delirium in-hospital and associations with mortality, length of stay (LOS) and discharge destination.

Methods: The ORCHARD database contains electronic patient data from four Oxfordshire, UK hospitals that routinely screen patients ≥ 70 years for delirium using the confusion assessment method-CAM and 10-point abbreviated mental test score-AMTS. Delirium is recorded as yes/no/uncertain by the admitting clinician. We included all first admissions ≥ 70 years in ORCHARD in 2018. Logistic regression was used to adjust associations for demographics, frailty, comorbidity and illness severity.

Results: Among 6766 screened patients (median/IQR age = 82/11; 47% male), delirium = yes was recorded in 710 (10%) and delirium = uncertain in 1188 (18%). Delirium risk factors, including dementia, were similar between delirium = yes and delirium = uncertain groups, but less prevalent in delirium = no. Compared with delirium = no, adjusted odds (aOR) of in-hospital death were elevated in delirium = yes (aOR = 1.80 [95% CI 1.40–2.32]) and delirium = uncertain (1.86 [1.51–2.30]) groups, and remained elevated 1-year after discharge (aOR = 1.29 [95% CI 1.05–1.46] vs 1.23 [1.06–1.58]). Among survivors, poor outcomes were also similar between delirium = yes and delirium = uncertain groups: aOR = 1.24 (95% CI 1.04–1.48) vs 1.15 (1.00–1.32) for LOS > 6 days; and aOR = 1.87 (95% CI 1.42–2.46) vs 1.83 (1.44–2.32) for discharge to care home instead of usual residence.

Conclusion: Uncertainty in delirium diagnosis occurred in $\sim 1/5$ of those screened. Risk factors and outcomes were similar between definite vs uncertain patients, suggesting strategies for managing delirium could be extended to those with an uncertain diagnosis and delirium rates in-hospital may be underestimated.

Abstract # 21

AREA: ECGI - Early Career Geriatricians

The effect of social deprivation on hip and distal femoral fractures in Italy (2010–2019)

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Introduction: Femoral fractures are a common cause of disability and mortality in the elderly, and an increasing public health issue due to population aging. Increased incidence of femoral fractures has been associated with socioeconomic deprivation (SED) in high-income countries. The aim of the study was to evaluate the association between SED and femoral fractures in Italy between 2010 and 2019.

Methods: Hip and distal femoral fractures (ICD-9-CM codes 820.x and 821.x) encoded as primary diagnosis in individuals aged 50 years and over were identified from the Italian National Hospital Discharge Database. The 2011 Italian Deprivation Index, categorized in quintiles, was used for SED analysis. Age-adjusted relative risks (RR) for hip and distal femoral fractures, stratified by gender and deprivation quintiles, were calculated.

Results: Over the period of 10 years, 875,809 hospitalizations for femoral fractures were identified: 90% were hip fractures and 75% occurred in women. The most deprived SED quintile (Q5), compared to the least deprived (Q1), is associated with lower incidence of hip fractures in women (RR = 0.83; 95% CI 0.81–0.86) and men (RR = 0.78; 95% CI 0.75–0.80). Compared to Q1, age-adjusted distal femoral fracture incidence also decreased with increasing SED quintiles in men (RR = 0.70; 95% CI 0.66–0.74) and women (RR = 0.78; 95% CI 0.73–0.83).

Key conclusions: Higher levels of SED index are associated with lower risk of osteoporosis-related fractures in Italy. The association seems consistent for both types of fractures and in both sexes. Further research is needed to identify the reasons behind the seemingly protective effect of SED in hip and distal femoral fractures.

Abstract # 22

AREA: Falls and fractures

Association between Body Mass Index and fall-related fractures following acute hospitalization of geriatric patients: a Danish nationwide cohort study

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Introduction: Fall-related fractures have great impact on morbidity and mortality. This study assessed the association between body mass index (BMI) and fall-related fractures among older adults following acute hospitalization.

Methods: All acutely hospitalized patients aged ≥ 65 years in the population-based National Danish Geriatric Database from 2005 to 2014 were included and followed until outcome, death, emigration, or study termination (31.12.2015). BMI (kg/m^2) at admission was categorized into five groups: < 16 , $16\text{--}18.4$, $18.5\text{--}24.9$, $25\text{--}29.9$, and ≥ 30 . Fall related fractures (hip, shoulder, lower arm, ankle, pelvis) were identified using diagnoses from the Danish National Patient Register. Multivariable competing risk regression model was used to estimate 2-year fall-related fracture risk (subhazard ratio (sHR)) with death treated as competing risk. The model adjusted for age, marital status, Charlson Comorbidity Index, prior hospitalizations, year of admission, prior fractures, and polypharmacy.

Results: A total of 74,589 patients (63% women) were included, mean (SD) age 82.5 (7.5) years and BMI 23.9 (5.1). During follow-up 12,492 patients (16.8%) suffered any fall-related fracture, thereof 7870 hip fractures. Incidence rates (95% CI)/1000 person years were highest in patients with BMI = $16\text{--}18.4$ for any fall-related fracture (193.7 (182.3–205.7)) decreasing with increasing BMI. However, competing risk analysis showed a reverse U-shaped risk (sHR (95% CI)) with patients in category BMI = $18.5\text{--}24.9$ at highest risk (sHR = 1) and patients with BMI < 16 (0.80 (0.71–0.90)) and BMI ≥ 30 (0.74 (0.68–0.79)) at lowest risk.

Key conclusions: The risk of fall-related fractures following acute hospitalization is high in older adults, with an inverted U-shaped association with BMI. Further research is warranted to confirm and explain these findings.

Abstract # 23

AREA: Falls and fractures

Fear of falling is independently associated with orthostatic hypotension in older people with and without a history of falls. Data from TILDA

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Introduction: Fear of falling (FoF) is an important consequence of falls, and risk factor for further falls in later life, though the biological factors underpinning FoF are not yet well described. While small studies have suggested a link between FoF and orthostatic hypotension (OH), this has yet to be examined in larger cohorts, using continuous BP measurement.

Methods: At Wave 1 of TILDA, FoF was assessed by asking: are you afraid of falling? Participants were divided into 4 groups: FoF/Falls ($n = 587$), FoF/No falls ($n = 283$), No FoF/Falls ($n = 562$) and No FoF/No Falls ($n = 2875$). Beat-to-beat BP was measured continuously during active stand using a finometer. OH was defined as a drop in systolic BP ≥ 20 mmHg or diastolic BP ≥ 10 mmHg at 30, 60 and/or 90 s post standing.

Results: Compared to the No FoF/No Falls group, the largest drop in systolic BP from pre-standing baseline was in the FoF/No Falls group at 30 s (5.23 mmHg (SD 18.5) vs 0.95 mmHg (SD 15.9); $p < 0.001$), 60 s (3.65 mmHg (SD 17.7) vs 0.80 mmHg (SD 15.3); $p = 0.025$) and 90 s (2.47 mmHg (SD 19.5) vs. -0.32 mmHg (SD 15.5); $p = 0.040$). Logistic regression models demonstrated a significant independent association of FoF/No Falls with OH-30 (OR 1.36 (1.01–1.84)), OH-60 (OR 1.42 (1.01–1.98)) and OH-90 (OR 1.46 (1.04–2.05)) but no association between other groups and OH.

Key conclusions: FoF, particularly in those with no recent falls, is independently associated with delayed BP recovery after standing. OH may therefore represent a potentially modifiable risk factor underpinning FoF in older people.

Abstract # 24

AREA: Falls and fractures

Activities of daily living associated with fall-related fractures in patients with dementia following acute hospitalization. A Danish nationwide cohort study

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Introduction: Risk of falls and fractures are of great concern in patients with dementia. This study assessed the association between activities of daily living (ADL) and 2-year fall-related fracture risk among patients with dementia following acute hospitalization.

Methods: Patients aged ≥ 65 years with diagnosed dementia in the population-based National Danish Geriatric Database from 2005 to 2014 were included and followed until outcome, death, emigration, or study termination (31.12.2015). ADL was assessed by Barthel-Index-100 (BI) and ADL was stratified based on the BI to very low (0–24),

low (25–49), moderate reduced (50–79), or independent (80–100). Fall related fractures (hip, shoulder, lower arm, ankle, pelvis) were identified using diagnoses from the Danish National Patient Register. Multivariable competing risk regression model was used to estimate 2-year fall-related fracture risk (subhazard ratio (sHR)) with death treated as competing risk. The model adjusted for age, marital status, Charlson Comorbidity Index, BMI, prior hospitalizations, year of admission, prior fractures, and polypharmacy.

Results: A total of 6550 patients (62% women) were included, median (IQR) age 84 (79–88) years and BI 37 (13–63). Fall-related fractures were experienced by 1198 patients (18.2%). The risk increased significantly with decreasing BI in both the univariable analysis and multivariable analysis. Risks (sHR (95% CI)) of any fall-related fracture and hip fracture specifically were 1.32 (1.05–1.65) and 1.93 (1.42–2.63), respectively in subcategory very low BI using independent BI as reference.

Conclusion: Risk of fall-related fractures is high among patients with dementia following hospital and independently associated with low ADL. Fall-related fracture prevention initiatives should be considered in these patients.

Abstract # 25

AREA: Falls and fractures

Older adults deemed “Low Risk for Falls” still experience injurious falls during one year of follow up. Results of the gait & brain study

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Background: Current fall risk screenings streams patients on the presence of one or more previous falls and gait and balance problems. Individuals who screen negative to both criteria receive no further assessments. We aimed to prospectively determine the rate of falls of this “low risk group”.

Methods: Older adults from the Gait and Brain Study cohort, free of dementia and frailty at baseline, were included in this study (N = 239). Falls were recorded using falls calendar twice a year in face-to-face assessments up to 10-year follow-up.

Results: Whereas the majority of the individuals who fell during follow-up had a history of falls in the previous 12 months (67%, RR = 2.06, 95% CI 1.57–2.71, $p < 0.001$), a third of the individuals who fell did not have a fall history (33%) and 68.1% of their falls were injurious ($\chi^2 = 6.15$, $p < 0.013$). Among those with a negative fall history, those with slow gait at baseline (< 1 m/s) had 1.5 times the risk of falling at follow up than those who did not have slow gait (RR = 1.52, 95% CI 0.98–2.36, $p = 0.077$). Importantly, these screen negatives did not present clinically evident balance or gait problems, other than slow gait. The only risk factor that differentiated the groups was the history of chronic low back pain, at baseline.

Conclusion: One third of older adults deemed low risk had a fall during follow up. These falls were not benign since 68% of them were associated with injuries. When only targeting individuals with a fall history or with gait and balance impairment, we missed a substantial proportion of those at risk for injurious falls. Assessing gait speed universally using a cut-off of < 1 m/s may help better identify these individuals.

Abstract # 26

AREA: Falls and fractures

A systematic review and meta-analysis assessing the effectiveness of deprescribing in falls prevention in older people

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Background: Identification of effective falls prevention measures is vital.

Objective: To assess the effectiveness of deprescribing as a single intervention in falls prevention.

Methods: Design: a systematic review and meta-analysis. Data sources: MEDLINE, EMBASE, CENTRAL and PsycINFO and trial registers. Eligibility criteria: randomized controlled trials of older participants comparing any deprescribing intervention to usual care with fall outcomes. Study records: title/abstract and full-text screening by two reviewers. Risk of bias: Cochrane Collaboration revised tool. Data synthesis: results reported separately for every setting and sufficiently comparable studies meta-analysed.

Results: In total, 42 studies with heterogeneous interventions and results were identified. Community: META-analysis of medication reviews by pharmacists resulted in a risk ratio (RR) of 1.06 (95% CI 0.89–1.27, $I^2 = 0\%$, 4 studies) for number of fallers. Hospital: meta-analysis assessing medication reviews resulted in a RR = 0.67 (95% CI 0.25–1.80, $I^2 = 47\%$, 3 studies) for number of fallers during hospital stay. Long-term care: meta-analyses investigating medication reviews or deprescribing plans resulted in a RR = 0.86 (95% CI 0.72–1.02, $I^2 = 0\%$, 4 studies) for number of fallers and a rate ratio of 0.93 (95% CI 0.62–1.38, $I^2 = 94\%$, 6 studies) for number of falls.

Conclusion: Due to very heterogeneous interventions it is difficult to estimate the exact effect of deprescribing as a single intervention. For future studies, more comparability is warranted. Deprescribing interventions should not be implemented as a stand-alone strategy in falls prevention but included in multimodal strategy due to falls' multifactorial nature. For successful deprescribing intervention, uptake and compliance of the intervention are essential and can be increased e.g. by education and engagement. Registration number: CRD42020218231.

Abstract # 27

AREA: Falls and fractures

Delayed blood pressure recovery after standing independently predicts fracture in community-dwelling older people

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Introduction: Orthostatic hypotension, characterised by delayed blood pressure recovery (DBPR) after standing, is a risk factor for falls, but the longitudinal relationship with fractures is not yet known. The aim of this study is to examine the prospective risk of fracture associated with delayed BP recovery.

Methods: This study, embedded within the Irish Longitudinal Study on Ageing (TILDA), examined a sample of > 3000 older people, with 8-year follow-up. Orthostatic BP was measured using a finometer during active stand at TILDA Wave 1. DBPR was defined as systolic BP $\geq$ 20 mmHg lower and/or diastolic BP $\geq$ 10 mmHg from baseline value at 30, 60 and 90 s. Participants with a fracture reported at any of waves 2–5 were defined as having 'Incident Fracture'. Logistic regression models were used to estimate odds ratios for the association between DBPR and incident fracture.

Results: Delayed BP recovery at 30 s was a significant predictor of any fracture [OR 1.80, 95% confidence interval (CI) 1.28–2.53] and hip fracture (OR 4.44, 95% CI 2.03–9.71) in fully adjusted models. DBPR at 30 s did not predict wrist or vertebral fracture. DBPR at 60s predicted any fracture (OR 1.74, 95% CI 1.19–2.54) and hip fracture (OR 4.66, 95% CI 2.12–10.26) whereas DBPR at 90s predicted any (OR 1.99, 95% CI 1.38–2.87), wrist (OR 1.87, 95% CI 1.19–2.95), and hip fracture (OR 3.39, 95% CI 1.45–7.93) in fully adjusted models.

Conclusion: DBPR independently predicts fracture in community-dwelling older people, is potentially modifiable, and can be measured in an ambulatory setting. Given the morbidity and mortality associated with fractures, identification of such risk factors is crucial in order to inform preventative strategies.

Abstract # 28

AREA: Frailty and resilience

Validating The Centre of Excellence On Longevity Self-Administered (CESAM) Questionnaire: an online self-reported tool for frailty assessment in older adults

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Introduction: Subjective health measures are often used as frailty criteria, but the validity of self-administered online tools to identify frailty remains to be established. We aim to assess convergent, concurrent and predictive validity of the Centre of Excellence on Longevity Self-Administered (CESAM) questionnaire for frailty identification in a geriatric clinic in Singapore.

Methods: We conducted cross-sectional analysis of 95 participants (mean age = 80.4 $\pm$ 6.2 years) recruited consecutively from a tertiary geriatric clinic. Participants [61 (64.2%)caregiver-assisted] completed the CESAM questionnaire online, comprising 27 self-report items that encompass cognition, falls, mood and functional domains.

Convergent validity was assessed using Spearman correlation with modified Barthel Index (MBI), modified version of the Chinese Mini-Mental State Examination (mCMMSE) and Geriatric Depression Scale (GDS). Concurrent validity was assessed by Area Under the Receiver Operating Characteristic curve (AUROC) against frailty [Frailty Index (FI) $\geq$ 0.25 from clinical interview and medical records]. Predictive validity for physician-diagnosed geriatric syndromes (cognitive impairment, unsteady gait with falls) and impaired proxy-rated quality-of-life [EuroQOL (EQ)-5D utility scores] were assessed using regression analyses adjusted for age and gender.

Results: CESAM score significantly correlated with MBI ($r = -0.65$, $P < 0.001$), mCMMSE ($r = -0.53$, $P < 0.001$) and GDS ($r = 0.61$, $P < 0.001$). AUROC for CESAM was excellent for frailty [0.89 (95% CI 0.83–0.95)]. Optimal CESAM cutoff of ≥ 8 for frailty (sensitivity 76%; specificity 82%) predicted physician-diagnosed cognitive impairment (OR 3.5, 95% CI 1.1–11.0), unsteady gait with falls (OR 5.3, 95% CI 1.3–21.4) and lower EQ-5D ($B = -0.07$, 95% CI -0.09 to -0.04).

Conclusion: We provide preliminary evidence for the validity of an online self-administered tool to identify frailty in an outpatient setting. The tool is potentially applicable to geriatricians conducting CGA remotely especially during the COVID-19 pandemic.

Abstract # 29

AREA: Frailty and resilience

Effects of leucine administration in sarcopenia in older institutionalized individuals: a randomized placebo-controlled trial

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Treating sarcopenia in older individuals remains a challenge, and nutritional interventions present promising approaches in individuals that perform limited physical exercise. We assessed the efficacy of leucine administration to evaluate whether the regular intake of this essential amino acid can improve muscle mass, muscle strength and functional performance and respiratory muscle function in institutionalized older individuals. The study was a placebo-controlled, randomized, double-blind design in fifty participants aged 65 and over (ClinicalTrials.gov identifier NCT03831399). The participants were randomized to a parallel group intervention of 13 weeks' duration with a daily intake of leucine (6 g/day) or placebo (lactose, 6 g/day). The primary outcome was to study the effect on sarcopenia and respiratory muscle function. The secondary outcomes were changes in the geriatric evaluation scales, such as cognitive function, functional impairment and nutritional assessments. We also evaluated whether leucine administration alters blood analytical parameters and inflammatory markers. Administration of leucine was well-tolerated and significantly improves some criteria of sarcopenia in elderly individuals such as functional performance measured by walking time ($p = 0.011$), and improved lean mass index. For respiratory muscle function, the leucine-treated group improved significantly ($p = 0.026$) in maximum static expiratory force compared to the placebo. No significant effects on functional impairment, cognitive function or nutritional assessment, inflammatory cytokines IL-6, TNF-alpha were observed after leucine administration compared to the placebo. The use of l-leucine supplementation can have some beneficial effects on sarcopenia and could be considered for the treatment of sarcopenia in older individuals.

Abstract # 30

AREA: Frailty and resilience

Validity and reliability of FORTO (fatigability in outcomes to monitor resilience targets in older persons): a smart self-assessment system for grip work

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Introduction: It is important to detect early symptoms of intrinsic capacity decline. We developed a smart (self-) assessment tool that measures muscle fatigability as an early indicator for loss of intrinsic capacity called FORTO. FORTO consists of a rubber bulb for squeezing, wirelessly connected to a smartphone application. The aim was to evaluate the validity and reliability of the FORTO system to measure muscle fatigability.

Methods: Community-dwelling older persons (n = 61), geriatric inpatients (n = 26) and hip fracture patients (n = 25) were evaluated for fatigue resistance (FR), measured as the time for the sustained grip strength (GS) to drop below 50% of the maximum GS, and grip work (GW) as area under decay curve. The GW of community-dwellers measured with FORTO was compared against a standard analog system (Martin Vigorimeter, MV) to assess criterion validity. For 6 consecutive days community-dwellers used FORTO as a self-assessment at home to test intra-rater reliability. Hospitalized patients were tested twice on the same day by two different professionals to test inter-rater reliability.

Results: Criterion validity was supported by good to excellent correlations between FORTO and MV for muscle fatigability (FR r = 0.81 and GW r = 0.73). Inter-rater and intra-rater reliability for GW were moderate to excellent (intra-class correlation: 0.59–0.94). The inter-rater standard error of measurement was small for geriatric inpatients and hip fracture patients (224.45 and 386.46 kPa s), but somewhat higher comparing community-dwellers' self-assessment and professional assessment (661.50 kPa s).

Conclusion: The results support the implementation of FORTO for repeated (self-)monitoring of muscle fatigability as a measure of intrinsic capacity.

Abstract # 31

AREA: Frailty and resilience

The influence of frailty on outcomes for older adults admitted to hospital with Benign biliary disease: a single centre, observational cohort study

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Introduction: The prevalence and complications of biliary disease increase with age. Frailty has been associated with adverse outcomes in hospital. We describe the prevalence of frailty in older patients hospitalised with benign biliary disease and its association with duration of hospital stay, 90-day and 1-year mortality.

Methods: Observational cohort study of patients aged 75 years and over admitted with acute biliary disease between 17/09/2014 and 20/03/2017. Clinical Frailty Scale (CFS) score was recorded on admission.

Results: 200 patients with a median age of 82 (75–99), 60% females, 154 (77%) were independent for personal and 99 (49.5%) for instrumental activities of daily living. Acute cholecystitis was the most common diagnosis (43%), acute cholangitis (36%) and acute pancreatitis (21%). 99 patients were non-frail (NF = CFS 1–4) and 101 were frail (F = CFS ≥ 5) 0.104 patients received medical treatment only. Surgery was more common in non-frail (F 2% vs. NF 11%), percutaneous drainage more common in frail patients (15% vs. NF 5%) and endoscopic cholangiopancreatography (ERCP) was similar in both groups (F 32% vs. NF 31%). Frailty was associated with worse clinical outcomes. F vs. NF: functional deconditioning (34% vs. 11%), increased care level (19% vs 3%), length of stay (12 vs. 7 days), 90-day (8% vs. 3%) and 1 year-mortality (48% vs. 24%).

Key conclusions: Frailty is associated with increased mortality in acute biliary disease. Individuals living with frailty were less likely to undergo surgical treatment, spent longer in hospital and were less likely to remain alive at 12 months after discharge.

Abstract # 32

AREA: Frailty and resilience

Does the interaction between pulse wave velocity and sarcopenia influence frailty transitions along time?

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Objective: Arterial stiffness has been proposed a biomarker of biological aging and associated with frailty. Whether frailty transitions are modulated by the presence isolated or in combination of arterial stiffness and sarcopenia has not been explored.

Methods: Data from the Toledo Study in Healthy Aging were used. The range of follow-up time was 2.1–4 years. Frailty was defined using the Frailty Trait Scale and Frailty Phenotype and were measured at baseline and at follow-up. Deaths were also ascertained.

Sarcopenia was measured at baseline and calculated according to the Foundation for the National Institutes of Health criteria. Arterial stiffness was evaluated at baseline through the pulse wave velocity (PWV), by using a non-invasive applanation tonometry

(SphygmoCor, Atcor) conducted in a supine position. We used Fisher exact test to assess if transitions between frailty statuses were modified by sarcopenia and PWV (cut-off 9 m/s) and Chi-square test with Yates correction to assess differences between death rates.

Results: 1382 subjects (45.22% male, 74.88 years) were included. 284 participants met sarcopenia criteria, 689 had a PWV > 9 m/s. Subjects with sarcopenia, a PWV > 9 or those who met both conditions were more prevalent to prognose from robustness to frail + prefrail. Moreover, subjects who met the previous mentioned conditions were less likely to improve in their frailty status (p -value < 0.05 with any tool used).

Conclusions: These results suggest that the evolution of frailty could be influenced by the interaction arterial stiffness and sarcopenia. From a clinical point of view, treating or reversing these entities should be paramount to prevent frailty status.

Abstract # 33

AREA: Frailty and resilience

Effects of long-term home-based physical exercise on depressive symptoms and quality of life in persons with signs of frailty – RCT (NCT02305433)

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Introduction: Frailty impairs functioning, affecting health and well-being which physical exercise may counteract. Our aim is to study the effects of yearlong home-based exercise on depressive symptoms and health-related quality of life (HRQoL) in older persons with signs of frailty.

Methods: Three hundred persons (≥ 65 years, Mini-Mental State Examination score ≥ 17) were screened for signs of frailty with FRAIL questionnaire. Frailty was verified with Fried's criteria. Participants were randomized to a physical exercise group (PE) and a usual care group (UC). Exercise sessions (60 min twice a week) to improve functioning were administered by a physiotherapist. Assessments, among others Geriatric Depression Scale (GDS-15) and 15D-instrument ("15 dimensions", weighted index; HRQoL), were performed at baseline, 3, 6, and 12 months at the participants' homes. Repeated measures of GDS-15 and 15D were analyzed using mixed-effects models.

Results: Of the participants 61% were pre-frail, and 75% were women. At baseline, the mean age was 82.5 (SD 6.3) y, GDS-15 4.8 (2.7) points and 15D 0.712 (0.091). Hundred thirty-three persons in PE and 127 in UC completed the intervention. Over 12 months, GDS-15 decreased by -0.5 (95% CI -0.8 to -0.1) in PE while in UC it increased by 0.5 (0.2–0.9) (group $\times$ time $p = 0.001$). Over 12 months, baseline HRQoL was maintained in PE while in UC the mean score decreased by 0.036 (-0.050 to -0.022) (group $\times$ time $p = 0.002$).

Key conclusions: Twelve-month training diminished depressive symptoms and maintained HRQoL in the exercising group while both measures deteriorated in those with usual care.

Abstract # 34

AREA: Frailty and resilience

Frailty trajectories in three longitudinal studies of aging: is the level or the rate of change more predictive of mortality?

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Introduction: Frailty shows an upward trajectory with age, and higher levels increase the risk of mortality. However, less is known whether the shape of frailty trajectories differs by age at death or whether the rate of change in frailty is associated with mortality.

Material and methods: 3689 individuals from three Swedish Twin Registry (STR) cohorts with up to 15 repeated measurements of the Rockwood frailty index (FI) were analyzed. The FI trajectories by age at death were assessed by stratifying the sample into four age-at-death groups: < 70, 70–80, 80–90 and > 90 years. The rate of FI change was calculated as a yearly change between the consecutive FI measurements. Generalized survival models were used in the survival analysis.

Results: The FI trajectories by age at death showed that those who died at < 70 years had a steadily increasing trajectory throughout the 40 years before death, whereas those who died at the oldest ages only accrued deficits from age ~ 75 onwards. Higher current (i.e., the most recently measured) level of FI was independently associated with increased risk of mortality (hazard ratio 1.68, 95% confidence interval 1.47–1.91 for a 10% increase in the FI), whereas the rate of change was no longer significant after accounting for the current FI level. Time elapsed since measurement did not weaken the effect of the FI level.

Conclusions: The current level of FI is a stronger marker for risk stratification than the rate of change. Frailty trajectories differ as a function of age-at-death category.

Abstract # 35

AREA: Frailty and resilience

Intrinsic capacity predicts negative health outcomes in older adults

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Introduction: Monitoring trajectories of intrinsic capacity (IC) in older adults has been suggested by the WHO as a means to inform prevention to avoid or delay negative health outcomes. Due to a lack of longitudinal studies, it is currently unclear how IC changes over time and whether repeatedly measured IC predicts negative health outcomes.

Methods: Based on 4751 repeated observations of IC (range = 0–100) during 21 years of follow-up among 754 older adults 70 + years, we assessed longitudinal trajectories of IC, and whether time-varying IC predicted the risk of chronic ADL disability, long-term nursing homestay, and mortality using joint models for longitudinal and time-to-event data.

Results: Average IC declined progressively from 77 to 11 points during follow-up, with substantial heterogeneity between older adults. Adjusted for socio-demographics and chronic diseases, a one-point lower IC value was associated with a 7% increase in the risk of ADL

disability, a 6% increase in the risk of a nursing home stay, and a 5% increase in mortality. Accuracy for 5- and 10-year predictions based on up to three repeated measurements of IC ranged between moderate and good (AUC = 0.76–0.82).

Discussion: Our study indicates that IC declines progressively and that it predicts negative health outcomes among older adults. Therefore, regular monitoring of IC could work as an early warning system informing preventive efforts.

Abstract # 36

AREA: Frailty and resilience

Frailty screening in geriatric patients in Sweden using an Electronic Frailty Index

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Introduction: Frailty screening at hospital admission can identify patients at risk of adverse outcomes [1, 2]. This study aims to develop an electronic frailty index (eFI) using medical records from the TakeCare journal system in Stockholm and assess its predictive ability for in-hospital, 30-day, and 6-month mortality.

Methods: We included patients admitted to geriatric clinics between March 1, 2020 and April 15, 2021, who were treated for any diagnosis or COVID-19. The eFI was constructed using 44 items (diagnoses, functioning, laboratory measures) according to the Rockwood FI model [3]. Other assessed frailty and comorbidity measures included Clinical Frailty Scale, Hospital Frailty Risk Score and Charlson Comorbidity Index. Logistic regression was used for in-hospital mortality and Cox proportional-hazards models for 30-day and 6-month mortality.

Results: Among 14,031 patients with eFI available (median age 83 years), 78.3% were treated for any diagnosis and 21.7% for COVID-19. Adjusting for age and sex, every 10% increase in eFI was associated with a higher risk of in-hospital (odds ratio 4.94; 95% confidence interval 3.74–6.54), 30-day (hazard ratio [HR] 3.40; 2.97–3.89), and 6-month mortality (HR 2.73; 2.52–2.96) in non-COVID-19 patients. Similar risks were observed in COVID-19 patients. Of all the frailty and comorbidity measures, eFI had the best predictive accuracy for all outcomes, with areas under receiver operating characteristic curve for in-hospital mortality being 0.79 and 0.77 in non-COVID-19 and COVID-19 patients, respectively.

Conclusions: An eFI based on routinely collected medical records has good predictive accuracy for mortality. When automated, it can be applied for frailty screening in hospitalized geriatric patients.

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Abstract # 37

AREA: Geriatric emergency medicine

SPICT as a predictive tool of mortality in old patients with advanced chronic diseases: a bicentric cohort study in Belgian emergency departments

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Introduction: Emergency clinicians are increasingly encountering older people suffering from polymorbidities, including some advanced chronic diseases. The decision to pursue invasive and uncomfortable life-prolonging treatments or to initiate a palliative care approach is a challenge in the emergency department (ED). The Supportive and Palliative Care Indicators Tool (SPICT) could support them to identify people at risk of deteriorating and dying and timely address palliative care needs, but was never tested in ED for older persons (OP, ≥ 75 years) suffering from chronic diseases.

Method: A prospective cohort study of OP admitted in two ED in Belgium. SPICT variables were collected, along with socio-demographic, medical and functional data. Survival and palliative symptoms and functional status were followed at 12 months by phone. Main outcome measures are sensitivity, specificity and likelihoods ratio.

Results: We included 352 patients. The 1-year follow-up is still ongoing. Results at 1-year follow-up are available for 158 of them (mean age 83 years old (± 5.58), 44% male). SPICT was positive for 76 patients (on 158), indicating a palliative profile. At 1-year follow-up, 33 patients died (21%). The SPICT sensitivity and specificity are respectively 0.76 (IC 95%, 0.58–0.89) and 0.59 (IC 95%, 0.50–0.68). LR– is 0.41 (IC 95%, 0.22–0.76) and LR+ is 1.86 (1.39–2.47).

Conclusion: The SPICT showed satisfying sensitivity and LR– to reach a maximum of OP at risk of dying within 1-year, for whom clinician should reassessed the intensity of care during ED admission.

Abstract # 38

AREA: Geriatric emergency medicine

Risk for undesirable outcomes in older emergency department users: results of an observational cohort study

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Background: The “Emergency Room Evaluation and Recommendations” (ER2) is a clinical tool designed to determine prognosis for the short-term Emergency Department (ED) undesirable outcomes. This study aimed to examine whether ER2 assessment part was: (1) usable by ED healthcare workers (e.g. nurses) and (2) scoring system associated with long Length Of Stay (LOS) in ED and in hospital, as well as hospital admission in older ED users on stretchers.

Methods: Based on an observational, prospective and longitudinal cohort study 1800 participants visiting the ED of the Jewish General Hospital (Montreal, Quebec, Canada) were recruited. ER2 assessment determined three risk-levels (i.e. low, medium and high) for short-term ED undesirable outcomes. The rate of ER2 digital form completed, the time to fill ER2 items and obtain ER2 risk-levels, the LOS in ED and in hospital, and hospital admission were used as outcomes.

Results: ER2 was usable by ED nurses in charge of older ED users. High-risk group was associated with both increased ED stay and hospital stay ($P < 0.002$) as well as with hospital admission ($P \leq 0.001$). Kaplan–Meier distributions showed that the three risk groups of participants differed significantly ($P = 0.001$). Those with high-risk level ($P \leq 0.001$) were discharged later from hospital to a non-hospital location compared to those with low risk.

Conclusion: The ER2 assessment part is usable in daily practice of ED care and its risk stratifications may be used to predict adverse outcomes including prolonged LOS in ED and in hospital as well as hospital admission.

Abstract # 39

AREA: Geriatric emergency medicine

Patients’ characteristics associated with a request for a geriatric consultation in the emergency department

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Introduction: The proportion of older patients admitted in the Emergency departments (ED) is increasing. This study aimed to determine patients’ characteristics associated with a request for a geriatric consultation (GC) in an academic ED.

Methods: Patients aged 75 years or older, admitted to the ED over a 4 month period were eligible. $N = 202$ patients were enrolled. Data on socio-demographic, health, functional (basic activities of daily living; BADL), cognitive and affective status were collected. GC were identified from the hospital electronic medical records. Hospitalization in the previous 6-month period were retrieved from the hospital database. Characteristics of patients with and without a GC were compared.

Results: Overall, 32 patients (15.8%) benefited from a GC in the ED. Patients with a GC were older (84.9 ± 5.4 vs 82.9 ± 5.4 years, $p = 0.03$), more dependent in BADL score (4.8 ± 1.6 vs 5.5 ± 1.0 , $p = 0.01$), more frequently admitted after a fall (43.7% vs 19.4%, $p = 0.01$), and hospitalized in the previous 6-month period (53.1% vs 30.6%, $p = 0.02$). In multivariate logistic regression, admission for a fall (Adj OR 4.0, 95% CI 1.3–7.8, $p = < 0.01$), a recent hospitalization (Adj OR 2.7, 95% CI 1.3–6.8, $p = 0.02$) were associated with higher odds of a GC. Inversely, higher independency in BADL (Adj

OR 0.7, 95% CI 0.5–0.9, $p = < 0.01$) was associated with lower odds of GC.

Conclusion: Only 1 in 6 older ED patients benefited from a GC. Higher dependency, admission for a fall and hospitalization in the previous 6 months were most strongly associated with requesting a GC. Further study should investigate whether GC are associated with specific health trajectories.

Abstract # 40

AREA: Geriatric emergency medicine

“Fit to Sit” in a tertiary hospital emergency department – a quality improvement initiative

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Introduction: Prolonged bed rest leads to deconditioning among hospitalised patients. The Gerontological Emergency Department Intervention (GEDI) team, an interdisciplinary ED-based service aims to improve quality of care for older patients. We aimed to increase the use of appropriate seating for patients in ED.

Methods: A single center prospective observational study was conducted in a tertiary level ED, before and after a quality improvement intervention, to determine the proportion of patients who were sitting out on a chair compared with lying on trollies. The “Fit to Sit” campaign included ED Nursing education and patient information relating to physical activity while in hospital. Improved seating was provided in ED cubicles. Statistical analysis was conducted using STATA version 12.

Results: Data was collected on 284 patients, mean (SD) age was 60 years (± 18.8). Prior to the intervention just 65% of patients were deemed ‘fit to sit’, while 18.4% were seated in a chair. Following the intervention 73.7% of patients were deemed fit to sit while the proportion of patients seated on a chair increased to 40% ($P < 0.001$). Among those deemed fit the sit, the proportion lying on a trolley reduced from 72 to 45% ($P < 0.001$) following the intervention.

Conclusion: Our study demonstrates that a ‘Fit to Sit’ campaign using targeted education and improved seating can significantly reduce the proportion of patients lying on trolleys and improve the number sitting in chairs. This intervention may have considerable positive impacts on patient health including reduced hospital associated deconditioning, reduced falls and promotion of independence.

Abstract # 41

AREA: Geriatric rehabilitation

Effect of geriatric rehabilitation system on care home admission and mortality in patients following hip fracture: a retrospective cohort study using German health insurance claims data

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Background: In Germany, geriatricians deliver both inpatient rehabilitation during acute care and subacute rehabilitation following transfer to a rehabilitation clinic. However, the rate at which patients receive inpatient rehabilitation versus those transferred to subacute rehabilitation differs greatly between hospitals. The objective was to analyse the effect of the two geriatric rehabilitation systems on care home admission and mortality in patients following hip fracture.

Methods: In this observational study, health claims data of hip fracture patients aged ≥ 80 years admitted to acute care were used to identify the rate of inpatient rehabilitation and the rate of transfer to subacute rehabilitation per hospital. Outcomes were cumulative admission to a care home and cumulative mortality (as competing risk) within 6 months of hospital admission. Multilevel binomial regression models were used.

Results: Data from 25,457 hip fracture patients from 609 hospitals were analysed. The rate of inpatient rehabilitation was not associated with care home admission. However, compared to high rates of inpatient rehabilitation, medium rates or no inpatient rehabilitation were associated with increased death rates of 18% or 27%, respectively. The risk of care home admission was 14% higher in patients who were treated in hospitals with low rates of transfer to subacute rehabilitation clinics compared to patients treated in hospitals with high transfer rates (IR (95% CI) 1.14 (1.06–1.22)).

Conclusions: Our study demonstrated two potential effects of geriatric care: lower mortality in hospitals with high rates of inpatient rehabilitation and lower care home admission in hospitals with high transfer rates to subacute rehabilitation.

Abstract # 42

AREA: Long-term care

The effect of educational intervention on use of psychotropics in defined daily doses and related costs in long-term care

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Introduction: There is a paucity of studies examining the changes in actual drug doses or drug costs related to interventions aiming at reducing psychotropic use among long-term care residents. The aim of this study is to (1) investigate the effect of educational intervention on changes of psychotropic use counted as relative proportions of WHO ATC defined daily doses, and (2) to explore the changes in related drug costs.

Methods: The study was a randomized controlled intervention with 12 months follow-up. Participants (n = 227) were residents (≥ 65 years) living in long-term care in Helsinki, Finland in 2011. The wards were randomized in two groups: (1) the nursing staff received training on appropriate medication therapy and guidance to recognize potentially harmful medications and adverse effects (intervention group); (2) the nursing staff did not receive any additional training (control group). The use of psychotropics was categorized by WHO ATC codes and further converted into relative proportions of defined daily doses (rDDD), which allowed comparison between various drug groups. Comparable assessments were performed at 0, 6, and 12 months.

Results: A significant decrease in both rDDDs and costs of psychotropics was observed in the intervention group at 6 months follow-up. However, at 12 months, the difference between intervention and control group had diminished.

Key conclusions: Educational training can be effective in reducing the doses of psychotropics. In addition, cost savings can be achieved. Further studies are warranted to investigate whether long-term effects could also be achieved by various educational interventions.

Abstract # 43

AREA: Nutrition

Anorexia in older people: normal aging or underlying disease?

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Introduction: Anorexia is a highly prevalent problem among older people and its reasons are multifactorial. It's possible that anorexia is part of normal physiological change caused by aging, but it can also be the result of an underlying pathology. There are only a small number of guidelines suited for the geriatric population. Therefore, the objective of this study is to provide specific guidelines on how to deal with anorexia in older patients in clinical practice.

Methods: A systematic literature search for existing evidence was performed. Keywords for older people (aged, geriatrics, older adult), anorexia (also loss of appetite, unintentional weight loss) and diagnosis were combined. After removal of duplicates and case-reports, articles were selected based on title and abstract by two reviewers. A first draft of an evidence-based flowchart was proposed, based on these articles. Next, the flowchart was adapted after peer-review.

Results: Out of 589 hits, 60 articles were eventually included. Consensus is to start with a detailed history and clinical examination. Additional full bloodwork, urine analysis, chest X-ray and FOBT should be performed. If there are other gastrointestinal symptoms, besides anorexia, ultrasound and upper endoscopy are further recommended. Besides chewing and swallowing malfunction, social and psychological factors should also be taken in consideration in case of persisting anorexia.

Key conclusions: Despite high prevalence of anorexia, there are few guidelines on how a clinician should set up his diagnostic evaluation. In order to provide guidance and structure, an evidence-based flowchart was proposed.

Abstract # 44

AREA: Pharmacology

Initial results from OPTIMIZE: a pragmatic deprescribing trial in primary care for older adults with cognitive impairment and multiple chronic conditions

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Background: Patients with cognitive impairment or dementia and multiple chronic conditions (MCC) are at increased risk for polypharmacy, use of potentially inappropriate medications (PIM), treatment burden and adverse drug events. Deprescribing may improve outcomes for these patients. However, optimal approaches to deprescribing in primary care are not known.

Methods: Pragmatic, cluster randomized trial at 9 intervention and 9 control primary care clinics in a not-for-profit integrated delivery system. Participants were ≥ 65 with dementia or mild cognitive impairment (MCI) plus ≥ 1 other chronic condition taking ≥ 5 chronic medications, and primary care clinicians. The intervention consisted of a brochure and short survey sent to patients and caregivers before a primary care visit to prepare them for conversations about deprescribing; and monthly tip sheets about deprescribing for clinicians. Primary outcomes were the number of chronic medications and proportion with any PIM at 12 months.

Results: 10,178 patients had a primary care visit during the 11-month study period (4929 intervention; 5249 control). Of these, 20% received (or were eligible for) mailings. Results are reported for the 1409 intervention patients and 1548 control patients who had ≥ 180 days of follow-up after mailings. In both groups at baseline, mean age was 80, mean number of chronic conditions was 8, mean number of chronic medications was 7, and approximately 30% took ≥ 1 PIM. In adjusted linear regression analyses, chronic medication counts declined from 6.6 to 6.5 ($\Delta = 0.12$) in the intervention group and remained the same (6.7; $\Delta = 0.01$) in the control group (time $\times$ group $p = 0.02$). The risk ratio for proportion of patients with ≥ 1 PIM over time was 0.81 in the intervention group and 0.90 in the control group (time $\times$ group $p = 0.02$).

Conclusions: Combining patient and caregiver education and activation with longitudinal clinician education about deprescribing has the potential to decrease chronic medication burden and PIM use in patients with dementia or MCI plus MCC.

Abstract # 45

AREA: Pharmacology

BZRA deprescription on acute geriatric units

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Introduction: Benzodiazepine receptor agonists (BZRA) use is highly prevalent in hospitalized older patients although they are associated with serious adverse events. BZRA deprescription can reduce the risk of the harm associated with BZRA use and may be implemented during hospitalization in acute geriatric unit (AGU). Our objectives were to (1) describe BZRA deprescription patterns and associated factors; (2) measure new prescriptions of trazodone or mirtazapine at discharge.

Methods: we conducted a multicenter (3) retrospective study. Eligible patients were aged 70 years and over, hospitalized in AGU and

using ≥ 1 BZRA at admission. BZRA deprescription was defined as full BZRA discontinuation at discharge. Multivariate logistic regression was performed to assess association between BZRA deprescription and various factors (comorbidities, medications, or demographic, BZRA related adverse events).

Results: 561 patients were included (mean age 85.3 years, 73% community-dwelling patients). BZRA deprescription was observed in 85 patients (15.2%). Factor associated with deprescription was BZRA related adverse events reported in the patient record (OR 2.2 [1.2; 4.3]), and a lower lorazepam equivalent dosage (OR 0.5 [0.3; 0.6]). Trazodone initiation was observed more often in patients with BZRA deprescription as compared to patients without BZRA deprescription (9.4% vs 2.5%; $p = 0.006$), while mirtazapine initiation patterns were similar in both groups (5.9% vs 4.6%, $p = 0.584$).

Conclusions: One out of 8 patients benefit from BZRA deprescription at discharge from AGU, mainly in reaction to an adverse event, and rarely accompanied by trazodone or mirtazapine initiation. Future investigation should focus on improving proactive BZRA deprescription and collaboration with primary care.

Abstract # 46

AREA: Pharmacology

Barriers and enablers for benzodiazepine receptor agonists deprescribing in older adults: a systematic mixed-methods review using the theoretical domains framework as an analysis guide

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Introduction: Benzodiazepine receptor agonists (BZRA, namely benzodiazepines and Z-drugs) deprescribing is strongly recommended in chronic BZRA users. Identifying barriers and enablers is an essential step towards deprescribing implementation.

Methods: We conducted a systematic review and searched five electronic databases and google scholar. We selected qualitative, quantitative and mixed-methods studies evaluating barriers and enablers for BZRA deprescribing in older adults from the point of view of the different stakeholders (older adults, physicians, nurses...). Extracted data were deductively coded in the theoretical domains framework (TDF) domains, a psychological framework mapping possible determinants for behavior change. Two independent coders performed this step of analysis. We then identified subthemes and most relevant domains based on frequency, perceived strength of beliefs and presence of conflicting beliefs.

Results: We included 23 studies: eight qualitative, 13 quantitative and two mixed-methods. The most studied setting was ambulatory. The analysis reported barriers and enablers in all of the TDF domains. The most relevant domains were beliefs about capabilities, beliefs about consequences, memory attention and decision process, goals, environmental context and resources, intention, and social influences. In addition, patient's characteristics and BZRA prescribing patterns were also found to be barriers and/or enablers.

Key conclusions: BZRA deprescribing appears to be a complex phenomenon with different barriers and enablers. Linking these to adequate behavior change techniques should enhance the probability of success of BZRA deprescribing interventions.

Abstract # 47**AREA: Pharmacology****Use of preventive medications at the end of life: room for deprescribing?**Onder Graziano¹¹Università Cattolica del Sacro Cuore Roma Italy

Should be presented in the submitted symposium: deprescribing at the end-of-life

Background: Among patients at the end of life, pharmacological treatment should be tailored to individual needs. In this population symptomatic treatments should be prioritized since preventive treatments to extend life expectancy (e.g. statins, bisphosphonates, vitamins or anti-hypertensives), not only are not useful, but could be harmful due to possible adverse drug reactions.

Aim: to examine use of preventive medications among older adults at the end of life in different settings (community, nursing home and hospice).

Methods: medication use was examined in the following context: (a) a nationally representative sample of community dwelling persons aged 95 years or older in Italy (n = 33,422); (b) nursing home residents with severe dementia (defined by Cognitive Performance Scale of 4 or greater) participating the SHELTER study, which involves 57 nursing homes in 7 European countries and Israel (n = 1449); (c) patients receiving care in hospice in Italy (n = 492).

Results: Among community dwelling older adults aged 95 years or older (women = 79.1%) the use of preventive medications was common: antiplatelet agents were used by 17.1% of the study sample, ace inhibitors by 8.3%, calcium channel blockers by 6.9% and beta blockers by 5.0%. Analyses of the data from the SHELTER study (mean age 84 years, women 75%) showed that 17.4% of nursing home residents with severe dementia were on Ace inhibitors, 17.3% on beta blockers, 14.8% on antiosteoporosis drugs, 13.9% on calcium channel blockers, 11.6% on acetylcholinesterase inhibitors and 10.0% on statins. Finally, among older adults receiving care in hospice (mean age 84 years, women 75%), anticoagulants (low molecular weight heparin) were used by 58.9% of sample, beta blockers by 19.7% and ace inhibitors by 12.4%.

Conclusion: the use of preventive medications is common at the end of life. Clear recommendations and deprescribing programmes are needed to reduce the use of these medications at the end of life.

Abstract # 48**AREA: Sarcopenia****Effect of perindopril on physical performance, muscle mass and quality of life in older people with sarcopenia: results from the LACE randomised controlled trial**

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Introduction: Angiotensin-converting enzyme inhibitors have been proposed as treatments to improve muscle mass and physical performance but have not been trialled in patients with sarcopenia.

Methods: Placebo-controlled, parallel group, double-blind, randomised two-by-two factorial trial. Participants aged 70 and over with sarcopenia were randomised to perindopril 4 mg once daily or placebo, and to leucine powder 2.5 g three times a day or placebo. The primary outcome was the between-group difference in the Short Physical Performance Battery, measured at baseline, 6 and 12 months, analysed using repeated-measures mixed models. Secondary outcomes included grip strength, quadriceps strength, six-minute walk distance, appendicular muscle mass and quality of life.

Results: We screened 320 people and randomised 145 participants, mean age 79 (SD 6) years; 78 (54%) were women and the mean SPPB was 7.0 (SD 2.4). 73 were randomised to perindopril and 72 to placebo. Median adherence was lower for perindopril (76% vs 96%; $p < 0.001$). Perindopril had no significant effect on the primary outcome (adjusted treatment effect – 0.1 points [95% CI – 1.2 to 1.0]). No significant treatment effect was seen for any secondary outcome except for worse EQ5D thermometer scores in the perindopril group (treatment effect – 12 points [95% CI – 21 to – 3]). More adverse events were seen in the perindopril group (218 vs 165) but falls rates were similar (perindopril 2.0 [95% CI 1.1–3.0] per year; placebo 2.8 [95% CI 0.6–5.1] per year)

Conclusion: Perindopril did not improve measures of physical performance, muscle mass or quality of life in older people with sarcopenia.

Abstract # 49**AREA: Sarcopenia****Twelve-year sarcopenia trajectories in older adults: results from a population-based study**

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Background: The dynamic nature of sarcopenia, including possible transitions between its different stages, is still unknown. We explored 12-year transitions through sarcopenia stages in older adults, and their associated factors.

Methods: We included 3219 SNAC-K participants aged ≥ 60 years. No sarcopenia, probable sarcopenia, and sarcopenia were assessed at baseline and up to 12 years, based on the EWGSOP2 criteria. Muscle strength was evaluated through handgrip or chair stand tests, and muscle mass from calf circumference. We estimated 1-, 5-, and 10-year transition probabilities through continuous-time Markov modeling. Sociodemographic, lifestyle, and medical factors associated with the likelihood of different transitions were evaluated with proportional intensity models.

Results: No sarcopenia participants had 10-year probabilities of 17.1% and 5.1% to develop probable sarcopenia and sarcopenia, and a 40.4% chance of not transitioning. Among those with probable sarcopenia, the chance of developing sarcopenia reached 10.3% at 5-year, likewise reverting to no sarcopenia (10.7%). The chances to revert from sarcopenia to probable sarcopenia after 5 and 10 years were 8.2% and 4.7%. Older age, male sex, current smoking, higher body mass index and number of chronic diseases were associated with sarcopenia development. Higher levels of physical activity and cognitive function were associated with increased reversion rates from probable sarcopenia. No factors were associated with sarcopenia reversion.

Key conclusions: Sarcopenia appears as a dynamic condition with two-way transitions between different sarcopenia stages, especially the earliest ones. Timely interventions to improve physical and cognitive function and better control individuals' chronic conditions could help counteract sarcopenia progression.

Abstract # 50

AREA: Sarcopenia

Milk intake across adulthood and grip strength decline from mid-to late life: the MRC National Survey of Health and Development (MRC NSHD)

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Background: Cow's milk is a source of several nutrients which may be beneficial for skeletal muscle. Evidence that links milk intake to muscle strength from mid- to late life is lacking. The MRC NSHD was used to investigate associations of milk intake from age 36 to 60–64 years with low grip strength (GS; probable sarcopenia), and GS decline between 53 and 69 years.

Methods: We included 2723 participants with at least one measure of both milk intake and GS. Milk intake was recorded in 5-day food diaries (ages 36, 43, 53 and 60–64 years), and grand mean of total, reduced-fat and full-fat milk each categorised in thirds (T1 (lowest) to T3 (highest)). GS was assessed at ages 53, 60–64, and 69 years, and probable sarcopenia classified at age 69. We employed logistic regression to examine the odds of probable sarcopenia, and multilevel models to investigate decline in GS in relation to milk intake thirds.

Results: Compared with T1, only T2 (58.7–145.2 g/day) of reduced-fat milk was associated with lower odds of probable sarcopenia at age 69 years (OR 95% CI 0.59, 0.37–0.94). T3 of total milk (≥ 237.5 g/day) in men [β (SE) = 1.82 (0.83), 95% CI 0.18–3.45], and T3 of full-fat milk (≥ 107 g/day) in all participants [1.19 (0.53), 0.17–2.22] were associated with stronger GS in midlife, but not with GS decline.

Conclusion: A higher milk intake across adulthood was associated with muscle strength in midlife and may reduce risk of sarcopenia in later life.

Oral Communications Late Breaking News

Late Breaking News Abstract #1

Results from COVID-Omega-F: a single-blind randomized controlled trial of omega-3 fatty acids in older frail subjects hospitalized in acute geriatric care for COVID-19

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Introduction: The uncontrolled inflammatory response in COVID-19 is characterized by a high neutrophil to lymphocyte ratio (NLR) and increased release of cytokines and proinflammatory lipid mediators. The omega-3 (n-3) polyunsaturated fatty acids (PUFA) are precursors for lipid mediators stimulating the resolution of inflammation.

Methods: 22 elderly subjects (12 females, 10 males; mean age 81 ± 6.1 years) with a COVID-19 diagnosis requiring hospitalization at a geriatric ward were randomized to a once daily i.v.-infusion (2 mL/kg) of either placebo (NaCl, n = 12) or n-3 PUFA (10 g/100 mL, n = 10). The primary outcome was change in leukocytes after 5 days treatment. The secondary outcome was an exploratory study of mechanisms involved.

Results: The study met its primary endpoint of a significantly decreased NLR after n-3 PUFA administration. There were 2 in-hospital deaths in each group. No serious adverse events were encountered. Compared with placebo, n-PUFA decreased oxidative stress and immune-thrombosis and skewed the lipidome from a proinflammatory to a proresolving profile. Immune cells derived from n-3 PUFA-treated patients exhibited significantly enhanced phagocytosis and interferon responses compared with placebo, with most pronounced difference in cortisone-treated subjects.

Key conclusions: I.v. n-3 PUFA is safe and feasible with beneficial effects on NLR, which is a marker of poor prognosis of COVID-19. The identified mechanisms point to a stimulation of the resolution of inflammation by n-3 PUFA, with an avoidance of cortisone-induced immunosuppression. The trial included multimorbid elderly subjects, which are at a particular high risk of adverse outcomes in COVID-19 and may not always benefit from advanced treatments.

Late Breaking News Abstract #2

To explore emergency medicine SpRs understanding, identification and management of frailty within the emergency department

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Introduction: Our frail cohort of older adults represent a large proportion of those presenting to our Emergency Departments. This has led to the introduction of diverse teams in many Emergency Departments to support their complex care needs. However, it is not known if Emergency Clinicians have a clear understanding of frailty identification and management or feel this is part of their own role.

Aims and objectives: The aim of this study was to engage with Emergency Medicine Senior Trainees on the national training scheme in Ireland to explore their understanding of frailty and what they feel their role is in its identification and management.

Methods: Following a literature review based on defined criteria, a number of focus groups were held with ED PGY4 and above doctors

working in various Emergency Departments throughout the country, with thematic analysis of the transcripts of the focus groups.

Results: In total, 13 Emergency Medicine PGY4 and above doctors partook in the focus groups with an overall view that frailty identification was part of their role within the Emergency Department; however there was agreement they have limited insight into the core principles of frailty identification and management. There was also an overall desire for future formal education on frailty to be provided. Three themes in the form of frailty recognition and assessment, education on frailty, and the role of the multidisciplinary team were identified as well as a number of subthemes for further exploration. **Conclusion:** The consequences of frailty often lead to presentation to the Emergency Department. There is an increased awareness of its presentation but the core providers of emergency care feel there is a lack of the education required for them to manage the consequences of frailty which they encounter on daily basis and they have a clear desire to increase the knowledge base and skill set.

Late Breaking News Abstract #3

mRNA SARS-CoV-2 vaccination short-term safety with respect to all-cause mortality in the older population in Norway

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¹Norwegian Institute of Public Health

Objectives: To investigate the relationship between mRNA SARS-CoV-2 vaccination and overall death among individuals 65 + years and to explore whether safety varies across four groups of health services: none, home-based, short-term stay, and long-term stay at nursing home.

Design: Matched cohort study.

Setting: Individual-level data from the Emergency Preparedness Register for COVID-19 (Beredit C19) in Norway. Participants: 967,786 individuals aged 65 + years by the start of the Norwegian vaccination campaign on December 27, 2020. 1:1 matching of vaccinated and unvaccinated individuals based on baseline characteristics: age, sex, use of community health-service, ethnicity, and medical risk group status. Main outcome measures: 3-week all-cause mortality. Kaplan–Meier survival functions were estimated for the vaccinated and unvaccinated groups. Cox proportional-hazards regression to estimate crude hazard ratios (HRs) with 95% confidence interval of death between vaccinated and unvaccinated individuals, overall and by health-service group.

Results: Between 27.12.20 and 31.03.21, 438,352 individuals (45.3% of all residents 65 + years) received at least one dose of vaccine. We found a small absolute risk difference in all-cause mortality, and the same pattern was observed when stratified by health-service use. HR of death between vaccinated and unvaccinated individuals was 0.29 (95% CI 0.26–0.34).

Conclusion: We found no evidence of increased short-term mortality among vaccinated individuals. The reduced mortality risk observed immediately after first-dose vaccination is most likely a “healthy-vaccinee effect” resulting in residual confounding, as immunity against the coronavirus is not expected to develop until the end of the 3-week period after vaccination.

Late Breaking News Abstract #4

HOMEFOOD randomized trial - Can a six-month nutrition therapy after discharge from hospital improve body composition and physical function in older adults?

Berglind Blondal¹, Olof Gudny Geirsdottir¹, Thorhallur Ingi Halldorsson¹, Kolbrun Sveinsdottir², Anne Marie Beck³, Palmi V Jonsson⁴, Alfons Ramel¹

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Introduction: Malnutrition is common among older adults. Studies on nutrition interventions show limited effects on anthropometrics or physical function. The aim of this 6-month randomized controlled study was to investigate the effects of nutrition therapy on community-dwelling older adults discharged from hospital.

Methods: 106 participants (> 65 years) were randomized 1:1 into the intervention group and the control group. The intervention group received individual nutrition therapy (5 visits) and freely delivered energy- and protein rich foods. Anthropometrics, dietary intake and short physical performance battery (SPPB) were measured at baseline and at endpoint.

Results: Two subjects dropped out. The control group experienced weight loss (-3.5 ± 3.9 kg; $P < 0.001$), while the intervention group experienced weight gain ($1.7 \text{ kg} \pm 2.5$ kg; $P < 0.001$). Lean body mass was the main component of these weight changes in both groups. Dietary intake of both groups was similar at baseline, however it increased in the intervention group (937 ± 534 kcal/day; $P < 0.001$) during the 6-month study but decreased in the control group (-832 ± 407 kcal/day; $P < 0.001$). SPPB score increased only in the intervention group (1.3 ± 2.1 ; $P < 0.001$) and the control group was 3 times more likely ($P = 0.019$) having difficulties to walk. **Key conclusions:** The time after hospital discharge leads to weight loss in older adults receiving the current standard care in Iceland. However, a 6-month nutrition therapy, provided by a clinical nutritionist in combination with freely delivered supplemental energy- and protein dense foods has outstanding effects on body composition, nutrition status and physical function.

Late Breaking News Abstract #5

HOMEFOOD randomized trial - can a six-month nutrition therapy after discharge from hospital improve quality of life and cognitive function in older adults?

Berglind Blondal¹, Olof Gudny Geirsdottir¹, Thorhallur Ingi Halldorsson¹, Anne Marie Beck², Palmi V Jonsson³, Alfons Ramel¹

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Introduction: Malnutrition is common among older adults and relates to a poor quality of life, low cognitive function, and depression. If nutrition interventions can improve these outcomes remains unclear. We aimed to investigate effects of nutrition therapy with free food for 6 months on health-related quality of life (EQ-5D), self-rated health (SRH), cognitive function, and depression in community dwelling older adults discharged from hospital.

Methods: 106 participants (> 65 years) were randomized 1:1 into the intervention- and control-group. The intervention group received individual nutrition therapy (5 visits) and freely delivered energy- and protein rich foods. EQ-5D, SRH, Mini-Mental-State-Examination (MMSE), and the Centre for Epidemiologic Studies Depression—IOWA (CES-D) scale was measured at baseline and at endpoint.

Results: Two subjects dropped out. The control group experienced increased depressive symptoms and a decrease in SRH, while the intervention group increased their MMSE, SRH and EQ-5D resulting into significant endpoint differences between the groups: EQ-5D 0.102; $P = 0.001$; self-rated health: 15.876; $P < 0.001$; MMSE: 1.701; $P < 0.001$, depressive symptoms:—3.072; $P < 0.001$; all in favour of the intervention group. Changes during the intervention in MMSE, SRH, and CES-D were significantly related to changes in body weight in a linear way.

Key conclusion: Time after hospital discharge leads to a deterioration of mental well-being in older adults receiving the current standard care in Iceland. A 6-months nutrition therapy, provided by a clinical nutritionist and freely delivered energy- and protein dense foods positively effects cognitive function, EQ-5D, CES-D and SRH.

Late Breaking News Abstract #6

Cross-cultural differences on experiences and attitudes towards the COVID-19 pandemic, and the initial lockdown period in France and Mexico

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Introduction: In older adults, socio-cultural factors may not only impact COVID-19-related outcomes, but they may also have an influence on how they experience and face the pandemic. The objective of this study was to determine to what extent the cultural, and economic environment from two distinct countries influenced on how older adults experienced the first months of the pandemic, and the safety measures adopted against the disease, particularly, the first lockdown.

Methods: Cross-sectional phone survey conducted in parallel in Bordeaux (France), and Mexico City (Mexico). Comparisons of the psychosocial measures and attitudes towards the pandemic in the two samples were performed using univariate and multivariate logistic regression models adjusting for potential confounders.

Results: The study included 467 participants in France, and 199 in Mexico. The two samples differed in age [French sample 87.5 (SD 5.2) years, vs Mexican sample 82.2 (SD 6.5) years, $p < 0.01$], sex [275 (58.9%) women, vs 143 (71.9%), $p < 0.01$], presence of disabilities for instrumental activities of daily living [206 (45.4%), vs 141 (71.9%), $p < 0.01$], presence of > 1 comorbidities [255 (54.6%), vs 189 (97.4%), $p < 0.01$], and co-habitation situation [48.6% of the French participants reported living alone respect to 10.2% of the Mexican participants ($p < 0.01$)]. After adjusting for potential confounders, the main differences between the provided answers were the adoption of slightly different coping strategies, and a higher use of digital devices in the Mexican sample. Concerning mental health, health/functional status, perceived social support, and knowledge of the recommendations against COVID-19, no statistically significant differences were observed.

Discussion: Despite important differences in socio-cultural and economic contexts, scarce differences were observed in the way the French and Mexican older adults faced the initial lockdown.

Conclusions: Experiences in French and Mexican older adults seem to be comparable (on the evaluated period), with relatively similar perceptions of the pandemic and adaptive abilities to face the crisis, highlighting the resilience abilities of older adults whatever the socio-cultural context.

Late Breaking News Abstract #7

Declining antibody response to SARS-CoV-2 at 6 months following vaccination in nursing home residents: data from NH-COVAIR

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Introduction: Older nursing home residents are the population at greatest risk from SARS-CoV-2. No studies have examined long-term vaccine-induced antibody responses in this vulnerable group.

Methods: Residents from five nursing homes underwent comprehensive clinical and serological assessment prior to vaccination, 5-weeks and 6-months post-vaccination with the BNT162b2 mRNA SARS-CoV-2 vaccine. Serum Nucleocapsid and Anti-Spike Receptor Binding Domain (RBD) antibodies were analysed at all timepoints. An in vitro Angiotensin Converting Enzyme (ACE2) Receptor-Spike RBD neutralisation assay assessed serum neutralisation capacity.

Results: Of 86 participants (81.1 ± 10.8 years; 65% female), just-under half (45.4%; 39/86) had experienced previous SARS-CoV-2 infection. All demonstrated a significant antibody response to vaccination at 5-weeks. At 6-months, there was a sharp decline in antibody levels in both previously infected (22,451 U/mL; interquartile range [IQR]: 14,021–25,000 U/mL at 5-weeks to 6332 U/mL; IQR: 3372–9667 U/mL at 6-months; $z = 4.7$, $p < 0.001$) and uninfected (632.5 U/mL; IQR: 170–1848 U/mL at 5-weeks to 133 U/mL; IQR: 54–337 U/mL at 6-months; $z = 5.0$, $p < 0.001$) individuals. SARS-CoV-2 infection, increasing age and frailty status were independently associated with significantly lower antibody titres at 6-months. Anti-Spike antibody titres at both follow-up timepoints were significantly correlated with in vitro neutralisation capacity.

Conclusion: Older nursing home residents demonstrated a significant decline in antibody titres 6-months following SARS-CoV-2 vaccination. Previous infection, increasing age and frailty status were independently associated with antibody titres at 6-months. These results support the ongoing use of SARS-CoV-2 vaccine boosters in this population.

Late Breaking News Abstract #8

Improving the care of older adults with fragility fractures within a major trauma centre: saving bones, saving lives

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¹Manchester University NHS Foundation Trust

Introduction: Osteoporosis is a hidden pandemic. Fragility fractures are associated with significant morbidity, mortality and economic implications. Anecdotal evidence within a major trauma service suggested that the bone health of older adults could be improved. The aim of this quality improvement project was to improve the bone health of older adults presenting to a major trauma centre with fragility fractures through improving vitamin D testing, and were two fold: (1) 90% of adults over the age of 65 with a fragility fracture to have a vitamin D level requested $\leq$ 48 h of admission and (2) 90% of adults over the age of 65 with a fragility fracture to have a vitamin D level resulted $\leq$ 10 days of admission.

Methods: Patient level data was collected through use of the Trauma Audit and Research Network (TARN) database, with data collected from 26/10/20 to 20/06/21. Inclusion criteria included patients aged > 65 years whom were admitted to the major trauma ward with a fragility fracture; which was defined as fall from a height of < 2 m. Patients were excluded if testing was deemed clinically inappropriate, or if those patients were cared for in an alternative environment. We identified 5 patients met this criteria on fortnightly timepoints. Data was expressed as %vitamin D tests requested < 48 h, or % vitamin D tests resulted < 10 days per timepoint.

Results: At baseline 20% of patients had a vitamin D test requested ≤ 48 h of admission, and 40% of patients had a vitamin D level resulted within ≤ 10 days of admission. A number of plan, do, study, act (PDSA) cycles were trialled, including an educational poster; multi-modal educational sessions; redesigning the major trauma clerking booklet as well as creation and advertisement of an ICE Tab. We showed an improvement in the percentage of patients undergoing vitamin D testing ≤ 48 h from 20 to 80%, but no improvement in our second outcome measure.

Conclusions: Strengths of the project included emphasis on multi-disciplinary team working, and the low financial cost of PDSA cycles. Limitations included a limited influence on the vitamin D assay turnaround time (TAT), which was subject to external issues during the study period. Through the use of QI methodology, we demonstrated improvement in the bone health care of older adults presenting with major trauma, as well validating the use of TARN in QI projects.

Late Breaking News Abstract #9

Adverse effects of subcutaneous vs intravenous hydration in older adults: an assessor-blinded RCT

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Background: Hydration therapy is essential in the care of the older patient. Subcutaneous (SC) hydration is a relevant method for parenteral hydration, but clinical trials on the subject have methodological shortcomings compared to updated standards.

Design: We performed an assessor-blinded, non-inferior trial to explore if SC is a safe alternative to intravenous (IV) hydration. Participants: eligibility patients were: admitted patients 65 years or older with a need for parenteral hydration. The targeted sample size was 67 patients in each group. Intervention: patients were randomized

to receive parenteral hydration either via an IV or SC placed catheter during a 24 h observation period. The non-randomized catheter was placed as a sham on the patient, thereby blinding the caregivers and outcome assessors. Measurement: our primary outcome was the proportion of patients reporting at least one adverse effect with a non-inferior calculation using a 20% margin.

Results: We included 51 patients with 24 randomized to SC and 27 to IV. The number of included patients was restricted by a time limitation and COVID-19. For the outcome of adverse effects, SC was found to be non-inferior to IV ($p = 0.012$). Time spent on inserting the catheters was significantly shorter with SC ($p = 0.001$). However, there was no difference between the groups on pain of insertion, discomfort during infusion, or the risk of developing delirium.

Conclusion: SC is a safe alternative to IV hydration, is faster to place and should be an available method for parenteral hydration wherever older adults are cared for. Trial registration: ClinicalTrials.gov Identifier: NCT03710408 Primary funding source: No external funding.

Late Breaking News Abstract #10

Serum microRNA as a predictor of frailty for middle-aged and older adults after COVID-19

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Introduction: Sarcopenia is an increasing socio-economic and healthcare challenge, particularly since the COVID-19 pandemic. Muscle loss is exacerbated during bed-rest and critical illness, increasing morbidity and mortality. Reflecting this, long-term sequelae of COVID-19 include disability and premature frailty. We examined whether serum microRNAs are useful biomarkers of frailty in middle-aged and older adults with COVID-19.

Methods: Small RNA-Sequencing was used to analyse circulating serum microRNAs (miR-1, miR-24-3p and miR-29b-3p) in patients with PCR-confirmed COVID-19 during ward or ICU stays. Linear regression examined the relationship between microRNAs and Clinical Frailty Scale (CFS) and grip strength scores 6–8 weeks post-discharge. Data were collected in a single-centre, Irish university hospital between July 2020–2021.

Results: In total, 48 patients with COVID-19 were available, median age 59 ± 20 (range: 30–85) years; 46% female. Half ($n = 24/48$) were admitted to ICU of whom 58% ($n = 14/24$) were intubated and 12.5% (3/24) died. Median baseline CFS scores were 2 ± 1 , increasing to 3 ± 2 at follow-up; 27% had reduced grip strength (< 60 –80% predicted). MicroRNAs (miR-1) were relatively poorly correlated with baseline CFS ($r = -0.08$, $p = 0.82$) and age ($r = 0.34$, $p = 0.07$). miR-1 was strongly and significantly correlated with follow-up CFS scores ($r = 0.89$, $p < 0.001$) compared with miR-24-3p ($r = 0.60$, $p = 0.09$) and miR-29b-3p ($r = 0.66$, $p = 0.11$). After adjustment for age, sex, ICU and intubation status, only miR-1 levels

independently predicted follow-up CFS scores (R -squared = 0.91, p = 0.02).

Key conclusions: Serum microRNAs and miR-1 in particular, likely reflecting skeletal and cardiac muscle damage, may provide objective biomarkers for outcomes including worsening frailty scores for middle-aged and older adults after critical illness (e.g. COVID-19). Long-term follow-up data are now required.

Late Breaking News Abstract #11

Prospective changes in reproductive hormone levels, androgen receptor CAG repeat length and their relationships with cognitive decline in men: The European Male Ageing Study

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Objective: It has been proposed that endogenous sex hormone levels may present a modifiable risk factor for cognitive decline. However, the evidence for effects of sex steroids on cognitive ageing is conflicting. We therefore investigated associations between endogenous hormone levels, androgen receptor CAG repeat length, and cognitive decline in a large-scale longitudinal study of middle-aged and older men.

Methods: Men aged 40–79 years from the European Male Ageing Study (EMAS) underwent cognitive assessments and measurements of hormone levels at baseline and follow-up (mean = 4.4 years, SD ± 0.3 years). Hormone levels measured included total and calculated free testosterone and estradiol, dihydrotestosterone, luteinizing hormone, follicle-stimulating hormone, dehydroepiandrosterone sulphate and sex hormone-binding globulin. Cognitive function was assessed using the Rey-Osterrieth Complex

Figure Copy and Recall, the Camden Topographical Recognition Memory and the Digit Symbol Substitution Test. Multivariate linear regressions were used to examine associations between baseline and change in hormone levels, androgen receptor CAG repeat length, and cognitive decline.

Results: Statistical analyses included 1827 and 1423 participants for models investigating relationships of cognition with hormone levels and CAG repeat length, respectively. In age-adjusted models, we found a significant association of higher baseline free testosterone (β = − 0.001, p = 0.005) and dihydrotestosterone levels (β = − 0.065, p = 0.003) with greater decline on Rey-Osterrieth Complex Figure Recall over time. However, these effects were no longer significant following adjustment for centre, co-morbidities, and lifestyle factors. No relationships were observed between any other baseline and change in hormone levels nor the androgen receptor CAG repeat length and cognitive decline.

Conclusions: In this large-scale prospective study there was no evidence for an association between endogenous sex hormone levels or CAG repeat length and cognitive ageing in men. These data suggest that sex steroid levels do not affect visuospatial function, visual memory, or processing speed in middle-aged and older men.

Late Breaking News Abstract

Posters

Abstract # 1

AREA: Acute hospital care

Blood gas analysis and D-dimer in cases of organ damage from pulmonary embolism: poor correlation in real life in the emergency room

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Premise: Pulmonary embolism is a pathology still characterized by high mortality and severe sequelae, greater in cases of organ damage. Raising suspicion and early recognition of this condition is therefore important to avoid delays in undertaking the right diagnostic and therapeutic process.

Purpose: Evaluate which vital parameters and shock parameters derived from them, in the real life of an Emergency Department, correlate with the presence of organ damage from pulmonary embolism to see which ones may be of help in raising the suspicion of this condition early.

Methods: single-center retrospective observational study, on all geriatric patients (> 75) who were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic

algorithm, both for the risk of PE (Wells, Geneva and Years), and for the presentation of the risk of mortality at 30 days (sPESI). We analyzed all the blood gas analyzes performed upon access to the emergency room. We then had all chest CTs retested by an experienced radiologist. We went to see the correlation of vital parameters and shock indexes from these derivatives with the presence of organ damage from pulmonary embolism. We considered right ventricular dilation, pulmonary artery dilation and the presence of pulmonary infarction organ damage.

Results: We enrolled 247 patients, with a mean age of 83 years and female prevalence ($F = 63\%$). Of these, 79 (32%) have organ damage from pulmonary embolism. The lactate values do not correlate with the presence of organ damage ($p > 0.05$). The pCO_2 values correlate inversely with the presence of organ damage reaching statistical significance ($P < 0.05$). Instead, the reduction in pO_2 values and the increase in pH values do not have any correlation with the presence of organ damage ($p > 0.05$). The D-dimer in turn shows a fair association with the values of organ damage from pulmonary embolism ($p < 0.01$).

Conclusions: The study suggests a reduced significance of blood gas analysis in the early identification of patients with organ damage in the event of pulmonary embolism. A fair correlation is given only by the reduction in pCO_2 values and by the increase in D-dimer values.

Abstract # 2

AREA: Acute hospital care

Guess who's coming to reanimation? Analysis of the patient with embolism in need of hospitalization in intensive care: real life in the emergency room

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Premise: Pulmonary embolism is a disease still characterized by high mortality and which may require hospitalization in intensive care.

Purpose: Evaluate which parameters, in the real life of an Emergency Department, correlate with the need and the duration of hospitalization in intensive care.

Methods: single-center retrospective observational study, on all geriatric patients (> 75) who refer to our ED, where they were diagnosed with acute PE. Enrollment began in 2015 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging, outcomes.

Results: We enrolled 247 patients, with a mean age of 83 years and female prevalence ($F = 63\%$). Of these 12 (14%) required hospitalization in intensive care from the emergency room. Regarding the need for hospitalization in resuscitation, age and vital parameters (arterial pressure, respiratory rate, heart rate), as well as derived shock indices are not correlated ($p > 0.05$). Only the systolic blood pressure

values and it show a trend which however does not reach statistical significance ($p = 0.06$). Among the blood gas analysis parameters, only low pCO_2 has a slight correlation ($p < 0.05$). The D-dimer ($p < 0.01$) and creatinine values ($p < 0.05$) show correlation between the blood chemistry tests. Regarding the length of stay in resuscitation, age and vital parameters (blood pressure, respiratory rate, heart rate), as well as derived shock indices, do not show any correlation ($\rho \sim 0$; $p > 0.05$). A weak correlation is instead present with high values of D-dimer ($\rho \sim 0.25$; $p < 0.005$) and creatinine ($\rho \sim 0.33$; $p < 0.0005$). The presence of massive pulmonary embolism shows no correlation ($p > 0.5$). The presence of organ damage, on the other hand, correlates in a statistically significant manner ($p < 0.0005$). Excellent correlation is shown by the sPESI index ($p < 0.0001$). Discrete correlation showed the alteration in pH ($\rho \sim 0.61$; $p < 0.0001$). Correlation for the blood gas analysis parameters taken into consideration (pH; pO_2 ; pCO_2 ; lactates).

Conclusions: The study suggests a reduced significance of vital parameters and indices derived from them for the need and duration of hospitalization in resuscitation. Presence of organ damage, low pCO_2 values and high D-dimer and creatinine values are associated with both the need for hospitalization in resuscitation and duration.

Abstract # 3

AREA: Acute hospital care

Comparison of the geriatrician's clinical judgment with the TRST score abilities to predict the risk 30-day hospital readmission

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Introduction: Unplanned readmissions in older population are frequent and deleterious. The "Triage Risk Screen Tool" (TRST) is one of the clinical risk scores available to predict the risk for readmission. We hypothesized that the clinical judgment of the geriatrician was more efficient than the TRST to predict 30-day hospital readmission. **Methods:** All consecutive patients aged over 75 years admitted to the Geriatric Departments (Bordeaux University Hospital) and discharged to their initial place of living were prospectively enrolled in the study. A continuous scale from 0 to 100 was used by senior geriatrician to assess the risk for 30-day hospital readmission. A phone call to the patient, relatives or general practitioner was carried out 30 days after discharge to collect his survival status.

Results: Between December 2018 and April 2019, 191 patients were enrolled (mean age 87–5.95 years, 58% women). The majority of patients ($n = 155$, 81%) lived at home, with a caregiver ($n = 146$ (76%)). The mean Charlson score was high (6.5 ± 1.3). The two main reasons for admission were fall and dyspnea. The 30-day hospital readmission was 26.5%, mainly for the same reasons (82%). A threshold of 20% was defined using the ROC curve of the Geriatrician's Clinical Sense, in order to find a satisfactory sensitivity. Geriatrician's Clinical judgment and TRST ROC curves were not significantly different (AUC TRST = 0.62, AUC Geriatrician's Clinical Sense = 0.67; $p = 0.16$). The readmission risk factors were the diagnosis of neoplasia and hospitalization in the previous 6 months.

Conclusion: The Geriatrician clinical judgement was not more efficient than TRST score to predict the risk for a 30-day hospital readmission.

Abstract # 4

AREA: Acute hospital care

Dextrocardia situs solitus diagnosed in the eighth decade

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Case report: An 82 years old man had a fall resulting in left neck of femur fracture. Medical history included hypertension, diabetes mellitus, atrial fibrillation, ischaemic heart disease and anaemia. Examination was normal with heart sounds well auscultated and the liver palpated just below the right costal margin. Apart from Hb of 9.8 g/dL, blood count, kidney, liver and thyroid function were normal. The ECG showed right axis deviation, negative QRS in lead I, and positive QRS in aVR. CXR revealed right-sided cardiac silhouette. CT chest, abdomen and pelvis showed normal anatomical position of the viscera. Discussing with the patient he said he was diagnosed as having dextrocardia when he was 79 years old. His fracture was repaired with uneventful postoperative period.

Discussion: Dextrocardia can be situs solitus (the liver is on the right, and the stomach and spleen are on the left side of the body) or situs inversus (the liver is on the left and the stomach and spleen are on the right), or situs ambiguus (the arrangement of the organs has no order “heterotaxy”). Dextrocardia situs solitus is nearly always associated with severe cardiac anomalies and is rarely encountered in adults. In situs inversus, the heart is commonly normal. Patients are usually asymptomatic, the diagnosis is often incidental and they have a normal life expectancy. On examination, the apex is not felt in the left side and heart sounds are quiet. ECG changes in dextrocardia include right axis deviation, negative QRS and inversion of T in lead I, positive P, QRS and T in aVR and inversion of P and low voltage in V3–V6. The differential diagnosis of significant right axis deviation includes: accidental reversal of placement of the limb leads, right ventricular strain or hypertrophy, left posterior block and dextrocardia. Our patient has dextrocardia situs solitus without any other congenital cardiac anomalies. It is rare to have the diagnosis of dextrocardia situs solitus in the eighth decade. It is also rare to have dextrocardia situs solitus without other cardiac congenital anomalies; many of which are serious. The ECG features of dextrocardia have the potential to be erroneously interpreted particularly when they are not expected.

Abstract # 5

AREA: Acute hospital care

An audit on the adherence to peripheral intravenous cannulae monitoring and documentation at Karin Grech Hospital

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Background: Despite the high prevalence of peripheral intravenous cannula (PIVC) use, their significance has historically been overlooked. They are a major cause of morbidity due to healthcare-associated infections, and bloodstream infections (infection prevention and control, NICE 2014). Despite frequency in PIVC use, complications are reported to be as high as 70%. They can be prone to blockage and dislodgment, phlebitis, extravasation, catheter-related bloodstream infection, and haemorrhage. Risks associated with PIC infection must be addressed to reduce patient morbidity and increased cost of prolonged hospital admission and treatment. Comprehensive routine assessment and observation of PIVC site and surrounding

tissue are essential to ensure any significant changes are identified in a timely manner to reduce the risk of complications. Phlebitis scales such as the Visual Infusion Phlebitis (VIP) scale can assist nurses and doctors alike in assessing managing PIVC sites (Ray-Barruel, Polit, Murfield and Rickard, 2014).

Abstract # 6

AREA: Acute hospital care

How long should it take to receive requested pain relief medication in elderly patients?

Brown John¹, Gitanjali Amaratunga¹, Greg Muller¹, Gossage Jessica¹

¹Lewisham and Greenwich NHS Trust

How long should it take to receive requested pain medication in elderly patients? Brown J, Amaratunga G, Muller G, Gossage J University Hospital Lewisham, London, England

Introduction: There are no national standards for appropriate time to provision of analgesia for inpatients on Elderly care (COE) wards. “Timely pain relief” is mentioned in CQC reports, but no specifics suggested. Elderly inpatients, with inadequately treated pain, will have worse hospital experiences, slower recovery and increased length of stay.

Method: Survey of inpatients and multidisciplinary (MDT) staff was done, to assess the perceived appropriate time to wait for analgesia. Documented assessments of pain and prescriptions of analgesia were also recorded.

Results: 98 patients recruited. Survey of waiting time: 45 patients responded (mean 81 years) and mean time acceptable was 15 min. In 32 MDT staff, mean acceptable time was 14.6 min. 22/98 had a diagnosis of Dementia and the PAINAD observational score was not completed in these patients. 46/98 reported pain, with a mean pain score of 7.2/10. 10/46 who reported pain, had no analgesia prescribed. 75/98 had analgesia prescribed, either regularly or PRN. < 50% had a pain assessment documented in medical notes.

Key conclusion: Inpatients and staff agreed on the time that it is appropriate to wait for pain relief on the COE wards (15 min). The severity and acuity of pain was acknowledged to alter this. The PAINAD score is under-utilised in patients with cognitive impairment and would assist in overall pain management. As a result of this survey, we have created Trust guidance for pain management in the Elderly care population to standardise prescribing and MDT responsibilities and have created an electronic PAINAD observational chart for inpatient assessment.

Abstract # 7

AREA: Acute hospital care

Family participation in the care of older hospitalised patients – preferences of patients, caregivers and nurses on caregivers performing care tasks

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Introduction: The participation of family members in daily inpatient hospital care is becoming increasingly common in Western society. However, it remains a rather new topic with many unknown factors.

This study aimed to gain insight into the attitude of family caregivers, patients and nurses towards family members taking up care tasks within the geriatric hospital setting.

Method: A cross-sectional survey study in eight geriatric wards and one geriatric medical rehabilitation ward within three hospitals in East Flanders, Belgium. Three groups of stakeholders were included: patients ($n = 330$), family caregivers ($n = 133$) and nurses ($n = 67$).

Results: A total of 330 patients (RR 60%), 133 family caregivers (RR 30%) and 67 nurses (RR 45%) completed the questionnaire. On average, 69% of the patients were prepared to let the caregiver perform a care task (Med 70.7%; SD 8.3%). For the caregiver this was 67.1% (Med 68.8% SD 12.6%) and for nurses 81.6% (Med 90.7%; SD 18.2%).

Conclusion: Most patients would let their family caregiver perform a large part of the listed care tasks without a nurse being present. The majority of family caregivers is willingly to participate in many caregiving activities, but were more reluctant to perform invasive/intimate care tasks. Nurses had a more dynamic perspective towards the care tasks that family caregivers can perform. Nurses' attitude was favourable towards family participation in care tasks.

Abstract # 8

AREA: Acute hospital care

Pott disease

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82 years old woman with medical history of hypertension, dyslipidemia, diabetes and embolic stroke in treatment with propranolol, apixaban, ezetimibe, atorvastatin, enalapril and metformin is brought into the emergency medical service because of a severe lumbar pain after an accidental fall a month ago. The patient refers difficulties in deambulation as well as loss of sphincter control. No irradiating pain into lower limbs. She also explains an important weight loss in the last 3 months and asthenia. She lives in a nursing home. Uses a Walker. Barthel 100. A CT scan made in the ER showed a L1 break and crush, so hospitalization took place to fulfill further examinations. A possible spondylodiscitis was found in the MRN, so instead of doing a cementoplasty, a bone biopsy happened in the first place. Also blood cultures were taken where streptococcus gallolyticus grew up, starting antibiotherapy with Penicilin. Facing this finding, a body CT and a transthoracic echocardiography were made, which turned out normal. A week after the beginning of antibiotherapy, without any improvement in pain control and awaiting pathological anatomy of the bone, a new transthoracic echocardiography and colonoscopy procedure were requested to rule out endocarditis. The bone biopsy's pathological anatomy turned out to be epithelioid granulomas, starting antituberculous treatment while waiting for the bone culture which were positive for mycobacterium tuberculosis. 20 days after hospitalization, once the pain was under control, the patient was discharged, being able to walk with a corset.

Abstract # 9

AREA: Acute hospital care

Impact of frailty, inflammation and dehydration on short- and long-term mortality among acutely admitted older patients

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Introduction: Frailty, inflammation and dehydration contribute to mortality of older patients acutely hospitalized. The aim of this study was to test the predictivity on 1-year mortality of a model combining frailty with variables which independently may affect mortality like age, sex, inflammation and dehydration in acutely admitted elderly patients.

Methods: Retrospective observational study including 529 inpatients (age 84.6 ± 7.3 years, females 61.6%) of a Geriatric Hospital Unit. At admission frailty was assessed by the Multidimensional Prognostic Index (MPI). The Glasgow Prognostic score (GPS), which includes C-reactive protein and albumin levels, was used to grade systemic inflammation. Serum osmolality was calculated to assess dehydration.

Results: In bivariate analysis MPI, GPS, osmolality and age were higher ($p < 0.001$) for those who died within 1-year from admission ($n = 196$; 0.60 ± 0.20) compared to those who survived ($n = 333$; 0.44 ± 0.20). Mortality was also significantly related to male sex. The adjusted severe-risk MPI category was a strong predictor for reduced survival at all tested time points including 1-year mortality (OR 4.133; 95% CI 2.273–7.516; $p < 0.001$). Age > 85 years, male sex, GPS = 2 and severe dehydration were independent predictors of mortality in the same multivariate model. The unadjusted MPI showed a moderate discrimination power (AUC 0.678; 95% CI 0.628–0.729; $p < 0.001$), which increased by 12.5% after the addition of the above predictors in the fully-adjusted regression model (AUC 0.763; 95% CI 0.719–0.807; $p < 0.001$).

Key conclusions: In older acutely hospitalized patients a model combining age, gender, GPS and calculated plasma osmolality significantly improved the accuracy of MPI in predicting mortality.

Abstract # 10

AREA: Acute hospital care

Watch out for side effects

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Woman aged 86 with medical history of heart failure secondary to atrial fibrillation, schizophrenia, myeloproliferative syndrome, D hypovitaminosis and protein-calorie malnutrition, in current treatment with Enoxaparin, Acetylsalicylic acid, Bisoprolol, Quetiapine, Furosemide, Spironolactone, Trazodone and Hydroxycarbamide is brought into Medical Emergency Service due to an accidental fall on right hemibody with a secondary iliopectineal branch fracture. Nursing home resident. Moderate cognitive impairment. Minimal 16. Barthel85. Diaper user. The patient was left in observation to watch over possible blood loss and anemia. Next day low blood pressure and low hemoglobin were found in blood test, so red cell transfusion was

decided. Angio CT scan was performed, which showed an active bleeding leading to an embolization procedure and hospitalization. In the meantime, because of the fluid overload and atrial fibrillation, acute lung edema was triggered, treated with Digoxin and Furosemide. Improving conscious state the patient referred polydipsia, added to diaphoresis in the physical examination and high glucose levels type 2 diabetes was diagnosed and treated with Metformin. On the other hand, Carbidopa was started after noticing cogwheel stiffness, making a noticeable improvement on it. Last but not least, Quetiapine was removed due to the lack of schizophrenia symptoms, appearing organised speech and improved cognitive function. From a functional point of view, once clinical stabilization and pain control was achieved and the patient was able to tolerate sitting and standing with help the patient was discharged back to the nursing home.

Abstract # 11

AREA: Acute hospital care

Frailty without dementia and lower access to palliative care: results from the DAMAGE cohort

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Background: Palliative care increases the quality of the end of life. The frequency of palliative care before death is related to the end-of-life trajectory of patients (sudden death, cancer, organ failure, frailty with or without dementia). In acute geriatric units, patients in end-of-life situations are frequently managed. Palliative care is often necessary. The link between the initiation of palliative care and the end-of-life trajectory has not been studied in acute geriatric units.

Aim: To describe the distribution of end-of-life trajectories and analyze its relationship to the implementation of palliative care before death in the acute geriatric units.

Design: This is an ambispective study of a subgroup of the DAMAGE cohort. Medical records were analyzed to determine their end-of-life trajectory and the implementation of palliative care. Setting/participants: all patients managed for more than 48 h and who died in the acute geriatric units were included.

Results: 177 patients died, 69.5% of the deceased were receiving palliative care in the acute geriatric units. The trajectory of death by frailty with or without dementia was the most frequent, concerning nearly 70% of deaths. Paradoxically, compared with a patient dying suddenly (trajectory 1), only trajectory 4b (frailty without dementia) was not significantly associated with more frequent initiation of palliative care (OR 1.44; 95% CI [0.44–4.76]).

Conclusion: The implementation of palliative care is widespread in acute geriatric units and is associated with end-of-life trajectories, except for frail patients without dementia. This trajectory is one of the most frequent before death in acute geriatric units, and must be a point of vigilance for improving practices.

Abstract # 12

AREA: Acute hospital care

Prevalence and characteristics of patients admitted in an acute geriatric ward with previous diagnosis of heart failure

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Introduction: Heart failure is one the most prevalent disease in older people. The objective of this study was to describe the prevalence and main characteristics of elderly patients admitted to an Acute Geriatric Ward (AGW) with previous diagnosis of heart failure (HF).

Methods: Descriptive study of patients over 80 years of age admitted to an AGW (september 2018–september 2019) with previous diagnosis of heart failure with 1-year follow-up. Variables: demographic, clinical, Transthoracic echocardiogram (TTE), functional (Barthel index (BI), Functional Ambulation Classification (FAC)), cognitive (global deterioration scale (GDS)), comorbidity (Charlson's index (CHI)), nutritional status (MNA-SF), frailty status (Frail-VIG index) and mortality.

Results: 191 had previous diagnosis of HF (40.64% of total admissions). The main cause of admission was acute heart failure (38.9%). The 63.87% was female. Age 88 (85–92) years old, BI < 90: 75.90%. FAC 0: 16.23%, Charlson $\geq$ 3: 65.54%. Polypharmacy 94.24%. Frail-VIG > 0.55: 24.6%. GDS $\geq$ 4 27.0%. MNA-SF $\leq$ 7: 25.46%. Etiology of HF: hypertensive heart disease (HHD) 60.73%, coronary artery disease, 5.24%, Valvular heart disease 7.85%, mixed etiology 24.08%, unknown 2.09%. The 43.98% of patients had recent TTE, of them ejection fraction < 40: 11.9%, 40–49: 8.3%, $\geq$ 50: 79.76%. therapy: diuretics 76.96% (loop diuretics 61.22%, thiazides 4.08%, spironolactone 3.40%, mixed treatments 25.85%). ACE-inhibitors/ARBs: 39.79%. Betablockers: 38.22%, ivabradine 0.52%, digoxin 10.47%. Calcium channel blockers 14.14%, Statins 23.65%. In-hospital mortality 13.6% and 1-year mortality 48.9%.

Conclusion: The prevalence of HF was high in our sample, with high rate of frailty, comorbidity, polypharmacy and high 1-year mortality. The most common etiology was HHD with preserved ejection fraction.

Abstract # 13

AREA: Acute hospital care

Finding the clinically deteriorating patient An audit of NEWS Chart use in the University Hospital Limerick

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Background: The National Early Warning Score [1], launched in February 2013, assists healthcare professionals in recognising patients whose condition is deteriorating. The NEWS chart assesses all vitals of the patient regularly and is associated with an escalation protocol to assist in determining who is the most appropriate contact, when the NEWS increases.

Aims: The aim of this audit is to assess the use of the NEWS chart throughout UHL, specifically the use of the parameter modification section and the appropriate use of the escalation protocol by nursing staff on the wards.

Methods: We collected NEWS charts throughout medical and surgical wards in UHL and assessed the appropriate labelling, parameter modification, the correct calculation of NEWS, and whether the escalation protocol was correctly abided. This was done prior and following an education session with nursing staff and NCHDs.

Results: 102 NEWS charts were assessed prior to and following the education sessions with NCHDs and nursing staff. Labelling of the NEWS charts remained consistently above 90%, regardless of the education sessions. Parameter modification by teams increased by 33% following the education sessions and the correct use of the

modified parameters by the nursing staff increased by 86%. Finally, the escalation protocol utilized by the nursing staff to contact the relevant teams was used 3.5 times more appropriately following the education sessions.

Conclusions: These results show that education sessions with NCHDs and nursing staff regarding the appropriate use of the parameter modification section and the escalation protocol were effective. Particularly, following these sessions, NCHDs utilized the parameter modification section more frequently, nursing staff were more aware of the section and calculated the NEWS appropriately and finally, the nursing staff engaged with the relevant teams more appropriately. The culmination of these efforts allowed for clinically deteriorating patients to be identified earlier and receives appropriate management in a timelier manner.

Abstract # 14

AREA: Acute hospital care

Oral health assessment in patients admitted to a Geriatric Unit

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Introduction: Hospitalized patients present multiple factors that worsen oral health, which favors a decrease in oral intake and quality of life. In addition, oral problems are associated with cardiovascular disease, diabetes and pneumonia. The aim of this study was to evaluate the assessment of the oral health in patients admitted to a geriatric unit.

Methods: Cross-sectional study carried out in February 2020 in patients admitted to a geriatric unit. Demographic and functional data, length of stay, taking of psychotropic drugs and inhalers, and the existence of dysphagia were collected. To determine oral health, we used the Oral Health Assessment Tool (OHAT), which includes 8 categories (lips, tongue, gums and oral mucosa, saliva, teeth, dental prostheses, oral hygiene and dental pain). The category scores are 0 (healthy), 1 (changes), and 2 (unhealthy).

Results: we included 33 patients. 54.45% were women. The mean age was 80.36 years (51–97). The mean length of stay was 24.6 days. The 84.9% patients were transfer from other hospitals; the main reason for admission was rehabilitation. The basal Barthel Index was 72.93 and at admission was 20.6. The 45.45% were dependent for food intake and 57.5% had dysphagia. They took an average of 1.4 psychopharmaceuticals and 27.2% used inhalers. Only 15.2% have visited a dentist in the last year. The mean OHAT score was 4.48 points, highlighting the state of the tongue and teeth, the scarcity of saliva and poor oral hygiene, as the areas with major problems.

Conclusions: The admitted patients present poor oral health, being a priority to establish an individualized approach to improve it.

Abstract # 15

AREA: Acute hospital care

Diagnosis of epilepsy and monitoring of treatment in an octogenarian patient with Alzheimer's disease

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We present the case of an 88-year-old patient with a history of stage GDS-6 Alzheimer's disease. She was admitted due to the persistence of fluctuating episodes of tremor. EEG was performed, resulting in disorganized bioelectric activity, delta activity and outbreaks of 1–5 s of slow spike-wave activity. Her laboratory tests (acute phase reactants, thyroid profile, Hashimoto encephalopathy screening, nutritional profile, vitamins, tumor markers, and serologies (HIV, syphilis and hepatotropic virus) were normal. A 500 mg dose of Levetiracetam every 12 h was started, after which a control EEG was performed, this activity, though in shorter duration and with a slight improvement, was persisting, thus deciding to increase the dose to 750 mg every 12 h; this resulted in an improvement in reactivity. Control EEG showed less disorganization in the baseline bioelectrical activity, fewer flare-ups, and a shorter duration of slow spike-wave activity; this led to the diagnosis of epilepsy in the form of complex partial seizures, with improvement in hypoactivity and disconnection from the environment. Although it is a highly prevalent clinical syndrome, the diagnosis of epilepsy in the elderly continues to be a challenge. Both the presentation, that can be given in the form of geriatric syndrome, like the disease itself (especially the presence of complex partial seizures), can be confused with multiple entities (syncope, psychiatric disturbances, essential tremor or other movement disorders or delirium both hypo and hyperactive) which, as in the present case, represents a difficulty for the clinician when making a correct differential diagnosis.

Abstract # 16

AREA: Acute hospital care

Terms used by physicians when deciding to withhold treatment for older patients not having received palliative care in an acute geriatric care unit

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Purpose: There are no guidelines or consensus statements on the terms to be used when discussing withholding of treatment (WT) for patients in acute geriatric care units (AGCUs) and who have not received palliative care (PC). The objective of the present study was

to analyze the terms used in medical records to refer to the WT for patients who died in an AGCU and did not receive PC.

Method: We conducted an ambispective multicentre cohort study based on the DAMAGE study. Data on 53 patients who died in the AGCU and who had not received PC were extracted from medical records. The verbatims referring to the WT were analyzed in terms of keywords and then key concepts, as defined by several reviewers in a consensus-based approach.

Results: Terms referring to the WT were found for 25 of the 53 patients (47.2%). Most of the decisions on the WT were recorded in the week following admission to the AGCU. Our analysis of the terms identified 11 key concepts: treatment limitation, no resuscitation, withholding diagnostic procedures, justification of care, ethical considerations, disease progression, uncertainty, the patient's wishes, the family's wishes, patient's comfort, and collegiality. The terms used to describe key concepts varied markedly from one physician to another.

Conclusion: Decisions about the WT are frequently noted in the medical records of patients who die in the AGCU without having received PC. The broad variety of key concepts and differences in the choice of words highlight the need for standardized terms.

Abstract # 17

AREA: Acute hospital care

Is vitamin D deficiency a risk factor of nosocomial infection?

Results from a retrospective case–control study

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Introduction: The relation between vitamin D (vitD) levels and the occurrence of nosocomial infection (NI) has been questioned in the literature. The aim of the study is to assess this relation using a case–control design.

Methods: We included retrospectively 234 patients admitted during a 4 year-period (2016–2019) in our geriatric department. Cases of NI were extracted from the hospital medical abstract based on the International Statistical Classification of Diseases-10th edition. Cases were matched by age and gender with 2 controls selected at random from the same database. Other data, including 25 (OH)vitD levels were extracted from the medical records. VitD levels were grouped according to the Endocrine Society definition (> 30 ng/mL, 20–29.9 ng/mL and < 19.9 ng/mL).

Results: Overall, 78 cases of NI were documented and matched with 156 controls. NI were documented as urinary tract infection (57%), bacteraemia (22%), respiratory tract infection (17%) and cutaneous infection (4%). Levels of vitD were lower in the NI group (median: 16 ng/mL) compared to controls (median: 23 ng/mL), P-value: 0.003. However, the proportion of patients suffering from NI was statistically not different according to the 3 predefined groups of VitD levels (29%, 27% and 38% respectively, P-value: 0.245). After multivariate adjustment for age, gender, Charlson comorbidity index, functional status, body mass index, number of medication and calcium levels, vitD levels was no more a risk factor of NI (OR: 0.98 [95% CI:0.96–1.00]; P-value: 0.138).

Conclusions: In that study, while vitD levels were lower among patients presenting NI, this association disappeared after multivariate adjustment.

Abstract # 18

AREA: Acute hospital care

A completed audit cycle examining quality improvement pre and post introduction of Emergency Department (ED) multi-disciplinary simulation based medical education training on the TUH hip fracture pathway to achieve gold standard care as per Irish Hip Frac

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Introduction: The care of patients with hip fractures is a surrogate marker of trauma care. Irish hip Fracture Standard 1 involves patients with a hip fracture being admitted to an orthopaedic ward bed within 4 h of attending the ED. We wanted to audit our current practice and introduce a quality improvement project to improve the timeliness and efficiency of care of our hip fracture patients compared with the gold standard IHFS 1. We introduced a 90 min multidisciplinary simulation training programme on the hip fracture pathway to our ED in February 2021. All key stakeholders were represented; from Emergency Medicine, Orthopaedics, Nursing (EM and Orthopaedic), Radiology, Radiography, Porters (32 people overall). Because of COVID-19, the training was available in person and online via zoom.

Methods: We performed a retrospective audit of patients presenting to TUH ED with a proximal third of femur fracture between 4th February and 31st March inclusive in 2020 and 2021, pre and post introduction of multidisciplinary simulation based medical education on the hip fracture pathway. Data was collected from the electronic record database (symphony). We recorded the following data.

Results: 2020 n = 31 Average time to ward—8 h 29 min. 26% patients reached ward < 4 h. (8/31) 2021 n = 25 Average time to ward—5 h 58 min (32% reduction vs 2020) 72% patients reached ward < 4 h. (18/25) (46% increase vs 2020).

Conclusion: Simulation based medical education is a successful intervention to improve compliance with our hip fracture pathway, time from presentation to transfer to an orthopaedic ward bed and achieve IHFS 1.

Abstract # 19

AREA: Acute hospital care

Prevalence and predictors of potentially inappropriate prescribing in hospitalised older persons

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Introduction: Potentially inappropriate prescribing (PIP) encompasses both over- and underprescribing and has been associated with adverse health outcomes for older persons [1]. The objective of this study was to identify the prevalence and predictors of PIP at discharge in a cohort of older hospitalised patients.

Methods: In this retrospective single-center cohort study, a random sample was selected from a cohort of older (≥ 75 years) hospital-admitted patients. Potentially Inappropriate Medications (PIMs) and Potential Prescribing Omissions (PPOs) were identified by applying

STOPP and START criteria [2] to discharge prescriptions. Poisson regression analysis were performed to identify variables that were associated with PIP at discharge.

Results: There were 394 incidences of PIP identified in 88% (132/150) of patients. There was a high prevalence of both PIM (72%) and PPO (63.3%). In multivariable analysis the number of medications at discharge was independently associated with PIM count (adjusted incidence rate ratio (IRR) 1.10, 95% confidence interval (CI) 1.07–1.14, $p < 0.001$). Being frail (adjusted IRR 2.0, 95% CI 1.18–3.41, $p = 0.01$) or pre-frail (adjusted IRR 1.91, 95% CI 1.04–3.48, $p = 0.04$) was independently associated with greater risk of PPOs.

Conclusions: In our study we identified a high prevalence of PIP. Frail/pre-frail status and number of medications were independently associated with PPO and PIM at discharge respectively and may be useful in guiding patient selection for targeted interventions to reduce PIP. Barriers to physician deprescribing include resourcing issues and lack of specialist knowledge [3]. Further research is needed to determine whether a dedicated geriatric pharmacotherapy service could address these barriers.

Abstract # 20

AREA: Acute hospital care

Dysphagia due to necrotizing otitis externa

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Introduction: Dysphagia in the elderly is commonly due to decompensation of neurogenic causes such as dementia, vascular or Parkinson's disease [1]. Dysphagia caused by skull based osteomyelitis (SBO) secondary to necrotizing otitis externa (NOE) is rarely seen on geriatric wards. NOE is a rare complication of otitis externa, primarily occurring in older diabetic or immunocompromised patients [2]. Severe, unrelenting otalgia and persistent otorrhoea are the symptomatic hallmarks of NOE [3].

Case: An 88-year-old man, with no relevant past medical history, presented with confusion and cough. Bloods showed significant hyponatremia and auscultation revealed crepitations at the left lung base. Initial diagnosis was delirium secondary to hyponatremia and lower respiratory tract infection. Patient responded well to fluid restriction and antibiotics. Audiology review described pus in the right auditory canal which was then micro-suctioned. He then developed hoarseness and oropharyngeal dysphagia. CT head was unremarkable and neurological findings were consistent with right lower cranial nerve (X, XII) palsies. Otoscopy was normal. Flexible nasendoscopy revealed a sluggish right vocal cord with subsequent MRI brain revealing findings in keeping with SBO secondary to a right sided NOE. Despite regular micro-suction and antibiotics, the patient deteriorated and died of aspiration pneumonia.

Discussion: Diagnosis proved challenging due to atypical presentation with delirium of NOE. This was a very rare presentation of NOE with no reported otalgia, an almost normal looking external auditory canal and no history of diabetes or immunosuppression. A high index of suspicion for NOE and its complications is needed in patients presenting with otolaryngeal symptoms.

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Abstract # 21

AREA: Acute hospital care

Collaborative project between neurosurgery and geriatrics

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Objective: Nowadays cross speciality geriatrics is one of the field that is developing the most, understood as a collaboration among different hospital services especially with surgical services that attend elderly people. Since 2016 at Marqués de Valdecilla Hospital is developing a joint action between Neurosurgery and Geriatrics for elderly patients.

Material and method: Data from 126 patients has been collected corresponding to adults over 70 years old, admitted to Neurosurgery making consultation to Geriatrics for follow-up during admission. Data on the most frequent diagnoses, efficacy data and efficiency are detailed.

Results: The mean age is 83.41 ± 6.1 years, with a previous Barthel Index (BI) of 78 (68.2% had a Barthel greater than 80). 28% of patients have cognitive impairment or dementia. Corrected Charlson scale/age 5.93 ± 2.02 . The most frequent diagnoses of admission are acute traumatic subdural hematoma (26.2%), acute traumatic subarachnoid hemorrhage (16%), vertebral fractures (16%). The most frequent complications are: delirium (30%) Bronchoaspiration (28%) UTI (20%), heart failure (17.6%). At discharge, 80% return to their previous address, 7.5% return to their nursing home, 7.5% enter a new nursing home and 5% are referred to a long-stay hospital. At a functional level, it has been possible to maintain a Barthel at discharge around 47 ± 30.08 . After 30 days the average Barthel improves to 60 ± 33 . In relation to deaths, there is an in-hospital mortality of 14.1%.

Conclusions: The good results obtained is based on an EARLY CLINICAL and intensive FUNCTIONAL action, trying to all the workers to achieve a common goal.

Abstract # 22

AREA: Acute hospital care

Anticoagulation and antiplatelet therapy in the elderly with acute neurosurgical pathology

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Objective: In the development of the joint activity between the Geriatrics and Neurosurgery Service at Marqués de Valdecilla Hospital, the great prevalence of anticoagulant and antiplatelet drugs in the elderly people which associate falls and consequences such as hemorrhage or brain haematoma takes big concern.

Material and methods: Data was collected from 61 patients corresponding to adults over 70 years old, admitted to Neurosurgery with a diagnosis of acute hemorrhage cerebral disease with anticoagulant or antiplatelet treatment.

Results: At the time the study was done, 42.4% had had previous multiple falls, 15.3% were diagnosed with severe dementia GDS FAST 6 or higher. 18.8% had had a previous major bleeding episode. Due to the fragility in relation to these previous items, the previous indication of anticoagulation or antiplatelet therapy would be doubtful in at least 42.4% and that we should reconsider it. The main anticoagulants used are acenocoumarol (33%), and apixaban (14.15%). Regarding antiplatelet agents used, acetylsalicylic acid is the most frequent (35.17%), and clopidogrel (29%). At discharge anticoagulation in patients goes down from 29.4 to 12.8%. At 30 days increases to 14.4% of anticoagulated patients (possibly due to resolution of the hematoma). In antiplatelet therapy, we found a prevalence at admission of 35%, being 9% at discharge. Anti-platelet drugs go up to 25% after 30 days.

Conclusions: Currently there is controversy regarding to the appropriate prior and subsequent indication of an antiplatelet or anticoagulant drug after a major cerebral hemorrhagic episode, in the wide spectrum of patients who are frail elderly, and above all, what criteria should be followed in addition to those already established.

Abstract # 23

AREA: Acute hospital care

Collaborative activity between neurosurgery and geriatrics service (I). Main features of elderly neurosurgical patients

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Objectives: Since 2016 in Marqués de Valdecilla Hospital there has been a joint action in development between Neurosurgery service and Geriatrics service. More specifically, most of the patients assessed are those with a neurosurgical pathology of the central nervous system, henceforth the value of performing a study within this cases.

Material and methods: Data from 85 patients have been collected corresponding to older adult, that enter Neurosurgery service with a diagnostic of central nervous system pathology.

Results: The average age is 83.41 + 6.1 years, women being 56.5% with a previous average Barthel Index 78 (68.2% had a Barthel higher than 80). 80% of the patients shows cognitive impairment or dementia. The most frequent hospitalization diagnostics are traumatic acute subdural hematoma (44.4%), as a single (22.8%) or associated to another hemorrhage (21.6%). Chronic subdural hematoma (15.2%), traumatic acute subarachnoid hemorrhage (15.3%), as a single (7.6%) or associated to other injuries (7.7%). Rebleeding of subdural hematoma after previous discharge (10%) of which only 2.5% had been previously evaluated by Geriatrics in the first episode. If we break down the factors that are classified as predisposing factors for falls, osteoarthritis is the most frequent causes (62.2%). We can also find iatrogenesis as an isolated item in 11%, being the most frequent drugs neuroleptics and benzodiazepines. In relations with

predisposing factors we find stumblings (25.6%), insufficient technical support (6.1%), or the direct impact of drugs in 36%.

Conclusions: An individualized study of falling in a neurosurgical patient is essential, to prevent new falls and new similar hospitalization episodes.

Abstract # 24

AREA: Acute hospital care

Collaboration activity between neurosurgery and geriatrics service (II). Complications and evolution after discharge

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Objectives: Since 2016 in Marqués de Valdecilla Hospital there has been a joint action in development between Neurosurgery service and Geriatrics service, involving patients older than 70. As a continuation of a previous publication we are releasing data in relation with complications and clinical and functional evolution at discharge.

Material and methods: Data from 85 elderly patients have been collected, that enter Neurosurgery service with a diagnostic of central nervous system pathology. The complications indured by the patients are detailed below, as well as their clinical and functional evolution at discharge.

Results: During the hospitalization and after a Geriatric assesment we target as main complications Delirium (20%), sintomatic urinary infection (17%), heart failure (4.7%), fecal impaction (47%), bronchial aspiration (8.2%), kidney failure (22.5%), urinary retention (11.8%). Furthermore, a new diagnosis of dysphagia was made (28.2%), protein malnutrition (38.8%), vitamin D deficit (11.8%). From a functional point of view, Barthel at discharge around 47 + 30.08 has been achieved. After 30 days, the average Barthel improves up to 60 + 33. At discharge 80% of the patients go back to their previous homes, 7.5% go back to their nursing homes, 7.5% are taken in a new nursing home and 5% are drifted to a long stay hospital. Regargind the deaths, a 14.1% in-hospital mortality is found (specially related to the pathology that caused the hospitalization).

Conclusions: The good results obtained in this coordination project between both Neurosurgery and Geriatrics services lies in a early CLINICAL (treatment settings of underlying diseases/perioperative complications/pharmacological iatrogenesis) and FUNCTIONAL performance.

Abstract # 25

AREA: Acute hospital care

PPI use in the elderly

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PPIs are highly effective drugs and have revolutionized the management of GORD. The overall benefits of therapy with a PPI significantly outweigh potential risks in most patients, however, when they are prescribed without a clear clinical indication, they only expose patients to the risks of prescription. In the elderly population, a

PPI without indication increases the risk for both adverse drug events and drug-drug interaction. The audit took into consideration the indication for the use of the PPI, the name of the medication and frequency of use, associated comorbidities, concurrent use of other medications and actions taken at Karin Grech. Fifty-seven patients had a proton pump inhibitor (PPI) prescribed in their charts. 60% of prescribed PPIs were found to be according to evidence-based guidelines, while 40% were not. From the 30 patients that had potential PPI-associated complications, the majority were continued on the same dose and type of PPI. PPIs were only stopped in 2 of these cases and were switched to an H2-antagonist. Following this audit, we recommend increasing awareness regarding the benefits vis-à-vis side effects of PPIs and document the need and duration of PPIs every time they are prescribed.

Abstract # 26

AREA: Acute hospital care

An audit on the adherence to peripheral intravenous cannulae monitoring and documentation at a Maltese rehabilitation hospital

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¹Karin Grech Hospital

Despite the high prevalence of peripheral intravenous cannula (PIVC) use, their significance has historically been overlooked. They are a major cause of morbidity due to healthcare-associated infections, and bloodstream infections (Infection prevention and control, NICE 2014). Despite frequency in PIVC use, complications are reported to be as high as 70%. A prospective audit was conducted on 65 in-patients at a Maltese rehabilitation hospital from November 2020 to December 2020. A self-designed checklist based on NICE & RCN guidelines was employed to evaluate the IV cannulation procedures and related documentation. A total of 65 PIVCs were audited. The majority of PIVCs had VIP score < 2 showing that protocols are being followed. Despite this, the most prevalent problem overall was the inaccuracy of documentation. This cohort of PIVCs was related to lack of insertion date on fixator, the higher chance of dressing being soiled and VIP score > 1. Documentations plays an important role as it improves the quality of care for patients with a PIVC in situ (Boyd et al, 2011). Following this audit, we have recommended the implementation of the VIP score in our documentation assessment sheet to enhance patient care. Currently, feedback is being collected from all the relevant stakeholders and a re-audit will be done to monitor if there is an improvement.

Abstract # 27

AREA: Acute hospital care

Multivariate analysis of basic data of acutely hospitalized patients in 1995–2020 years

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Objectives: The elderly are extremely heterogeneous group of people with different manifestations of age and disease.

Methods: The retrospective cohort study was aimed at conducting an analysis and comparison of collected data during 25 years. Studied parameters were age, social status (including who sent them to the hospital and where they were transferred), mortality, multi-morbidity, occurrence of “geriatric giants” (GG), mobility and obesity among age different groups at admission time to the acute geriatric department (incl. mental ability, ADL test). Between 1995 and 2020 years we treated altogether 36,475 elderly patients (≥ 65 years) of an average age 80.0 ± 8.9 years (range 65–106 years) hospitalized at the Department of acute Geriatrics. They had been nonselectively enrolled from the catchment area of Brno city where 100,000 inhabitants live.

Results: We divided the patient set into three different age subgroups (65–74 y.-14,956 persons; 75–84 years 12,191 p. and ≥ 85 years 9328 p.; e.g. 41%; 33.4% and 25.6%) and altogether compared the data of all grades individually. There were totally 23,125 (63.4%) women (age 81.1 ± 8.8 years) and 13,350 men (36.6–age 78.3 ± 8.9 years). Growing tendency of the occurrence of all the above mentioned parameters (social status, mortality, multi-morbidity, GG, mobility and obesity in combinations with increasing age ($p < 0.001$)) is obvious. Our effort was to point out the dynamics of a change over 25 years. Age cut-off for geriatric syndromes occurrence based on ROC analysis is for the female sex 83.5–84.5 y. and for the male sex 78.5–82.5 y.

Conclusion: For the quality of the senior's life keeping their self-sufficiency is the cornerstone as soon as possible.

Abstract # 28

AREA: Acute hospital care

Sub-scapular soft tissue haematoma as a consequence of deep vein thrombosis anticoagulation after Sars-cov2 infection

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Introduction: Spontaneous soft tissue hematoma (STH) is defined as the presence of non-traumatic, non-iatrogenic bleeding [1]. The absolute annual mortality from coagulant-induced bleeding is 0.65% [2]. The development of STH is associated with anticoagulant therapy, especially in the elderly [3]. Clinical symptoms are usually nonspecific, and the diagnosis is made from radiological findings, especially CT and CT angiography [2]. Most patients require blood transfusions and reversal of anticoagulation [4]. Contrast leakage in an arterial phase CTA is associated with failure of conservative treatment [2]. Patients in whom conservative treatment has been unsuccessful or are hemodynamically unstable are usually referred for transcatheter angiography and embolization or surgery.

Case report: An 86-year-old woman was admitted for left lower limb venous thrombosis as a complication of SARS-CoV-2 infection to continue anticoagulation therapy. Ten days after treatment, a colorless lump was observed on the back, which was not painful, but whose new appearance was remarkable. A thoracic CT scan was performed and a left acute subscapular hematoma of approximately 13 cm was observed. Risk factors were advanced age, atheromatosis and chronic arterial hypertension. Given the high comorbidity, frailty, multiple pathologies and family decision, conservative management was decided. Complications included uncontrolled pain requiring high doses of opioids and multiple organ failure, resulting in the patient's death.

Conclusions: Spontaneous hematomas are not as frequent in the subscapular area. Management remains controversial. We emphasize the importance of the patient at high thrombotic risk after COVID-19

infection and the risk of spontaneous bleeding, in despite appropriate anticoagulation in frail patients.

Abstract # 29

AREA: Acute hospital care

Traumatic intracranial haemorrhage in the oldest old: characteristics and evolution within one-year follow-up

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Objective: To describe the characteristics of very elderly patients with TIH at admission and 1-year follow-up.

Methods: Descriptive study of patients aged > 80 years admitted to the acute geriatric unit with a TIH treated conservatively between December 2016 and April 2021. Demographic, clinical, functional, cognitive and neuroimaging variables were recorded at admission and discharge. Complications, readmissions, and mortality were registered at 1-year follow-up.

Results: We included 132 patients (59.8% females), the mean age was 87.3 years (83–91.6). The past medical history included heart failure (13.6%), chronic kidney disease (12.1%), ischemic heart disease (15.9%), atrial fibrillation (33.3%), dementia (40.2%), polypharmacy (8.3 drugs, 4.1–12.5) and antithrombotic treatment (65.1%). CT brain revealed acute subdural hematoma (74%), subarachnoid haemorrhage (63.4%), intracerebral haemorrhage (25.2%) and intraventricular haemorrhage (15.3%). During admission 52.3% developed delirium and 44.7% an infectious disease (62.7% respiratory infection). At discharge, loss of functional ability was identified in 94.7% of patients. In-hospital mortality was 18.9%, with intracranial bleeding recurrence and brain herniation (72%) and aspiration pneumonia (12%) as the main causes. 100 patients completed 1-year follow-up. At 1 year, mortality was 38.5% and readmissions 44.4%. The main cause of readmissions was an infectious disease (55%), where pneumonia was the most frequent cause. **Conclusions:** TIH patients had high comorbidity, polypharmacy, functional decline, and cognitive impairment during admission. There was a high percentage of mortality and hospital readmissions within 1 year follow-up. Infections were the most frequent cause of readmissions.

Abstract # 30

AREA: Acute hospital care

Geriatrics wards: different countries, different patients? Baseline characteristics of older patients admitted to a geriatric ward

Arturo Vilches-Moraga¹, Yolanda Parada-DeFreitas², Juan Jose Arechederra-Calderon³, Amaya Capon-Saez⁴, Alejandro Gomez⁵,

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Introduction: Spain and United (UK) are two countries where Geriatrics is a booming specialty. There is lack of evidence regarding differences and similarities between both countries.

Methods: Observational prospective study. Patients hospitalized geriatric wards (3 Spain, 2 UK). October 2019 and February 2020. Variables: demographic, comorbidities, functional, cognitive, social and drugs at admission. T-test, Mann–Whitney U test and Chi-square test.

Results: Spain: 715 patients. Male 42%. Age 89.6 (SD 6.1). Mild cognitive impairment 21.1%, dementia 36.8%. Comorbidities 7 (IQR 5). Fit 11.2%, vulnerable 14.9%, frail 36.7%, very frail 37.2%. Independent 19.5%, cane 23.4%, walker 23.4%, wheelchair 10.5%, dependent 22.9%. Urinary incontinence 32.2%, bi-incontinent 34.9%. Home 10.8%, home aids 55.1%, valid residence 3.6%, nursing home 30.4%. Drugs at admission 8.9 (SD 3.7). Diagnosis: infection (respiratory 33.6%, urinary 11%, abdominal 6.3%, ulcers 1.4%), heart failure 13.7%, stroke 6.9%, falls 1.5%, behavioural symptoms 1.5%. UK: 297 patients. Male 38.7%. Age 85.6 (SD 6.6). Mild cognitive impairment 6.7%, dementia 29.3%. Comorbidities 6 (IQR 3). Fit 9.8%, vulnerable 19.8%, frail 43.1%, very frail 27.6%. Independent 27.9%, cane 19.2%, walker 36%, wheelchair 6.4%, dependent 10.4%. Urinary incontinence 18.2%, bi-incontinent 17.2%. Home 26.6%, home aids 51.9%, valid residence 5.7%, nursing home 15.8%. Drugs at admission 7.9 (SD 3.9). Diagnosis: infection (respiratory 25%, urinary 6.7%, abdominal 3.4%, ulcers 3.4%), heart failure 8.1%, stroke 2.4%, falls 14.8%, behavioural symptoms 3.7%.

Key conclusions: Spanish patients were older, had more incontinence, comorbidities and drugs at admission. There is a higher percentage of frail patients in Spain. Cognitive decline was more prevalent in Spain.

Abstract # 31

AREA: Acute hospital care

Geriatrics wards: different countries, different patients? Differences in clinical outcomes in older patients admitted to a geriatric ward

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Introduction: Spain and United (UK) are two countries where Geriatrics is a booming specialty. There is lack of evidence regarding differences and similarities between both countries.

Methods: Observational prospective study. Patients hospitalized geriatric wards (3 Spain, 2 UK). October 2019 and February 2020. Variables: demographic, length of stay (LOS), delirium, other specialists, non-medical staff, drugs, destination, mortality (in-hospital,

30 and 90 days), readmission. T-test, Mann–Whitney U test and Chi-square test.

Results: Spain: 715 patients. LOS 9 (IQR 7). Delirium 31.3%. Antipsychotics 29.6%. Psychogeriatric 2%. Palliative care 9.1%. Occupational Therapy 6.9%. Physiotherapy 9.9%. Speech Therapy 0.4%. Social worker 49.7%. Drugs 8.7 (DS 3.3). Home (alone 4.1%, family 44.7%, social aids 5.5%), intermediate care 8.3%, valid residence 4.1%, nursing home 32.7%. Mortality (in-hospital 17.3%, 30 days 8.6%, 90 days 18.3%). Re-admission (30 days 10.8%, 90 days 20.5%). UK: 297 patients. LOS 7 (IQR 9). Delirium 33.7%. Antipsychotics 1%. Psychogeriatric 4.4%. Palliative care 7.8%. Occupational Therapy 60.6%. Physiotherapy 67.7%. Speech Therapy 6.7%. Social worker 31.3%. Drugs 8.2 (DS 3.3). Home (alone 13.1%, family 20.8%, social aids 27.5%), intermediate care 15.5%, valid residence 6.4%, nursing home 16.6%. Mortality (in-hospital 12.1%, 30 days 8%, 90 days 14.6%). Re-admission (30 days 13%, 90 days 28.3%).

Key conclusions: Spanish geriatric wards have longer LOS and more in-hospital mortality. No differences in presence of delirium but higher antipsychotics prescription in Spain. Higher participation of non-medical staff in UK. Discharge destination differences could be due to social resources and cultural factors. Re-admission is higher between UK patients.

Abstract # 32

AREA: Acute hospital care

Geriatrics wards: different countries, different patients? Factors related with hospital mortality

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Introduction: Spain and United (UK) are two countries where Geriatrics is a booming specialty. There is lack of evidence regarding differences and similarities between both countries.

Methods: Observational prospective study. Patients hospitalized geriatric wards (3 Spain, 2 UK). October 2019 and February 2020. Variables: Demographic, comorbidities, functional, drugs, delirium. T-test, Mann–Whitney U test and Chi-square test.

Results: Spain: 715 patients. Patients alive: Age 89.6 (SD 5.1). Fit 90%, vulnerable 86.8%, frail 86.6%, very frail 75.1%. Comorbidities (3 or less: 75%; more: 83.5%). Drugs 8.9 (SD 3.6). Walking devices 68%. Urinary incontinence 85.7%, bi-incontinent 76.7%. Delirium 82.1%. Deceased patients: Age 90.3 (SD 5.0). Fit 10%, vulnerable 13.2%, frail 13.4%, very frail 24.9%. Comorbidities (3 or less: 25%; more: 16.5%). Drugs 8.7 (SD 4.0). Walking devices 32%. Urinary incontinence 14.3%, bi-incontinent 23.3%. Delirium 17.9%. UK: 297 patients. Patients alive: Age 85.5 (SD 6.7). Fit 96.6%, vulnerable 87.9%, frail 92.2%, very frail 78%. Comorbidities (3 or less: 92%; more: 89.1%). Drugs 8.0 (SD 3.8). Walking devices 85.7%. Urinary incontinence 87%, bi-incontinent 78.4%. Delirium 81%. Deceased patients: Age 86.6 (SD 5.9). Fit 3.4%, vulnerable 12.1%, frail 7.8%, very frail 22%. Comorbidities (3 or less: 18%; more: 10.9%). Drugs 7.3 (SD 4.1). Walking devices 14.3%. Urinary incontinence 13%, bi-incontinent 21.6%. Delirium 19%.

Key conclusions: Frailty influences death during admission in both countries. Use of walking aids influence higher mortality in Spanish geriatric wards. Delirium is related with higher risk of death in UK geriatric wards. Incontinence is related with higher mortality during admission in both countries.

Abstract # 33

AREA: Acute hospital care

Geriatrics wards: different countries, different patients? Does frailty influences length of stay, mortality and readmission?

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Introduction: Spain and United (UK) are two countries where Geriatrics is a booming specialty. There is lack of evidence regarding differences and similarities between both countries.

Methods: Observational prospective study. Patients hospitalized geriatric wards (3 Spain, 2 UK). October 2019 and February 2020. Variables: Clinical frailty scale, length of stay (LOS), mortality (in-hospital, 30 and 90 days), readmission (30 and 90 days). T-test, Mann–Whitney U test and Chi-square test.

Results: Spain: 715 patients. Median LOS (fit 9, vulnerable 9, frail 10, very frail 9). Mortality: In-hospital 17.3% (fit 10%, vulnerable 13.2%, frail 13.4%, very frail 24.9%). 30 days 8.6% (fit 4.2%, vulnerable 5.4%, frail 8.4%, very frail 12.1%). 90 days 18.3% (fit 15.3%, vulnerable 9.8%, frail 21.2%, very frail 20.1%). Re-admission: 30 days 10.8% (fit 8.3%, vulnerable 5.4%, frail 13.2%, very frail 11.7%). 90 days 20.5% (fit 18.3%, vulnerable 17.8%, frail 28%, very frail 23%). UK: 297 patients. Median LOS (fit 4, vulnerable 5.5, frail 9, very frail 13). Mortality: In-hospital 12.1% (fit 3.4%, vulnerable 12.1%, frail 7.8%, very frail 22%). 30 days 8% (vulnerable 7.8%, frail 5.1%, very frail 16.9%). 90 days 14.6% (fit 7.1%, vulnerable 13.7%, frail 7.7%, very frail 30.8%). Re-admission: 30 days 13% (fit 3.6%, vulnerable 17.6%, frail 14.4%, very frail 10.8%). 90 days 28.3% (fit 25%, vulnerable 35.4%, frail 35.3%, very frail 25.9%).

Key conclusions: The greater the frailty, the greater the mortality, both in Spain and UK. No differences in readmission according to frailty, neither in Spain nor in UK. In UK, LOS increases as frailty increases.

Abstract # 34

AREA: Acute hospital care

Usefulness of bedside lung ultrasound to detect acute pneumonitis in the elderly patients

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Pneumopathy is a serious disease, which is one of the first causes of mortality in the elderly. Early detection of patients hospitalized for the suspicion of pneumopathy, using a portable ultrasound, could make it possible to adapt treatment and care more quickly. This is a cross-sectional observational study of elderly patients (≥ 75 years) hospitalized in acute unit, acute unit Covid and the geriatric SSR unit with clinical suspicion of possible pneumopathy, or a clinically fever or inflammatory syndrome that may concern the lung. The goal of this study was to assess the diagnostic value of pulmonary bedside ultrasound, performed by geriatricians, non radiologists, for the diagnosis of pneumopathy by comparing the results with those of the thoracic scanner, taken as gold standard. 66 patients, 39 with COVID-19 and 27 non-COVID, were included. The average age was 87 years. Among all 66 patients, the geriatrician performed a pulmonary bedside ultrasound which showed a sensitivity of 88%, a specificity of 15%, a PPV of 81%, a NPV of 25%, a LR+ of 1.04, a LR– of 0.75, a precision of 0.74. The study showed that pulmonary bedside ultrasound technique was better for the diagnosis of patients with COVID-19 (92% of sensitivity, 25% of specificity, 92% of PPV, 25% of NPV, 1.22 of LR+, 0.33 of LR– and 0.85 of precision) than for those without COVID-19 (81% of sensitivity, 27% of specificity, 62% of PPV, 50% of NPV, 1.12 of LR+, 0.69 of LR– and 0.59 of precision). Pulmonary ultrasound has a good enough sensitivity but a poor specificity for the diagnosis of pneumonitis in elderly hospitalized patients. It appears to be more effective in the diagnosis of pneumonitis SARS-CoV-2 related. Further studies, including more patients, would be required to define its usefulness in clinical practice.

Abstract # 35

AREA: Acute hospital care

Risk factors and comorbidities of heart failure in elderly population

Iago Ferrero¹, Blanca Torres¹, Patricia Mateo¹, Javier Alonso¹, Ortiz Barrasa¹, Fran Balea¹, Nuria Hernandez¹, Rolf Sander¹

¹si

Introduction: Frailty is more commonly found in heart failure (HF) patients and It is an independent predictor of re-entry, emergency department visits, and death. HF has a high prevalence in geriatrics population. The aim of our study was to evaluate the heart failure rate to determine its prediction for frailty and dependency.

Methods: It is a descriptive observational analytical study. We analysed 427 people from 1 of January of 2019 to 31 of December of 2019 admitted at the Geriatrics Acute Unit of the Hospital Insular in Lanzarote. The primary endpoint was to establish if HF is a strong predictor for dependency by its punctuation in Barthel index during follow up. In addition, We analysed aged, sex, VGI-frailty, GDS-Reisberg at admission and at discharge.

Results: HF motive 32% of our hospital admission. The medium IF VGI in patients with HF was 0.78 vs 0.50 in no HF (NS). Comorbidity index Charlson is also higher in HF (3.11/1.87) ($p < 0.0001$), Mental state GDS ($P < 0.0001$), cardiovascular diseases, Ischemic heart disease and pacemaker $P > 0.0001$; and Barthel Index at admission $p < 0.05$ and at discharge $p < 0.0001$. No differences in exitus incidence.

Conclusions: Despite of all, there is no mayor mortality or institutionalization, but there is in dependence at discharge. Surprisingly diabetes and sex are no significant in our populations. May be because DM is a high prevalence disease in Canary Islands and there all of Type 2, and hormonal protector factor in woman are disappear. Dates are from retrospective study and there's not dates of frailty at discharge.

Abstract # 36

AREA: Acute hospital care

The impact of heart failure multidisciplinary team input on outcomes for geriatric inpatients

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Introduction: Heart failure causes or complicates 5% of UK adult emergency admissions. Heart failure incidence and prevalence increase with age and this is an independent predictor of mortality. We reviewed outcomes for heart failure admissions under the care of geriatricians after developing a heart failure multidisciplinary team which aims to optimise inpatient management and improve patient outcomes.

Aim: To review the percentage of geriatric inpatients receiving optimal heart failure management in Key Performance Indicators (KPI) defined by the NICOR National Heart Failure Audit. To compare KPI and longer term outcomes between inpatients who did and did not receive multidisciplinary heart failure input.

Method: We conducted a retrospective review of heart failure patients admitted under geriatricians between October and December 2019. Independent variables were: heart failure MDT team input, echocardiography within 12 months, review of disease modifying medications, community heart failure follow-up, admission duration, readmission and six month mortality.

Results: Out of seventy-five heart failure admissions under geriatricians, 60% were referred to the heart failure MDT. A significantly higher proportion of patients in the MDT group had a recent echocardiogram (89% vs 57%), disease modifying medication review (84% vs 64%) and heart failure follow-up (95% vs 30% $p = 0.0000001$). Admission duration was significantly higher in the MDT group (15.6 vs 7.8 days, $p = 0.00008$) but there was no significant difference in readmission and mortality.

Conclusion: Significantly higher proportion of patients met the national heart failure targets following heart failure MDT input. Length of stay was significantly higher with MDT input. There was no significant difference in readmission rates or mortality. We conclude that heart failure MDT achieved better KPI however can be improved further to reduce length of in-patient stay.

Abstract # 37

AREA: Acute hospital care

Delirium in an orthogeriatric unit: an issue to address

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Introduction: Delirium is a multifactorial neuropsychiatric syndrome associated with acute illness with estimated prevalence of 28–63% in hip fracture patients. Although it is a major cause of morbidity and mortality it is still underdiagnosed. Previous to the implementation of a delirium protocol in our Orthogeriatric Unit we did this study to have baseline data on prevalence, risk factors and delirium management.

Methods: Observational prospective study of patients admitted to our Orthogeriatric Unit during January and February 2020, regarding delirium prevalence, risk factors and management.

Results: The authors made 151 records from 60 patients. Delirium's prevalence was 46%, slightly superior after surgery (56% vs 44%). There was no significant difference in age (average 87.9 years), time

in the Emergency Room (average 31.8 h) or time span until surgery (average 104.5 h). In the delirium patients group, 51% were physically restrained and 79% had antipsychotic drugs prescribed. Preventable risk factors here identified: dehydration (67.1%), dementia (38.6%), infection (27.1%), opioid use (21.4%) and uncontrolled pain (8.6%). 56% of the delirium patients were previously treated with benzodiazepines and, in 69.2% of them, those drugs were abruptly suspended.

Key conclusions: The authors found that it is urgent to address delirium in this Unit due to its high prevalence, incorrect management and the identification of many preventable risk factors. In order to solve this problem, a delirium protocol was created for our Orthogeriatric Unit to be implemented until the end of 2021. Monitoring of the results after protocol implementation will be presented in 2022.

Abstract # 38

AREA: Acute hospital care

Prognostic accuracy of the seattle heart failure model for one-year mortality in hospitalized older persons

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Introduction: Older people living with frailty and/or heart failure are at risk for decreasing quality of life and early death. We aimed to study if the Seattle Heart Failure Model (SHFM) can be used as a prognostic tool for 1-year mortality in a general older population.

Methods: In this prospective study, we included patients aged 75 and older at the acute geriatric (AGU) and cardiology unit (CU) of two hospitals. Clinical, pharmacological, device and laboratory characteristics were assessed to calculate the mean 1-year survival score by SHFM. We performed ROC and COX-regression analyses.

Results: We collected data in 221 participants. Patients in AGU (n = 103) were older, more female, more ADL-dependent and screened more positive on ISAR compared to CU (n = 118). Neither Charlson comorbidity score nor SHFM score differed between the units (mean SHFM 88.5 on AGU versus 88.7 on CU, p = 0.702). Mean left ventricle ejection fraction was 52.6 on AGU versus 55.3 on CU (p = 0.012). The ROC curve showed an AUC of 0.751 (p < 0.001). The optimal cut-off was a SHFM of 91.6 with sensitivity 77.1% and specificity 56.6%. The proposed cut-off was associated with positive predictive value 31.6% and negative predictive value 89.7%. A Cox regression showed a significant association between survival time and type of unit (HR 2.72, AGU versus CU, p = 0.004) and survival time and SHFM (HR 0.75 for every increase of 5 on SHFM).

Conclusion: The SHFM score has good prognostic accuracy for 1-year mortality in older persons hospitalized on acute geriatric and cardiology units.

Abstract # 39

AREA: Acute hospital care

Painful shoulder. About a case

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92-year-old woman. No drug allergies. History of hypertension. Dyslipidemia, diabetes. Chronic renal insufficiency. Glomerular filtration 25 ml/min. Chronic atrial fibrillation. Heart failure. Definitive pacemaker implantation for sinus bradycardia-tachycardia (November 2019). She lives alone at home with a caregiver 4 h a day, good family support from her son. Partially dependent for basic and instrumental activities, no cognitive impairment. She came to the emergency room for inflammation, pain and erythema of the arm right, especially in the shoulder, for 3 days after overexertion. Patient with history of shoulder pain 15 days ago, oriented as a supraspinatus tendon rupture that improved with analgesia. He denies fever and does not know if he has suffered clear trauma. She denies a skin lesion prior to the condition. The pain is not controlled with current analgesia (paracetamol and metamizole interspersed). On physical examination no fever. T 35.4 °C, HR 70 bpm, TA 101/46 mmHg, Sat 95%, visual analog pain scale (10/10). Cardiac: rhythmic heart tones without murmurs or friction. No edema in lower extremities. Pulses peripherals present and symmetrical. Not IY or RHY. Respiratory: without added noise. Do not draw or tachypnea. Upper right extremity: Edema and erythema from shoulder to hand. Some skin injuries from scratching on the right shoulder. Local heat rise. No appreciable bone deformities. Fluctuating lump in the right shoulder along the biceps, possible hematoma. Functional impotence of the shoulder. Elbow and wrist with preserved mobility, irradiated pain in the shoulder. Distal neurovascular preserved. Complementary explorations Blood test: ionogram normal, exacerbated chronic renal failure (Urea 33.5 mmol/L, Creatinine 264 µmol/L, pcr 149.3 mg/L Hemoglobin 71 g/L hematocrit 0.23 L/L Platelets 211 × 10⁹/leukocytes 14.89 × 10⁹/L Neutrophils 71.7%, Prothrombin time 10.62 ↑ INR (0.75–1.20) Shoulder X-ray: no acute injuries. Blood cultures: in progress. Electrocardiogram: pacemaker rhythm. Clinical course It was diagnosed as a hematoma on rotator cuff lesion in the context of hypercoagulation. Vitamin K and red blood cell transfusion (2 concentrates) were indicated. Given the lack of improvement of the shoulder pain, the patient was reevaluated and flogistic signs were observed in the right shoulder, performing a CT scan of the shoulder that showed: notable joint effusion that communicates with the subcoracoid, subacromial-subdeltoid bursae and extends to the spinal, acromial and clavicular portions of the deltoid. Possible septic arthritis and superinfected hematoma. Microbiology reported positive blood cultures for gram-positive staphylococcal cocci, which were later identified as staphylococcus aureus sensitive to oxacillin. Surgical drainage of the collections and joint lavage were performed with repeated sampling, all positive for staphylococcus aureus. Treatment with meropenem and vancomycin was started and the patient was admitted to the orthopedic hospitalization ward, with subsequent change to cloxacillin. During the following days, the patient presented a frank progressive deterioration of the general condition, with worsening renal function despite a correct water balance without signs of hemodynamic instability. Cognitive deterioration with decreased alertness and stupor. The patient was evaluated in the following days and in view of the poor evolution despite the established treatment, after assessing the family and informing them, it was decided to appropriate the therapeutic effort and initiate symptomatic treatment. The patient died 6 days after admission.

Abstract # 40

AREA: Acute hospital care

Geriatric approach in acute biliary pathology

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Introduction: Acute bile duct pathology (cholelithiasis, cholecystitis, cholangitis, acute biliary pancreatitis) is a group of relatively frequent clinical entities in the elderly. In certain cases, the management of these patients does not include surgical intervention and is limited to conservative treatments ranging from antibiotic treatment to drainage and/or endoscopic retrograde cholangiography. According to the Surgery Service, we decided that the elderly who were not candidates for open or laparoscopic surgical treatment would be admitted to the Acute Geriatric Unit. We present the results of our activity from 1/1/2019 to 31/12/2020.

Methods: Retrospective review of patients admitted to Geriatrics who have ICD 10 diagnostic codes that correspond to ABDP in the period described. The data collected was the gender, average age, distribution by centers, type of treatment applied, the circumstance of discharge, readmissions, and data from the geriatric assessment such as the Score on Barthel Index, Charlson scale and frailty index.

Results: 253 admissions. 220 patients. 33 (13%) readmissions in 24 patients. Early readmission (< 30 days) 8 patients. 130 (51%) women; 122 (48.4%) men. Average age: 86.37 years (47–99). Average stay: 10.97 days (0–36) ABDP as the primary diagnosis: 165 (65%). 193 (76.5%) only medical treatment. Exitus 41 (16%). Home at discharge: 71%. Moderate/advanced frailty 63%. Altered/severely altered functional status 47.5%.

Key conclusions: Geriatrics care for this group of patients appears to be reasonably adequate and safe. The group attended is elderly with altered or severely altered frailty and functional disability indices.

Abstract # 41

AREA: Acute hospital care

Humanitude care on patients with dementia and delirium in acute hospital improves outcomes during COVID-19 pandemic

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Background/objectives: Older patients with dementia and/or delirium often have challenging behaviours such as refusal of care and aggression. These cause much distress to both healthcare staff and patients, increase burden of care and put older patients at risk of functional decline. The problem is exacerbated during covid19 when visits by family members and caregivers are limited or even curtailed. Humanitude, a methodology of care developed by Gineste and Marescotti, is a relationship-centred and compassionate care approach that aims to enable patients. The aim of this study is to investigate the effectiveness of Humanitude on older patients' well-being, mobility and activities of daily living (ADLs).

Design: Pilot, quasi-experimental, non-equivalent controlled trial design. Setting: acute care hospital.

Participants: Twenty patients diagnosed with dementia and/or delirium were recruited from two geriatric wards. Ten were in the Humanitude ward and the other ten in a conventional ward received

usual care for older patients served as concurrent controls. Intervention: patients in humanitude ward received Humanitude care by trained healthcare workers during day-to-day care, which is based on the 4 pillars of gaze, speech, touch and verticality (maintaining an upright position). Every patient encounter utilizing Humanitude techniques follow a structured care sequence that helps draw the patient into the care relationship. Measurements: the outcome measures include Modified Perme ICU Mobility Score, Bradford Well-being Profile and Modified Barthel Index (MBI).

Results: There was significant improvement of median score within the Humanitude group from admission to discharge in mobility (admission: 9.0 [0–27] vs discharge 19.5 [1–36], $p = 0.002$), MBI (admission: 20 [0.0–46] vs discharge: 54.3 [3–81], $p = 0.002$) and well-being (admission: 7.0 [1–15] vs discharge 20.0 [8–26], $p = 0.002$). The median increase in the score of Humanitude group was also significantly higher than usual care group in mobility (Humanitude: 8 [1–24] vs usual care 0 [–9–16], $p = 0.02$), MBI (Humanitude: 17.5 [3–64] vs usual care 0 [–3–17], $p = < 0.001$), and well-being (Humanitude: 11 [6–20] vs usual care 0 [–5–4], $p = < 0.001$).

Conclusion: Humanitude care improves outcomes in mobility, ADL function and well-being for patients with dementia and/or delirium in the acute hospital.

Abstract # 42

AREA: Acute hospital care

Effectiveness of an assess and restore program (HEART) in returning hospitalized frail older adults to home

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Introduction: Assess and restore (A&R) programs aim to prevent functional decline in hospitalized frail older adults to ensure independent living upon discharge; however, there is limited information on the success of A&R programs. The objective of this study was to determine the effectiveness of an A&R program, Humber's Elderly Assess and Restore Team (HEART), in discharging patients to home, reducing 30-day hospital readmissions, and preventing 30-day emergency department (ED) visits.

Methods: Discharge destination, 30-day readmissions, and 30-day ED visits were compared in HEART participants ($n = 547$) and patients who were eligible for the program but did not participate ($n = 5175$) between September 4, 2018 to March 31, 2020. Electronic health records were examined to gather data on outcome variables. The associations between HEART participation and outcome variables were determined using logistic regression and Cox proportional hazards regression that controlled for several confounding variables.

Results: HEART participants were more likely to be discharged home (OR = 2.68, 95% CI 2.02–3.57) compared to non-participants. Participation in HEART was not associated with 30-day ED visits (HR = 1.05, 95% CI 0.68–1.62) nor 30-day readmissions (HR = 0.97, 95% CI 0.69–1.36).

Key conclusions: Participation in the HEART program was associated with an increased discharge to home and a decreased need for further rehabilitative care but not 30-day readmissions nor ED visits. This provides novel insight into the effectiveness of A&R programs and suggests that there may be benefit in including them in the care of hospitalized older adults.

Abstract # 43**AREA: Acute hospital care****Scoring the Clinical Frailty Scale in the Emergency Department: the home FIRsT experience**

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Introduction: The Clinical Frailty Scale (CFS) is a frailty identification tool based on clinical judgement. A concern is that in busy acute care settings, CFS scoring may be based on subjective 'eyeballing' rather than pre-illness functional baseline. We evaluated predictors of CFS scored by an interdisciplinary team (Home FIRsT) performing comprehensive geriatric assessment (CGA) in our Emergency Department (ED).

Methods: This was a retrospective observational study (service evaluation) utilising data routinely collected by Home FIRsT between January and October 2020. As part of the ED-based CGA, Home FIRsT collected pre-attendance sociodemographics, comorbidities including dementia, activities of daily living (ADLs), and mobility and falls history; and related to attendance, they recorded present complaint, acuity of illness (Manchester Triage Category: MTC), and delirium (4AT). A linear regression model was computed to establish independent predictors of CFS. This was complemented by a classification and regression tree (CRT) to evaluate the main predictors.

Results: During the study period, there were 799 Home FIRsT episodes, of which 740 were unique patients (mean age 81 years, 61% women). Among the latter, the CFS was scored on 658 (89%) (median 4, range 1–8). Independent predictors of higher CFS were older age ($p < 0.001$), history of dementia ($p < 0.001$), mobility ($p < 0.001$), ADLs ($p < 0.001$) and higher acuity of illness ($p = 0.010$). ADLs and mobility were the main classifiers in the CRT.

Conclusions: Pre-attendance ADLs and mobility were the most important geriatric dimensions considered by Home FIRsT for CFS scoring in the ED. This suggests appropriate CFS scoring mostly informed by functional baseline.

Abstract # 44**AREA: Acute hospital care****Polypharmacy in a UK District General Hospital; call it by its name**

Carmel Bergbaum¹, Louis Nerurkar¹, Alexander Tan¹, Grace Navin¹, Hannah Karet¹, Yuri Downing¹, Nihaar Shah¹, Clifford Lisk¹

¹Barnet Hospital, Royal Free London NHS Foundation Trust

Introduction: Polypharmacy is an increasingly prevalent problem amongst older adults [1] with adverse outcomes such as falls, adverse drug reactions [2] and poorer physical and cognitive capability [3]. This study aims to assess whether polypharmacy was being recognised and deprescribing was occurring in an older age ward in a United Kingdom hospital.

Methods: The electronic patient records of all patients aged 65 years and over with a Clinical Frailty Score (CFS) of 5 and above discharged between March and May 2021 were reviewed. Data on CFS, numbers and types of medicines on admission and discharge, documentation of polypharmacy as a diagnosis, potentially inappropriate medications (PIM) and deprescribed medicines were collated.

Results: 29 patients were reviewed (82% female, mean age 86 years). Comorbidities were common (range 3–11), and the most common reason for admission was a fall (48%, 14). CFS was 5–7. 71% (20) patients had 5 medications prescribed on admission, with 46% (13) having 10 medications. At discharge, this was 86% (24) and 46% (13), respectively. 54% (15) had at least one PIM prescribed with PPIs, Z drugs and BZP being the commonest. Deprescribing occurred in 45% (13) with the commonest deprescribed medicine group being antihypertensives in 7. No patient had polypharmacy documented as a diagnosis.

Key conclusions: Polypharmacy and excessive polypharmacy are common in older patients living with frailty, and deprescribing of PIMs is poor. Naming the problem in the list of diagnoses and training health care professionals in deprescribing would be a step forward in addressing inappropriate polypharmacy.

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Abstract # 45**AREA: Acute hospital care****Physicians views, attitudes and challenges of deprescribing medicines in a United Kingdom (UK) District General Hospital**

Carmel Bergbaum¹, Louis Nerurkar¹, Alexander Tan¹, Grace Navin¹, Hannah Karet¹, Yuri Downing¹, Nihaar Shah¹, Clifford Lisk¹

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Introduction: Prescribing potentially inappropriate medicines (PIMs) in older adults can lead to avoidable harm such as adverse drug reactions, falls, hospitalisation and mortality. Recent population-based studies on older adults indicate that 92% would be willing to stop taking one or more medicines if their physicians said it was

possible and 66.6% wanted to reduce the number of medicines they were taking. Physicians' views, attitudes, and knowledge of deprescribing medicines is therefore key.

Method: A survey was undertaken to understand this, as well as challenges of deprescribing, amongst physicians working in a UK hospital.

Results: 38 physicians responded (response rate 16%). 92% (n = 35) think that polypharmacy is a significant problem in patients living with frailty. 15.8% (n = 6) deprescribe daily whilst 42.1% (n = 16) deprescribe once weekly or a few times weekly. The commonest reasons for deprescribing were unwanted side effects (88.34%, n = 33), minimal benefit in view of advanced age, frailty, and comorbidities (84.1%, n = 32) and lack of an indication (81.58%, n = 31). The top three barriers to deprescribing were lack of confidence (44.7%, n = 17), uncertainty of the indication for medicines (44.7% n = 17) and concern about adverse consequences from deprescribing (44.7%, n = 17). 55.3% (n = 21) were unaware of deprescribing tools. The commonest enablers to deprescribing were pharmacists flagging up cases of polypharmacy and PIMs (50%, n = 19), leadership from seniors (47.4%, n = 18) and education (73.9%, n = 28).

Conclusions: There remains a reluctance for physicians to deprescribe but there is a pressing need for pharmacists to work alongside physicians on ward rounds, deprescribing education, and leadership and encouragement from senior clinicians.

Abstract # 46

AREA: Acute hospital care

Assessing the mortality risk in older patients hospitalized with a diagnosis of sepsis: the role of acute organ dysfunction and frailty

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Introduction: Sepsis strongly impact on patient survival, especially in advanced age. 1–3 This study evaluated the ability of different prognostic scores, clinical biomarkers, and measures of frailty to predict the in-hospital and 6-month mortality in a cohort of older patients admitted to an Acute Geriatric Unit (AGU) with a diagnosis of sepsis. 4.

Methods: All patients aged 70 years old and over consecutively admitted to our AGU between March 2017 and January 2020 with a diagnosis of sepsis were included. To assess the accuracy of candidate prognostic markers, the analysis of the area under the receiver operating characteristic (AUROC) curves was performed.

Results: We included 240 patients (median age = 85, IQR = 80–89, 40.8% women), of whom 33.8% died before discharge, and 60.4% at 6 months. The Sequential Organ Failure Assessment score (SOFA, AUROC = 0.678, 95% CI 0.610–0.747), lactate (AUROC = 0.625, 95% CI 0.551–0.700), and C-reactive protein blood levels (AUROC = 0.606, 95% CI 0.532–0.680) were the best predictors of in-hospital mortality. 5 The Clinical Frailty Scale (CFS, AUROC = 0.703, 95% CI 0.637–0.768) and the Frailty Index (FI, AUROC =

0.677, 95% CI 0.607–0.746) best predicted 6-month mortality. 6–7 The combined assessment of SOFA and measures of frailty improved the performance of the model, both in the short and the long term.

Key conclusions: The severity of organ dysfunctions on AGU admission is a major predictor of in-hospital mortality of older patients with sepsis. 8–9 Frailty, either assessed with CFS and FI, is accurate in predicting 6-month mortality. 10–11 Both organ dysfunction and frailty should be considered to address therapeutic choices and to plan the allocation of healthcare resources.

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Abstract # 47

AREA: Acute hospital care

Loneliness as a geriatric syndrome

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Background: Loneliness is considered a public health problem. In Spain, more than 4.7 million people live alone, around 50% of them are over 65 years old. In several studies, relationship has been found between loneliness with increased blood pressure, cardiovascular problems, sleep disturbances, depression, dementia, and increased risk of mortality.

Objective: to know the prevalence of loneliness and related risk factors in patients discharged from an acute geriatric unit.

Methods: descriptive, observational and retrospective study of patients discharged from a Geriatric Acute Unit between January and December 2019. Sociodemographic variables, number of drugs consumed and frailty were analyzed. Living alone or with a paid caregiver was established as a lonely situation. Data were analyzed with IBM SPSS v26 software.

Results: n = 370 patients, 76 patients in lonely situation of which 10% lived alone and 9.7% with a non-family caregiver. 67% were women with a mean age of 84 years and mild to moderate frailty, being this relationship statistically significant. The hospitalization in days was similar in all social situations (22 days). They presented depression in a higher percentage than in other social situations but without statistical significance. 21.8% of the lonely people died during hospital admission.

Conclusions: Loneliness has the face of a widow woman. Depression is more prevalent in lonely situations but psychiatric illness not. Despite not having home support, they do not require longer hospitalization or increased consumption of drugs.

Abstract # 48**AREA: Acute hospital care****Multiple ischemic strokes due to temporal arteritis in a geriatric patient**Dácil Cabezas Jaén¹¹Geriatrician, Lanzarote Insular Hospital

Introduction: Giant cell arteritis (GCA) is the most common idiopathic systemic vasculitis. The greatest risk factor for developing GCA is aging. Systemic symptoms are common in GCA and vascular involvement can be widespread, causing stenosis and aneurysm of affected vessels. It is the targeting of the tiny muscular arteries from cranial branches of the aortic arch, however, that gives rise to many of the most characteristic symptoms of GCA. Classic temporal arteritis may cause headache (70%), jaw claudication (50%) and, as its most feared complication, blindness. Of patients with temporal arteritis, 50% have complaints compatible with polymyalgia rheumatic (PMR). In patients with PMR, 15% have temporal arteritis.

Clinical case: Patient is 88-year-old male. He was admitted because he started with dysarthria and loss of strength of the right upper limb. One week after admission, the patient worsened clinically, presenting weakness in the left hand and severe loss of visual acuity. Re-history of the patient refers to a history of weeks of evolution of headache. Personal medical history; arterial hypertension, hypercholesterolemia, benign prostatic hyperplasia. Treatment; AAS 100 mg/per day, Olmesartan 40 mg 1-0-0, tamsulosin 0.4 mg/per day. Basal situation: Independent patient for basic activities of daily living, Barthel index 100. Upon admission Barthel index 50. No cognitive impairment. Widower, lives with a friend. In blood test we found that erythrocyte sedimentation rate and C-reactive protein was increased. Brain MRI shows lesions in different territories, right posterior cerebral artery and left middle cerebral artery. Given clinical and analytical findings, it was decided to do an ultrasound of the temporal arteries, thickening of the intima-media complex of both temporal arteries is observed. GCA was suspected and a right temporal artery biopsy showed giant cells, histiocytes and destruction of the lamina elastica, thus confirming the clinical diagnosis. High-dose corticosteroids were started and rehabilitation treatment with a physical and occupational therapist with progressive functional improvement. Diagnostic trial; multiple ischemic strokes in different territories due to temporal arteritis. In conclusion, the clinical presentation of large-vessel GCA is variable; thus, the diagnosis should be considered in patients presenting with systemic inflammation or large-vessel disease associated with laboratory signs of inflammation. Temporal artery biopsy is specific for GCA, but false-negative test results are common.

vasculitis of large- and medium-sized vessels because it can involve the aorta and great vessels. It also shares some histopathologic features with Takayasu arteritis, the other major “large vessel” (LV) vasculitis. Its frequent localization in the superficial temporal artery is the basis for its common name “temporal arteritis.” The greatest risk factor for developing GCA is aging. Systemic symptoms are common in GCA and vascular involvement can be widespread, causing stenosis and aneurysm of affected vessels. It is the targeting of the tiny muscular arteries from cranial branches of the aortic arch, however, that gives rise to many of the most characteristic symptoms of GCA. Classic temporal arteritis may cause headache (70%), jaw claudication (50%) and, as its most feared complication, blindness.

Clinical case: Patient is 88-year-old male. He was admitted because he started with dysarthria and loss of strength of the right upper limb. One week after admission, the patient worsened clinically, presenting weakness in the left hand and severe loss of visual acuity. Re-history of the patient refers to a history of weeks of evolution of headache. Personal medical history; arterial hypertension, hypercholesterolemia, benign prostatic hyperplasia. Treatment; AAS 100 mg/per day, Olmesartan 40 mg 1-0-0, tamsulosin 0.4 mg/per day. Basal situation: Independent patient for basic activities of daily living, Barthel index 100. Upon admission Barthel index 50. No cognitive impairment. Widower, lives with a friend. In blood test we found that erythrocyte sedimentation rate and C-reactive protein was increased. Brain MRI shows lesions in different territories, right posterior cerebral artery and left middle cerebral artery. Given clinical and analytical findings, it was decided to do an ultrasound of the temporal arteries, thickening of the intima-media complex of both temporal arteries is observed. GCA was suspected and a right temporal artery biopsy showed giant cells, histiocytes and destruction of the lamina elastica, thus confirming the clinical diagnosis. High-dose corticosteroids were started and rehabilitation treatment with a physical and occupational therapist with progressive functional improvement. Diagnostic trial; multiple ischemic strokes in different territories due to temporal arteritis. In conclusion, the clinical presentation of large-vessel GCA is variable; thus, the diagnosis should be considered in patients presenting with systemic inflammation or large-vessel disease associated with laboratory signs of inflammation. Temporal artery biopsy is specific for GCA, but false-negative test results are common. In the event of a cerebrovascular accident, steroid therapy clearly reverses established symptoms, however it is useful to prevent its progression and the establishment of irreversible injuries, especially when transient phenomena occur. Therefore, it is essential to confirm the suspicion of temporal arteritis, to initiate the steroid treatment necessary to control the disease activity, as well as the prevention and control of classic vascular risk factors and avoid sequelae in the elderly patient.

Abstract # 50**AREA: Acute hospital care****Participation of relatives in geriatric follow-up home visits after discharge reduces unplanned readmissions in the frailest older patients – a post-hoc analysis**Rikke Kongensgaard¹, Maria Krogseth², Troels K. Hansen¹, Merete Gregersen¹

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Introduction: Preventing readmission of frail geriatric patients is important because of their increased risk of readmission and adverse health outcomes. Varying effects of follow-up after discharge on readmission rate underlines a need to identify effective elements of

Abstract # 49**AREA: Acute hospital care****Multiple ischemic strokes due to temporal arteritis in a geriatric patient**Ruth Paz Maya¹, Dácil Cabezas Jaén¹, Patricia Mateo Martín², Ortiz Barrasa Bermejo², Antonia Solano Benítez¹, Concepción Peinado Gallego³

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Introduction: Giant cell arteritis (GCA, also known as Horton disease, cranial arteritis, and temporal arteritis) is categorized as a

follow-up. Thus, the objective of this study is to evaluate if participation of relatives in hospital-based geriatric follow-up visits after discharge is associated with reduced unplanned 30-day readmission rate in frail geriatric patients.

Methods: This cohort study is a post-hoc analysis of data from a randomized controlled trial regarding early geriatric follow-up after hospital discharge. Patients were 65 + years, moderately or severely frail defined by Multidimensional Prognostic Index, living alone or in nursing home and discharged from an emergency department or a geriatric ward between September 8, 2017 and February 20, 2019. Only patients in the intervention group was included. Unplanned 30-day readmission rate in patients with and without relatives participating in the geriatric follow-up home visit was compared in subgroups of moderately and severely frail patients. Data were analyzed using Chi-squared test and logistic regression.

Results: In 517 included patients 25% had relatives participating in the visit. Participation of relatives was significantly associated with lower unplanned 30-day readmission rate in the 307 severely frail patients (9.1% vs. 19.9%, adjusted Odds Ratio: 0.39 (95%: 0.15–0.99), $p = 0.049$). No association was found in the 210 moderately frail patients (19.7% vs 16.1%, $p = 0.28$).

Key conclusions: Participation of relatives in geriatric follow-up home visits after hospital discharge seems to reduce unplanned readmissions in severely frail geriatric patients.

Abstract # 51

AREA: Acute hospital care

Provision of an emergency department in-reach frailty multidisciplinary team: results of a 2 month pilot trial

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Introduction: Early identification of patients with frailty has proven to improve outcomes in the acute setting [1]. The NHS 'Ageing Well' plan in 2020 advised a team capable of assessing and managing geriatric syndromes should be available 70 h per week in the Emergency Department (ED) [2]. Surrey Downs Health & Care (SDHC) '@home' integrated frailty service established a community facing frailty multi-disciplinary team (MDT) that in-reaches to the ED to identify patients who would benefit from early Comprehensive Geriatric Assessment (CGA) and admission avoidance.

Method: MDT members include a frailty specialist doctor, therapists and nurse based within the ED. The MDT proactively case-find frail patients at risk of admission, initiate early CGA to guide management and provide wrap-around support to patients at home as an alternative to hospital admission. Patients with an established clear discharge plan from the ED were not assessed.

Results: Over 2 months 152 patients, 15% of all ED admissions, with Clinical Frailty Scale score of 5 and above were seen by the MDT. MDT input meant 60.4% of patients avoided admission to hospital and 58% of these patients had follow-up support from the integrated community team. 20.41% of patients reattended ED within 28 days compared with a local average of 20.3% for all patients aged over 75 years [3].

Conclusion: The in-reaching frailty MDT enabled rapid identification of frail patients in the ED providing patient-centred reactive frailty care. Early CGA completion and integrated community support for discharged patients allowed for admission avoidance without increasing re-attendance rates.

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Abstract # 52

AREA: Acute hospital care

Improving the quality of do not attempt cardio-pulmonary resuscitation (DNACPR) form completion

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Introduction: The completion of a Do Not Attempt Cardio-Pulmonary Resuscitation (DNACPR) form represents an important part of patient care. However, this can be a sensitive process that has gained national media interest. The aim of this Quality Improvement (QI) Project was to improve the quality of DNACPR form completion in a Care of the Elderly Department.

Methods: The QI project ran from May 2019 to January 2021 and was overseen by a multi-disciplinary team (including patient representation). DNACPR forms on the Care of the Elderly ward were audited each month against 7 standards correlating to each section on the DNACPR form. During the data collection process, interventions were implemented using Plan-Do-Study-Act cycles. Interventions included: appointing "DNACPR Champions" to complete monthly audits and provide personalised clinician feedback, the introduction of a new mandatory e-learning module, the creation of an alert system on the Trust's electronic handover system and the development of new patient information leaflets.

Results: This project led to sustained improvements in the majority of the 7 standards. The biggest improvements were seen in the inclusion of a review date, correct completion of mental capacity assessment and the use of patient information leaflet. The documentation of discussions with patient and relatives remained below the audit standards and was largely unchanged during the QI project.

Conclusion: A multi-disciplinary and multi-faceted QI approach can improve the quality of DNACPR form completion. Further work is needed to continue this process and a focus on staff training and ward-level processes will be the priority.

Abstract # 53

AREA: Acute hospital care

An audit on early detection and primary prevention of CKD in patients aged 65 and above admitted to the acute medical ward

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Background: The prevalence of chronic kidney disease (CKD) is increasing in Ireland, affecting nearly 12% of the population. Developing CKD increases morbidity and mortality. Early detection and intervention are beneficial in altering the course of CKD [1]. The National Institute of Health and Care Excellence (NICE) published guidance on early detection and management of CKD in adults in

2008 (updated in 2014) [2]. This audit aimed to assess the adherence of current practices in an Irish hospital to those set out by NICE guidelines.

Methods: A convenience sample of 50 charts were reviewed (Jan 2021).

Results: The mean age of patients was 80 years. 95% of the sample had at least one risk factor for CKD, while 80% were on nephrotoxic drugs on admission. No patient in the sample had urine evaluated with Urinary Albumin Creatinine ratio. Appropriate referral for follow-up was noted in only 16% of discharges.

Conclusion: Elderly patients are at higher risk for development of CKD and may benefit from early specialist input. This audit highlights that adherence to NICE guidelines could be improved in Wexford General Hospital. Further recommendations would be to re-audit in 6 months to re-measure outcomes after education.

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Abstract # 54

AREA: Acute hospital care

Amyotrophic lateral sclerosis in the nonagenarian patient

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A 90-year-old woman came to Acute Geriatric Unit Care with aspiration pneumonia secondary to dysphagia and dysarthria of 1 week of evolution. She had a history of three admissions in the last 5 months due to ischemic strokes and a chronic axonal polyneuropathy. Cognitively intact, Barthel Index (BI) was 25 because of tetraparesis that seemed secondary to strokes, with institutionalization in the last month. However, the BI was 100 6 months ago. The functional deterioration started with monoparesis of the left hand that progressed in weakness in upper limbs (Daniels Scale (DS) 1/5) and finally in lower limbs (DS 3/5). Furthermore, she had facial and limbs amyotrophy with fasciculations, hyperreflexia and emotional lability. We restarted the study: a brain Computed Tomography (CT) and electromyogram was performed, confirming the diagnosis of first and second motorneuron disease compatible with amyotrophic lateral sclerosis (ALS). The thoracoabdominopelvic CT discarded an oncological process. In a shared decision-making process with the patient and her family, it was decided to refer to the Palliative Care Unit (PCU). ALS is a neurodegenerative disease of the upper and lower motorneurons with asymmetric onset. The age distribution reaches its peak in the seventh and eighth decade. The diagnosis is delayed between 10 and 18 months, due to confusion with other neurological processes such as vascular ones. The differential diagnosis also includes tumors associated with paraneoplastic motorneuron degeneration. The management of the disease is essentially based on the control of symptoms, so multidisciplinary ALS units and PCU are essentials.

Abstract # 55

AREA: Acute hospital care

Pure red cell aplasia, a clinical report

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Anemia is a highly prevalent condition in the elderly. Nevertheless, it is also quite common that it is not studied by some clinicians, or it is only studied once and whenever it changes it is not noticed. In this abstract it is presented the clinical history of an 80-year-old woman partially dependent and with mild cognitive impairment. A month ago she was admitted to another center for an anemia of 2.7 g Hb, unknown, and was discharged with a 10 g hemoglobin. In consultation she had a blood test with a hemoglobin of 6.6. She was referred to the emergency room, and hospitalised. It was discovered a normochromic, normocytic anemia with LDH without alterations, and after a bone marrow biopsy, it was revealed an areregenerative anemia with an impression of pure red cell aplasia. She was studied and finally she was discharged with good response to glucocorticoids. Acquired pure red cell aplasia is a rare disease with secondary causes like drugs, infections, rheumatic diseases, some tumors and hematological alterations or neoplasms. Treatment should be decided not only by age, but also by functional status and comorbidities.

Abstract # 56

AREA: Acute hospital care

Can you hear me? The use of assistive listening devices amongst geriatric consultants and trainees to communicate with older patients with hearing impairment

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Introduction: Hearing impairment is common amongst older adults affecting over 80% over age 80. However only 10–20% of older adults with hearing loss have used hearing aids. It is problematic when older patients are admitted to hospital and hearing is essential to effective care and communication. Amplifiers may be a temporary solution during an inpatient stay. The aim of this study was to examine the practice of geriatricians with older patients with hearing loss and availability of amplifiers in hospitals.

Methods: We conducted an online cross-sectional survey amongst consultant geriatricians and specialist geriatric trainees in Ireland.

Results: Of 54 geriatric consultants and trainees responding (25% response rate), over 90% (n = 49) reported very often looking after older patients with hearing impairment. Alternative communication methods used included writing (90%, n = 48), speaking louder (80%, n = 43), assistive listening devices (46%, n = 25), organising hearing aids (26%, n = 14) and deferring a conversation (17%, n = 9). Assistive listening devices have been used by 42 (78%) of respondents with 42 (78%) finding them useful. These devices were unavailable or available with difficulty in 74% of hospitals and 67% of geriatric wards. Geriatricians refer patients with hearing impairment to audiology services routinely (15%) or occasionally (50%).

Conclusion: Most geriatricians find assistive listening devices helpful. However, these are not readily available putting older patients at a high risk of breakdown in healthcare communications. More screening, strategies and support are needed to identify and overcome barriers associated with age related hearing loss.

Abstract # 57

AREA: Acute hospital care

Retroperitoneal hematoma during enoxaparin treatment of pulmonary embolism secondary of severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) infection

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An 81-year-old man was admitted in an Acute Geriatric Unit Care after being incidentally diagnosed with SARS-COV-2 pneumonia after a fall with traumatic brain injury suffered in the nursing home. A cranial computed tomography (CT) was made, being objectified a small focus of acute subdural hemorrhage. Furthermore, an elevated D-dimer (6 mg/dL) was identified, and an atrial fibrillation highlighted as antecedent, so that a lower dose of enoxaparin was started (0.75 mg/kg/12 h). During admission, a pulmonary embolism (PE) was diagnosed by CT pulmonary angiography, but the same dose was maintained because of bleeding risk. After the hemoglobin and hematocrit values decreased to 7.3 g/dL and 23% respectively, a CT scan revealed a left retroperitoneal hematoma including iliac psoas, transverse and oblique muscles, so that Enoxaparin was retired, but a fatal outcome happened secondary of worsening of pneumonia. Major bleeding episodes are reported to occur at a rate of up to 5.2%. Spontaneous retroperitoneal hematoma is a severe and potentially fatal complication of anticoagulation therapy. Factors that increase the risk of bleeding in patients receiving enoxaparin are the use of high doses of enoxaparin, advanced age, renal impairment, and the concomitant use of drugs affecting hemostasis. Furthermore, patients with SARS-COV-2 have been reported to have a number of clinical and laboratory abnormalities that suggest a form of sepsis coagulopathy and thromboembolic complications have also been reported, although the mechanisms and risk factors for these changes are not well-characterized.

Abstract # 58

AREA: Acute hospital care

How common is cognitive impairment in older adults with type 2 diabetes and diabetic foot ulcers?

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Introduction: Older adults compared to the general population are at increased risk for the development of type 2 diabetes mellitus (T2DM), of which one common complication is the development of diabetic foot ulcers (DFU). Few studies have investigated the relationship between T2DM, DFU and cognitive function in older adults. This study's aim is to investigate the cognitive functioning of DFU patients with T2DM, compared to a healthy T2DM free control group. **Methods:** A convenience sample of 22 DFU patients attending a specialist clinic and 22 age and gender matched controls were enrolled into this study. Patients and controls were assessed with the global Addenbrookes Cognitive Examination (ACE), Trail Making and the Weigl Color Form sorting Tests for executive function. The health related quality of life (HRQoL) in the DFU and controls was assessed with Euqol-5D-5 (EQ-5D-5L).

Results: The mean age of the cohorts was 70.5 (7.4), with a gender ratio of 9:2 (male:female). A comparison of the global ACE and its cognitive sub domains revealed that the DFU group had significantly more cognitive impairments in the domains of Memory, Fluency, Language and visuospatial function ($p < 0.05$). In addition, the DFU patients had significantly more executive disfunction ($p < 0.001$), and a much worse HRQoL in the all of the individual EQ-5D-5L domains ($p < 0.001$).

Key conclusions: The results of this study suggest that the cognitive function of T2DM patients with DFU is significantly affected, which has implications for health education programmes and its clinical management.

Abstract # 59

AREA: Acute hospital care

A case of a complicated urinary tract infection due to *Aerococcus urinae*

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Introduction: Urinary tract infections (UTI) are common in older adults who are at increased risk of complications. We report the case of a premonitory well male who developed disseminated infection (lumbar discitis and septic arthritis) from a UTI due to the rare gram positive bacteria *Aerococcus urinae*.

Presentation: A 75 year old male presented to hospital with a 1 day history of dysuria, malaise, fever and mild pain in the mild lower back and right shoulder pain. Medical history included atrial fibrillation for which he was anticoagulated. Routine bloods revealed an elevated white cell count ($3.8 \times 10^9/L$) and CRP (158 mg/L) and urinalysis was positive for leukocytes. Blood culture grew *Aerococcus urinae* after 65 h for which he was treated with intravenous antibiotics. Ultrasound of renal tracts were normal. MRI imaging of spine showed discitis at L1/L2 and septic arthritis in the right shoulder. Transoesophageal echo (TOE) was normal with no evidence of vegetations. He was discharged home to continue intravenous antibiotics for a total of 6 weeks.

Discussion: To our knowledge, this is the first case of an infection with *Aerococcus urinae* to cause both infective discitis and septic arthritis in a previously well male. *Aerococcus urinae* is a rare cause of UTI accounting for about 0.5% of all cases and has a high risk of dissemination. However, in the majority of cases, there are underlying renal tract anomalies or other risk factors. This case is a reminder of the need to be vigilant for UTI complications in older adults.

Abstract # 60

AREA: Acute hospital care

Evaluation of the incidence of functional impairment in patients admitted to a Geriatric Acute Unit (UGA). Feasibility study

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Introduction: Hospitalization is one of the main causes of functional impairment in the elderly, the acute process itself and deconditioning due to immobility being the two main causes. We assess the

feasibility of different functional markers before calculating the incidence of functional impairment.

Methods: We evaluated 20 patients admitted consecutively from December 15th 2019 to February 5th 2020, except those hospitalized on non-working days and/or in exclusively palliative care. Function was assessed with: Barthel and Clinical Frailty Scale (CFS) at baseline and at discharge; gait speed (in 6 m), grip strength and quadriceps circumference at entry and discharge. We also collected: age, sex, BMI, comorbidities, main reason for admission, presence of delirium (Abbreviated Mental Test, AMT) at admission and discharge and days of hospital stay.

Results: The Barthel index, the CFS and the measurement of the quadriceps perimeter could be obtained in 100% of the patients, both at baseline and at discharge. The speed of the gait could only be estimated in 45% of the cases at admission and in 55% at discharge, and the grip strength in 65% at admission and in 75% at discharge.

Conclusions: Variations in the CFS and in the Barthel were shown as the most feasible indicators of functional impairment during admission. The quadriceps measurement showed great interobserver variability. The main limiting factor for obtaining grip strength and gait speed was the inability to maintain standing.

Abstract # 61

AREA: Acute hospital care

Incidence of functional impairment in patients admitted to a Geriatric Acute Unit (UGA)

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Introduction: Low physical activity performed by hospitalised older have negative associated with hospitalization. We wanted to know if the absence of a physiotherapist in our UGA is cause of a higher incidence of functional impairment.

Methods: After a feasibility study, we observed the Barthel index and the Clinical Frailty Scale (CFS) are the only feasible tools to evaluate the incidence of functional impairment in hospitalized patients. We define functional impairment as the loss of capacity in at least one basic daily activity on discharge with respect to admission.

Results: We analyzed 20 patients with a mean age of 86.65 years, 70% women and a mean stay of 4.65 days. Taking Barthel index as marker, 85% experienced functional deterioration at discharge and with CFS was 90%.

Discussion: Functional impairment during hospitalization is difficult to assess (performance tests are difficult to perform in patients with acute illness). Barthel index showed greater sensitivity to change than CFS but both predicted similar percentages of functional impairment at discharge. Assuming the management of acute processes is protocolized and standardized, we observed absence of physiotherapists could be cause of higher incidence in functional impairment, greater than expected according to literature. The main limitation was the small sample size, influenced by COVID19 pandemic, which paused our study.

Conclusion: The implementation of rehabilitative approaches in our UGA should be fundamental to avoid and/or delay the great problem of functional decline associated with hospitalization.

Abstract # 62

AREA: Acute hospital care

Neuroimaging features associated to mortality in very elderly patients presenting with acute traumatic intracranial haemorrhage

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Introduction: Acute traumatic intracranial haemorrhage (TIH) tends to be treated conservatively in very elderly patients based on risk-benefit of neurosurgical procedures. This group of patients is rising, with high morbi-mortality.

Methods: We report neuroimaging and mortality data of patients aged $> = 80$ years with conservatively treated TIH, admitted to the acute geriatric unit between December 2016 and April 2021.

Results: We included 134 patients (59% female, mean age 87.3 ± 4.3 years). In-hospital mortality was 19.4%. Most patients presented with mild head trauma (HT) (83.6%, GCS 14–15), 12.7% moderate HT (GCS 9–13), and 3.7% severe HT (GCS $< = 8$). Most frequent cause was accidental fall (76.9%). Most frequent Marshall CT scoring was 2 (83.6%), followed by 6 (10.4%). Most frequent Rotterdam CT scoring was 2 (61.2%), followed by 1 (23.1%) and 3 (11.9%). 74.6% of patients had acute subdural hematoma (mean thickness 5.8 ± 6.08 mm); 63.4% subarachnoid haemorrhage; 15% intraventricular haemorrhage; 23.1% contusion. Mean midline shift was 1.4 ± 3.4 mm (94 patients had 0 mm; 8 patients had $> = 5$ mm). 48.8% patients showed radiological worsening on control CT. Marshall (OR = 6.47, $p < 0.001$) and Rotterdam (OR = 3.26, $p = 0.032$) scores, control CT worsening (OR = 11.98, $p < 0.001$), number of haemorrhagic lesions (2.23 vs. 1.69, $p = 0.009$), thickness of extra axial hematoma (9.73 vs 4.89 mm, $p = 0.003$) and midline shift (4.08 vs 0.73 mm, $p = 0.001$) were associated to in-hospital mortality.

Conclusions: Very elderly TIH patients most frequently presented with mild head trauma. CT scores, CT worsening, number of haemorrhagic lesions, thickness of extra axial haematoma and midline shift were associated to in-hospital mortality.

Abstract # 63

AREA: Acute hospital care

Frailty scores in practise: a comparison of clinical frailty scores performed in a triage environment compared to consultant geriatricians

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Introduction: Frailty assessment in older adults is widespread in UK clinical practice. Frailty tools can identify patients who may benefit from Comprehensive Geriatric Assessment (CGA). CGA can guide management of chronic conditions (1) or treatment escalation decisions (2). Previous research has shown substantial concordance between triaging staff and Geriatrician assessments of frailty (3). In our centre, triage nurses in the Emergency Department (ED) assign a Clinical Frailty Scale (CFS) score to older patients. Patients with $CFS \geq 5$ requiring hospital admission are streamed to the Acute Frailty Unit (AFU) in order to facilitate early CGA from the multi-

disciplinary frailty team (4). Non-frail patients receive standard medical care.

Methodology: We aimed to evaluate the concordance between CFS assigned in the ED by triage nurses with CFS assigned by the Consultant Geriatrician at the post-take ward round. We aimed to establish whether frail patients were being identified in the ED and appropriately streamed to the AFU. Patients admitted to the AFU between 11/01/21 and 11/02/21 were included. CFS assessments from ED triage and Consultant Geriatrician were compared for agreement using a weighted Kappa statistic.

Results: 117 patients were admitted during the study period; ED triage found 83 (70.3%) to be living with frailty ($CFS \geq 5$), compared to 105 of 117 (89.9%) who received geriatrician assessment. We found moderate agreement between ED triage scores and Consultant Geriatrician scores (k 0.44; 95% CI 0.28–0.58).

Conclusion: ED triage staff may under-recognise frailty. This may deny frail patients access to early CGA.

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Abstract # 64

AREA: Acute hospital care

Case report: amiodarone pneumonitis

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Introduction: We present the case of an 83-year-old female patient with a personal history of an atrial fibrillation currently being treated with Amiodarone 3 days a week. The patient presents a Barthel of 90/100 and a Lawton 7/8. She lives alone without family support.

Methods: The patient went to the emergency room due to dyspnea on minimal exertion of 3 days of evolution and cough without expectoration. Complementary tests are carried out: the electrocardiogram shows sinus rhythm with a known left bundle branch block. The blood test presented a normal blood count and correct kidney function. The chest X-ray shows a bilateral interstitial infiltrate with an image suggestive of extensive acute lung edema.

Results: The patient was admitted into the charge of Cardiology with a suspected diagnosis of acute lung edema. Upon admission, depletive treatment is started and Amiodarone is suspended, with little symptomatic improvement, successively in ward complementary tests are requested to rule out cardiac cause of the pathology in which we observe a normal range levels of pro-BNP and thyroid function. The echocardiogram shows an ejection fraction of 68% without ventricular dysfunction. With a diagnostic suspicion of pulmonary toxicity by amiodarone, it was requested a chest computed tomography scan,

which observed a diffuse, nonspecific but compatible with amiodarone toxicity.

Conclusions: After this diagnosis, treatment with oral Prednisone was started, observing an immediate clinical improvement, starting functional rehabilitation until there was no more dyspnea. Achieving hospital discharge in a week without the need of oxygen therapy.

Abstract # 65

AREA: Acute hospital care

Monitoring of anticholinergic burden in 50 consecutive patients admitted to an Acute Geriatric Unit

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Introduction: Nowadays, more than 600 drugs have been reported as having anticholinergic activity. They are useful but they are not selected for receptor binding, causing not only the desired effects but also adverse effects blocking the parasympathetic nervous system and inhibiting acetylcholine transmission. Old patients, especially those ones with Alzheimer's disease, are more vulnerable to central anticholinergic effects. The aim of the study is to quantify the change in "Drug Burden Index" (DBI) between hospital admission and discharge in an acute geriatric hospital ward.

Methods: We selected the first 50 discharged patients since 4th May 2021 to a Geriatric Acute Unit in Spain (Navarra). A review of drug records was analyzed case by case before admission and at discharge, calculating DBI in these two moments. Clinical and demographic characteristics were recorded.

Results: The medium age was 87 and 66% were females. Only 8% were autonomous for basic activities while 22% were completely dependent. 28% had a diagnosis of dementia and 14% were institutionalized. At admission, 28% had a DBI = 0 (without risk), 30% had a DBI: 0–0.99 (low risk) and 42% had a DBI ≥ 1 (high risk). At discharge, DBI was improved in 30% of the cases but in 8% was worsened.

Conclusion: Drugs' anticholinergic and sedative properties are often present in elderly pharmacotherapy. This condition may change the drugs risk–benefit profile. Hospital discharge in a Geriatric acute ward has a positive impact in DBI reduction. Pretabulated scales for measuring anticholinergic and sedative load can help us to carry out a more appropriate pharmacological prescription.

Abstract # 66

AREA: Acute hospital care

The COVID age study

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Objective: To determine predictors of in-hospital mortality related to COVID-19 in older patients.

Design: Retrospective cohort study.

Setting and participants: Patients aged 65 years and older hospitalized for a diagnosis of COVID-19.

Methods: Data from hospital admission were collected from the electronic medical records. Logistic regression and Cox proportional hazard models were used to predict mortality, our primary outcome. Variables at hospital admission were categorized according to the following domains: demographics, clinical history, comorbidities, previous treatment, clinical status, vital signs, clinical scales and scores, routine laboratory analysis, and imaging results.

Results: Of a total of 235 Caucasian patients, 43% were male, with a mean age of 86 = 6.5 years. Seventy six patients (32%) died. Non-survivors had a shorter number of days from initial symptoms to hospitalization ($P = 0.007$) and the length of stay in acute wards than survivors ($P < 0.001$). Similarly, they had a higher prevalence of heart failure ($P = 0.044$), peripheral artery disease ($P = 0.009$), crackles at clinical status ($P < 0.001$), respiratory rate ($P = 0.005$), oxygen support needs ($P < 0.001$), C-reactive protein ($P < 0.001$), bilateral and peripheral infiltrates on chest radiographs ($P = 0.001$), and a lower prevalence of headache ($P = 0.009$). Furthermore, non-survivors were more often frail ($P < 0.001$), with worse functional status ($P < 0.001$) and higher comorbidity burden ($P < 0.001$). The presence of delirium was associated with an increased risk of dying (hazard ratio 2.1; 95% CI 1.2–3.7, $p = 0.0113$). Acute stroke did not influence early mortality. A multivariable Cox model showed that male sex (HR 4.00, 95% CI 2.08–7.71, $P < 0.001$), increased fraction of inspired oxygen (HR 1.06, 95% CI 1.03–1.09, $P < 0.001$), and crackles (HR 2.42, 95% CI 1.15–6.06, $P = 0.019$) were the best predictors of mortality, while better functional status was protective (HR 0.98, 95% CI 0.97–0.99, $P = 0.001$).

Conclusions and implications: In older patients hospitalized for COVID-19, male sex, crackles, a higher fraction of inspired oxygen, and functionality were independent risk factors of mortality. These routine parameters, and not differences in age, should be used to evaluate prognosis in older patients.

Abstract # 67

AREA: Acute hospital care

Mortality of patients over 65 years admitted by medical cause in an intensive care unit: purpose of the study

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Introduction: Analysis of the mortality of patients over 65 years old admitted for a medical cause in the Intensive Care Unit (ICU) of the General Hospital 1 month and 180 days.

Methods: Prospective, observational, descriptive and analytical study of data collected from patients admitted to the ICU, January 2018–December 2019, with a 6-month follow-up. Inclusion criteria: patients over 65 years of age admitted to the ICU for medical reasons and signed informed consent. Exclusion criteria: undergoing surgery, ischemic heart disease or arrhythmias, ICU stay of less than 24 h and previous inclusion.

Results: Patients included: 118. Women: 66.9%. Median age: 73.5 years (IR: 69.5–77.63). Percentage of people over 80 years old: 16.1%. Follow-up after 30 days. Percentage of death: 25.4% (19.49% aged between 65 and 80 years). Mortality in ICU: 17.8%. 83.33% women. Causes of death: 20% respiratory failure-acute lung edema, 16.6% septic shock of respiratory origin and 13.3% septic shock of abdominal origin. Follow-up at 180 days. Patients included: 50 (death

in the first month: 30 patients, patients included who did not complete 6 months of follow-up: 38). Mortality: 6%. 66.6% women.

Conclusions: In our study, the majority of deaths in patients over 65 years of age admitted to the ICU occurred in the first 30 days of follow-up (25.4%). The most frequent cause is infectious: respiratory and abdominal (29.9%). At the 6-month follow-up, the survival rate is high. These are preliminary results that can help decision-making regarding the geriatric patient at the time of admission to the ICU.

Abstract # 68

AREA: Acute hospital care

Does use of a Clinical Frailty Scale application improve rating accuracy by non-specialists in the acute hospital setting?

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Background: The Clinical Frailty Scale (CFS) provides predictive information for enhanced clinical care of older adults but requires individual judgement and is prone to inter-rater variability [1]. The CFS application [2] may help standardise scoring.

Methods: Retrospective analysis of CFS scores for 240 patients ≥ 65 years attending Whipps Cross Hospital. Comparison of CFS scoring by junior doctors (non-geriatrician), Acute Assessment Unit (AAU) nurses and geriatricians. Blinded data was re-scored by a junior doctor using the application. Prospective use of the application on the acute medical take ($n = 123$) and by AAU nurses ($n = 35$) was assessed using Spearman rho rank based correlation coefficients (r).

Results: There was positive correlation between geriatrician and both junior doctors ($r = 0.855$, $p < 0.01$) and nurses ($r = 0.699$, $p < 0.01$) scoring. Correlation was greater between geriatrician and retrospective app scoring ($r = 0.958$, $p < 0.01$). Prospective use of the app by doctors on the acute take did not improve correlation ($r = 0.831$, $p < 0.01$), however use by AAU nursing staff did ($r = 0.922$, $p < 0.01$).

Conclusions: Concordance between geriatrician scoring and the CFS application is high. Use of the application improved concordance between nurse and geriatrician derived CFS, though had little impact on junior doctor derived CFS. This advocates the CFS application as a way of standardising and improving acute CFS scoring.

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Abstract # 69

AREA: Acute hospital care

Functional evolution and short-term impact on fragility and quality of life of patients over 65 years admitted to an intensive care unit

Ester Hoyos Alcañiz¹, Alberto José Silva Obregón², Juan Rodríguez Solís¹, María Gebauer Campos¹, Luis Daniel Mujica Chumbes¹

¹Geriatrician, ²Intensive Care

Introduction: Analysis of the functionality, frailty and quality of life of patients over 65 years admitted for a medical cause in the Intensive Care Unit (ICU) at 30 days.

Methods: Prospective, observational, descriptive and analytical study of the data collected from patients admitted to ICU, January 2018–December 2019, with a 30-day follow-up. Inclusion criteria: patients over 65 years admitted for medical reasons and signed informed consent. Exclusion criteria: undergoing surgery, ischemic heart disease or arrhythmias, ICU stay of less than 24 h and previous inclusion. Functionality assessment: Modified Barthel (IB); assessment of frailty: Clinical Frailty Scale (CFS) and FRAIL questionnaire; quality of life assessment: Questiaonnaire 3 level version (EQ-5D-3L). Statistical significance $p < 0.005$, SPSS 22.0.

Results: Patients: 118. Women: 66.9%. Median age: 73.5 years (IR: 69.50–77.63). Over 80 years old: 16.1%. Location: 76.3% home, 7.3% residence, 5.1% family environment. Mean BI: 91.47 (SD 17.36). Mean EQ-5D-3L: 37 (SD 5.64). Mean FRAIL: 1.47 (SD 1.25); Mean CFS: 3.17 (SD 1.33). Follow-up after 30 days. Patients: 88 (intra-ICU death: 17.8%, hospital death: 7.6%). Location: 73.86% home, 20.45% residence (77.77% < 80 years), 5.68% family environment. Mean BI: 71.77 (SD 33.59). Mean EQ-5D-3L: 33.42 (SD 5.90). FRAIL mean 2.29 (SD 2.00); Mean CFS: 4.28 (SD 1.74).

Conclusions: In our sample, 76.3% lived at home prior to admission. The institutionalization is striking (7.3–20.45%). The loss of functionality and increased frailty of the patients in the short term stand out, although the quality of life remains constant throughout the follow-up.

Abstract # 70

AREA: Acute hospital care

Q fever. A case report

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Introduction: Q fever is a zoonosis of worldwide distribution caused by *Coxiella burnetii* whose clinical manifestations depend largely on the characteristics of the host, with immunocompromised patients being the most predisposed to chronicity.

Methods: Analysis of the clinical case of a 98-year-old patient who consulted for fever and desaturation, undergoing different studies after which he was diagnosed with Q fever.

Results: A 98-year-old male patient with a history of hypertension, diabetes mellitus, major neurocognitive disorder type Lewy body disease, idiopathic acute pericarditis and chronic renal failure, who consulted for febrile syndrome, desaturation, headache and polyarthralgia. PCR was requested for SARS-CoV2, this being negative. A chest X-ray revealed condensation in the middle and upper fields of the right hemithorax, for which it was initially classified as community pneumonia and ceftriaxone was empirically prescribed. Due to the persistence of febrile syndrome, pneumococcal and legionella antigenuria were requested in urine, the result being negative, serology for atypical pneumonia was carried out, presenting positive IgM for *Coxiella burnetii*, for which specific treatment with doxycycline 100 mg was started for 14 days, presenting the progressive improvement of his symptoms, being able to be discharged without supplementary oxygen therapy.

Conclusion: Acute Q fever usually presents as a flu-like picture with varying degrees of pneumonia. Although in general it is a benign condition, and its mortality does not exceed 3%, its diagnostic suspicion is important in elderly patients with atypical symptoms, to reduce complications such as pneumonitis and myocarditis.

Abstract # 71

AREA: Acute hospital care

Descriptive study of a Covid cluster amongst a partially vaccinated elderly population in a Cognitive Behavioral Unit (CBU)

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Introduction: Elderly patients are at risk of severe forms, hospitalization and death related to COVID19 with a mortality rate of about 30% for this population, especially frail and dependent patients. Thanks to rapid development of vaccines, those patients started being vaccinated with messenger RNA vaccine. To date data on the transmission of the virus within a vaccinated population remain however limited.

Methods: Retrospective cross-sectional study including patients hospitalized in a French CBU from 02/14/2021 to 03/23/2021, date at which a cluster of COVID19 alpha variant occurred.

Results: During this cluster, 12 patients over 71 years old were hospitalized in the CBU. 10 had been vaccinated with Pfizer Comirnaty[®] mRNA vaccine—4 had received one dose only and 6 were fully vaccinated—and 2 were not vaccinated. 9 of the 12 patients (75%) presented a positive RT-PCR. The 2 non-vaccinated patients had a positive RT-PCR with clinical and biological signs. All 4 “one-dose” patients had a positive RT-PCR after vaccination, and among the 6 “fully vaccinated” patients, 3 were negatives and 3 got infected (one before 14 days after his second dose).

Conclusion: These data are consistent with several studies showing that there is a small proportion of COVID19 infections amongst vaccinated patients. When infected, vaccinated patients present a smaller virus load, suggesting they are less contagious. Despite our small sample size, our study contributes to demonstrating the beneficial impact of vaccination with the Comirnaty[®] vaccine for this elderly population, reducing both clinical severity and transmission of SARS-COV 2.

Abstract # 72

AREA: Acute hospital care

Functional evolution and long-term repercussion on the fragility and quality of life of patients over 65 years admitted to an Intensive Care Unit

Ester Hoyos Alcañiz¹, Juan Rodríguez Solís¹, Alberto José Silva Obregón², María Gebauer Campos¹, Luis Daniel Mujica Chumbes¹

¹Geriatrician, ²Intensive Care

Introduction: Analysis of the functionality, frailty and quality of life of patients older than 65 years admitted for a medical cause in the Intensive Care Unit (ICU) at 180 days.

Methods: Prospective, observational, descriptive and analytical study. Patients admitted to ICU, January 2018–December 2019, with a 180-day follow-up. Inclusion criteria: over 65 years admitted to the ICU for medical reasons and signed informed consent. Exclusion criteria: undergoing surgery, ischemic heart disease or arrhythmias, ICU stay of less than 24 h and previous inclusion. Functionality assessment: Modified Barthel (IB); assessment of frailty: Clinical Frailty Scale (CFS) and FRAIL questionnaire; quality of life assessment: Questiaonnaire 3 level version (EQ-5D-3L). Statistical significance $p < 0.005$, SPSS 22.0.

Results: Patients: 118. Women: 66.9%. Median age: 73.5 years (IR: 69.50–77.63). Over 80 years old: 16.1%. Location: 76.3% home, 7.3% residence, 5.1% family environment. Mean BI: 91.47 (SD 17.36). Mean EQ-5D-3L: 37 (SD 5.64). Mean FRAIL: 1.47 (SD 1.25); Mean CFS: 3.17 (SD 1.33). Follow-up at 180 days. Patients: 47 (death in the first month: 30 patients, death at 6 months: 3 patients, patients included not completed, 6 months of follow-up: 38). Location: 70.21% home, 19.14% residence (77.77% < 80 years), 10.63% family environment. IB mean: 81.68 (SD 27.08). Mean EQ-5D-3L: 33.48 (SD 5.54). Mean FRAIL: 1.64 (SD 1.50); Mean CFS: 3.62 (SD 1.72).

Conclusions: In our long-term follow-up study, the predominant location is one's home (70.21%). Institutionalization (from 7.3 to 19.14%). Functionality, frailty and quality of life decrease. This good long-term maintenance is probably related to the adequate selection of patients admitted to this unit.

Abstract # 73

AREA: Acute hospital care

Descriptive analysis of patients assessed by the Health Social Worker of the Geriatrics Interdisciplinary Socio Health Care Functional Unit and the resources at discharge

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Introduction: The Geriatrics Interdisciplinary Functional Unit (GIU) is in charge of assessing the needs of the elderly patients after a hospitalization and to facilitate the discharge to intermediate care units.

Aim: To show that the Health Social Worker (HSW) integrated in the GIU, represents an optimal intervention for the Comprehensive Geriatric Assessment (CGA) and management of appropriate resources for the patient care.

Method: Descriptive and retrospective study. 874 patients were assessed by HSW from January to December 2020. Data collected: Mean age, gender, Gijón scale (family-partner assessment), Pfeiffer test (cognitive assessment), Barthel Index (functional status), Lawton Index (instrumental activities of daily living), length of stay, period between GIU intervention until discharge, origin of the demand, resource at discharge, number of non-indicated demands.

Results: 461 (53%) male. Mean age 76 years (SD 12.77). 329 (42.1%) lived alone. Without architectural barriers 378 (43.2%). Mean Gijon Scale 11 points, previous social support 36% (n = 315). GIU's main consultants: COT 11.8% (n = 103), Neurology 11.3% (n = 99), Internal Medicine 11.1% (n = 97). Period between GIU interventions until discharge 12 days (SD 16.72). From all the patients assessed 24.1% (n = 211) were non indicated demands, and 11.1% (n = 97) were clinical unstable. Destination at discharge: intermediate care unit 527 (60.9%); return home 212 (24.5%); 36 (4.2%) died in the hospital.

Conclusions: According to the results, a high number of patients needed to go to intermediate care units at discharge and 24.1% of patients were not indicated. The role of HSW in the Geriatric Functional Unit is essential for the detection of social vulnerability and resource management. Main interconsultant service: Orthopaedics-Traumatology Department.

Abstract # 74

AREA: Acute hospital care

Impact of the introduction of telemedicine during the coronavirus pandemic, on patients attending the Rapid Access Clinic for the Elderly (RACE) at West Middlesex University Hospital in West London

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Background: The coronavirus pandemic required rapid changes in the delivery of healthcare with many outpatient services shifting from 'face to face' consultations to telemedicine contacts. We had shown before RACE service is effective at reducing unscheduled attendances to the emergency department and mortality compared to the control group [1].

Aims: To assess the impact of telemedicine on older patients attending the Rapid Access Clinic for the Elderly (RACE) at West Middlesex University Hospital (WMUH) in West London. Approach using NHS administrative data, we identified RACE attendances and the subsequent emergency attendance to hospital following the telemedicine contacts.

Results: The number of attendances increased from a mean of 49 attendances a quarter to 54 (Apr–Jun 2020). The number of patients attending ED within 30 days increased, from 8 per quarter to 11 including patients directed to attend ED during the consultation.

Conclusions: Telemedicine contacts reduced the number of appointment cancellations. However, the challenge was to provide the appropriate clinical assessment of complex older patients. The approach used is a useful tool in evaluating the appropriateness of telemedicine consultations for complex older people.

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Abstract # 75

AREA: Acute hospital care

Predicting mortality after hip fracture using the Frail-VIG Index which integrate comprehensive geriatric assessment results

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¹Physician, ²Physician

Objective: to assess the capacity of VIG index to predict mortality in patients with femoral fracture (FF).

Methods: retrospective study of patients ≥ 65 with FF, admitted in an OU, from June 2014 to May 2015. Main variable was mortality. Data: age, gender, Charlson, Barthel, Lawton, cognitive impairment. Frailty was measured by the Frail-VIG Index (IF-VIG). The IF-VIG is a simple instrument that assesses 25 deficits. According to the index score, patients were categorized as fit: IF-VIG < 0.2; initial frailty: IF-VIG = 0.2–0.34; intermediate frailty: IF-VIG = 0.35–0.54 and advanced frailty: IF-VIG = ≥ 0.55 . Contrast of hypothesis log-rank for survival curves according to IF-VIG and analysis of ROC curves were performed.

Results: 261 patients included, 200 women (76%), mean age 84.3 ± 7.13 . Charlson 5.6 ± 2.21 ; Lawton 3.28 ± 3.17 ; Barthel 73.85 ± 28.64 ; Dementia 113 (43.3%). Category IF-VIG: fit: 72 (27.58%), mild-frail: 86 (32.92%), moderate-frail: 86 (32.92%), severely-frail: 17 (6.51%). 1-year mortality: 65 (24.90%). Mortality during a follow-up of 58 months: 150 (57.47%). Factors associated with mortality in the multivariate analysis: age (HR 1.05 [IC 95% 1.02–1.07] ($P < 0.001$)), gender (HR 1.77 [IC 95% 1.21–2.58] ($P = 0.003$)) and the IF-VIG: Mild-frailty (HR 2.30 [IC 95% 1.33–3.99] ($P = 0.002$)); Moderate-frailty (HR 4.57 [IC 95% 2.68–7.78] ($P < 0.001$)) advanced-frailty (HR 20.01 [IC 95% 9.83–40.72] ($P < 0.001$)). Survival curves showed significant differences ($p < 0.001$). Area under ROC curve at 12 months 0.73 (0.66–0.79) and at 60 months 0.75 (0.69–0.81).

Conclusions: Global mortality in FF remains elevated. Age, sex and frailty are predictive factors of mortality. The IF-VIG is a useful tool to estimate mortality and can help to optimize the medical resources of these patients.

Abstract # 76

AREA: Acute hospital care

RS3PE, an unknown disease

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Background: RS3PE is a seronegative rheumatologic disease characterized by the presence of symmetric polyarthritis associated with synovitis of the flexor and extensor tendons of the fingers and pitting edema on the back of the hands. The prevalence is unknown and its incidence is 0.09%. It has an excellent response to corticosteroid treatment.

Clinical case: A 79-year-old woman with a history of hypertension, MD2, DLP, grade III obesity, stage 3BA1 CKD, Vitamin B12 deficiency and atrophic gastritis, who attended a Geriatric Day Hospital for rehabilitation after prolonged admission to Internal Medicine due to cardiac decompensation. On examination, we observe pitting edema in both hands associated with morning pain and stiffness, as well as milder edema in legs. The X-ray of both hands shows an increase in soft tissue and the chest X-ray rules out acute heart failure. In the analysis, he presented an increase in ESR and CRP with negative rheumatoid factor and ANCA. Suspecting RS3PE syndrome, corticosteroid therapy is started, experiencing progressive clinical and functional improvement.

Conclusions: RS3PE is a little-known disease with nonspecific symptoms. It should be included in the differential diagnosis in patients with tath kind of symptoms. The treatment is corticosteroids, that produce a rapid and effective response.

Abstract # 77

AREA: Acute hospital care

Polypharmacy prevalence: special attention to anticholinergic drugs

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Introduction: Polypharmacy is a constant geriatric syndrome among patients over 80. Furthermore, half of the medicines prescribed have anticholinergic activity, producing not only the desired effects but also toxicity. The aim of the study is to evaluate polypharmacy prevalence in an acute geriatric hospital ward, as well as to analyze the drugs with anticholinergic activity that are used most frequently.

Methods: We selected the first 50 discharged patients since 4th May 2021 to a Geriatric Acute Unit in Spain (Navarra). A review of drug records was analyzed case by case at hospital admission. Clinical and demographic characteristics were recorded.

Results: The medium age was 87 and 66% were females. Only 8% were autonomous while 22% were completely dependent. 38% had a diagnosis of dementia and 14% were institutionalized. Comorbidity was analyzed by CIRS* and the most frequent chronic comorbidities were arterial hypertension (88%) and osteoarthritis (68%). Pain was observed in 40% and behavioral disturbances in 32%. Regarding the drugs administered at the time of admission, 83.3% took 5 or more drugs. The most prescribed medications were analgesics (68%), antihypertensives (66%), diuretics (58%), psychotropics (56%) and gastric antisecretors (56%).

Conclusion: Polypharmacy is present in the majority of patients admitted to a geriatric ward, being considered as an important risk factor for both functional and cognitive impairment in this population, especially anticholinergic drugs. Therefore, it is important to understand that in many cases the best therapeutic option is not to prescribe a new drug but to suspend those that produce a deterioration in the patient's quality of life. *CIRS: Cumulative Illness Rating Scale.

Abstract # 78

AREA: Acute hospital care

COVID-19: interest, information requirements and stress factors of elderly patients at an acute geriatrics hospital. A pilot study

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Introduction: Elderly patients belong to the main risk group for severe COVID-19 disease. The present study examines the sources of information, the information needs and stress factors of older multimorbid patients.

Methods: The exploratory cross-sectional study is being conducted out in a clinic for acute geriatrics in Berlin. The pilot study included 50 interviews; the main study will include 200 interviews in a semi-structured interview with a total of 13 questions on 4 topics. Results are analyzed descriptively including patient characteristics and baseline assessments. Exclusion criteria: somnolence, pre-final situation, severe cognitive impairment, language barrier, and patients not consenting to the interview.

Results: 53% of patients surveyed were female, median age 85 years. 47% had a Barthel score of 0–35 points. 44% had mild, 33% moderate cognitive impairment. Survey on COVID-19: 79% got their

information from television, 39% from relatives, 17% from medical staff, and 10% from the internet. 58% wanted information specifically for elderly. 40% had little or no interest, 30% moderate, and 30% great interest in COVID-19. 25% felt inadequately informed, 40% moderately, and 35% very well informed. 57% felt that social distance is burdensome. 53% rated COVID-19 as hazardous to health, 23% as not hazardous to health.

Summary: Respondents obtained most of their information from television or through relatives. For the majority (60%), there is a greater need for information regarding COVID 19, this combined with a desire for information specifically for older people. Preventive measures such as social distance represented a burden for the respondents.

Abstract # 79

AREA: Acute hospital care

Prevention and management of refeeding syndrome by using rule of thumb “start low and go slow” in acute geriatric at RH

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¹HMC

Introduction: Acute geriatric units in Rumailha hospital is a 30 bedded provide care 24 h to patients who have multiple comorbidities and acute illnesses, refeeding syndrome is widely considered to be a common problem among the elderly, it is not well recognized due to lack of a screening tool to identify risk of the refeeding syndrome. Refeeding syndrome a life-threatening medical condition is commonly associated with acute or chronic starvation.

Methods: A multidisciplinary team was formed in Jan 2020 to conduct a quality improvement project to prevent Refeeding syndrome using “Plan-Do-Study-Act (PDSA) methodology”. All stakeholders were involved, and interventions were carried out in three steps. First step was to create Assessment screening tool which would help identify the high-risk category (1st PDSA). Second step was to develop Multidisciplinary Team interventions to prevent Refeeding syndrome (2nd PDSA) and standardizing the approach by establishing an intervention guideline. Third step was to pilot in two units of the acute care units to analyze the effectiveness of this initiative (3rd PDSA).

Results: Following multimodal multifaceted intervention by the interdisciplinary team members (Physicians, Nursing and Dieticians) showed refeeding syndrome manage probably in the pilot units.

Conclusion: Prevention and management of refeeding syndrome in the acute care units is really challenging due to the complexity of the medical conditions. However, this project has shown refeeding syndrome treatment and prevention is possible if early screening and interventions are implemented by multidisciplinary team members. Next steps would be to roll out this project into all the acute care units.

Abstract # 80

AREA: Acute hospital care

Multidrug-Resistant bacterium infections in an acute geriatric unit during the years 2019 and 2020

Saleta Maria Goñi¹, Gemma Cuesta², Lucía Gómez¹, Alicia Muñoz², Marcelle Canto³, Cristina Caverio³, Aris Somoano², Claudia Ruiz-Huerta³, Javier Gómez-Pavón⁴

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Introduction: Antimicrobial resistance among bacteria is a serious increasing threat to public health. There is few evidence about the characteristics of patients admitted in the acute geriatric unit care with multi-resistant infections. The aim of this study is to describe the characteristics of the patients with multi-drug resistant bacteria.

Methods: Observational, retrospective descriptive study. We included all patients consecutively admitted to the acute geriatric unit (AGU) between Jan 2019-Dec 2020 suffering from an infection caused by a multi-drug resistant bacterium. We analyzed frequency of demographic variables, frequency of the most prevalent microorganisms and variables referred to the integral geriatric assessment (Barthel index, dementia, origin, comorbidity measured by Charlson Index and polypharmacy). Level of significance and confidence intervals of 95%.

Results: N: 183 patients (54.6% women, mean age of 89.33 ± 7.58 years old). The infections were caused by MRSA (27.3%), Klebsiella CPE (24.6%), Klebsiella BLEE (16.4%) Clostridium (11.5%), and other (20.2%). Sample origin were urinary (31.1%), stool (29.5%) and ulcer samples (19.5%). Community acquired (87.4%), and nosocomial origin (15.1%). Regarding the integral geriatric assessment, functional level BI a mean of 34.7 ± 33.83 , and most of the patients had slight dependence (IB 40–60: 41.1%), dementia 62.3%. Polypharmacy 85.2% (mean number of drugs 8.92 ± 3.7). Mean Charlson Index 3.23 ± 1.59 (most frequent comorbidity heart failure 48.1%, Stroke 30.1%, diabetes 29%, pulmonary disease 21.9%, ischemic heart disease 18.6%). Non-statistical significance was found comparing both years.

Conclusion: The most frequent infections in a AGU are MRSA followed by Klebsiella EPC and clostridium, maintaining stable prevalence over time.

Abstract # 81

AREA: Acute hospital care

Is the profile of patients who got infected by multi-resistant microorganisms any similar to the one of those who got infected by *Clostridium difficile*?

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Objectives: Evaluation of common aspects as well as differentiators from geriatric patients who entered a hospital geriatric service infected by multi-resistant microorganisms and *Clostridium difficile*.

Methods: Observational, retrospective study (review from medical records). Patients admitted to our secondary teaching hospital's Geriatric unit, with 51 beds on the acute unit care and 24 on the non-acute rehabilitation unit, on the period between Jan-2019 and Dec-2020, suffering from infection by carbapenemase-producing enterobacteria, ESBL, and MRSA or *Clostridium difficile* collected by the preventive medicine service, are also cases included as multi-resistant microorganisms. Two groups were compared: Group A: Clostridium

diffuse and group B (other multi-resistant infections). Frailty association, measured by the Frágil-VIG index and other comorbidities compared to the type of infection was analyzed. Level of significance and confidence intervals of 95%.

Results: Group A: N: 30 patients, 54.5% women, 45.5% men, mean age (87 ± 8.12 years old). The 46.7% had dementia according to the GDS scale, 72.4% moderate frailty or severe according to the VIG index, 23.3% diabetes mellitus, and 6.7% chronic kidney disease. Group B: N: 182 patients. 47.8% men and 52.2% women with an average age (88.22 ± 8.3 years old). 45% had dementia, 83.14% moderate-severe frailty, 31.3% diabetes mellitus, and 19.23% chronic kidney disease. There were no significant differences between both groups ($p > 0.05$). **Conclusions:** The profile of the patients who are affected by these microorganisms is similar, being most of them moderately severe frail patients with multiple comorbidities.

Abstract # 82

AREA: Acute hospital care

A model of patient-centered care for people with dementia in a geriatric ward

Tania Zieschang¹, Jantje Becker², Jessica Koschate¹

¹Carl von Ossietzky University, Geriatric Medicine, ²Klinikum Oldenburg

Introduction: Cognitive impairment is highly prevalent on geriatric acute care wards. Missing structures for the care of these patients, impact patients' well-being and outcomes, as well as the workflow of the staff negatively. In his study, we implemented additional specialized care by registered nurses with the goal of (1) providing better care and (2) encouraging nurses who are not able/willing to work in the usual nursing shifts to search work in the hospital.

Methods: Specially trained registered nurses created a personal environment for the patients ($N = 18$, 85 ± 5 years, 8 female) providing very individualized care. The effects on the physical and psychological development of the patients were evaluated. During and after the project, the regular staff was asked to evaluate the project.

Results: We were able to recruit nurses into the project who otherwise would have left the hospital or not considered the hospital as working place. Twelve of 17 members of the care team agreed completely with the patient-centered care as a relief for the workload of the regular nursing staff and 13 agreed completely, that the project was valuable to improve patient care. Physical performance of the patients increased in a pre-post analysis.

Key conclusions: A challenging but meaningful occupation aside from regular nursing routine is attractive for individual nurses and can diversify job description for hospitals. A good acceptance by the regular staff and well-coordinated work can be achieved. Patients suffering from dementia and/or delirium benefit from this specialized care although not covering all shifts.

Abstract # 83

AREA: Acute hospital care

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Abstract # 84

AREA: Acute hospital care

Unusual deep vein thrombosis among elderly patients

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Introduction: Deep vein thrombosis is frequent among elderly patients and classically localized to the lower limbs. Other sites of thrombosis can occur and are classically referred to as unusual deep vein thrombosis. Our work aims to describe the clinical aspects of unusual venous thrombosis in elderly patients as well as their etiological profile.

Materials and methods: Retrospective and descriptive study of the files of patients hospitalized in our internal medicine department between January 2009 and January 2021 in whom the diagnosis of unusual deep vein thrombosis was confirmed by imaging.

Results: Seven patients in a total of sixty-seven were diagnosed with unusual vein thrombosis (10.44 percent). The sites were varied with two thromboses of the upper limb, two mesenteric thromboses, two portal thromboses, one of the renal vein and the inferior vena cava and one cerebral thrombophlebitis. The association of two thromboses was observed in three patients. One patient gave the history of a deep vein thrombosis in postpartum (40 years prior to this episode). Thrombosis occurred post-surgery in one patient. The rest had no context of thromboembolic disease. The etiological investigation revealed a cancer in three cases (prostate, kidney, adrenal). A portal cavernoma and polycythemia vera and hyperhomocysteinemia secondary to Biermer's disease in other patients.

Conclusion: Deep vein thrombosis with an unusual location represent a serious condition in the elderly patients which requires rigorous exploration, adequate symptomatic management and exhaustive etiological investigation because it can reveal a serious pathology, in particular neoplastic.

Abstract # 85**AREA: Acute hospital care****At the stroke of midnight – a case report of parasomnia and stroke**

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Sleep occupies over 30% of our lives yet, the effects of sleep on cerebrovascular haemodynamics is not well studied [1]. The regulation of wakefulness, rapid eye movement (REM) sleep, and non-REM sleep depends on dynamic and complex interactions of neurons in different parts of the brain, including the brainstem, hypothalamus, preoptic area, and thalamus, and alterations in sympathetic tone [2]. Lesions caused by a stroke may change sleep architecture [3]. Up to 63% of stroke patients experience sleep disorders [3]. Parasomnias are a group of sleep disorders characterised by complex movements and behaviours that occur during sleep which include nightmares, dream enactment behaviours, sleep paralysis and sleepwalking [4]. They present a risk for self-injury or harm to others. Parasomnias are believed to be due to an increased noradrenergic state and occur in up to 16% of individuals post-stroke [4]. We present a case of an 84-year-old woman who reported a 2-month history of sleep-walking and night terrors associated with multiple injuries. She had been diagnosed with a right frontoparietal ischaemic stroke, which just preceded the onset of her sleep disturbance. A diagnosis of post-stroke sleep parasomnia was made. Due to the severity of her symptoms, a trial of prazosin 1 mg was given, a lipid-soluble alpha1-adrenergic receptor antagonist. This led to complete resolution of her symptoms. Parasomnias are distressing for patients and have a negative impact on sleep, mental and physical health, and quality of life. As physicians, it is essential to understand sleep disturbances which may occur following stroke and address them timely with appropriate interventions.

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Abstract # 86**AREA: Acute hospital care****Assessment of falls presentations to a tertiary hospital Emergency Department In Ireland**

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Introduction: In Ireland, there is a high incidence of falls in the community, with almost 40% of adults > 50 years of age reporting at least 1 fall in 4 years [1]. Falls represent a high proportion of

attendances to Emergency Department and the estimated cost of falls and fractures is €402 million per annum [2].

Methods: We conducted a retrospective audit of the > 65 years population who presented to ED over a 2-week period in 2021. We reviewed the charts of patients who presented with a fall/faint/collapse/blackout/syncope. This yielded 80 patients and then compared these results to a previous audit in 2019 with 55 patients.

Results: Of the 80 attendees, 31% (n = 25) were admitted compared to 42% (n =) in 2019. 51% (n = 41) reported possible altered consciousness, 28% (n = 22) reported syncope, and 40% (32) sustained a head injury. In regards to investigations, 14% (n = 11) of patients had lying and standing blood pressure measured and 27% (n = 22) had blood sugar levels checked compared to 15% and 29% respectively in 2019. 44% (n = 35) of patients underwent a CT brain, representing a 42% increase since 2019. The most common indication (71%) was altered consciousness. 88% (n = 47) had an ECG done in ED but only 24% (n = 6) had telemetry and/or Holter Monitoring, and only 20% (n = 5) had an echocardiogram.

Key conclusions: Intervention and education has helped reduce rates of admission in falls presentations. However, more comprehensive initial investigations in ED should be performed for better patient care, to determine appropriate imaging, and guide further inpatient investigations.

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Abstract # 87**AREA: Acute hospital care****Diagnostic yield of investigations for iron deficiency anaemia in a frail older inpatient population**

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Background: The diagnostic yield of iron deficiency anaemia (IDA) in a frail older population is unknown. The aim of this study was to assess the diagnostic yield of investigation of IDA in a frail older inpatient population.

Methods: A retrospective cohort study of frail older inpatients over a 14 month period was conducted. Age, gender, clinical frailty score (CFS), haemoglobin, ferritin, transferrin saturation, coeliac serology, OGD and/or colonoscopy and CT Thorax Abdomen Pelvis were documented. Positive tissue Transglutaminase antibody, peptic ulcer disease, gastrointestinal malignancy/polyp, diverticular disease, non-GI malignancy or vascular abnormality were considered diagnostic. Data was analysed using descriptive statistics.

Results: The mean age was 83 years. The male:female ratio was 1:1.5. 508 patients (96.6%) had a CFS of 4 or more. 526 of 598 patients had blood tests. 141 (28%) patients had IDA. 30% had coeliac serology, 18% OGD, 20% colonoscopy, 28% CT TAP and 11% dual endoscopy. 3.5% (n = 5) had upper GI pathology, 4.9% (n = 7) had lower GI pathology, 8% (n = 11) had a malignancy. A diagnosis was found in 5% screened for coeliac, 12% of OGDs, 29% of colonoscopies and 18% of CT TAP.

Conclusion: The diagnostic yield in this frail older cohort was inaccurate as the use of diagnostics for IDA was so low. No

guidelines exist for the investigation of IDA in the frail, older population. Research is needed to guide clinicians in the investigation of anaemia in this frail older population.

Abstract # 88

AREA: Acute hospital care

Back to basics and baselines; a review of documentation of pre-admission functional status of older inpatients in an Irish hospital

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Background: The Specialist Geriatric Service Model of Care recommends prioritising rehabilitation for older inpatients from the time of admission [1]. Rehabilitation improves functional outcome and increases likelihood of discharge directly home. Knowledge of pre-admission functional status is key in identifying rehabilitation needs.

Objectives: (1) Assess documentation of baseline function among older inpatients. (2) Compare in-hospital function with pre-admission function.

Methods: This point prevalence study was conducted in one day. Charts of inpatients > 65 were reviewed, checking documentation of pre-admission functional ability. Senior nurse managers advised on current dependency levels. Pre-admission dependency was compared with current functional status.

Results: Of 197 inpatients > 65 years, 157 were admitted medically, 40 surgically. 53.8% were male. The mean age was 79. Baseline function was documented in 71% of medical inpatients and 41% of surgical inpatients. In 71.7%, doctors documented the baseline function; average documentation time was 1 day. In 27.3%, the MDT documented the baseline function; average documentation time was 5.3 days. Where baseline was known; 70.7% required new mobility assistance, 56.6% required new Personal Activities of Daily Living (PADL) assistance. Where baseline was unknown; 56.5% required mobility assistance, 62.3% required PADL assistance.

Conclusion: Documentation of baseline function was poor, particularly for surgical inpatients. Of patients with a known baseline functional status, 70.7% experienced functional decline. This highlights the vulnerability of older people when hospitalised, and underpins the need for well-established rehabilitation services for older inpatients. Baseline function should be routinely identified in the initial assessment, as deferring identification may delay rehabilitation. Prompt identification of baseline function facilitates early rehabilitation, preventing functional decline.

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Abstract # 89

AREA: Acute hospital care

Is functional status associated with investigation rate of iron deficiency anaemia in a frail older population?

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Introduction: We observed a low rate of any investigation of IDA in a frail older inpatient population.

Aim: To explore whether functional status was associated with investigation of IDA in frail older populations.

Methods: This was a retrospective cohort study of frail (Clinical Frailty Score > 4) older patients with IDA, assessed between June 2019 and August 2020. Pre admission and inpatient functional status was measured using the modified Barthel Index (mBI). The mBI of those who did and did not have investigations was compared.

Results: 242 frail patients with an age range of 66–99 years of age were included. The male:female ratio was 1:1.2. 75% (n = 183) had complete blood results. 58% (n = 107) had iron deficiency. Of those, 36% (n = 39) had investigations. 64% (n = 68) had none. Mean mBI for investigated patients was 15.6 and 14.6 for those who had none. Of those investigated, n = 39, 66% had a pre admission mBI > 15 and 9% had an mBI < 10. 22% had a high BI (> 15) and 28% had low mBI (< 10) during their inpatient stay. Of those not investigated, 46% had pre admission mBI > 15 and 10% had mBI < 10. 14% had high mBI (> 15) and 37.5% had low mBI (< 10) during their inpatient stay.

Conclusion: Higher pre admission mBI is associated with increased IDA investigation. Lower inpatient mBI is associated with reduced IDA investigation. There is a need to further explore the relationship between functional dependency and the investigation of IDA.

Abstract # 90

AREA: Acute hospital care

Discharge letters in elderly care, are they appropriately done?

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Background: Discharge letters are considered very important documents outlining the details of patient's hospital admission. They are particularly valuable for elderly patients suffering from dementia, frailty and other significant co-morbidities. Consequently, major decisions including DNACPR, Escalation, GSF status and initiation of advance care planning needs to be stated clearly on the letter, including the relevant discussion with patient or relatives.

Methodology: Retrospective review of discharge summaries for 127 patients discharged from elderly care ward in Russells Hall hospital has been performed over a month period from 1/5/2021 till 31/5/2021. Copies of the discharge letters were acquired through the hospital system, Sunrise.

Results: 29% of the discharge letters did not have a written diagnosis. 33% of the letters did not have the appropriate GSF status documented although the patients had one during admission. DNACPR decisions made during the admission were not documented in 27.4% of the patients including any relevant discussions made. For any inpatient medication amendments, 13.8% of the discharge letters did not have those changes clearly mentioned and 34.6% did not have the reason/rationale behind this change included into the discharge summary. When outpatient appointments were required, 16.9% of the discharge letters did not have the appropriate referrals/appointment mentioned.

Conclusion: Inadequate performance of discharge summaries along with inappropriate documentation can result in serious repercussions. As patients and relatives acquire copies of these letters, caution needs to be exercised not to result in any confusion or miscommunication that might eventually compromise the patient's care.

Abstract # 91**AREA: Ageing biology****AED peptide activates synthesis of sirtuins in human skin fibroblasts during replicative aging**

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Introduction: The AED peptide, isolated from the cartilage polypeptide complex, regulates fibroblasts metabolism. The aim of work is to study the effect of the AED peptide on the synthesis of sirtuins-1, -6 in human skin fibroblasts during aging. Sirtuins regulate cell cycle, apoptosis, inhibits cell ageing.

Methods: Skin fibroblasts of a woman were cultured up to 3rd passages (“young” cultures) and 14th passages (“old” cultures). An immunocytochemical staining with antibodies to sirtuin-1 and -6 was carried out. Micrographs of cells were obtained using a confocal microscope. The cells were divided into 2 groups: control and cultures with AED peptide (20 ng/ml). The area of expression of sirtuins was determined as the ratio of the area occupied by immunopositive cells to the total area of cells in the field of view, and was estimated in %.

Results: The expression of sirtuin-1 and -6 in “old” fibroblasts was 1.8 and 3.6 times lower, respectively, compared to “young” cells. The synthesis of sirtuins-1 and -6 in skin fibroblasts decreases during replicative ageing. The AED peptide increases the expression of sirtuin-1 and -6 in “old” cultures by 2.0 and 11.5 times, respectively, compared to the control. With the addition of the AED peptide, the expression of sirtuins-1 and -6 in “young” fibroblasts increased by 2.4 and 2.3 times, respectively, compared to the control.

Key conclusions: AED peptide inhibits the development of age-related skin changes by activating the synthesis of sirtuins-1 and -6, thus contributing to the normalization of the fibroblast function.

Abstract # 92**AREA: Ageing biology****Prevalence stages of CKD in people over 90 years by different formulas CKD-EPI-Creat, CKD-EPI-Creat-Cys, CKD-EPI-Cys**

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Actualy: ERA-EDTA and EUGMS recommend to use the formula of CKD-EPI Creatinine—CystatinC (2012) as the most appropriate for the evaluation of renal function in people aged 65+. However, the most common way to assess glomerular filtration rate (GFR) in clinical practice is a formula of CKD-EPI Creatinine (2009). The aim: to identify differences in the eGFR in patients over 90 years old using calculated methods.

Materials and methods: We investigated 1215 centenarians. Patients with critical and terminal conditions were not included in this study. Formulas CKD-EPICreat, CKD-EPICreat-Cys, CKD-EPICys were used.

Results: The median age of participants was 92 years (IQR 91–94; range 89–104 years), 74% were women. Different methods for calculating GFR give inconsistent results. The maximum value of eGFR was obtained with formula CKD-EPI-Creat—54.8 [43; 65] ml/min/1.73 m², minimum- with CKD-EPI-Cys—31.2 [24; 37] ml/min/1.73 m², CKD-EPI-Creat-Cys showed medium value—40.7 [24; 0] ml/min/1.73 m². The mean differences of the obtained values differ significantly from zero for all pairs of comparisons ($p < 0.01$ in the one-sample Student's test), and also the 95% confidence interval for the level of agreement doesn't include zero, that is, the methods have a systematic error (bias) relative to each other. The Bland–Altman plots show discrepancy between the formulas positively correlates with eGFR, but the error remains systematic even at the minimum recorded values.

Conclusions: Patients over 90 years of age have a decreased GFR. Diagnostics of the stage of CKD depend on the method for calculating GFR and the difference can be twofold. We need additional studies for unified method for calculating GFR into routine clinical practice in centenarians.

Abstract # 93**AREA: Ageing biology****Features of melatonin receptor expression in cardiomyocytes during aging**

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To understand the pathogenesis of dilated cardiomyopathy (DCM), it is necessary to establish the molecular and cellular mechanisms of myocardial aging, including those associated with melatonin, which affects vascular tone. The aim of the study was to study melatonin type 2 receptors in cardiomyocytes of patients with dilated cardiomyopathy in vitro. The method of primary dissociated cell cultures and the method of immunofluorescence confocal laser microscopy were used. Cells of the 3rd and 10th passages corresponding to “young” and “old” cultures were used to model cellular aging. At the molecular level, the aging of cardiomyocytes was accompanied by a threefold decrease in the expression of the melatonin type 1 receptor compared to the “old cultures” in both the control group and the group with DCMP (by 1.8 times). The expression of MR1A in cell cultures taken from patients with DCMP was reduced by 2 times than in the culture of normal cardiomyocytes. MR1B expression was significantly lower in the group with DCMP compared to the control at passage 3, with the aging of cultures. Similar trends in the studied markers may indicate that both melatonin receptors are involved in the pathogenesis of DCMP and may be involved in the mechanisms of aging. The acquired knowledge will allow us to expand the concept and form a diagnostic panel of DCMP in people of different ages.

Abstract # 94

AREA: Ageing biology

Exercise training ameliorates cardiac aging of mice through activating Apelin/APJ system

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Apelin/APJ system is known to improve cardiovascular disease. Exercise training has been associated with benefits against cardiac diseases and aging associated disorders. Our previous research showed that the serum Apelin levels decreased with age and exogenous Apelin intervention or overexpression of its receptor APJ could reverse the aging phenotype in D-galactose-induced aging cardiomyocytes. Herein we investigated the role Apelin/APJ system played in exercise training ameliorates cardiac aging. The aging heart was simulated in 24 weeks-old senescence-accelerated mice. Mice were subjected to 6 weeks treadmill training, and treated with or without intraperitoneal injection of the apelin receptor antagonist—F13A 75 µg/kg per day during training. The effects of treadmill training on circulating Apelin, myocardial Apelin/APJ, cardiac aging phenotype and mitochondrial autophagy were evaluated. Exercise training reduced weight loss, myocardial fibrosis and cardiac expression of aging biomarkers (p16, p53 and p21) in aged mice. In addition, exercise training increased the expression of Apelin and APJ in cardiomyocytes and maintained mitochondrial homeostasis, as evidenced by expression of mitochondrial related proteins (PGC-1α, CPT1A, PINK1, Parkin, Drp-1 and fis-1). The cardioprotective effects of exercise training were weakened by inhibition of the Apelin/APJ system. Taken together, our research showed that exercise training ameliorated phenotype of cardiac aging and disruption of mitochondrial homeostasis through activating the Apelin/APJ system. Hence, pharmacological activation of the Apelin/APJ system may prove to be a promising prevention against aging related heart disease especially in subjects with intolerance of exercise.

Abstract # 95

AREA: Ageing biology

The impact of the gut microbiome on the ageing process

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Introduction: The gut microbiome has recently been proposed as an essential element in the aging process. Previous studies performed in animals have shown its implication in multiples pathologies,

including diabetes mellitus, obesity, and cognitive impairment, as well as the possible benefits that targeted therapies can have in this regard. Our study aimed to evaluate the effect of the modulation of the gut microbiome on some of the most prevalent disorders in older people.

Methods: An electronic search of randomized controlled trials was performed in MEDLINE and CENTRAL. The search was narrowed to RCT performed in humans, aged 65 or older, and published between 2009 and 2019. Interventions with prebiotics, probiotics and/or synbiotics were included.

Results: Out of the 550 results, a total of 10 articles were included in the qualitative synthesis (7 with probiotics and 3 with prebiotics). The reported benefits of the evaluated interventions included: beneficial changes of the gut microbiota composition, improvement of insulin levels and insulin resistance (HOMA-IR), immunomodulatory effects, improvements on physical frailty, and enhancement of cognition state.

Key conclusions: Results of the present study suggest that interventions aimed to modulate the gut microbiota may improve health and attenuate some physiological deterioration that occurs during the ageing process.

Abstract # 96

AREA: Ageing biology

Hip fracture leads to transitory immune imprint in older patients

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Background: Hip fracture (HF) is common in the geriatric population and is associated with a poor vital and functional prognosis which could be impacted by immunological changes. The objective here is to decipher immune changes occurring in the 1st days following HF and determine how phenotype, function, and regulation of innate and adaptive compartments adapt during acute stress event.

Methods: We included HF patients, aged over 75 years. For each patient, blood samples were taken at five different timepoints: four in the perioperative period (day 0 to hospital discharge) and one at long term (6–12 months). Phenotypical and functional analysis were performed longitudinally on fresh blood or cryopreserved PBMCs. Clinical data were prospectively collected.

Results: One-hundred HF patients and 60 age-matched controls were included. Innate compartment exhibits pro-inflammatory phenotypes (hyperleukocytosis, increase of CD14+ CD16+ proportion and CCR2 expression), maintaining its ability to produce pro-inflammatory cytokines. Adaptive compartment extends toward a transitory immunosuppressive profile (leucopenia) associated with an active T-cell proliferation. Furthermore, increases of LAG-3 and PD-1 and a decrease of 2-B4 expression are observed on T-cells, reinforcing their

transitory suppressive status. Of note, these immune changes are transitory and sequential but may participate to a regulation loop necessary for homeostatic immune control at long term.

Conclusion: HF is associated with several transitory immunological changes including pro-inflammatory phenotype in innate compartment and immunosuppressive profile in adaptive compartment. A comprehensive assessment of immune mechanisms implicated in the patient's prognosis after HF could pave the way to develop new immune therapeutics strategies.

Abstract # 97

AREA: Ageing biology

Quantification of cerebral calcification in primary familial brain calcification

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Background: Primary familial brain calcification is a rare cause of basal ganglia calcifications. Too little is known about the quantitative differences between physiological calcification common in older adults and primary familial brain calcification patients (PFBC).

Aim: To objectively compare the amount and location of cerebral calcifications measured with CT in patients with PFBC and a control group.

Methods: This case-control study was conducted at a geriatric outpatient clinic. All patients with PFBC were included provided that a cerebral computed tomography scan was available. Controls from a large trauma cohort were included if they showed calcifications on cerebral computed tomography scans. The Nicolas score and semi-automatic measuring software were used to quantify cerebral calcifications. The Wilcoxon Rank Sum Test was used to determine differences between patients and controls and between symptomatic and asymptomatic patients.

Results: Twenty-six primary familial brain calcification patients and ninety controls were analysed for cerebral calcifications. Both the Nicolas score and the calcification volume in cubic centimetres were significantly higher for the PFBC patients with median Nicolas scores of 30.0 (4.0–65.0) for the patients and 2.0 (1.0–16.0) for the controls. Calcifications were mainly situated in the lenticular nuclei for the controls and more diffusely spread for the patients. Seventeen (81%) patients were symptomatic. No significant differences between the symptomatic and asymptomatic patients were found.

Conclusions: PFBC patients have higher calcification volumes and Nicolas scores than controls and have more diffusely spread calcifications in areas of the brain that are unaffected in healthy patients. Both the volume score and Nicolas score can be used to make a PFBC diagnosis more likely, though they cannot be used without other diagnostic measurements yet. No significant differences in calcifications between symptomatic and asymptomatic patients were objectified in this study.

Abstract # 98

AREA: Ageing biology

Mitochondrial dysfunction as a potential biomarker of frailty

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Introduction: Medical advances have led to an increase in life expectancy, but quality of life commonly worsens in the last years of life and the elderly develop dependency. There is an intermediate and reversible state that often precedes dependency, which is known as frailty. Its identification is fundamental to prevent dependency. However, frailty is a heterogeneous process, and even if many biomarkers have been proposed, they do not identify all frail individuals. Thus, in the search for biomarkers of frailty, we focused on the age-associated mitochondrial dysfunction, and investigated whether it could be more pronounced in frail, when compared to robust individuals.

Methods: This potential relationship was studied through the followings assays. Mitochondrial DNA copy number was assessed by quantitative PCR, and the study of key parameters of the mitochondrial function was performed with the Mitochondrial Stress Test by SeaHorse. DNA samples from whole blood of 22 frail and 22 robust individuals (70–90 years old) were used in the first assay, and PBMCs from 4 frail and 19 robust individuals (70–90 years old) were used to study mitochondrial function.

Results: Mitochondrial DNA copy number is significantly lower in frail individuals. Besides, mitochondrial parameters (maximum achievable respiration, proton leak, ATP production and coupling efficiency) show significant differences between frail and robust donors, which suggest a poorer mitochondrial function with frailty.

Key conclusions: Our results indicate that age-associated mitochondrial deterioration could be more significant in frailty. Therefore, our results point to mitochondrial dysfunction as a potential biomarker of frailty, which needs to be further investigated.

Abstract # 99

AREA: Ageing biology

Assessing the role of gut-derived pathogenic components in the development of peripheral inflammation in older adults living with HIV

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Background: A state of accelerated aging, defined as “inflammaging” marked by an increase in systemic inflammatory cytokines has been described in people living with HIV (PLWH). Persistently higher levels of circulating inflammatory cytokines e.g. IL-6, IL-1 β are observed in PLWH receiving HAART. However, pathogenic aspects contributing to age-associated inflammaging are not clearly understood. Hence, the present work analyzes the relationship between aging and markers of gut barrier dysfunction (intestinal fatty acid-binding protein (I-FABP)) and microbial translocation (sCD14) on proinflammatory cytokines IL-6, IL-1 β in older adults living with HIV (OALWH).

Methods: Subjects 50 + OALWH (n = 40, median age = 56) were enrolled from the UofL Medical Center in a pilot cross-sectional study. Plasma biomarkers of inflammation and gut-barrier dysfunction were assessed using Meso Scale Discovery platform (Rockville, MD) and commercially available ELISA (R&D Systems, Inc. Minneapolis, MN). Multivariable linear regression was performed (R version 3.4.2). Age was dichotomized as 50–59 and 60–70 with the first group as the reference. Age, sCD14 and IFABP were the independent predictors.

Results: The data showed that age was significantly correlated with IL-6 (beta = 0.508, p = 0.034) and was trending with IL-1 β (beta = 0.481, p = 0.078) when controlled for IFABP and sCD14 in

combination. Additionally, a strong positive correlation between gut barrier marker IFABP with IL-6 ($\beta = 1035.1$ $p = 0.049$) was observed in the 60–70 age group.

Conclusions: These data implicate that gut barrier dysfunction and increased intestinal permeability potentially drives systemic immune activation and peripheral inflammation and is a significant pathogenic component of inflammaging in OALWH.

Abstract # 100

AREA: Ageing biology

Endogenous DNA damage and oxidative stress in blood mononuclear cells may predict anti-SARS-CoV-2 antibody response after vaccination in older adults

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Introduction: Age-associated immunosenescence due to chronic oxidative stress and DNA damage may reduce vaccination efficacy, in addition to increasing susceptibility to infection. Since there is a paucity of robust biomarkers predictive of post-vaccination antibody formation, we tested the hypothesis that increased endogenous DNA damage and oxidative stress in peripheral blood mononuclear cells (PBMCs) of older adults may associate with diminished humoral immune response to SARS-CoV-2 vaccination.

Methods: Endogenous oxidative stress and DNA double-strand breaks (DSBs) were measured before and on days 1 and 14 after the first dose, and on day 14 after the second dose of the BNT162-b2-mRNA vaccine in 9 non-immunocompromised individuals aged 80–96 years; 9 adults aged 27–44 years were studied in parallel. Individual titers of anti-s-RBD-IgG antibodies, as well as the neutralizing capacity of circulating anti-SARS-CoV-2 antibodies were measured on day 14 after the 2nd dose in all participants.

Results: Endogenous oxidative stress and DSB levels were increased in older vs. younger individuals before vaccination and at all subsequent time-points. DSB repair efficiency was unaffected by vaccination irrespective of age, confirming vaccination safety. Both anti-s-RBD-IgG antibody titers and circulating anti-SARS-CoV-2 antibody neutralizing capacity correlated inversely with the corresponding baseline endogenous oxidative stress and DSB levels ($p < 0.005$ for all correlations).

Conclusion: These novel results suggest that humoral response after SARS-CoV-2 vaccination may be weaker when immune cells are in a state of increased oxidative stress and/or accumulate DNA DSBs. Whether such measurements may serve as biomarkers of vaccine efficacy in older adults warrants further studies.

Abstract # 101

AREA: Ageing biology

Comparative analysis of age-related metagenomic changes in human gut microbiota

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Introduction: Healthy life is closely related with the homeostatic relationship established between gut microbiota (GM) and the human body. In this study, our aim is to investigate the age-related changes in human GM in Istanbul City of Turkey, using next-generation sequencing based on 16S ribosomal RNA amplicon sequencing strategy.

Methods: 163 individuals were enrolled into the study (male/female: 69/94, 48 nursing home residents [NH] and 115 community dwelling individuals [CD]). The V3–V4 16S rRNA hypervariable regions of human GM samples were sequenced using the Illumina MiSeq system by the paired-end sequencing method. Bioinformatics analysis was performed by the QIIME 2 software. Sub-programs of QIIME 2 was used for statistical analysis.

Results: Firmicutes ratio were decreased, while Proteobacteria and Verrucomicrobiota were increased with ageing in CD elderly. Actinobacteria were more abundant in NH group. Firmicutes/Bacteroidota ratio was 32.8–45.0 in NH group, 18.2–35.1 in CD group (65–94 years of age) and 9.6 in CD (centenarians). Akkermansia showed strong correlation with ageing. Centenarians had decreased Firmicutes and increased Proteobacteria and Verrucomicrobiota. The predominant Bifidobacterium species of our centenarians was a previously unidentified species (median 1.0%, mean 2.96%). Christensenellaceae R-7 group relative abundance was highest in centenarian (median: 3.20%).

Key conclusions: As well as we know, this is the first study in Turkey that investigated possible relationship of human gut microbiota and longevity using next-generation sequencing. Although it has some limitations, our study presents the first findings in defining native to our country-specific gut microbiota compositions for various age groups.

Abstract # 102

AREA: Ageing biology

Visfatin in patients with Alzheimer's disease

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Introduction: There is growing evidence of relationship among metabolic syndrome, obesity and hippocampal neuroplasticity impairment. Still, many questions remain to be unanswered. Visfatin

is one of adipokines, expressed by adipose tissue and other tissues. It is also known as PBEF (pre-Bcell colony EnhancingFactor) or NAMPT (nicotinamide phosphoribosyltransferase). While intracellular iNAMPT is considered to be protective to ischemic injury of brain, extracellular eNAMPT is described as a proinflammatory cytokine increasing the risk of damage caused by inflammation and oxidative stress [1, 2, 3].

Methods: Our study examined plasma levels of visfatin in patients with Alzheimer's disease (AD). Patients with AD are defined on the basis of international NINCDS-ADRA criteria. Peripheral levels of adipokines, including visfatin, are measured using Bio-Plex ProHuman Diabetes 10-Plex Assay. The results are compared in patients with Alzheimer's disease and in controls of the same age, using Kruskal–Wallis one way Anova analysis.

Results: According to preliminary results, significant differences between the group of Alzheimer's disease patients and healthy controls of the same age in peripheral levels of visfatin have been found.

Conclusion: Alzheimer's disease was associated with increased levels of plasma visfatin. Clarification of the role of visfatin and other adipokines in pathogenesis of AD may contribute to finding new targets for AD treatment. Supported by the grant NV18-01-00399 of the Ministry of Health of the Czech Republic.

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Abstract # 103

AREA: Ageing biology

Relation between telomere dynamics and metabolic disorders in early age

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Introduction: In adults, short leukocyte telomere length (LTL) is associated with metabolic disorders such as diabetes and obesity. The causality remains unclear since longitudinal studies do not show influence of metabolic disorders on LTL attrition. These associations could stem from early life interactions between telomere dynamics and metabolic disorders. To test this hypothesis, we measured, in obese children and their controls, LTL and its evolution over time.

Methods: 74 children aged 2–10 years (mean 7.5 ± 2.0) at inclusion were followed for 4 years (one visit/year). A complete biology and LTL measurement (Southern blot) were performed annually. BMI score was calculated based on the mean BMI category during follow-up (normal, overweight, obesity, severe obesity according to criteria for age and sex). 3 BMI profiles were created according to the BMI category evolution throughout the study (profile 1 = low; profile 2 = decreasing; and profile 3 = high).

Results: Mean LTL attrition was 67 ± 8 bp/year. LTL was progressively shorter from profile 1 to profile 3 ($p = 0.04$). Baseline LTL correlated negatively with BMI score ($R = -0.32$; $p = 0.009$) and glycemia ($R = -0.37$; $p = 0.04$). The multivariate model analysis showed that both glycemia and BMI score were independently associated with baseline LTL ($p = 0.02$ and $p = 0.04$) in a model also including age and sex. No association was found with LTL attrition.

Conclusions: In young children, BMI and glycemia are negatively associated with LTL but not with LTL attrition. These results indicate that either short TL is the cause of metabolic disorders or that these metabolic disorders increased LTL attrition very early in life probably before the age of 5 years.

Abstract # 104

AREA: Ageing biology

Endogenous DNA damage in blood mononuclear cells of older adults is associated with frailty status, rather than chronological age or the burden of comorbidities

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Introduction: DNA damage accumulation has been proposed as a central mechanism for biological aging, but it is unclear whether it precedes or follows chronic non-communicable diseases, and its relationship with geriatric frailty has not been adequately investigated. We aimed to determine whether DNA damage accumulation is associated with geriatric frailty beyond the effect of comorbidities and chronological age.

Methods: From a cohort of 53 older adult outpatients in their usual state of health (12 aged 65–74, 20 aged 75–85, and 21 aged > 85 years), blood was drawn and peripheral blood mononuclear cells (PBMCs) were isolated for measurement of the DNA Damage Response (DDR) using the Olive Tail Moment (OTM) method, and a comprehensive geriatric assessment was performed in order to accurately classify patients on the Rockwood Clinical Frailty Scale (CFS) and obtain data on chronic kidney disease (CKD) stage, and comorbidities, summarized in the Charlson Comorbidity Index (CCM).

Results: Frailty (CFS ≥ 4) was detected in 36 participants (68%). In the multivariable analysis including frailty, the age group, CCM, and CKD stage, the logOTM was positively correlated with frailty status ($p = 0.034$), but not the age group ($p = 0.465$), CKD stage ($p = 0.274$), or CCM score ($p = 0.239$).

Conclusion: An elevated DNA damage response is associated with frailty status, rather than chronological age or burden of comorbidities, in a typical cohort of stable geriatric outpatients.

Abstract # 105

AREA: Cardiovascular medicine

Cardiovascular risk assessment and senescence

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Aging is strongly associated with a structural and functional body decline and the major risk factor for cardiovascular diseases; therefore there is a stringent need to develop strategies of early detection, prevention and diagnostic. Aim of this study was to observed cardiovascular risk at senescent patients. Study was conducted on 601 patients (over 65 years), of which 104 men and 497 women, with age-related diseases. Cardiovascular risk was assessed by HeartScore. Overall data revealed: 68.15% of patients with cardiovascular diseases; 15.09% with diabetes mellitus; prevalence of obesity is 37.47% and HeartScore present at high risk in 16.19% of them. We noticed that with age, cardiovascular risk increases considerably, and there is a statistically significant positive correlation ($r = 0.27$; $p < 0.00001$). For HeartScore, high risk in male patients is much elevated than female (65.3% vs. 34.69%). Aging surely increases the prevalence of cardiovascular diseases, but more studies are needed to understand the mechanism of this process. Estrogen decline, at elderly menopausal women, significantly alters lipid profile and increases cardiovascular risk. Nevertheless, men gender is associated with a more atherogenic profile, explaining the increased risk of cardiovascular diseases. All of these above show the importance of HeartScore as useful tool for the diagnosis, treatment and prevention of chronic cardiovascular disease and major cardiac events and the identification of the relative impact of modifiable risk factors.

Abstract # 106

AREA: Cardiovascular medicine

Connection between kidney function and cognition in the elderly

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Introduction: Impaired kidney function, cardiovascular disease and cognitive dysfunction are common in the elderly population [1, 2]. Cardiovascular risk factors are strongly associated with both impaired kidney function [3], and cognitive dysfunction [4, 5]. Cerebrovascular disease is associated with cognitive dysfunction [6], and cerebrovascular disease is common in the presence of kidney dysfunction [7]. Therefore, a connection between impaired kidney function and cognitive dysfunction on a vascular basis is possible.

Methods: All data is obtained from the general population cohort study “Good aging in Skåne” (GÅS). Impaired kidney function is defined as $eGFR < 60 \text{ ml/min/1.73 m}^2$ [3]. A cognitive test battery including 11 tests is used to assess the cognitive domains learning and memory, language, complex attention, executive function, perceptual-motor, meta-memory, as well as global cognitive function.

Results: In a first cross-sectional study, a relationship between impaired $eGFR$ and impairment in the cognitive domains learning and memory, language, complex attention, executive function and global cognitive function, but not meta-memory, was found [8]. To the authors knowledge, no one has previously investigated a connection between kidney function and meta-memory. In a follow up

longitudinal study, moderately impaired kidney function preceded impairment in processing speed, but did not predict dementia or minimal cognitive impairment (MCI) [9]. Processing speed is sensitive to cerebrovascular disease [6, 10], suggesting our findings could represent early vascular implications on cognition.

Conclusion: Moderately impaired $eGFR$ preceded cognitive impairment, suggesting that overview of cardiovascular risk factors is indicated even at moderately impaired kidney function, to prevent future cognitive impairment.

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Abstract # 107

AREA: Cardiovascular medicine

Holding area in Emergency Department: a strategy to improve adherence to international guidelines in cases of pulmonary embolism

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Premises: Pulmonary embolism is a disease still characterized by high mortality. Despite a great development of the guidelines it is not clear what adherence to them is in real life, especially in the emergency room. Some international studies have actually shown that adherence to guidelines is quite low in both primary and secondary care and, depending on the studies, between 40 and 60%. For the ERs, an organized, care-intensive layout with a holding area to stabilize the most critical patients proved to be more functional to the role played by the Emergency Departments in the last 10 years and the needs arising from this. In addition to receiving priority at the medical examination, patients in Triage also receive assignment to an area of low or medium–high intensity of care. From both areas, patients can then be referred to the holding area (in Italy OBI) for diagnostic completion, observation or stabilization. Patients can be discharged or hospitalized either directly from the areas of care or from the holding unit.

Purpose of the study: See if and how, in the real life of an Emergency Department, adherence to the Guidelines varies according to the area to which the patient is addressed.

Methods: monocentric retrospective observational study, on a group of geriatric patients (< 75 y) that include all the people accessed to our ED, where they received acute PE diagnosis. Enrolment started on 2016 and finished on 2019. We collected data from medical history, physical examination, lab tests, imaging; we calculated characteristic scores from the diagnostic/therapeutic algorithm, both regarding PE risk (Wells, Geneva and Years), and the 30-day mortality risk presentation (sPESI). We then analyzed guidelines adherence in three decision-making turning-points: 1 Correct application of decisional scores examined, which classify the patient in low, intermediate or high risk of PE, calculated with Wells and simplified Geneva score; 2 Correct therapy administration since the ED as suggested by the guidelines; 3 The eventual observation in the medium-intensity care area with close monitoring for the subpopulation of patients with finding of right ventricular dilation or myocardial enzymes impairment (considered at high risk of short-term shock and mortality).

Results: we enrolled 249 patients, with a mean age of 83 years and female prevalence (F = 62%). Of these, 69% were referred by Triage to medium–high intensity of care, the remaining 31% was directed to low intensity of care. 42.5% of the total patients were referred to OBI. The two areas of intensity of care showed similar adherence to guidelines (approximately 50%) without there being a statistically significant difference between the two areas ($p > 0.05$) Adherence to guidelines was higher in the holding area—OBI (75%) compared to that of those managed in theaters (50%) in a statistically significant way ($p < 0.001$).

Conclusions: The study suggests that holding areas located in Emergency Departments can considerably increase adherence to international guidelines.

Abstract # 108

AREA: Cardiovascular medicine

Management of acute pulmonary embolism in the emergency room: does adherence to international guidelines increase in the most serious cases?

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Premises: Pulmonary embolism is a pathology still characterized by high mortality. Some international studies have actually shown that adherence to guidelines is generally quite low in both primary and secondary care and ranges, depending on the studies, between 40 and 60%. However, it is the opinion of the authors of this abstract that adherence to the guidelines is higher in the most serious cases, where the resources of the Emergency Department are more concentrated and which absorb more medical and nursing time.

Purpose of the study: See if and how, in the real life of an Emergency Department, adherence to the Guidelines varies according to the severity of the acute pulmonary embolism. We understood this severity as the presence of organ damage or massive pulmonary embolism.

Methods: single-center retrospective observational study, on all geriatric patients (> 75 y) who entered our ED, where they received a diagnosis of acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and Years), and for the presentation of the risk of mortality at 30 days (sPESI). We therefore analyzed adherence to the guidelines in three decisional turning points: 1 Correct application of the decision scores examined, which classify the patient at low, intermediate or high risk of PE, calculated with Wells and simplified Geneva score; 2 Correct administration of therapy starting from ED as suggested by the guidelines; 3 Any observation in the care area of medium intensity with careful monitoring for the subpopulation of patients with finding of right ventricular dilation or myocardial enzyme elevation (considered to be at high risk of shock and short-term mortality).

Results: we enrolled 248 patients, with a mean age of 83 years with female prevalence (F = 62%). Of these, 81 (32.7%) have organ damage and 86 (34.7%) have massive pulmonary embolism. Patients with organ damage received treatment with a higher adherence to the guidelines (68%) than those who did not have organ damage (51%) in a statistically significant way ($p < 0.01$). Patients with massive pulmonary embolism received treatment with a higher adherence to the guidelines (69%) than those with peripheral pulmonary embolism (50%) in a statistically significant way ($p < 0.005$).

Conclusions: The study suggests that patients with organ damage or massive pulmonary embolism are more likely to receive treatment in the emergency room with greater compliance with international guidelines.

Abstract # 109

AREA: Cardiovascular medicine

Management of acute pulmonary embolism in the emergency room: does adherence to international guidelines decrease in atypical symptoms?

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Premises: Pulmonary embolism is a pathology still characterized by high mortality. Some international studies have actually shown that adherence to guidelines is generally quite low in both primary and secondary care and ranges, depending on the studies, between 40 and 60%. Some authors have highlighted how adherence to the guidelines is more critical in patients with atypical symptoms, because diagnostic delay can be more likely in these.

Purpose of the study: Evaluate if and how, in the real life of an Emergency Department, adherence to the Guidelines varies according to the presence of atypical symptoms. We understood dyspnoea, chest pain, signs and symptoms of deep vein thrombosis and syncope as typical symptoms. As atypical symptoms all the others (low-grade fever, vertigo ...)

Methods: Single-center retrospective observational study on all geriatric patients (> 75 y) who entered our ED, where they received a diagnosis of acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and YEARS), and for the presentation of the risk of mortality at 30 days (sPESI). We then analyzed adherence to the guidelines in three decision turning points: 1 Correct application of the decision scores examined, which classify the patient at low, intermediate or high risk of PE, calculated with Wells and simplified Geneva score; 2 Correct administration of therapy starting from ED as suggested by the guidelines; 3 Any observation in the care area of medium intensity with careful monitoring for the subpopulation of patients with evidence of right ventricular dilation or myocardial enzyme elevation (considered to be at high risk of shock and short-term mortality).

Results: We enrolled 248 patients, with a mean age of 83 years with female prevalence (F = 63%). Of these, only 17 with atypical symptoms and 231 with typical symptoms. The vital signs were comparable in the two groups with no statistically significant difference ($p > 0.05$). Long-term outcomes such as mortality, need for hospitalization, hospitalization in intensive care and length of stay in hospital are also comparable results with no statistically significant difference ($p > 0.05$). However, adherence to international guidelines was statistically significantly lower in patients with atypical symptoms (33%) than in patients with typical symptoms (59%) ($p < 0.05$).

Conclusions: The study suggests that patients with atypical symptoms are more likely to have reduced adherence to international guidelines, most likely due to diagnostic delay.

Abstract # 110

AREA: Cardiovascular medicine

Does senility affect the manifestation and management of pulmonary embolism? Experience of an ED

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Premises: Acute pulmonary embolism is a pathology characterized by high mortality. The elderly population is destined to increase, becoming, according to some authors, 30% of the population in the developed countries.

Purpose of the study: See if and how, in the real life of an Emergency Department, age can affect the manifestation (more severe or milder forms of pulmonary embolism; typical symptoms and atypical symptoms), patient management and adherence to guidelines. We considered subjects over 75 years of age to be elderly, as per the latest indications of the guidelines.

Methods: Single-center retrospective observational study on all patients who entered our ED, where they received a diagnosis of acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and YEARS), and for the presentation of the risk of mortality at 30 days (sPESI). We analyzed the hospitalization rate, in-hospital mortality rate, the hospitalization rate in resuscitation and the length of hospitalization. We then analyzed adherence to the guidelines valid in the period under study.

Results: We enrolled 487 patients, with equal gender distribution (F = 52%). 247 were older than 75 (50.7%). Age has a positive correlation with the presence of massive pulmonary embolism, in a statistically significant way ($p < 0.05$), and with the presence of organ damage, touching on statistical significance ($p = 0.05$). On the other hand there is no statistically significant difference in the prevalence of typical or atypical symptoms in the two groups. The vital parameters were instead comparable in the two groups with no statistically significant difference ($p > 0.05$). Long-term outcomes such as mortality, need for hospitalization, ICU stay and length of stay in hospital are also comparable results without statistically significant difference ($p > 0.05$). Adherence to international guidelines is also comparable between the two groups ($p > 0.05$).

Conclusions: The study suggests that age correlates with more severe forms of pulmonary embolism but does not affect either patient management or short-term outcomes.

Abstract # 111

AREA: Cardiovascular medicine

Role of blood gas analysis and D-dimer in raising the suspicion of massive pulmonary embolism: the emergency room as a window into real life

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Premise: Massive pulmonary embolism is burdened with high mortality. Raising suspicion and recognizing this condition early allows to avoid delays in the diagnostic and therapeutic process.

Purpose: Assess which parameters of blood gas analysis, in the real life of an Emergency Department, correlate with the presence of massive pulmonary embolism to see which ones can help to suspect it early.

Methods: Single-center retrospective observational study, on all geriatric patients (> 75 y) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and YEARS), and for the presentation of the risk of mortality at 30 days (sPESI). We looked at all the blood gas analyzes performed at the emergency room access. We then had all chest CTs retested by an experienced radiologist.

Results: We enrolled 247 patients, with a mean age of 83 years with prevalence of female prevalence (F = 63%). Of these, 85 (34.4%) have massive pulmonary embolism. Lactates do not correlate with the presence of massive pulmonary embolism ($p > 0.05$). The pCO_2 values correlate inversely with the presence of massive pulmonary embolism with excellent statistical strength ($p < 0.0001$). The reduction in pO_2 values also correlates with the presence of massive pulmonary embolism, with good statistical strength ($p < 0.005$). The increase in pH values also correlates with the presence of massive pulmonary embolism, albeit with a lower statistical strength ($p < 0.05$). The D-dimer shows a strong association with massive pulmonary embolism values ($p < 0.0001$).

Conclusions: The study suggests that the reduction of pCO_2 values, with an increase in pH and D-dimer show a strong correlation with the condition of massive pulmonary embolism. Similarly, the pO_2 can play a role in the identification of this condition, while no role would seem to have the alteration of lactates. Taking into consideration these parameters, which are quickly available and easily performed in the various Italian situations, can help to raise the suspicion of massive pulmonary embolism early and direct the patient more quickly towards the therapeutic diagnostic process.

Abstract # 112

AREA: Cardiovascular medicine

Role of vital signs and indices of shock derived from them in the suspicion of massive pulmonary embolism: the ER as a window on real life

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Premise: Pulmonary embolism is a pathology still characterized by high mortality, greater in cases of massive embolism. Raising suspicion and recognizing this condition early is therefore important to avoid delays in undertaking the right diagnostic and therapeutic process.

Purpose: Assess which vital parameters or shock parameters, in the real life of an Emergency Department, correlate with the presence of massive pulmonary embolism to see which ones can be of help to early suspect it.

Methods: Single-center retrospective observational study, on all geriatric patients (> 75 y) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and Anni), and for the presentation of the risk of mortality at 30 days (sPESI). We then had all chest CTs retested by an experienced radiologist. We assess the correlation of vital parameters and shock indexes with the presence of massive pulmonary embolism. We took into consideration: the shock index (SI), the modified shock index (MSI) and the age-shock index (AGE_SI).

Results: We enrolled 247 patients, with a mean age of 83 years and prevalence of female (F = 63%). Of these, 85 (34.4%) presented with massive pulmonary embolism. There is no correlation between blood pressure, systolic and diastolic values, respiratory rate with the presence of massive pulmonary embolism ($p > 0.05$). However, there is a strong statistical correlation between heart rate values and the presence of massive pulmonary embolism ($p < 0.0001$). The shock index correlates with the presence of massive pulmonary embolism with good statistical strength ($p < 0.001$); the modified shock index correlates with the with even greater statistical strength ($P = 0.0005$). The age-shock index correlates with the presence of pulmonary embolism with excellent statistical strength ($p < 0.0001$).

Conclusions: The study suggests that the alteration of shock indices, in particular of the AGE-shock index, correlate with the condition of massive pulmonary embolism. Taking into consideration these parameters, of very low cost, available from triage and obtainable in a few minutes at the medical examination, easily performed in the various Italian situations, can help to raise the suspicion of massive pulmonary embolism early and direct the patient more quickly towards the correct procedure therapeutic diagnostic.

Abstract # 113

AREA: Cardiovascular medicine

Effectiveness of shock indices and alteration of vital parameters in the diagnostic suspicion of organ damage from pulmonary embolism: the emergency room as a window on real life

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Background: Pulmonary embolism is a pathology still characterized by high mortality, greater in cases of organ damage. Raising suspicion and early recognition of this condition is therefore important to avoid delays in undertaking the right diagnostic and therapeutic process.

Aim: Assess which vital parameters and shock indices correlate with the presence of organ damage from pulmonary embolism to see which ones can help to suspect this condition early.

Methods: single-center retrospective observational study, on all geriatric patients (> 75 y) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and Years), and for the presentation of the risk of mortality at 30 days (sPESI). We then had all chest CTs retested by an experienced radiologist. We went to see the correlation of vital parameters and shock indexes from these derivatives with the presence of organ damage from pulmonary embolism. We considered right ventricular dilation, pulmonary artery dilation and the presence of pulmonary infarction organ damage. We have considered as shock indices: the shock index (SI), the modified shock index (MSI) and the age-shock index (AGE_SI).

Results: We enrolled 247 patients, with a mean age of 83 years and prevalence of female (F = 63%). Of these 79 (32%) have organ damage from pulmonary embolism. There is no correlation between the values of blood pressure, systolic and diastolic, respiratory rate with the presence of organ damage ($p > 0.05$). However, there is a strong statistical correlation between heart rate values and the presence of organ damage from pulmonary embolism ($p < 0.001$). The shock index correlates with the presence of organ damage with good statistical strength ($p < 0.001$); also the modified shock index, albeit with a slightly lower statistical strength ($P < 0.005$). The age-shock index correlates with the presence of pulmonary embolism with excellent statistical strength ($p < 0.001$).

Conclusions: The alteration of the shock indices, in particular the AGE-shock index, correlate with the condition of organ damage. Taking into consideration these parameters, of very low cost, available from triage and obtainable in a few minutes at the medical examination, which can be easily performed in the various Italian situations, can help to raise the suspicion of organ damage from pulmonary embolism early and address more quickly the patient towards the therapeutic diagnostic process.

Abstract # 114

AREA: Cardiovascular medicine

Low free triiodothyronine is associated with contrast-induced acute kidney injury and long-term outcome in elderly patients who underwent percutaneous coronary intervention

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Objective: Low free triiodothyronine (fT3) is common in elderly patients with cardiovascular disease. The purpose of this study was to evaluate the relationship between low fT3 and contrast-induced acute kidney injury (CI-AKI), including the long-term outcomes, in elderly patients after percutaneous coronary intervention (PCI).

Methods: A total of 350 patients aged ≥ 75 years who underwent PCI between January 2012 and December 2015 were consecutively enrolled. Perioperative thyroid function, including fT3, was measured before PCI. Low fT3 was defined as fT3 < 3.1 pmol/L with normal thyrotropin and free thyroxine. CI-AKI was defined as an absolute serum creatinine (SCr) increase ≥ 0.30 mg/dl or a relative increase in SCr $\geq 50\%$ from the baseline value within 48 h after contrast media exposure. Multivariate logistic regression analysis was applied to analyze whether low fT3 was an independent risk factor for CI-AKI. Cox regression analysis was used to evaluate the relationship between low fT3 and long-term prognosis.

Results: A total of 46 (13.1%) patients developed CI-AKI. The incidence of CI-AKI was significantly higher in the low fT3 group than in the normal group (26.5% vs. 9.9%, $p < 0.01$). Multivariable logistic analysis demonstrated that low fT3 level was significantly related to CI-AKI (odds ratio [OR] = 2.41, 95% confidence interval [CI], 1.11–5.27, $p = 0.027$). Cox regression analysis showed that low fT3 was associated with long-term mortality (adjusted hazard ratio [HR] = 2.00, 95% CI, 1.04–3.83, $p = 0.037$) during follow-up of mean 1.67 years.

Conclusion: Low fT3 concentration was independently associated with CI-AKI and poor prognosis in elderly patients who had undergone PCI.

Keywords: Percutaneous coronary intervention, free triiodothyronine, contrast-induced acute kidney injury, long-term prognosis, elderly.

Abstract # 115

AREA: Cardiovascular medicine

Metabolic disorders in long-living patients with coronary artery disease

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Background/objective: Very limited data are available on metabolic disorders in centenarians; therefore, we investigated these pathologies in long-living patients with coronary artery disease (CAD).

Methods: The study enrolled 225 patients > 90 years, hospitalized with CAD diagnosis. The majority of patients (67.6%) were women. The mean age of patients was 92.5 (+ 2.2) years. Blood levels of uric acid, lipids, glucose and body mass index were determined.

Results: Obesity was registered in 31.5% of patients, but grade III obesity—in 1 patient. Overweight was found in 39.1% of patients, normal BMI—in 28.9%, and underweight—in 1 patient. Increase in

the blood concentration of triglycerides was noted in 11.2% of patients. Decrease in the HDL cholesterol level was registered in 12.7% of patients. Blood concentration of LDL cholesterol < 2.0 mmol/l was observed in 23.3% of cases. Hyperuricemia was detected in 37.3% of patients—in 41.4% of women and 28.8% of men. Increase in the serum creatinine level was registered in 45% of patients. Only 16.5% of patients had glomerular filtration rate > 60 ml/min. Women had more frequent hyperuricemia, dyslipidemia and azotemia. Increase in fasting blood glucose level was found in 23.1% of patients, but only 0.9% of patients had glucose > 14 mmol/l.

Conclusions: Study results indicate some clinical features of metabolic disorders in long-living patients with coronary artery disease. High proportion of patients with overweight or obesity was found. Frequent hyperuricemia but relatively low levels of atherogenic lipids and glucose were registered.

Abstract # 116

AREA: Cardiovascular medicine

Features of metabolic disorders in very elderly patients with atrial fibrillation

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Introduction: There are few data available on various metabolic disorders in very elderly patients and centenarians with atrial fibrillation.

Methods: Cross sectional data from 475 very elderly hospitalized patients with coronary artery disease were analyzed. The patients' age ranged from 75 to 106 years; the mean age was 88.3 ± 5.1 years. The majority of study participants (74.1%) were women.

Results: Prevalence of atrial fibrillation in this study was 34.3%. Atrial fibrillation was diagnosed more often in patients with hyperuricemia—in 43% versus 29.4% of patients with normal uric acid ($p = 0.001$). Hyperuricemia was significantly associated with risk of atrial fibrillation (hazard ratio = 1.8 (95% CI 1.2–2.7); $p = 0.001$). Left atrium dilatation was registered in 82.6% of patients with hyperuricemia whereas in patients with normal uric acid level—in 77.1% of cases ($p = 0.004$). Concentrations of all blood lipids in patients with atrial fibrillation were significantly lower than in patients without this arrhythmia. The largest differences were in total cholesterol (4.4 vs 5.1 mmol/l in patients without atrial fibrillation; $p < 0.0001$), in triglycerides (1.2 and 1.6 mmol/L; $p = 0.00002$) and in LDL cholesterol level (2.4 and 3.0 mmol/L; $p = 0.0007$). Highly significant negative correlations were established between left atrium diameter and total cholesterol ($r = -0.25$; $p < 0.0001$), LDL cholesterol ($r = -0.22$; $p = 0.01$) and HDL cholesterol ($r = -0.25$; $p = 0.003$) levels. 50% of obese patients were diagnosed with atrial fibrillation, while in the non-obese group this arrhythmia was registered in 31.3% ($p = 0.001$). Obese patients had larger left atrium diameter compared to patients with normal body mass index (45.2 vs 43.5 mm, respectively; $p = 0.007$). In patients with atrial fibrillation and without this arrhythmia, the mean fasting blood glucose concentrations did not differ—6.0 ± 2.1 and 6.2 ± 2.4 mmol/L, respectively ($p = 0.64$). Atrial fibrillation was registered in 34.8% of patients with diabetes mellitus and 34.5% of patients without diabetes ($p = 0.95$).

Conclusions: The study results indicate some features of different metabolic disorders in very elderly patients and centenarians with atrial fibrillation. It is advisable to further study this pathology in long-livers involving a large sample of patients.

Abstract # 117

AREA: Cardiovascular medicine

Subclinical inflammation in very elderly patients with coronary artery disease

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Background: Few and conflicting data are available on prevalence and features of subclinical inflammation in very elderly patients and centenarians with coronary artery disease (CAD).

Purpose: To determine the serum concentration of tumor necrosis factor- α (TNF- α) and interleukin-6 (IL-6) and to analyze the relationships of these pro-inflammatory cytokines with a number of pathological conditions in very elderly patients with CAD.

Methods: The study enrolled 130 hospitalized patients > 75 years old: 102 patients with CAD—in the study group, 28 patients without CAD—in the control. The main exclusion criteria were infectious, inflammatory, and oncological diseases. The mean age of patients was 89.3 ± 4.6 years (77–101 years); 56.2% of patients were ≥ 90 years old. Most of the patients (65.4%) were women. The blood concentrations of TNF- α ($N < 8.1$ pg/ml) and IL-6 ($N < 7.0$ pg/ml) were determined by enzyme immunoassay.

Results: The mean concentration of TNF- α was 9.2 ± 4.7 pg/ml (3.9–31.9 pg/ml). Increase in TNF- α levels was found in 54.6% of patients. In patients with CAD mean TNF- α concentration reached 10.0 ± 4.9, in the control group—6.1 ± 1.8 pg/ml ($p = 0.000001$). The likelihood of high TNF- α levels in patients with CAD increased by 16.6 times compared with patients without CAD (odds ratio (OR) = 16.6; $p < 0.00001$). TNF- α concentrations were higher in patients with congestive heart failure (10.8 and 8.1 pg/ml, respectively; $p = 0.002$). The likelihood of high TNF- α levels in patients with heart failure increased by 2.8 times (OR = 2.8; $p = 0.004$). In patients with hyperuricemia, the mean level of TNF- α was 10.9 ± 5.3 pg/ml, in patients with normal uric acid—7.5 ± 2.5 pg/ml ($p = 0.000006$). Direct correlations were revealed between TNF- α concentrations and uric acid ($r = 0.45$; $p < 0.000001$), creatinine ($r = 0.26$; $p = 0.002$), urea ($r = 0.37$; $p = 0.00004$), and IL-6 ($r = 0.34$, $p = 0.01$) levels. Direct correlations were found between the TNF- α level and the left atrium diameter ($r = 0.3$; $p = 0.003$), and the right ventricle size ($r = 0.3$; $p = 0.001$). Inverse correlations were found between the TNF- α and HDL cholesterol concentrations ($r = -0.38$; $p = 0.00005$). Increased IL-6 levels were found in 49% of patients. The mean IL-6 concentration was 7.96 ± 5.1 pg/ml (1.5–30.6 pg/ml). In patients with CAD, the mean concentration of IL-6 reached 10.9, without CAD—5.9 pg/ml ($p = 0.02$). Clinically significant heart failure occurred more often among patients with increased IL-6 levels than in patients with normal IL-6 (45.8% and 16% of cases, respectively). In patients with heart failure, significantly higher IL-6 values were registered compared with patients without CHF (13.3 and 7.6 pg/ml, respectively; $p = 0.04$). The likelihood of high IL-6 levels in patients with severe CHF increased by 4.4 times compared with patients without it (OR = 4.4; $p = 0.02$). Among patients with hyperuricemia, the mean IL-6 values were 10.5 ± 3.1 pg/ml, in patients with normal uric acid—7.1 ± 3.1 pg/ml ($p = 0.001$). The likelihood of high IL-6 levels in patients with hyperuricemia increased by 9.7 times compared with patients with normal uric acid (OR = 9.7; $p = 0.003$). Significant direct correlations were revealed between IL-6 and uric acid ($r = 0.31$; $p = 0.03$), between IL-6 and creatinine ($r = 0.35$; $p = 0.01$) levels.

Conclusion: The study results indicate a frequent increase in the TNF- α and IL-6 blood concentration in very elderly patients with

CAD. Higher levels of TNF- α and IL-6 are associated with congestive heart failure and hyperuricemia.

Abstract # 118

AREA: Cardiovascular medicine

Economic evaluation in cardiology: telemonitoring of users with pacemakers 5 years after implantation

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Introduction: The use of telemonitoring (TM) of users with pacemakers is limited, and very few studies have focused on their comparative cost-effectiveness. The purpose of this trial was to analyze the cost-effective potential of TM versus Conventional Monitoring (CM) 5 years after implantation from the Public Health System (PHS) and patients perspectives.

Methods: a controlled, non-randomized, non-blinded clinical trial, with data collection carried out during 5 years was performed at the Hospital de Poniente (Almería-Spain). Initially, 82 patients were selected (TM = 52; CM = 30). Baseline characteristics, number of in-hospital visits, and costs were analyzed. The EuroQol-5D questionnaire to evaluate the HRQoL and Duke Activity Status Index to assess the functional capacity were administered. A cost-utility analysis was conducted to measure whether the TM of pacemakers is cost-effective in terms of costs per gained quality-adjusted life years (QALYs).

Results: 55 patients completed the study (TM = 21; CM = 34). HRQoL and functional capacity values were improved; however no significant differences were found between both groups. Total costs were 23.02% lower in the TM group ($p = 0.033$). The reduction of in-hospital visits from TM group supposed a cost saving of 15.04% from the PHS perspective. Costs/QALYs obtained by the TM group were higher. The average cost per patient during the monitoring period studied was 13.17% lower in the TM group.

Conclusions: TM of pacemaker users is configured as an equal option to the CM in terms of HRQoL and functional capacity. It is a more efficient alternative involving a significant cost savings for PHS and patients perspectives.

Abstract # 119

AREA: Cardiovascular medicine

The additional prognostic value of ghrelin for mortality and readmission in elderly patients with acute heart failure

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Introduction: To evaluate the prognostic value of ghrelin, a growth hormone-releasing peptide, for mortality and readmission in elderly patients with acute heart failure (AHF).

Methods: We measured plasma ghrelin levels upon emergency admission in 241 prospectively recruited elderly AHF patients. The outcomes were all-cause mortality and/or readmission due to heart failure (HF). Multivariate Cox proportional hazards regression analyses were used to evaluate the prognostic value of ghrelin. Discrimination, calibration, and reclassification indices were compared between models, with or without ghrelin.

Results: During 1.2 years of follow-up, we observed 90 events (57 deaths and 33 readmissions due to HF). Plasma ghrelin levels were significantly elevated in elderly AHF patients, when compared to healthy control subjects ($P < 0.001$). Patients with events had significantly higher baseline ghrelin levels, when compared to those without ($P < 0.001$). Log transformed ghrelin levels were independently associated with AHF events (hazard ratio = 2.64, $P = 0.028$). The incorporation of ghrelin into the reference model, or reference with the NT-proBNP model, both improved C-statistics (both $P < 0.05$), resulting in an improvement in net reclassification index (14.42% and 10.45%, $P = 0.020$ and 0.025, respectively), and integrated discrimination index (5.64% and 3.60%, both $P < 0.001$). Patients who displayed the above NT-proBNP and ghrelin median levels had a markedly higher risk of AHF adverse events ($P < 0.001$).

Key conclusions: Plasma ghrelin is an independent predictor of adverse events in elderly AHF patients. Ghrelin may provide additional value to clinical parameters or NT-proBNP for prognostic risk stratification in AHF.

Abstract # 120

AREA: Cardiovascular medicine

Green space exposure on mortality and cardiovascular outcomes in older adults: a systematic review and meta-analysis of observational studies

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Introduction: With the launch of the “Global Age-Friendly Cities project”, increasing emphasis has been placed on the effects of green spaces on health in the elderly. The previous literature has shown that green spaces are beneficial to a range of health-related outcomes in adults. However, associations of greenness with mortality and cardiovascular outcomes are less certain, which may differ depending on the age class. This review aimed to synthesize current evidence from observational studies to assess relationships of green space exposure with mortality and cardiovascular outcomes in older individuals.

Methods: Five databases were searched. Qualitative evaluation and meta-analyses of included studies were conducted. This review is registered with PROSPERO, CRD42020160366.

Results: Of the 8143 records identified, we finally included 22 studies. In a narrative systematic review, we observed that the majority of studies showed reductions in the risk of all-cause mortality and total cardiovascular disease. Further meta-analyses which included eight cohort studies, indicated that greater greenness exposure (per 0.1 unit increase of normalized difference vegetation index (NDVI)) was associated with a reduced risk of all-cause mortality (pooled hazard ratios (HR) (95% confidence interval (CI) = 0.99 (0.97, 1.00)) and stroke mortality (pooled HR (95% CI) = 0.77 (0.59, 1.00)) in older individuals.

Key conclusions: This review supports increasing green space exposure in terms of the prevention of death and cardiovascular outcomes in older individuals. Effective measures to increase or

preserve greenspaces should therefore be considered as important public health interventions.

Abstract # 121

AREA: Cardiovascular medicine

Statin use and venous thrombo-embolism: a case–control study in patients aged 75 years and older

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Introduction: Although previous studies reported a lower rate of venous thrombo-embolism in statin users, such studies were conducted in selected patients and results may not be generalizable to an old and multimorbid population. The aim of this study was to investigate the influence of statin use on the risk of venous thromboembolic events (VTE) in older patients.

Methods: We used a retrospective case–control study of patients aged 75 and older, hospitalized from 2009 to 2019. Cases with a documented episode of VTE were included and compared with controls matched on age, gender, and year of hospitalization, for previous statin use. Patients under long-term anticoagulation before admission were excluded.

Results: Over 177 cases, 31 (17.5%) reported statin use, as well as 36 (20.3%) controls. Statin use was not associated with a lower rate of VTE in this study (OR 0.8 CI 95% [0.5–1.4], $p = 0.5$). Adjustment for age, sex, atherosclerotic diseases, major risk factors for VTE and use of antiplatelet therapy did not alter the result. Neither aspirin (OR 1 CI 95% 0.6–1.6], $p = 1$) nor other antiplatelet therapies (OR 0.6 CI 95% [0.3–1.3], $p = 0.2$) were associated with a reduced rate of VTE. Compared to non-users, statin users had significantly more comorbidities such as atherosclerotic diseases, hypertension and diabetes. In conclusion, this study does not support a protective effect of statins on VTE risk in old and multimorbid patients.

Abstract # 122

AREA: Cardiovascular medicine

Thrombin generation test is superior to conventional tests to monitor direct oral anticoagulants in the elderly

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Background: The test of choice for the assessment of the anticoagulant effect of direct oral anticoagulants (DOAC) is the dilute thrombin time (dTT) for dabigatran and the anti-factor Xa assay for rivaroxaban, apixaban, and edoxaban. The Thrombin Generation Test (TGT) evaluates thrombin generation and inhibition. We aimed to assess the anticoagulant effect of the DOAC on each individual TGT parameter to evaluate their suitability for monitoring the global anticoagulant effect.

Methods: We prospectively included 20 senior patients on DOAC for atrial fibrillation. TGT parameters were measured at trough and were correlated with DOAC concentration.

Results: The mean age was 76 ± 7 years; 40% were male. The majority of the patients were under apixaban ($n = 12$, 60%), while 4 patients were on edoxaban, 2 on rivaroxaban, and 2 on dabigatran. All patients were on clinically appropriate DOAC dosages. Although all the TGT parameters were significantly correlated with DOAC activity, peak height showed the best correlation ($r = -0.74$, $p < 0.001$). Patients treated with dose reduction scheme ($n = 7$, 35%) had a similar DOAC activity compared to patients treated with a regular dose. At the 9-month follow-up, 1 patient suffered an ischemic stroke; no major hemorrhagic events were observed. In that dabigatran-treated patient who suffered the stroke, although dTT was in the appropriate range, the very sensitive parameters of the TGT suggested a hypercoagulability state, characterized by higher levels of ETP and peak high.

Conclusion: Our preliminary analysis results indicate a potential role for TGT in improving the assessment of the thrombotic risk in elderly patients on DOAC.

Abstract # 123

AREA: Cardiovascular medicine

Idiopathic pulmonary embolism in the elderly: high rate of events but low adherence to long term anticoagulation

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Background: After the first 3 months of anticoagulation after a pulmonary embolism (PE), a decision has to be taken regarding its duration. We sought to characterize the patterns of anticoagulation for the long-term prophylaxis of venous thromboembolism (VTE) in the elderly.

Methods: We conducted a retrospective, observational study including 584 patients aged over 65 years (51% males, mean age 80 ± 7 years) admitted with PE. Median (interquartile range) follow-up was 3.7 (1.2–5.9) years. The primary endpoint was a composite of recurrent fatal or nonfatal VTE.

Results: Almost half of the cohort had a trigger for the PE, either cancer (21.9%) or other provocative factor (22.1%); 55.8% had an idiopathic PE. Globally, the in-hospital mortality was 12.3%. After discharge, the primary endpoint occurred in 38 patients after a median time of 11 months. Unprovoked PE (idiopathic or cancer) had an HR of 4.86 (1.17–20.21) of having a recurrent event compared to provoked PE. Patients with an idiopathic PE had a significantly higher risk of recurrence if not anticoagulated [HR 3.52 (1.91–10.41)] compared with those anticoagulated. The absolute risk of recurrent VTE for patients with idiopathic PE for anticoagulated and not anticoagulated patients was 1.7% vs 5.8% at 1 year and 2.2% vs 15.5% at 5 years. Among patients with idiopathic PE, after 2 years only 43.1% were anticoagulated.

Conclusion: We found a significant interaction between PE etiology and recurrent VTE in the elderly. The risk for recurrence is increased 3.5-fold for idiopathic PE patients under no anticoagulation.

Abstract # 124

AREA: Cardiovascular medicine

Implantable cardioverter defibrillator deactivation and advance care planning: a focus group study

Rik Stoevelaar¹, Arianne Stoppelenburg², Anne Geert van Driel¹, Rozemarijn van Bruchem-Visser¹, Dominic Theuns¹, Rohit Bhagwandien¹, Agnes van der Heide¹, Judith Rietjens¹

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Objective: Implantable cardioverter defibrillators can treat life threatening arrhythmias, but may negatively influence the last phase of life if not deactivated. Advance care planning conversations can prepare patients for future decision-making about implantable cardioverter defibrillator deactivation. This study aimed at gaining insight in the experiences of patients with advance care planning conversations about implantable cardioverter defibrillator deactivation.

Methods: In this qualitative study, we held five focus groups with 41 patients in total. Focus groups were audio-recorded and transcribed. Transcripts were analyzed thematically, using the constant comparative method, whereby themes emerging from the data are compared with previously emerged themes.

Results: Most patients could imagine deciding to have their implantable cardioverter defibrillator deactivated, for instance because the benefits of an active device no longer outweigh the harm of unwanted shocks, when having another life-limiting illness, or when relatives would think this would be in their best interest. Some patients expressed a need for advance care planning conversations with a healthcare professional about deactivation, but few had had these. Others did not, saying they solely focused on living. Some patients were hesitant to record their preferences about deactivation in advance care directives, because they were unsure whether their current preferences would reflect future preferences.

Conclusions: Although patients expressed a need for more information, advance care planning conversations about implantable cardioverter defibrillator deactivation seemed to be uncommon. Deactivation should be more frequently addressed by healthcare professionals, tailored to the disease stage of the patient and readiness to discuss this topic.

Abstract # 125

AREA: Cardiovascular medicine

Advance care planning and end-of-life care in patients with an implantable cardioverter defibrillator: the perspective of relatives

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Background: Little is known about the last phase of life of patients with implantable cardioverter defibrillators and the practice of advance care planning in this population.

Aim: To describe the last phase of life and advance care planning process of patients with an implantable cardioverter defibrillator, and to assess relatives' satisfaction with treatment and care.

Design: Mixed-methods study, including a survey and focus group study. Setting/participants A survey among 170 relatives (response

rate 59%) reporting about 154 deceased patients, and 5 subsequent focus groups with 23 relatives.

Results: Relatives reported that 38% of patients had a conversation with a healthcare professional about implantable cardioverter defibrillator deactivation. Patients' and relatives' lack of knowledge about device functioning and the perceived lack of time of healthcare professionals were frequently mentioned barriers to advance care planning. Twenty-four percent of patients experienced a shock in the last month of life, which were, according to relatives, distressing for 74% of patients and 73% of relatives. Forty-two to sixty-one percent of relatives reported to be satisfied with different aspects of end-of-life care, such as the way in which wishes of the patient were respected. Quality of death was scored higher for patients with a deactivated device than those with an active device (6.74 versus 5.67 on a 10-point scale, $p = 0.012$).

Conclusions: Implantable cardioverter defibrillator deactivation was discussed with a minority of patients. Device shocks were reported to be distressing to patients and relatives. Relatives of patients with a deactivated device reported a higher quality of death compared to relatives of patients with an active device.

Abstract # 126

AREA: Cardiovascular medicine

Experiences and communication analysis of telemonitoring of patients with pacemakers

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Introduction: The number of telemonitored pacemaker patients has increased exponentially over the last decade. The main objective of this study was to analyse the experiences and communication comparing telemonitoring (TM) and conventional monitoring (CM) of pacemaker patients.

Methods: This is as a single-center, controlled, non-randomized, non-blinded clinical trial. Data were collected 5 years after pacemaker implantation. Patients were assigned previously to TM and CM groups. The 'Generic Short Patient Experiences Questionnaire' was used to assess patients' experiences, and the Healthcare Communication Questionnaire was used to measure the communication of patients with healthcare professionals. Additionally, an ad-hoc survey from the 'Telehealth Patient Satisfaction Survey' and a 'costs survey' was used.

Results: It was observed that TM users received adequate information about their diagnosis or afflictions ($p = 0.035$), the treatment was better adapted to their situation ($p = 0.009$), and they experienced poorer consultation management by the healthcare provider ($p = 0.041$). Participants from both the groups reported positive overall communication experiences during the monitoring. However, they reported negative experiences regarding their involvement in their treatment decisions, the waiting time before admission, and perceived a low-benefit they also stated that the treatment was incorrect.

Conclusion: The study provides information on experiences and communication in pacemaker monitoring services and their practical implications in virtual settings. In a healthcare environment that increasingly relies on remote communication is very important to adapt new technologies of the users' needs for.

Abstract # 127

AREA: Cardiovascular medicine

The role of myeloperoxidase in cardiovascular disease at older patients

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Introduction: Cardiovascular disease (CVD) is a multifactorial disorder that is considered to be the leading cause of death and disability in older people. Myeloperoxidase (MPO), a proinflammatory enzyme, secreted from activated neutrophils, monocytes, and certain tissue macrophages, by generating a large number of reactive species which can attack, destroy or modify the function of each known cellular component, plays a role in the promotion of pathological events involved in all stages of CVD. This study aimed to evaluate the levels of myeloperoxidase in two groups of older patients (71.36 ± 6.64 years): a group of control patients and a group of patients with cardiovascular disease.

Methods: MPO levels were determined in serum by immunoenzymatic assay and spectrophotometric detection at 450 nm.

Results: Our results showed the serum MPO level was significantly increased in the group of patients with CVD compared with a control group (781.53 ± 315.19 vs 462.06 ± 147.36 ng/ml serum).

Key conclusions: In conclusion, serum MPO levels are elevated in patients with cardiovascular disease, which demonstrates their role in the degradation of fibrous plaque and thus can be considered as a mediator through which inflammation promotes CVD at the molecular and cellular level.

Abstract # 128

AREA: Cardiovascular medicine

Different equations for the estimated glomerular filtration rate in long-living patients with coronary artery disease

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Background/objective: Very limited data are available on optimal equation for the estimated glomerular filtration rate (eGFR) in centenarians; therefore, we compared the CKD-EPI, MDRD, BIS1, and Cockcroft-Gault equations for calculating GFR, and analyzed the various relationships between the glomerular filtration rate and clinical, laboratory, and echocardiographic parameters in long-living patients with coronary artery disease (CAD).

Methods: The study enrolled 270 patients > 90 years, hospitalized with CAD diagnosis. The majority of study patients (66.7%) were women. The age of the patients varied from 90 to 106 years, averaging 92.9 (+ 2.3) years. All study patients had frailty. The estimated GFR was calculated using the 4 equations—CKD EPI, MDRD, BIS1 and Cockcroft-Gault.

Results: The mean eGFR according to CKD-EPI was 51.4 + 14.2 ml/min, MDRD—50.9 + 13.4, BIS1—38.4 + 7.7, Cockcroft-Gault—40.6 + 12.6 ml/min. The median and mode of eGFR (CKD-EPI) was 51 ml/min. Only 75 patients (27.8%) had CKD-EPI eGFR greater than or equal to 60 ml/min. The most common stage of chronic kidney disease was stage 3A, while stage 4 CKD was less common, and CKD 5 did not occur at all. CKD staging results calculated using the MDRD and CKD-EPI equations were similar. However, when using the BIS1 equation, eGFR of more than 60 ml/min was not observed in any patient, and the vast majority of patients (64.1%) had stage 3B CKD, and another 13% had CKD stage 4. When using the Cockcroft-Gault equation, 64.9% of patients had the most pronounced C3–4 stages of CKD, and the frequency of stage 4 CKD was the highest, compared with the use of other equations (21.8%). At high creatinine levels (125 µmol/L and higher), there were no considerable differences between eGFR according to different equations, while at low and medium creatinine values, there were significant differences in eGFR, assessed using the CKD-EPI and MDRD equations on the one hand and BIS1 and Cockcroft-Gault on the other. The maximum differences reached 21 ml/min. When analyzing the differences in eGFR obtained using different equations, the following was found. The mean difference between Cockcroft-Gault eGFR and CKD-EPI eGFR was 11.7 + 7.9 ml/min (from 0.1 to 43 ml/min), between CKD-EPI eGFR and MDRD eGFR—1.5 + 1.3 (from 0 to 10 ml/min), between MDRD eGFR and BIS1 eGFR—12.9 + 6.5 (from 1 to 25 ml/min). The severity of differences between eGFR, calculated using different equations, did not depend on any other clinical and laboratory factors, except for serum creatinine level. No significant relationships between clinical, laboratory, echocardiographic parameters and eGFR, as well as differences in eGFR depending on the therapy, have been established.

Conclusions: The four equations for assessing eGFR are not considered interchangeable in long-living patients with coronary artery disease. We tend to suggest the CKD-EPI and MDRD equation to calculate the glomerular filtration rate in long-living individuals > 90 years, especially at low and medium creatinine values.

Abstract # 129

AREA: Cardiovascular medicine

No more major bleedings in frail older persons with repeated falls using oral anticoagulants

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¹MD

Background/introduction: Frail elderly with falls are often under-treated for atrial fibrillation (AF) due to fear of bleeding complications of the oral anticoagulants (OAC). The aim of the study was to investigate whether frail elderly with falls and OAC for AF have more bleeding complications than patients without OAC and to investigate the association between frailty, OAC therapy, and mortality.

Methods: This observational study included patients aged 65 years or older who were evaluated for falls between November 2011 and February 2020. Patients using OAC for AF were compared with similar patients without using OAC. Primary outcomes were death, major bleeding and intracranial bleeding.

Results: Of the 654 included patients, 136 had AF and used OAC. Patients with OAC were more often severely frail (67% vs. 47%, $p < 0.001$) and had a higher mortality during follow up (38% vs. 27%, $p = 0.008$). Patients using OAC had a higher mortality risk compared to the patients without OAC (crude analysis Hazard Ratio

(HR) 1.7 (95% confidence interval (CI) 1.3–2.4), $p = 0.001$; after adjustment for age, gender, and frailty index HR 1.4 (95% CI 0.9–1.9) $p = 0.058$). No differences were found in the incidence of major bleedings ($p = 0.299$) or intracranial bleedings ($p = 0.773$) in both groups.

Conclusions: Elderly with falls and AF using OAC are frailer and have a tendency to a higher mortality risk than patients without AF. These frail elderly patients had no more bleeding complications during OAC treatment than comparable patients without OAC. Further research should focus why older frail persons with AF are more prone to die.

Abstract # 130

AREA: Cardiovascular medicine

Association between central arterial stiffness and new adiposity indexes in Spanish elderly

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Introduction: Central arterial stiffness (AS) is commonly used parameter for detecting subclinical atherosclerosis. Several adiposity indexes can be used to estimate obesity. The objective was to investigate the association between central AS with adiposity indexes in Spanish elderly.

Methods: This cross-sectional study was conducted in a consecutive sample of 198 elderly without peripheral arterial disease (121 males; age mean 72.11 ± 6.33), who had lived in Cáceres (Spain). Seven adiposity indexes, including the body mass index (BMI), body shape index (ABSI), body roundness index (BRI), conicity index (CI), waist to height index (WHI), weight-adjusted-waist index (WWI) and waist-to-height ratio (WHtR) were investigated. Central AS was measured by carotid-femoral pulse wave velocity (cfPWV) with Complior® device (Artech Medical, Pantin, France) according to the recommendations. Central AS was considered if cfPWV ≥ 10 m/s.

Results: Between adiposity indexes studied, cfPWV correlated with ABSI (Rho = 0.237; $p = 0.001$), BRI (Rho = 0.233; $p = 0.001$), CI (Rho = 0.293; $p = 0.001$), WHI (Rho = 0.206; $p = 0.004$), WWI (Rho = 0.178; $p = 0.033$) and WHtR (Rho = 0.232; $p = 0.001$). Comparison of adiposity indexes according to the presence of central AS (cfPWV ≥ 10 m/s), gave significant differences in all the indexes assessed ($p < 0.05$). After adjusting by age, sex, smoking and level of physical activity, these differences are maintained, except for BMI. According to the ROC analyses, CI provided the largest area under the curve (AUC = 0.667; $p < 0.001$), and BMI showed the lowest value (AUC = 0.583; $p = 0.044$).

Conclusions: All new adiposity index have been related with central AS. Subjects with central AS obtained higher values. CI was the best adiposity index for estimating central AS.

Abstract # 131

AREA: Cardiovascular medicine

Relationship between new anthropometric indexes and peripheral arterial stiffness in Spanish elderly

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Introduction: Peripheral arterial stiffness (p-AS) is a new alternative to assess subclinical atherosclerosis. Recently, new anthropometric indices combining traditional measures (height, weight and waist circumference) have been proposed as alternatives to body mass index (BMI). The aim was to study the relationship between p-AS with new anthropometric indexes in Spanish elderly.

Methods: This cross-sectional study investigated a consecutive sample of 184 elderly without peripheral arterial disease (111 males; age mean 71.81 ± 5.53), who had lived in Cáceres (Spain). Seven anthropometric indexes, including the body mass index (BMI), body shape index (ABSI), body roundness index (BRI), conicity index (CI), waist to height index (WHI), weight-adjusted-waist index (WWI) and waist-to-height ratio (WHtR) were investigated. Brachial-ankle pulse wave velocity (baPWV) measured by VOPITB device was used to determine p-AS. A baPWV ≥ 1450 cm/s was considered as p-AS.

Results: Between adiposity indexes studied, baPWV correlated with ABSI (Rho = 0.153; $p = 0.039$), BRI (Rho = 0.237; $p = 0.001$), CI (Rho = 0.210; $p = 0.004$), WHI (Rho = 0.259; $p < 0.001$), WWI (Rho = 0.271; $p < 0.001$) and WHtR (Rho = 0.237; $p = 0.001$). Comparison of anthropometric indexes according to the presence of p-AS, gave significant differences in all the indexes assessed ($p < 0.05$), except for BMI and ABSI. Similar results were observed after adjusting by age, sex, smoking and physical activity level. According to the ROC analyses, WWI provided the largest area under the curve (AUC = 0.634; $p = 0.002$), and BMI showed the lowest value (AUC = 0.543; $p = 0.314$).

Conclusions: Anthropometric indexes studied associated with p-AS, except BMI and ABSI. Subjects with p-AS presented higher values. WWI was the best anthropometric index for estimating p-AS.

Abstract # 132

AREA: Cardiovascular medicine

Antithrombotic usage rates in patients over 65 years of age presenting with acute gastrointestinal bleeding

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Introduction: Gastrointestinal bleeding (GIB) in older adults is afrequent cause of hospital admissions. The presence of multiple

comorbidities and greater medication use in this age group influence the clinical outcome. In the United States, approximately 350,000 patients are hospitalized for upper gastrointestinal bleeding (UGIB) each year and 35–45% are 60 years of age or older. The annual incidence of UGIB ranges between 50 and 150 per 100,000 population per year, with women aged 60 years and older accounting for 60%. The mortality of UGIB has remained approximately 6–10% for the past 6 decades. The exact incidence of lower gastrointestinal bleeding (LGIB) is not known, but the annual incidence of hospitalization is approximately 20–27 episodes per 100,000 persons per year. A 200-fold increase of LGIB is seen with advancing age from the third to ninth decades. The mortality for LGIB is 4–10% or greater and is more common when associated with severe bleeding and in those undergoing emergent surgery. During the clinical assessment drug history is important, especially the use of aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), and anticoagulant drugs. In this study we aimed to evaluate the antithrombotic usage rates in patients over 65 years of age presenting with acute gastrointestinal bleeding.

Patients and methods: A total of 112 patients who were admitted to gastroenterology department of our hospital with GIB in the last year were enrolled in this study. The past medical history was learned from retrospective data. Laboratory parameters, endoscopy and colonoscopy reports, total number of daily drug usage, antiplatelet, NSAIDs, anticoagulation usage were recorded. Bleeding proximal to the ligament of Treitz was termed as UGIB and distal to as LGIB. The statistical analyses were conducted with SPSS 21.

Results: Ninety-nine patients with UGIB and 13 patients with LGIB were enrolled in the study. Median age of patients was 78.5 (min–max: 65–99) years, 45.5% were female. HT incidence was 41.7%, DM incidence was 18.7% and AF incidence was 15.2%. Most common diagnoses among patients with UGIB were, gastritis 27.7%, gastric ulcer 19.6%, esophageal varices 13.4%, duodenal ulcer 8.9% and malignancy 8.9%. Other rare causes were esophageal ulcer, Mallory-Weiss tear, angiodysplasia and combinations of other lesions, 1–3.6%. The most common causes of LGIB was diverticular bleeding accounting for 38.4% of the patients. On admission, the average hemoglobin concentration level was 9.7 ± 7.7 gr/dl. Mean prothrombin time was 1.6 ± 1.5 . Median number of drugs was 5 (min–max: 0–10). Thirty-five percent of the patients were on antiplatelet therapy and frequency of anticoagulant therapy was 25%. Among patients receiving anticoagulant therapy, 85% was taking a drug from novel oral anticoagulants (NOACs) and 15% was on warfarin therapy. Dual antiplatelet use ratio was 6.2%, while 4.5% of the patients were both using anticoagulant and antiplatelet therapy. Additionally, 6% of the patients were on NSAIDs drug therapy. Remarkably, antidepressants were the third most common drugs after antihypertensive and antidiabetic drugs. When we compared patients with UGIB and LGIB, neither antiplatelet nor anticoagulant usage was different ($p = 0.07$, $p > 0.05$, respectively). Also, number of drugs were similar between two groups ($p > 0.05$).

Discussion: We showed that among the patients receiving anticoagulant therapy, NOACs usage was more common than warfarin therapy. Gastrointestinal bleeding is a common geriatric problem. NOACs are gaining popularity in the prevention of embolic stroke in non-valvular atrial fibrillation as well as in the prevention and treatment of venous thromboembolism. However, similar to traditional anticoagulants, NOACs have the side effects of bleeding, including GIB.

Results: From both randomized clinical trials and observational studies suggest that high-dose dabigatran (150 mg b.i.d), rivaroxaban and high-dose edoxaban (60 mg daily) are associated with a higher risk of GIB compared with warfarin. Other risk factors of NOACs-related GIB include concomitant use of ulcerogenic agents, older age, renal impairment, *Helicobacter pylori* infection and a past history of GIB.

Conclusion: GIB in the older adults is associated with greater morbidity and mortality. The major advantage of NOACs is that the drug does not require monitoring. However, considering the GIB rates, it is useful to think once again while using NOACs instead of warfarin.

Keywords: Antithrombotic usage, gastrointestinal bleeding, older adults

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Abstract # 133

AREA: Cardiovascular medicine

Utility of the FRADEA functional classification as a predictor of 1-year mortality in elderly patients with symptomatic severe aortic

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Introduction: The FRADEA functional classification stratifies older adults according to frailty and dependency, representing a functional continuum that has been shown to correlate with mortality risk.

Objectives: To study 1-year mortality according to the FRADEA classification in elderly patients with symptomatic severe aortic stenosis.

Methods: Prospective study, including the first 200 patients aged 75 years or older referred from cardiology to a specialized geriatrics consultation, who were followed up at 1 year. Variables: demographic and cardiological characteristics, comorbidity. Functional assessment by means of FRADEA classification (groups 1–8, from highest to lowest functional reserve) by means of the assessment of frailty, instrumental (IADL) and basic (BADL) activities of daily living. Management of severe aortic stenosis and mortality at 12 months.

Results: $n = 200$, age: 84.02 ± 3.92 , women: 62.0%. EuroSCORE-II: 4.05 ± 3.37 , FEV1p: 77.8%. arterial hypertension: 75.5%, dyslipidemia: 51.0%, atrial fibrillation: 33.5%, heart failure: 29.5%, anemia: 27.5%, diabetes mellitus: 24.5%, myocardial infarction: 18.0%, renal disease: 17.5%. Index Charlson abbreviated: 1.34 ± 1.19 (comorbid: 38.0%). Frailty: 21.0% (SPPB: 8.39 ± 2.52), independent IADL 47.7% (Lawton 5.32 ± 2.34), Independent ABVD: 70.0% (Barthel 91.90 ± 13.06). FRADEA n (%): [1] 54 (27.0%), [2] 24 (12.0%), [3] 36 (18.0%), [4] 32 (16.0%), [5] 18 (9.0%), [6] 29 (14.5%), [7] 5 (2.5%), [8] 2 (1.0%). Management: TAVI: 104 (52%), SAVR: 48 (24%), conservative: 48 (24%). Mortality increased progressively from FRADEA-1 (7.40%) to FRADEA-8 (100%). (log-rank, $p < 0.01$, table).

Conclusions: The FRADEA functional classification correlates with mortality in older adults with symptomatic severe aortic stenosis, and may be useful in care planning and decision making. Likewise, it emphasizes the need and importance of a comprehensive assessment of frailty and functional reserve in these patients.

Abstract # 134

AREA: Cardiovascular medicine

The first 3 months after a pulmonary embolism in the elderly: no anticoagulation is a very high risk option!

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Background: In pulmonary embolism (PE), anticoagulation aims to prevent early death and recurrent venous thromboembolism (VTE) and is recommended for at least 3 months. We sought to characterize the use and efficacy of anticoagulation for the treatment of PE in the first 3 months in the elderly, a population perceived as having a higher risk of complications.

Methods: We conducted a retrospective, observational study including 584 patients aged over 65 years (51% males, mean age 80 ± 7 years) admitted with PE. Median (interquartile range) follow-up was 3.7 (1.2–5.9) years.

Results: Almost half of the cohort had a trigger for the PE, either cancer (21.9%) or other provocative factors (22.1%); 55.8% had an idiopathic PE. Globally, the in-hospital mortality was 12.3%. Most patients completed the initial 3-month anticoagulation period (94.2%). Among the 5.8% who did not, the 3-month recurrent VTE rates were 12-fold higher than in patients anticoagulated (1.1% vs 11.8%; $p < 0.001$). Both in the idiopathic (0.6 vs 12.5%, $p = 0.01$) and the provoked forms of PE (0.8 vs 25.0%, $p < 0.001$), the recurrence rate at 3 months was very high when drugs were suspended. This interaction was not clear when cancer was the provocative event (2.7 vs 7.1%, $p = 0.38$). Finally, 3-month all-cause mortality was 22.1%, also significantly higher in the patients without a complete 3-month anticoagulation period (21.1% vs 38.2%, $p = 0.02$). However, this interaction only remained significant when cancer was the provocative event (32.5% vs 64.3%, $p = 0.02$).

Conclusion: In this large cohort of real-world data, we confirmed the critical importance of anticoagulation for at least 3 months after PE in the elderly.

Abstract # 135

AREA: Cardiovascular medicine

Myocardial infarction and diabetes in the elderly: lookout for heart failure

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Introduction: The impact of diabetes on the risk of HF in elderly patients with myocardial infarction (MI) is still unknown. We aimed to assess the prognostic value of diabetes on the risk of HF in ST-elevation MI (STEMI).

Methods: We conducted a retrospective, observational cohort study, including all patients aged over 65 years with STEMI admitted to an intensive cardiac care unit ($n = 916$). The median (interquartile range) follow-up (FU) was 5 (3–8) years.

Results: The mean age was 75 ± 7 years; 62.8% were male. Baseline demographics were considerably different in non-diabetic and diabetic patients. The risk of developing HF during the index hospitalization was 30.4% among patients with diabetes and 21.3%

among those without (unadjusted HR 1.6; 95% CI 1.2–2.2; $P = 0.004$). The rates of hospitalization for HF were 8% vs 5% at 1 year, and 19% vs 11% at 10 years for diabetic and non-diabetic patients, respectively. After adjusting for confounders, such as age, sex, hypertension, HF at index hospitalization, and left ventricle ejection fraction, diabetic patients were at two-fold higher risk of HF hospitalization (HR 1.9; 95% CI 1.2–3.1; $P = 0.01$). Conversely, the rates of nonfatal MI were 5% vs 2% at 1-year, and 12% vs 9% at 10-year for diabetic and non-diabetic patients. However, diabetes was not an independent predictor of MI (HR 1.6; 95% CI 1.0–2.6; $P = 0.07$).

Conclusions: Our study shows that elderly STEMI patients with diabetes are at a greater risk of developing HF, both at the acute stage and long after the MI. Interestingly, the incidence of HF is higher than recurrent MI.

Abstract # 136

AREA: Cardiovascular medicine

The SCORE and the ASCVD risk prediction scores in young versus older adults

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Background: The Systematic Coronary Risk Evaluation (SCORE) and the atherosclerotic CV disease (ASCVD) systems are widely used tools to estimate CV risk at 10 years. However, both have a limited age range and excluded elderly people. We aimed to assess the performance of both systems in young and older adults.

Methods: We prospectively included from 1994 to 2007 455 CV events-naïve patients treated at our Lipidology Clinic. The cohort was stratified into two groups: young (40–64 years, $n = 376$) and older people (≥ 65 years, $n = 79$).

Results: Mean age was 51 ± 7 years in the younger cohort and 69 ± 3 years in the older cohort. The younger cohort was more likely to be current smokers (21.5% vs. 5.1%, $p = 0.01$) and less likely to have hypertension (54.0% vs 72.2%, $p = 0.003$). No difference was found in cholesterol, diabetes, and gender. Globally, the 10-year incidence rate of CV death was 0.8% in the younger cohort and 5.1% in the older cohort; however, the expected CV death risk calculated by SCORE was 1.8% (IQR 0.6–5.0%) and 8.4% (IQR 5.1–12.8%), respectively. Regarding the ASCVD system, the median calculated ASCVD risk was 7.9% (IQR 3.7–14.8%) and 23.9% (IQR 16.0–35.9%). The c statistic for SCORE was 0.81 for the younger cohort and 0.56 for the older cohort; while the c statistic was 0.61 and 0.51 for ASCVD, respectively.

Conclusion: In a prospective, real-world cohort, both the SCORE and the ASCVD systems had worse discriminatory power in the older population. New tools are needed to stratify CV risk in the elderly.

Abstract # 137

AREA: Cardiovascular medicine

Comparison of atrial fibrillation outcomes within a homebound population with heart failure

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Introduction: Patients who have medical visits at home or a non-medical facility are known as a homebound population. Within this specific population, heart failure is the leading diagnosis, with patients having additional comorbidities, such as atrial fibrillation (AF).

Purpose: We aim to analyze the mortality differences in heart failure homebound AF patients in comparison to non-AF patients from January 2016 through March 2020.

Methods: A total of 471 patients were compared. Other characteristics were analyzed including age, race, stroke, anticoagulant use, renal disease, pulmonary disease, hypertension, and diabetes. Differences in outcomes were determined for significance via chi-square test and t-test.

Results: Among the 471 homebound heart failure patients, 132 patients had AF and 339 did not have AF. In the AF group, 37.1% were male, 81.1% were White, and the mean age was 77.3 years. In the non-AF group, 41.0% were male, 78.5% were White, the mean age was 82.5 years. The mean age of the non-AF group is significantly older than the AF group ($p < 0.001$). In the AF group, 46.2% died during the study period compared to 35.4% in the non-AF group ($p = 0.022$). Anticoagulant use was 22.0% in the AF population vs 2.7% of the non-AF population ($p < 0.001$). Additionally, 66.7% of the AF population had hypertension vs. 79.4% non-AF population ($p = 0.004$). Additional comorbidities that were not significant between both groups included stroke (14.4% of the AF population vs. 12.1% of the non-AF population), diabetes (33.3% vs. 38.1%); chronic kidney disease (10.6% vs. 14.5%), and chronic obstructive pulmonary disease (17.4% vs. 22.1%).

Conclusion: In our study of elderly homebound patients with heart failure, AF is a significant comorbidity leading to higher mortality rates during the study period. Stroke prevalence is similar in the AF and non-AF populations possibly due to older age and the higher prevalence of hypertension in the non-AF population.

Abstract # 138

AREA: Cardiovascular medicine

Conservative medical treatment in older patients with severe aortic stenosis: comprehensive geriatric assessment and mortality

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Introduction: To evaluate the indications for conservative medical treatment, the characteristics and mortality of patients with severe symptomatic aortic stenosis.

Methods: Prospective, descriptive, observational study of patients evaluated by a geriatrician during 5 years. The treatment was decided by an Interdisciplinary Heart Valve Team (conservative management, transcatheter aortic valve implantation, aortic valve replacement). Main reason for conservative treatment was assessed. Sociodemographic characteristics (age, gender, cohabitation) and a comprehensive geriatric assessment was carried out: functional status [(Lawton Index (LI), Barthel Index (BI) and Short Physical Performance Battery (SPPB)]; cognitive status (Mini-Mental State Examination of Folstein) and comorbidity (Charlson index). Mortality

and cause of death (cardiac, non-cardiac, no assessable) were recorded.

Results: Of the 265 patients evaluated, 77 (29.05%) patients (62.34% women; mean age 83.44 ± 6.76) were considered to be subject to conservative treatment. Thirty-two patients (41.56%) lived alone, 44 (57.14%) with their family and 1 (1.3%) others. The reasons for the indication of conservative medical treatment: 23 (29.87%) frailty; 16 (20.78%) elevated comorbidity; 6 (7.79%) no cardiac benefit; 7 (9.09%) cancer; 2 (2.60%) multifactorial dyspnea; 3 (3.90%) non vascular access; 5 (6.49%) patients preferences and 15 (19.48%) others. Mean of the evaluated parameters: LI: 3.75 ± 2.14 ; BI: 82.49 ± 16.25 ; SPPB: 5.17 ± 3.02 ; MMSE: 23.22 ± 5.01 ; Charlson index: 2.84 ± 1.71 . Forty-six (59.74%) patients died [22 (47.83%) due to cardiac causes; 16 (34.78%) non-cardiac; 8 (17.39%) not assessable].

Key conclusions: almost a third of the patients were considered recipients of conservative medical treatment due to various reasons, mainly frailty and comorbidity. More than a half lived with their family, had functional dependence and high comorbidity. Mortality was high, mainly due to cardiac causes.

Abstract # 139

AREA: Cardiovascular medicine

Conservative management in older patients with severe aortic stenosis: relationship between frailty instruments and mortality

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Introduction: To evaluate the relationship between frailty instruments and mortality in patients with symptomatic severe aortic stenosis and indication of conservative medical treatment.

Methods: Single-center, prospective, observational, descriptive study of patients evaluated between April 2016 and February 2021. An interdisciplinary Heart Valve Team decided the most appropriate treatment [medical, transcatheter aortic valve implantation or aortic valve replacement]. Demographic variables (age, gender) and mortality were recorded during the study period. Frailty was assessed through: Short Physical Performance Battery (SPPB), Frail-VIG Index, Frail Questionnaire and Essential Frailty Toolset (EFT). A bivariate analysis was performed.

Results: Of 265 patients evaluated, 77 (29.05%) (women 62.34%; mean age: 83.44 ± 6.76) were considered candidates for conservative medical treatment. Frailty assessment was carried out by SPPB in 73, by the Frail-VIG Index in 60, by Frail Questionnaire in 44 and by the EFT in 67. Of the 77 patients who were evaluated using any of the frailty instruments, 46 (59.74%) had died. Mean of frailty instrument scores in patients who died: SPPB: 5.25 ± 3.01 ; Frail-VIG Index: 0.32 ± 0.10 ; EFT: 2.11 ± 1.29 vs. SPPB: 5.06 ± 3.10 ($p = 0.804$); Frail-VIG Index: 0.31 ± 0.12 ($p = 0.766$); EFT: 2.44 ± 1.22 ($p = 0.320$). Of the 19 patients who were assessed with Frail Questionnaire and died: 14 (73.68%) Frail, 4 (21.05%) Pre-Frail and 1 (5.26%) Non-Frail; and the 25 survivors: 7 (28%) Frail, 17 (68%) Pre-Frail and 1 (4%) Non-Frail ($p = 0.007$).

Key conclusions: Mortality of patients with symptomatic severe aortic stenosis in conservative medical treatment was significantly associated with a higher degree of frailty through the Frail

Questionnaire. No significant differences were found with the other fragility constructs applied.

Abstract # 140

AREA: Cardiovascular medicine

Prevalence and characteristics of patients admitted in an acute geriatric ward with previous diagnosis of heart failure

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Introduction: Heart failure is one the most prevalent disease in older people. The objective of this study was to describe the prevalence and main characteristics of elderly patients admitted to an Acute Geriatric Ward (AGW) with previous diagnosis of heart failure (HF).

Methods: Descriptive study of patients over 80 years of age admitted to an AGW (september 2018–september 2019) with previous diagnosis of heart failure with 1-year follow-up. Variables: demographic, clinical, Transthoracic echocardiogram (TTE), functional (Barthel index (BI), Functional Ambulation Classification (FAC)), cognitive (global deterioration scale (GDS)), comorbidity (Charlson's index (CHI)), nutritional status (MNA-SF), frailty status (Frail-VIG index) and mortality.

Results: 191 had previous diagnosis of HF (40.64% of total admissions). The main cause of admission was acute heart failure (38.9%). The 63.87% was female. Age 88 (85–92) years old, BI < 90: 75.90%. FAC 0: 16.23%, Charlson $\geq$ 3: 65.54%. Polypharmacy 94.24%. Frail-VIG > 0.55: 24.6%. GDS $\geq$ 4 27.0%. MNA-SF $\leq$ 7: 25.46%. Etiology of HF: Hypertensive heart disease (HHD) 60.73%, coronary artery disease, 5.24%, Valvular heart disease 7.85%, mixed etiology 24.08%, unknown 2.09%. The 43.98% of patients had recent TTE, of them ejection fraction < 40: 11.9%, 40–49: 8.3%, $\geq$ 50: 79.76%. Therapy: Diuretics 76.96% (Loop diuretics 61.22%, Tiazides 4.08%, Spironolactone 3.40%, mixed treatments 25.85%). ACE-inhibitors/ARBs: 39.79%. Betablockers: 38.22%, Ivabradine 0.52%, Digoxine 10.47%. Calcium channel blockers 14.14%, Statins 23.65%. In-hospital mortality 13.6% and 1-year mortality 48.9%.

Conclusion: The prevalence of HF was high in our sample, with high rate of frailty, comorbidity, polypharmacy and high 1-year mortality. The most common etiology was HHD with preserved ejection fraction.

Abstract # 141

AREA: Cardiovascular medicine

Pain characteristics, cardiovascular risk factors, and cardiovascular disease

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Introduction: There is unclear evidence that chronic pain may increase the risk of cardiovascular disease (CVD) incidence and mortality. This work evaluated the association between chronic pain, changes in CVD risk factors, and incidence of CVD.

Methods: 1091 individuals aged $\geq$ 60 years, free from CVD at baseline and followed up to 6 years were recruited. Data on CVD risk and psychosocial factors was obtained through validated questionnaires and laboratory measurements. Pain frequency, location and intensity was self-reported and combined to compute a pain scale ranging from 0 (no pain) to 6 (worse pain).

Results: The cumulative incidence of CVD was 4.2% at 3 years, and 7.7% at 5-years of follow-up. Compared to individuals without pain in the first 3 years (2012–2015), those with maintained scores $\geq$ 2 showed a mean reduction of 3.57 (– 5.77, – 1.37) METs-h/week in recreational physical activity; a 0.38-point (0.04, 0.73) increase in psychological distress; and a 1.79 (1.03, 3.11) higher odds of poor sleep. These associations held in the second follow-up period, when individuals with maintained pain also worsened their diet quality. A 1-point increase in the pain scale in 2012 was associated with a 1.21 (1.03, 1.42) and 1.18 (0.97, 1.44) increased CVD incidence in 2015 and 2017, respectively; none of the studied factors mediated this relationship.

Key conclusions: Older adults with chronic pain show important reductions in recreational physical activity and deterioration in mental health, sleep and diet quality over time, which may well aggravate pain. Future studies should evaluate whether these factors mediate the increased risk of CVD observed in older adults with chronic pain.

Abstract # 142

AREA: Cardiovascular medicine

Geriatrician-performed point-of-care ultrasound for detection of deep venous thrombosis in geriatric inpatients

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Introduction: Deep venous thrombosis (DVT) is common among patients > 60 years with increasing prevalence with age. A known potentially fatal complication is pulmonary embolism (PE). Ultrasound is used to diagnose DVT. We investigate the prevalence of deep venous thrombosis (DVT) and evaluate the quality of geriatrician-performed point-of-care ultrasound (POCUS) for assessment of DVT compared to golden standard: radiologist/specialist performed ultrasound.

Methods: A prospective study carried out from 1st of March 2021 to 1st of March 2022 in patients admitted to the Geriatric Department, Svendborg, Denmark. Inclusion criteria: (1) $\geq$ 65 years, (2) presence of > 2 or more diseases, (3) symptoms: swollen leg, pain, increased venous prominence, and/or rubor skin, (4) no recent or current DVT. The included patients will undergo ultrasound examination first by a geriatrician using POCUS followed by the radiologist performed ultrasound. In case of divergence patients will be offered a new ultrasound examination by radiologist within 5–7 days.

Results: During the first 3 months 12 patients (66.7% women) with a median age of 83 years, have been included. The prevalence of DVT is currently 8.3% (1/12) and patients have a median Wells score of 1. The quality of geriatric performed POCUS when compared to radiologist performed ultrasound (golden standard) shows a sensitivity and specificity of 100% and 90.9%.

Conclusion: These preliminary results show promising use of bedside geriatrician performed POCUS for the detection of DVT among geriatric inpatients.

Abstract # 143

AREA: Cardiovascular medicine

Assessing frailty in hypertensive older adults: a comparison of different frailty measures

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Introduction: Frailty has been poorly investigated in hypertensive patients. We assessed frailty prevalence in a sample of hypertensive older adults according to the most widely used measure tools, aiming at analysing their agreement and the corresponding frailty phenotype. **Methods:** Hypertensive patients aged 75 or older referred to a Hypertension and Memory outpatient Clinic in Florence, Italy, were enrolled. The following frailty measure tools were applied: Fried Frailty Phenotype (FFP), Frailty Index, Clinical Frailty Scale (CFS), Frailty Postal Score (FPS), Short Physical Performance Battery (SPPB), gait velocity. Cohen's kappa coefficient was calculated to assess the agreement among measures. Multiple logistic regression was used to identify variables that best predicted frailty according to different measures.

Results: Ninety-one patients were enrolled (mean age 81, 59% female). Frailty prevalence varied according to the measure used, ranging from 31% (gait velocity) to 50% (CFS). The Cohen's kappa coefficient indicated moderate agreement of the FFP with Frailty Index, gait velocity and SPPB, and of Frailty Index with CFS and SPPB ($K = 0.6-0.8$). Agreement was poor among the remaining measures ($K < 0.6$). Multivariate analysis revealed the following independent associations: FFP with reduced gait velocity, Frailty Index and CFS with disability in Instrumental Activities of Daily Life (IADL) and Charlson Comorbidity Index, physical performance measures with disability in IADL. Depressive symptoms were significantly associated with frailty according to all the frailty measures used.

Conclusions: Frailty is common in older adults with hypertension, although prevalence varies depending on the measure used. Available measure tools may capture different subtypes of frailty.

Abstract # 144

AREA: Cardiovascular medicine

Association of uric acid with mortality modifies at old age: data from the URic acid Right for heArt Health (URRAH) Study

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Background and aims: In older people, the role of serum uric acid (SUA) as risk factor for mortality is debated. This study investigated the association of SUA with all-cause and cardiovascular (CV) mortality in older adults participating in the large multicentre observational URic acid Right for heArt Health (URRAH) study. The influence of age on SUA levels was also explored.

Methods: 8000 URRAH participants aged 65 + were included in the analysis. The predictive role of SUA was assessed using Cox regression models stratified according to the cut-off age of 75. SUA was tested as continuous and categorical variable (age-specific quartiles). The prognostic threshold of SUA for mortality was analysed using receiver operating characteristic curves.

Results: SUA was independently associated with age, with a different trend in women and men. Among participants aged 65–74, multivariate Cox regression adjusted for CV risk factors and comorbidities identified an independent association of SUA with both all-cause (HR 1.169, 95% CI 1.107–1.235) and CV mortality (HR 1.146, 95% CI 1.064–1.235). The cut-off value of 4.8 mg/dl discriminated mortality status. In participants aged 75 +, we observed a J-shaped relationship of SUA with all-cause and CV mortality, with risk increasing at extreme SUA levels.

Conclusions: These results confirmed the predictive role of SUA for all-cause and CV mortality in older people, while revealing considerable age-related differences. Mortality risk increased at higher SUA levels in participants aged 65–74, with a prognostic threshold of 4.8 mg/dl. The relationship between SUA and mortality was J-shaped in oldest participants.

Abstract # 145

AREA: Cardiovascular medicine

Hyponatremia: a poor prognosis factor in older patients hospitalized for acute cardiac failure

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Introduction: Hyponatremia is associated with higher mortality rate in acute cardiac failure in young people. Despite its high frequency in acute cardiac failure in old patients, its prognostic remains uncertain.

Objectives: The main objective of the study was to assess whether hyponatremia was associated with 6-month mortality in old patients hospitalized for acute cardiac failure. Secondary objectives were to assess the impact of hyponatremia on hospital mortality, length of hospitalization and institutionalization.

Methods: We performed a retrospective observational, monocentric study, including all patients aged 75 or older, hospitalized between 2017 and 2019 and presented an episode of acute cardiac failure in

acute geriatric unit. Hyponatremia was defined by a rate strictly lower than 135 mmol/L. The primary endpoint was 6-month mortality. Secondary endpoints were hospital mortality, length of stay and institutionalization.

Results: Three hundred and thirty-five patients (mean age 90 ± 6.16 , 66% female) were included. Of these, 141 (42%) suffered from hyponatremia during hospitalization. Mortality at 6 months was 52.5% in the hyponatremia group versus 30.4% in the normonatremia group, ($p = 0.01$). In multivariate analysis, hyponatremia was associated with 6-month mortality (OR 2.83, IC (1.64; 5.08) $p < 0.01$), as well as intra-hospital mortality (OR 2.96, IC (1.51; 5.78), $p < 0.01$), and length of stay ($p < 0.01$).

Conclusion: In our study, hyponatremia was associated with an increased risk of short- and long-term mortality as well as an increased length of stay. These patients should probably receive special attention from clinicians.

Abstract # 146

AREA: Cardiovascular medicine

Statin discontinuation stratified by primary and secondary prevention in persons with and without Alzheimer's disease

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Background: Benefits of statin use in people with advanced dementia have been questioned. However, time to statin discontinuation and factors associated with discontinuation in persons with Alzheimer's disease (AD) have not been studied before. We compared the risk of statin discontinuation and associated factors, including secondary and primary prevention indication, in persons with and without AD.

Methods: The register-based Medication Use and Alzheimer's disease (MEDALZ) cohort includes community dwellers with a clinically verified AD diagnosis during 2005–2011 in Finland. On the AD diagnosis date (index date), each person with AD was matched with a comparison person without AD. We included 25,137 people with AD and 22,692 without AD who used statin on the index date or initiated within 90 days after. The outcomes were analyzed by Cox regression models. Follow-up was restricted to 4 years.

Results: The median time to statin discontinuation was 1.46 years in people with AD and 1.36 years in people without AD. People with AD were more likely to discontinue than people without AD (adjusted HR (aHR) 1.20 (1.18–1.24)). This was observed for both primary (aHR 1.11 (1.06–1.16)) and secondary prevention (aHR 1.30 (1.25–1.35)) purpose. Factors associated with discontinuation included higher age and female gender, whereas concomitant cardiovascular drug use and previous statin use were associated with decreased risk.

Conclusion: The more frequent discontinuation in persons with AD could be due to weight loss and frailty which lead to lowered lipid levels. Deprescribing in advanced stage of dementia may also explain discontinuation in some cases.

Abstract # 147

AREA: Cardiovascular medicine

Improved cardiovascular profile in Danish centenarians?

A comparative study of two birth cohorts born twenty years apart

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Introduction: Cardiovascular health among middle-aged and elderly has improved over the last decades in high-income countries, but it is unknown whether this is also the case for the rapidly growing population of the oldest-old. To elucidate this, we performed a population-based cohort study comparing two Danish centenarian birth cohorts born in 1895 and 1915, respectively.

Method: Population-based cohort studies in the western half of Denmark. Included were all persons turning 100 years old in 1995 and 2015, respectively. Data were collected through structured in-home interviews. Participation rates were 74% ($n = 106$) and 79% ($n = 238$), respectively. Cardiovascular profile was obtained by measured blood pressure, electrocardiogram (ECG), and information on medication. Hypertension was defined as systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic blood pressure (DBP) ≥ 90 mmHg.

Results: Mean SBP and DBP were almost identical in the two cohorts. Yet, the prevalence of measured hypertension was non-significantly higher in the 1895 cohort (73%, 95% CI [61; 82]) compared to the 1915 cohort (63%, 95% CI [55; 70]). The proportion receiving at least one type of cardiovascular drug was significantly higher in the 1915 cohort (80%, 95% CI [74; 86]) compared to 1895 cohort (66%, 95% CI [55; 76]). ECG findings were similar in the two cohorts, e.g. atrial fibrillation was present in 17% of the 1895 cohort and 20% of the 1915 cohort.

Conclusion: This comparison study found a non-significant improvement in measured hypertension irrespective of medical treatment in the recent born cohort. Also, the recent born cohort was treated more intensively with cardiovascular drugs than earlier. However, the prevalence of pathological ECG-findings was unchanged.

Abstract # 148

AREA: Cardiovascular medicine

Hand-carried ultrasound for volume status assessment in acute geriatric care

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Background: Older patients are sensitive to volemia changes due to polymedication, comorbidities and alteration of regulation systems. Atypical semiology makes volume status evaluation difficult in this population. Standard transthoracic echocardiography is used to estimate volume status, but access to this technique may be limited. Right atrial pressure can be estimated from inferior vena cava (IVC) diameter and collapsibility index (degree of inspiratory collapse) measured by hand-carried ultrasound (HCU). These pocket-size devices enable quick bed-side cost-effective evaluation by geriatricians.

Objective: To compare volume status assessment after clinical examination and biology interpretation on the one hand, and after HCU on the other hand, by a geriatrician.

Methods: 37 patients hospitalized in University Hospital Geriatric acute care units from November 2020 to June 2021, with suspicion of volume status imbalance (overload or dehydration), were included in this prospective observational study. After clinical examination and biology interpretation, the IVC diameter and collapsibility index were assessed from the sub-costal view, by a geriatrician trained by a cardiologist during two half-days.

Results: In 37 patients, mean age was 88 years old and 62% were women. Clinical and biological volume status assessment was different from HCU in 19 patients (51%, IC 95%: 35–67%). This led to diagnostic changes in 12 patients (34%, 95% CI 17–37%), and to 12 (34%, 95% CI 17–37%) significant therapeutic changes (stopping or starting drugs).

Conclusion: HCU performed during hospitalization in acute geriatric care for a suspicion of volume status imbalance provide assessments that differs from clinical-biological assessment in about 51% of cases. HCU could be a useful tool in geriatric departments to help diagnose overload or dehydration, to guide therapeutic adjustments in older patients, especially during acute heart failure.

Keywords: Older patients, pocket-size ultrasound, hand-carried ultrasound, point-of-care ultrasound, inferior vena cava, collapsibility index, volume status, heart failure, dehydration.

Abstract # 149

AREA: Cardiovascular medicine

Neuro-medical complications of stroke – trends over the decades in an acute stroke unit

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Introduction: Neuro-medical complications post-stroke are common and often serious [1]. We first described complications in our stroke cohort in 1998 and sought to assess whether the severity and the nature of neuro-medical complications may have changed over time due to changes in presentation and the processes of care [2].

Methodology: Analysis of stroke service database, which captures all neuro-medical complications as part of its portal for the Irish National Audit of Stroke (INAS), was completed. The frequency of each of the 19 complications was expressed as the percentage of patients that developed each complication over a certain year and over 5 years. Historical comparison was made with dataset from 1998, which captured six complications.

Results: Data on 1283 patients presenting over 5 years between 2015 and 2019 was collected. The median age of all patients was 71 years (Range 21–101). In all, 19 different post-stroke complications were recorded; 48% (n = 622) had post-stroke pain, while 23.85% (n = 306) had cognitive decline. Data on 100 patients from 1998 was compared for three common metrics; 21.82% (n = 275) of patients developed an LRTI 2015–2019 compared with 14% (n = 14) in 1998 (p = 0.09) while 16.29% (n = 209) of patients developed a swallow disorder compared to 21% (n = 21) in 1998 (p = 0.22).

Conclusion: There are high levels of neuro-medical complications in stroke patients. Twenty years has seen extensive investment in hyper-acute stroke care yet post-acute care complications did not appear to reduce significantly between this time, albeit with low numbers.

Direction of future funding may consider the full spectrum of stroke care.

Abstract # 150

AREA: Cardiovascular medicine

Impact of vitamin D levels on the prevalence of acute heart failure in old populations hospitalized for hip fracture

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Introduction: Acute heart failure (AHF) occurs in 20% of perioperative care and is associated with mortality within the first month of 16% CI 12.2–21.3; p < 0.01 [1]. In general population, the risk of AHF is doubled in patients with vitamin D deficiency while it affects 50–60% of patients hospitalized for hip fracture (HF). The aim of the study was to compare prevalence of HF in patients over 75 years old experiencing a HF.

Method: Single-center descriptive retrospective study performed on a cohort of patients aged 75 years and older, hospitalized for a HF between 01/10/18 and 31/12/19 at the orthogeriatric unit of university hospital of Grenoble (UGA). The primary objective: prevalence of HF between patients with normal vitamin D levels and deficient. Our secondary objectives: determine factors associated with vitamin D deficiency, HF, and chronic heart failure. Our subgroups: severe deficiency < 25 nmol/L, moderate deficiency 25–75 nmol/L, normal ≥ 75 nmol/L and deficiency < 75 nmol/L.

Results: In our population of 149 patients, the prevalence of AHF was 23% and not significantly different between patients with normal and deficient vitamin D levels (p = 0.67). Factors associated with AHF were age (p < 0.01), comorbidities (p < 0.01), chronic heart failure (p < 0.01), and the following perioperative complications included arrhythmia (p < 0.01), infection (p < 0.01), acute kidney insufficiency (p < 0.01), venous thromboembolism disease (p = 0.03) and hyperparathyroidism (p = 0.04).

Conclusion: There is no direct link between vitamin D Levels and AHF but the links between hyperparathyroidism and vitamin D levels in the mechanisms of AHF and the effect of vitamin D supplementation remain to be clarified.

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Abstract # 151

AREA: Cardiovascular medicine

Subclavian steal syndrome (SSS): a possible cause of recurrent syncope

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89-year-old patient presented at the emergency department with recurrent episodes of abrupt fainting. Her medical history included hypertension, hypercholesterolemia and advanced arteriosclerotic vascular disease. Fainting always occurred in an upright position. Medication prior to admission included acetylsalicylic acid, lercanidipine, perindopril. During hospitalization, patient developed abrupt syncope with a significant difference in blood pressure between the right (130/70 mm Hg) and left arm (60/50 mm Hg) and a

weak pulse on the left side. Doppler ultrasonography demonstrated retrograde blood flow in the left vertebral artery caused by SSS. CT angiography revealed an ostial occlusion of the left subclavian artery and confirmed the diagnosis. Pathophysiology of SSS involves a proximal subclavian stenosis/occlusion, often caused by atherosclerotic plaque, resulting in a lower blood pressure in the distal subclavian artery. This pressure difference creates a retrograde flow, pulling blood from the contralateral vertebral artery to the basilar and then down the ipsilateral vertebral artery which steals blood from the cerebral circulation. However only a small portion of patients are symptomatic (< 5%). Due to reduced arterial flow, patients may develop exercise-induced arm pain, weakness, paresthesias and claudication. Ischemic changes are rare. Pharmacotherapy includes aspirin and a statin. Surgical revascularization is still the most common form of surgical correction for symptomatic SSS and patients benefit from secondary prevention and life style modifications. SSS is associated with an increased risk of both overall mortality related to CVD. Comparative measurement of blood pressure left vs. right is a simple, non-invasive investigation that contributes to the diagnosis of SSS.

Abstract # 152

AREA: Cardiovascular medicine

Association between frailty and ischemic heart disease: a systematic review and meta-analysis

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Background: Frailty is increasingly reported among older adults with cardiovascular diseases and it has been demonstrated to increase negative health outcomes and mortality. To date, no systematic review of the evidence is available regarding the association between frailty and ischemic heart disease (IHD). We performed a systematic review of literature and a meta-analysis to assess the association between frailty and IHD.

Methods: We selected all the studies that provided information on the association between frailty and IHD, regardless of the study setting, study design, or definition of IHD and frailty. PubMed, Web of Science and Embase were searched for relevant papers. Studies that adopted the Fried definition for frailty were included in the meta-analyses. For each measure of interest (proportions and estimates of associations), a meta-analysis was performed if at least three studies used the same definition of frailty. Pooled estimates were obtained through random effect models and Mantel–Haenszel weighting.

Results: Thirty-seven studies were included. Of these, 22 adopted the Fried criteria to define frailty and provided estimates of prevalence and therefore they were included in meta-analyses. The pooled prevalence of IHD in frail individuals was 17% (95% confidence interval [95% CI] 11–23%) and the pooled prevalence of frailty in individuals with IHD was 19% (95% CI 15–24%). The prevalence of frailty among IHD patients ranged from 4 to 61%. Insufficient data were found to assess longitudinal association between frailty and IHD.

Conclusions: Frailty is quite common in older persons with IHD. The identification of frailty among older adults with IHD should be considered relevant to provide individualized strategies of cardiovascular prevention and care. Further research should specifically explore the association between frailty and IHD and investigate the potential common biological ground.

Abstract # 153

AREA: Cardiovascular medicine

Disposition of patients presenting with decompensated heart failure

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Introduction: Currently, there is locally no defined pathway to allocate which patients with heart failure (HF) should be admitted to Cardiology or Geriatric teams on admission, and which patients can be managed in the community. This study sought to understand the demographics, clinical criteria and outcomes of patients referred to Cardiology, Geriatric or community teams.

Methodology: The medical records of patients presenting with decompensated heart failure presenting to inpatient Geriatric medicine (N = 35), Cardiology (N = 65) and Community teams (N = 70) were analysed.

Results: Patients admitted under Cardiology were younger and less likely to be female than patients admitted under Geriatric medicine. In the 6 months prior to the index admission, 48% of patients had been admitted to an acute hospital. Patients admitted under Geriatric medicine had greater care needs. Although those managed by the community teams were older than inpatient total, care in the community seems to lead to a reduction in readmission rates.

Conclusions: Cardiologists and Geriatricians both have expertise in HF and training according to the specialist curriculum. Non-Cardiologists may have poorer awareness of guideline-recommended management strategies than Cardiologists, but for patients with multimorbidity, single organ clinical guidelines may be less relevant. The aim of the study was to improve referral pathways to ensure the right patient can access the right service for their HF treatment in the right place. We propose that the frailer patients are better cared for in an environment where a comprehensive geriatric assessment is available to understand their needs.

Abstract # 154

AREA: Cardiovascular medicine

Time to change the paradigm - elevated NT-proBNP showed no role in heart failure diagnostics in elderly

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Background: The diagnosis of heart failure (HF) is more difficult in elderly polymorbid patients due to atypical signs and signs of other concomitant illnesses, especially when an echocardiographic evaluation is not available or feasible. NT-proBNP assay is recommended as a reliable marker in order to diagnose congestive heart failure (CHF) in symptomatic patients. On the other hand many other diseases could affect its levels.

Aim: To evaluate the prognostic value of elevated NT-proBNP and their correlation with echocardiography in a population of elderly hospitalized for medical conditions other than CHF.

Methods: We performed a prospective observational study on 486 elderly patients admitted to Geriatric Department. Exclusion criterion was an admission diagnosis of CHF. Patients with at least one symptom or sign compatible with CHF were tested for NT-proBNP (fatigue, exercise dyspnea at most). NT-proBNP values < 300 pg/ml

were considered as an age-independent exclusion criterion for HF (high negative predictive value), while NT-proBNP values > 1800 pg/ml were considered as highly suspected diagnostic criterion for CHF diagnosis. Main comorbidities and laboratory parameters were considered to adjust correlation analyses between NT-proBNP and LV systolic function. LV function was measured echocardiographically as ejection fraction (EF) in all subjects with increased NT-proBNP values and correlation was calculated.

Results: NT-proBNP values higher than 1800 pg/ml were present in 73.5% of studied patients, 36.5% of patients showed values between > 300 and < 1800 pg/ml. NT-proBNP values were associated with diseases known for the biomarker elevation such as reduced eGFR, reduced albumin and elevated CRP, but there was no correlation with presence of significant LV systolic dysfunction (EF $< 40\%$).

Conclusions: Highly elevated NT-proBNP values were present in most of non-cardiac senior patients admitted to hospital. Diseases different from congestive CHF appear to affect NT-proBNP plasma levels significantly in elderly hospitalised population. In contrast to younger adults, determination of its levels does not seem to help clinicians to improve the CHF diagnostic algorithm in elderly population.

Abstract # 155

AREA: Cardiovascular medicine

Relationship between the cardio-ankle vascular index and geriatric syndromes of older adults with arterial hypertension

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Introduction: Cardio-ankle vascular index (CAVI) regarded as marker of cardiovascular risk.

Material and methods: The study included 100 patients aged 60–95 years (mean age 75.5 ± 7.0 years) with hypertension. Patients were divided into 2 groups: frail ($n = 50$), and non-frail ($n = 50$) groups. Arterial stiffness was assessed by CAVI.

Results: Patients were comparable in age ($p = 0.07$). CAVI was higher in the group of patients with frail compared with non-frail (10.3 ± 1.6 vs 9.3 ± 1.0 ; $p = 0.0004$). In non-frail group, CAVI was higher in patients with elevated cholesterol level (≥ 5.0 mmol/L), diabetes, with low physical activity, and BMI ≥ 25 kg/m² ($p < 0.05$). In contrast, in frail group, CAVI was higher in patients with a BMI < 25 kg/m² compared with patients with a BMI ≥ 25 kg/m² (11.3 ± 1.8 vs 9.9 ± 1.4 , $p = 0.006$) and the results was comparable in patients with dyslipidemia, diabetes, and low physical activity ($p > 0.05$). Four factors independently influencing the stiffness of the arterial wall: orthostatic hypotension (coefficient of multiple regression $b = 0.31$ (95% CI [0.09–0.50])), malnutrition ($b = 0.21$ (95% CI [0, 0.01–0.41])), walking speed less than 0.8 m/s ($b = 0.25$ (95% CI [0.05–0.46])), low physical activity ($b = 0.39$ (95% CI [0.15–0.64])).

Conclusion: In frail patients the traditional risk factors do not affect arterial stiffness. Arterial stiffness is associated with geriatric syndromes—malnutrition, orthostatic hypotension, and decreased mobility.

Abstract # 156

AREA: Cardiovascular medicine

Relationship between osteoporosis and anemia in long-living patients with coronary artery disease

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Introduction: Limited and controversial data are available on relationships between osteoporosis and anemia; therefore, we evaluated bone mineral density and its relationship with erythropoiesis in patients with coronary artery disease (CAD) over 90 years of age (long-livers).

Methods: This work was cross-sectional study performed in the War Veterans Hospital. The study enrolled 197 patients (138 women and 59 men) aged 90–106 years (mean age 92.4 ± 2.3 years) hospitalized with CAD. Bone mineral density (BMD) was analyzed by dual-energy X-ray absorptiometry.

Results: Patients with osteoporosis had lower hemoglobin and erythrocyte counts compared to patients with normal BMD: hemoglobin—117.3 and 125.9 g/l, respectively ($p = 0.003$), erythrocytes— $3.8 \times 10^{12}/l$ and $4.1 \times 10^{12}/l$ ($p = 0.04$), MCV—88.7 and 93.5 fl ($p = 0.02$), MCH—30.6 and 31.0 pg ($p = 0.07$). Patients with anemia had lower total BMD (973 and 1036 mg/cm³, $p = 0.001$), BMD of upper (772 and 845 mg/cm³, $p = 0.001$) and lower (956 and 1059 mg/cm³, $p = 0.0003$) extremities, BMD of trunk (805 and 851 mg/cm³, $p = 0.004$), ribs (607 and 642 mg/cm³, $p = 0.005$), pelvis (889 and 935 mg/cm³, $p = 0.03$) and spine (973 and 1034 mg/cm³, $p = 0.02$). Correlation analysis revealed significant direct relationships between hemoglobin level and all BMD parameters ($r = 0.3$; $p = 0.00003$). Significant correlations were also established between all BMD parameters and erythrocytes MCV ($r = 0.27$; $p = 0.0001$) as well as MCH ($r = 0.22$; $p = 0.002$). Significant direct relationships between blood iron concentration and all BMD parameters were found ($r = 0.28$; $p = 0.003$).

Conclusion: The study results indicate presence of relationships between bone mineral density and erythropoiesis in centenarians.

Abstract # 157

AREA: Cardiovascular medicine

Can sitting and lying blood pressure measurements be considered interchangeable in older frail subjects?

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Background: Hypertension guidelines in middle-aged adults assume that blood pressure (BP) measured in lying or sitting positions provide similar values. Therefore, baseline values and orthostatic changes can

be assessed in either of these two positions. However, this question has never been studied in old, frail adults.

Aim: To compare BP values in lying and sitting positions, and their changes when moving to the upright position in a geriatric population with various frailty levels.

Methods: In two sub-studies, we included a total of 157 consecutive patients, aged 75 + admitted to our Geriatric Department. BP and HR were sequentially measured three times in one-minute intervals each in lying, sitting and upright positions (Protocol#1, n = 107) or lying and upright positions (Protocol#2 n = 50) with an automatic validated BP device. Patients were classified into two increasing frailty status (FS) categories: Low/Moderate (L/M-FS; n = 98) and High (H-FS; n = 59).

Results: Mean age $\pm$ SD was 83 ± 6 years. Systolic and diastolic BP were not different between lying and sitting positions in none of the frailty groups. In the H-FS, orthostatic drop of SBP was > 2-fold more pronounced from the lying to the upright position (22.1 ± 5.8 mmHg) as compared to the sitting to upright changes (9.4 ± 1.9 mmHg) ($p < 0.008$), and the same trend was observed for DBP. No such differences were observed in the L/M-FS group.

Conclusions: In old frail individuals, lying and sitting BP measurement cannot be interchangeable and therefore the exact position of the patient should be specified when evaluating BP orthostatic changes.

Abstract # 158

AREA: Cardiovascular medicine

Real-world data and machine learning to predict cardiac amyloidosis

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Introduction: Cardiac amyloidosis or “stiff heart syndrome” is a rare condition that occurs when amyloid deposits occupy the heart muscle. Many patients suffer from it and fail to receive a timely diagnosis mainly because the disease is a rare form of restrictive cardiomyopathy that is difficult to diagnose, often associated with a poor prognosis. This research analyses the characteristics of this pathology and proposes a statistical learning algorithm that helps to detect the disease (1–4).

Methods: The hospitalization clinical (medical and nursing ones) records used for this study are the basis of the learning and training techniques of the algorithm. The approach consisted of using the information generated by the patients in each admission and discharge episode and treating it as data vectors to facilitate their aggregation. The large volume of clinical histories implied a high dimensionality of the data, and the lack of diagnosis led to a severe class imbalance caused by the low prevalence of the disease.

Results: Although there are few patients with amyloidosis in this study, the proposed approach demonstrates that it is possible to learn from clinical records despite the lack of data. In the validation phase, the algorithm first acted on data from the general study population. It then was applied to a sample of patients diagnosed with heart failure. The results revealed that the algorithm detects disease when data vectors profile each disease episode.

Key conclusions: The prediction levels showed that this technique could be useful in screening processes on a specific population to detect the disease.

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Abstract # 159

AREA: Cardiovascular medicine

Cognitive function and transcatheter aortic valve implantation (TAVI)

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Introduction: TAVI has opened up treatment possibilities for older adults with severe aortic stenosis and higher surgical risk scores. There is little data on the outcome of TAVI for patients with pre-procedural cognitive impairment (CI).

Methods: A prospective observational study of patients undergoing TAVI at Oslo University Hospital Ullevål. Patients are included at admittance. Cognitive function is tested with the Montreal Cognitive Assessment (MoCA), the 10-word recall test, trail making test A and B (TMTA and TMTB). We collect data regarding frailty, quality of life, emotional status, nutritional status, comorbidity and physical performance. A subgroup has been retested at 3 months and 1 year, some by phone or mail. Complications, readmissions and deaths are recorded. The study is ongoing.

Preliminary results and key conclusions: 140 patients have been included so far. Baseline data of the first 119 show a mean age of 81 years, 48% men. The mean MoCA score is 24, range 12–30. 45 of 119 patients (38%) had a MoCA-score < 24; none had a previous diagnosis of dementia. 84 patients completed further cognitive testing with 10-word recall test immediate recall mean 14 (range 4–25), delayed recall mean 4 (range 0–9). TMTA mean 60 s (range 22–286 s). TMTB was completed by 68 patients: mean score 148 s (range 56–583 s). There were few serious complications. 7 of 140 patients (5%) died within 1-year follow-up.

Conclusion: Cognitive impairment is frequent in patients undergoing TAVI. Further analyses will show whether CI predicts negative outcomes.

Abstract # 160**AREA: Cardiovascular medicine****Anticoagulation in elderly patients with multiple comorbidities and nonvalvular atrial fibrillation**

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Introduction: Atrial fibrillation (AF) is the most common arrhythmia in the elderly population. AF is associated with a high morbidity and mortality. Recommend oral anticoagulation (OAC) with vitamin K antagonists (VKA) and direct acting anticoagulants (DOAC).

Objective: Factors influencing the therapeutic decision and dosing of treatment with oral anticoagulants in the elderly with non-valvular atrial fibrillation.

Material and methods: Prospective observational study. Patients ≥ 80 years with AF from November 2019 to April 2020. Demographic variables, Barthel scale (IB), SPPB, previous comorbidities, cognitive impairment, type and dose of anticoagulant.

Results: This was a population of patients with a diagnosis of AF with a mean age of 87.7 ± 31 , 64.8% being female. The mean on the Barthel index was 64.33 ± 27.4 at admission. Of these patients, 32.2% were cognitively impaired. Of the comorbidities, we highlight valvular heart disease (35.2%), hypertensive heart disease (44.5%), ischemic heart disease (19.5%), anemia (32.8%), ischemic stroke (6.3%). A total of 66.5% of patients were anticoagulated at discharge, 14.8% with VKA, 15% with low molecular weight heparins (LMWH) and 36.7% with DOAC. The most prevalent being apixaban with 68%, compared to 17% Endoxaban, 14% Rivaroxaban and 1% Dabigatran. Apixaban was the target of infradosification at 78%, with age as the only criterion. Rivaroxaban and Endoxaban were at adequate therapeutic doses according to renal function.

Conclusions: There is a tendency to use inadequate doses, generally due to underdosing. A high percentage of patients are not anticoagulated at discharge, 33.5%. Fifteen percent of patients are anticoagulated with LMWH. 68% of patients treated with apixaban were under-anticoagulated.

Abstract # 161**AREA: Cardiovascular medicine****Mortality as a function of thrombo-prophylactic management of atrial fibrillation**

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¹Geriatrician

Introduction: Atrial fibrillation (AF) is the most common arrhythmia in the elderly patient. Its presence is associated with an increased mortality, stroke, ventricular dysfunction and heart failure, and the development of cognitive impairment. To prevent thromboembolic phenomena, all guidelines recommend oral anticoagulation (OAC) with vitamin K antagonists (VKA) and direct acting anticoagulants (DOACs).

Objectives: To study mortality as a function of prophylactic thrombo management of atrial fibrillation.

Methods: Prospective study, including 126 patients ≥ 80 years with AF from November, 2019 to April, 2020. Variables: demographic,

cardiological, comorbidity, fragility and Basic activities of daily living (BADL) (SPPB, Barthel indices respectively) and mental states. Type and dose of anticoagulation and associated complications and mortality.

Results: A total of 126 patients with AF were recruited, of which 76% were anticoagulated. The 64.8% were women with a mean age of 87.7 ± 3.7 years and a mean Barthel Index of 64.33 ± 27.4 , 32.2% had cognitive impairment. Of the comorbidities, the following stood out: valvular heart disease (35.2%), hypertensive heart disease (44.5%), ischemic heart disease (19.5%), anemia (32.8%), ischemic stroke (6.3%), hemorrhagic stroke (2.4%). In-hospital mortality of 7% was significantly related to patients with cognitive impairment ($P < 0.001$), first month mortality of 7.8% significantly related to chronic kidney disease (CKD), valvular heart disease and anemia ($P < 0.001$) and finally 6-month mortality of 21.1% significantly related to low Barthel index, cognitive impairment and anemia ($P < 0.001$).

Conclusions: The findings of our patient sample suggest a close relationship between functional, cognitive impairment, anemia and CKD as determinants of mortality in the first 6 months in elderly patients with atrial fibrillation.

Abstract # 162**AREA: Cardiovascular medicine****Atrial fibrillation related stroke audit**

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Introduction: Atrial fibrillation (AF) is a risk factor for ischaemic stroke and anticoagulation can reduce this risk by two thirds. We noted a rise in AF related ischaemic strokes from 3.5% in 2019 to 3.7% in 2020 in Cornwall. This audit aimed to investigate reasons.

Methods: Data was collected prospectively over 4 months for AF related ischaemic stroke admissions to the acute stroke unit including demographics, severity, systolic blood pressure and cholesterol on admission, anticoagulation status in pre-existing AF patients and in newly diagnosed AF, their last contact with primary care.

Results: We report data for 45 patients identified with AF out of 174 patients admitted with ischaemic stroke. The mean age was 80.9 (SD 7.9) and moderated NIHSS 8.5 (SD 6.6). Raised systolic BP was documented in 31 (69%) and raised cholesterol in 20 (44%) patients. Twelve patients (27%) had new AF and 5 (42%) had contact with their GP within 6 months before admission. Of 33 patients with pre-existing AF, 12 (24%) were not anticoagulated. Of 21 anticoagulated patients, all 6 warfarinised patients presented with subtherapeutic INR. Of 15 patients on NOACs, 4 (27%) had lower doses than appropriate prescribed by the GP.

Conclusion: Total patients with known AF not on anticoagulation is higher than national average. The number of newly detected AF in ischaemic stroke is high. Detecting and treating patients at risk of cerebrovascular disease in primary care including AF, high BP and cholesterol should be prioritised to reduce the rising incidence of AF related strokes.

Abstract # 163

AREA: Cardiovascular medicine

Intra hospital course of elderly patient aged of 75 years and more hospitalised for acute heart failure in Hospital Center from Douai

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Introduction: Heart failure is a frequent and severe disease, in particular for old patients. There are no dedicated guidelines for those patients. We know that acute heart failure is responsible of hospitalisations which can lead to a loss of independence. Thus, we have studied geriatrics population and their healthcare pathway. The aim of the study is to create a detailed description of intra hospital pathway of old patient hospitalised for acute heart failure as well as geriatrics population.

Materials and methods: This prospective, observational, monocenter study was conducted in the Hospital Center of Douai, in the North of France, between June 1st of 2020 and March 31st of 2021. It was held in the medical wards including geriatrics, cardiology, pneumology and medicine wards. Inclusion criteria were aged equal or superior of 75 and acute heart failure being the principal inpatient or being associated to the principal inpatient. The intra hospital pathway was divided in of 3 stages: pre-hospital stage, inpatient stage and post hospitalisation stage. The population was described with geriatrics criteria, such as age, sex, comorbidity, treatment and geriatrics syndromes.

Results: 132 patients were included in the study. Patients mostly arrived in hospital through the emergency ward. Most of the patients were hospitalised in cardiology and geriatric wards. The patients hospitalised in geriatrics ward had more dementia, undernutrition and anteriority of falls. Only few patients benefited therapeutic optimisation. The statistical data are in progress and more results would be communicated in congress.

Discussion: Geriatric population is more subject to cardiovascular diseases, especially acute heart failure. However, the therapeutic optimisation remains insufficient. The frailty was evaluated for only few old patients. A cooperation between cardiologist and geriatrician could be primordial for patient care. Furthermore, a dedicated cardiogeriatric unit could be useful for those patients.

Abstract # 164

AREA: Cardiovascular medicine

Coronarography in very old people – less common side effect we should look for?

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The very old people usually have multiple comorbidities, frailty, and sarcopenia, which may predispose to less frequent side effects of drugs or invasive investigations, with unexpected consequences. We present the case of a 93 years old patient. She was admitted for dyspnoea at rest, orthopnoea of gradual onset and progressive course. Symptoms also includes a weight loss (10 kg in 8 months),

palpitations and symptoms of congestive heart failure. Her medical history includes acute coronary syndrome and chronic atrial fibrillation. The acute coronary syndrome was diagnosed 8 months ago and treated using percutaneous transluminal coronary angioplasty. Clinical examination is suggestive for cardiac failure. CXR shows bilateral pleural effusion, echocardiography shows hypokinesia of the left ventricle in association with a severe systolic function impairment in association with high level of proBNP = 15626 pg/ml. Considering previous history, clinical examination and laboratory investigations, the hypothesis of hyperthyroidism was emitted. Thyroid-stimulating hormone serum levels were 0.00 μ IU/ml. Endocrinological examination suggested an iatrogenic hyperthyroidism after iodine load induced by coronary angiography and recommended proper treatment. This case illustrates the need to follow up the very old patients at shorter time intervals. In these patients we must consider also the less common side effects. The guidelines should include recommendations for evaluating thyroid function after coronary angiography, especially in the frail and predisposed older population.

Keywords: Iodine load induced hyperthyroidism, coronary angiography, very old population.

Abstract # 165

AREA: Cardiovascular medicine

Drug related problems in preoperative and postoperative stages at cardiac surgery

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Introduction: There is limited data on the prevalence and potential risk factors for drug related problems (DRPs) in cardiac-surgery patients. This study aimed to identify DRP frequencies and associated factors at preoperative and postoperative stages in cardiac surgery.

Methods: Patients aged ≥ 18 year admitted to the University Hospital for elective cardiac surgery between November 2019 and April 2020 were included. Patients' demographics, medical and surgical data were recorded. The usage of ≥ 5 drugs were defined as polypharmacy. DRPs were identified at pre- and post-operative wards by a clinical pharmacist. The data were analyzed according to age (< 65 versus 65 years).

Results: A total of 100 patients were included, of whom 39 were 65 years. The median (range) number of medications per patient at preoperative and postoperative wards were 4 (0–13) and 9 (4–15) for < 65 years; and 5 (2–11) and 8 (3–14) for 65 years, respectively. A total of 242 DRPs were identified [69 (28.5%) at preoperative and 173 (71.5%) at postoperative]. The most common DRP was “no medication reconciliation at transfer” and “inappropriate combination of drugs” at preoperative and postoperative wards, respectively. Preoperative-DRPs were related to presence of coronary artery disease ($p = 0.009$) and polypharmacy at admission ($p = 0.05$), whereas postoperative-DRPs were associated with having surgical complication ($p = 0.007$). The preoperative ($p = 0.002$) and total number ($p = 0.04$) of DRPs was higher in patients 65 years.

Key conclusions: Cardiac surgery patients, particularly older adults, are at risk of developing DRPs during hospitalization. Therefore, DRPs should be prevented by healthcare professionals in order to maintain optimum outcomes of the surgery.

Abstract # 166**AREA: Cardiovascular medicine****Assessment the cardiovascular risk in depression**

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Introduction: Depressive illness in the older population is a common health concern that is associated with comorbidity, impaired functioning, and increased mortality. Depression often accompanies vascular diseases. In this study, we aimed to evaluate the cardiovascular risk rates between patients with and without depression.

Materials and methods: Two hundred and twenty patients with depression and 620 healthy controls (not diagnosed with depression) were enrolled. All patient had comprehensive geriatric assessment. Blood samples were taken after 8 h fasting period to measure the levels of blood glucose, total cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL) and triglyceride. An online calculator was used to determine the Pooled Cohort Equations (PCE) to estimate the 10-year primary risk of atherosclerotic cardiovascular disease among patients without pre-existing cardiovascular disease.

Results: The median age of patients was 66.2 (65–69) years. Forty of 248 male patients had depression. Hundred and eighty of 592 female patients had depression. The risk assessed with PCE was significantly higher in patients with depression than healthy controls ($34.5 \pm 2.7\%$ vs $27.6 \pm 1.7\%$, $p < 0.001$).

Discussion: This study showed that depression patients have higher cardiovascular risk. Cardiovascular diseases increase the risk of depression and patients with depression have higher cardiovascular disease burden. In this study, we found out that PCE risk score was higher in depression patients. The sedentary lifestyle in patients with depression may have caused this result. When we evaluate it from a different perspective, the chronic ischemic process may have triggered the depression of the patients.

Abstract # 167**AREA: Cardiovascular medicine****Effect of transmural intervention + home-based cardiac rehabilitation on physical functioning of elderly patients postdischarge**

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Introduction: In elderly patients, hospitalized at a cardiology department, a high occurrence of frailty, moderate quality of life, delayed recovery and readmission is seen. Hospital interventions are commonly disease-oriented. The objective of this study was to

evaluate the impact of the Cardiac Care Bridge intervention which combined case management, disease management and home-based cardiac rehabilitation (CR) on physical functioning.

Methods: We performed a single-blinded multicenter randomised clinical trial between June 5, 2017, and 31 March 2020, in six hospitals in the Amsterdam region in the Netherlands. Transitional care started in-hospital and continued in patients' homes. Trained primary care physical therapists performed CR in the homes of patients who were: hospitalized at a cardiology department for > 48 h; identified as frail by a Dutch Safety Risk Score (VMS) of ≥ 1 for age 80 + and ≥ 2 for age 70 + ; or with a prior hospital admission within 6 months. Difference was measured between physical functioning (short physical performance battery) at baseline and 6 months after hospital admission.

Results: In total, 306 patients were included with a mean age of 82.4 years (SD 6.3). 67% of the intervention components were delivered. Physical functioning improved in 54.2% (83/153) in the intervention group and 47.7% (73/153) in the control group. Mean improvement in the intervention group was 2.28 (SD 2.9) v.s. 1.39 (SD 2.8) in the control group.

Conclusion: Home-based cardiac rehabilitation, combined with case- and disease management improved physical functioning of elderly patients 6 months after a hospital admission, and may prolong physical independence.

Abstract # 168**AREA: Cardiovascular medicine****Patient selection for geriatric screening prior to tavr: a clinical challenge**

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Introduction: Frailty is associated with a higher risk of negative outcomes in patients undergoing transcatheter aortic valve replacement (TAVR). The best way to select patients who will benefit from geriatric assessment before TAVR is yet unclear.

Methods: We included all patients referred by a cardiologist for geriatric assessment prior to TAVR between January 2017 and December 2018. Data were retrospectively collected from clinical records and the National Heart Registration (NHR).

Results: We included 121 patients with a mean (SD) age of 84 (3.1) years. 57.9% were men. Before TAVR mean MMSE (SD) was 26.6 (2.9), mean (SD) Charlson Comorbidity Index 5.5 (1.4), mean (SD) walking speed 1.0 (0.25)m/s. 19 (15.7%) patients were frail based on the Edmonton frailty scale (EFS) and 13 (10.7%) patients were categorised as frail after geriatric assessment. 7 patients died within 120 days after TAVR of which 4 (57.1%) were frail according to the EFS or geriatric assessment. Physical health ($P = 0.001$) and walking speed ($P = 0.001$) improved after TAVR.

Conclusion: Most of the patients referred by a cardiologist for geriatric assessment were not frail. Possibly patients were already preselected on their suitability for TAVR. Another explanation may be that criteria currently used in our institute for referral to a geriatrician based on age above 80 is not the most efficient way of preselection for a geriatric assessment. Future studies should focus on how we can identify patients who benefit from a geriatric assessment and show what these benefits are.

Abstract # 169

AREA: Cardiovascular medicine

Is sacubitril/valsartan well tolerated in elderly heart failure patients with reduced ejection fraction? Preliminary data from a real-word registry

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Background: Heart failure (HF) is a common disease in the elderly. Nevertheless, older patients are frequently excluded from HF clinical trials mainly due to their comorbidity burden. Although post-hoc analysis of the PARADIGM-HF trial showed an optimal efficacy and safety profile of sacubitril/valsartan (SA/Va) in elderly patients with HF and reduced ejection fraction (HFrEF), real-word unselected data is needed to better define tolerability and safety in this population.

Purpose: To describe tolerability and safety of sacubitril/valsartan in elderly HFrEF patients with followed at our outpatient HF clinic.

Methods: We consecutively enrolled elderly patients (> 65 years) with HFrEF followed at our outpatient clinic for HF from November 2016 to March 2020 undergoing treatment with Sa/Va, evaluating suspension and titration after 1 years.

Results: We enrolled 70 patients with a mean age of 77 ± 7 years (19% 85 + years), 18.6% were female. Overall, 73% had an ischemic aetiology and 49% had at least moderate mitral insufficiency. Mean ejection fraction was $32 \pm 5\%$ and nearly one third (29%) had a biventricular cardioverter defibrillator. Patients were characterized by a high burden of cardiovascular and non-cardiovascular comorbidities such as history of arterial hypertension (61%), atrial fibrillation (51%), anaemia (46%) and chronic kidney disease (50%). Sa/Va was started at minimum (24/26 mg) or intermediate (49/51 mg) dose in 93% and 7% of patients, respectively. After 1 year 4 patients had died and, of the 66 alive patients, 58 were still on treatment with Sa/Va (88%) while in 8 patients it had been withdrawn (12%). Hypotension, allergic reactions and worsening renal function was the three motivation of suspension (37.5% the first two and 25% respectively). Among patients still on treatment, only 11 (19%) reached target dose (97/103 mg) while 16 reached intermediate dosage (28%). Hypotension (45% of cases), worsening renal function (19%) and hyperkalaemia (17%) were principal causes of non-titration; of note, in 17% of cases we did not find a clinical reason for lack of up-titration. After 1 year we found a reduction in percentage of loop diuretic prescription (with a reduction in mean dosage from 67 ± 100 mg/die to 42 ± 65 mg/die) and mineral-corticosteroid antagonist (MRA, with a reduction of medium dosage from 24 ± 15 mg/die, a stability in percentage of prescription of betablockers (BB, only 3.3% at target dose) and an increasing in sodium-glucose cotransporter rate. Anyway, prescription of Sa/Va, BB and MRA decreased from 79 to 70%. At 1 year follow-up, in patients still treated with Sa/Va, we observed a functional improvement, as well as in NTproBNP levels while mean systolic blood pressure, mean serum creatinine and mean serum potassium remained stable.

Conclusions: At 1 year follow-up Sa/Va was well tolerated in the vast majority of our elderly HF patients and used in combination with a BB and an MRA in a very high percentage of cases, although we found a important reduction in prescription rate of MRA. Sa/Va up-titration to maximum dose was overall very poor and limited mainly

by hypotension, worsening renal function and hyperkalaemia. Patients that tolerated Sa/Va at 1 year were less symptomatic and had an improved biohumoral profile.

Abstract # 170

AREA: Cardiovascular medicine

Assessment of cognitive dysfunction using the montreal cognitive assessment test: rate, severity and comparison with the clock test alone in a population of patients referred for TAVI

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Background: Although not recommended in routine practice, the detection and quantification of Cognitive Dysfunction (CD) in older patients might have an impact on clinical decisions. We assessed the rate and severity of CD in an unselected population of patients referred for Transcatheter Aortic Valve Implantation (TAVI) using the Montreal Cognitive Assessment (MoCA) and using the Clock Drawing Test (ClockT) alone.

Methods: The MoCA was performed before TAVI by an experienced operator. The ClockT was scored out of 10 points according to the Rouleau rating scale. CD was defined according to the MoCA score: No CD if score ≥ 26 , mild CD if score 18–25, moderate if 10–17 and severe if < 10 . Inter-observer reliability of scoring on the ClockT was estimated with the Bland–Altman method. Agreement between MoCA scores and the ClockT for ruling out and for detecting CD were measured with the Kappa coefficient.

Results: MoCA was performed in 83 consecutive patients referred for TAVI, median age 85 years. The mean time required for assessment was 11 ± 2 min for the MoCA and 3 ± 2 min for the ClockT. The mean MoCA score was 21 ± 4.5 : CD was excluded in 17 (20%) pts, mild CD was found in 50 (60%), moderate in 15 (18%) and severe in one (1%). The median ClockT score was 8 (interquartile 6; 9), with excellent inter-observer concordance (Kappa = 0.84). Overall, 51% of the variance of the MoCA score was explained by the ClockT alone according to multiple regression. A ClockT < 7 detected a group with significantly lower MoCA score, compared to pts with higher ClockT scores.

Conclusion: Among patients referred for TAVI, CD can be excluded using the MoCA test in 20%, while moderate or severe CD is observed in 18%. The ClockT alone is faster to implement, reliable to interpret and enabled detection of patients with moderate CD when Rouleau scoring was < 7 .

Abstract # 171

AREA: Cardiovascular medicine

Cognitive dysfunction among patients referred for transcatheter aortic valve implantation: results of the montreal cognitive assessment and clinical impact at 6 months

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Background: Detection of Cognitive Dysfunction (CD) is not routinely performed among patients undergoing Transcatheter Aortic

Valve Implantation (TAVI). We sought to determine whether CD has an impact on the clinical course of these patients, during hospitalization at the time of TAVI and up to 6 months afterwards.

Methods: The MoCA was performed before TAVI by an experienced operator in an unselected population of patients referred for TAVI. CD was defined according to the MoCA score: No CD if score ≥ 26 , mild CD if score 18–25, moderate if 10–17 and severe if < 10 . Multivariate Cox logistic regression analysis was used to determine the impact of CD on procedural success of TAVI, length of stay, 6 month survival, re-admission, and change in clinical status (changes in NYHA class and/or functional status).

Results: MoCA was performed in 83 consecutive patients. TAVI was performed using femoral access and local anesthesia in all patients. There were no procedural deaths, and 2 deaths at 6 months. The median age was 85 years, and median Euroscore I was 11.62. The median MOCA score was 22, CD was excluded in 17 (20%), mild in 50 (60%), moderate in 15 (18%) and severe in one patient. No difference was observed in rate of procedural success, 6 month mortality, re-admission, degree of dyspnea by NYHA between the different cognitive groups. Length of stay after the TAVI procedure was lower in patients without CD, compared to those with CD at any level: 3 ± 1 days versus 4.3 ± 1 days, $p = 0.045$, and $p = 0.02$ by multivariate analysis.

Conclusion: Among patients referred for TAVI, mild or moderate CD was observed in 80% of patients. Patients without CD had a shorter length of stay at the time of TAVI, but CD was not associated with worse prognosis or clinical status at 6 months.

Abstract # 172

AREA: Cardiovascular medicine

Multi-morbidity in an Irish interdisciplinary atrial fibrillation clinic – Tallaght university hospital atrial fibrillation initiative (TAFI)

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Introduction: Atrial Fibrillation (AF) is an age-related condition, with higher rates of co-morbidity in AF patients than matched controls [1, 2]. The AF population requires interdisciplinary care to avoid incomplete patient assessment. We set up an interdisciplinary AF service in 2018, with geriatric medicine, nursing, cardiology and pharmacy to ensure comprehensive assessment and stroke prevention.

Methodology: In this single centre prospective observational study, patients attending a dedicated interdisciplinary AF clinic were recruited. Baseline clinical and demographic details were collected at initial clinic visit. Statistical analysis was performed using STATA, Version 16.1. Continuous data are presented as means ($\pm$ SD) or median (IQR). Creatinine clearance (CrCl) was measured using Cockcroft-Gault. All patients provided informed consent and the database had ethical approval.

Results: In 755 patients the mean ($\pm$ SD) age was 69.1 years (± 12.3) and 62% were male. The median (IQR) CHADSVASC score was 3 (2, 4), while 21% had a score of 0–1. Oral anticoagulants were prescribed to 88.7%, of whom 96.5% received novel oral

anticoagulants. Hypertension was present in 71%, ischaemic heart disease in 18.9%, prior stroke/TIA in 15.8% and diabetes mellitus in 18%. The mean CrCl was 63.5 ml/min and CrCl was > 90 in 19.6%, 60–90 in 36.6%, 45–59 in 25.3%, 30–45 in 14.4%, and < 15 ml/min in 4.1%.

Conclusion: Our AF population are typically older with high rates of co-morbidities, many of which are considered gerontological. Our findings support the need to provide interdisciplinary assessment and management to prevent a ‘fractured’ approach to patients needs and to ensure safe and effective medical management.

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Abstract # 173

AREA: Cardiovascular medicine

Plasma ceramides independently predict total mortality in oldest-old men

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Introduction: Although dyslipidemia is an established risk factor for cardiovascular and total mortality, relationship is more obscure and may even be reversed in old age. Ceramides are bioactive lipids which have a role in several cellular functions and are present in small amounts in plasma. Plasma concentrations of ceramides have been observed to improve cardiovascular and mortality risk prediction over other variables like low density lipoprotein cholesterol (LDL-C) in middle age, but whether this applies to oldest-old is unknown.

Methods: In the Helsinki Businessmen Study (HBS) men with high socioeconomic status (born 1919–1934, $n = 3490$) have been followed-up from midlife, and in 2017, home-dwelling survivors ($n = 129$) participated in clinical investigations including short physical performance battery (SPPB) reflecting function. Plasma ceramide concentrations (mass spectrometry), together with several other plasma markers were measured, and total mortality follow-up was through January 2021. In this analysis we focused on Cer (d18: 1/16.0) molecule. Cox regression was used for analyses.

Results: Median age was 88 (IQ range 86–90) years, mean BMI 25.8 (SD 2.8) kg/m² and mean LDL-cholesterol 2.5 (SD 0.9) mmol/L; 75 men (59%) were on statin therapy. Of the various ceramides measured, Cer (d18: 1/16.0) was the strongest predictor and its mean concentration (umol/L*10) was 2.67 (SD 0.62). Correlation with LDL-C was significant ($r = 0.63$). During 3.5-year follow-up 23 men (18%) died. After adjustment for age, LDL-C, and SPPB, Cer (d18: 1/16.0) significantly predicted mortality, hazard ratio 2.41 (95% CI 1.21–4.77).

Conclusions: Plasma ceramide level predicted mortality in oldest-old home-dwelling men independently of LDL-C and physical function.

Abstract # 174

AREA: Cardiovascular medicine

Is arterial stiffness is a useful predictor of secondary vascular events?

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Introduction: Arterial stiffness, shown to be an independent predictor of cardiovascular events, is increased in those with established strokes. The ASIST study (Arterial Stiffness In Lacunar stroke and TIA) explores if measuring arterial stiffness following a minor stroke can predict those likely to have a secondary event.

Methods: In this longitudinal study, individuals with a confirmed diagnosis of TIA (Transient Ischaemic Attack) or lacunar stroke were recruited. Those unable to provide informed consent or with active cancer were excluded. Arterial stiffness was measured using standardised methods; Complior® (Alam medical) and CAVI® (Fukuda), within 2 weeks of the minor stroke. Participants were followed up by telephone call at 3 and 6 months.

Results: We recruited 96, mainly white-caucasian patients (66 male), the mean age of participants was 72 (range 46–94). All individuals recruited were included in follow-up. Of those recruited 9 had secondary events within 6 months (rate 8.6%). Of the measurement of arterial stiffness CAVI demonstrated the most significant difference ($p = 0.047$) between those with secondary events (10.7, S.E. 0.57) and those without (9.61, S.E. 0.17). Carotid Femoral Pulse Wave Velocity (CFPWV) although higher in the group with secondary events (10.8 m/s, S.E. 1.06 vs. 10.5 m/s, S.E. 0.32) did not reach statistical significance.

Conclusions: In conclusion markers of arterial stiffness are present early in the stages of cerebrovascular disease. Markers of arterial stiffness, especially CAVI, may aid in the prognostic profiling of patients following minor strokes.

Abstract # 175

AREA: Cardiovascular medicine

Tako-Tsubo syndrome in the elderly patient. about a case

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Introduction: TakoTsubo syndrome is a rare reversible cardiac pathology with atypical manifestation in the elderly, so its diagnosis must be differentiated from myocardial infarction.

Methods: A clinical case of an 80-year-old male patient with chest pain, dyspnea, hypotension, tachycardia, general malaise in the context of acute urine retention is analyzed.

Results: Patient with a history of hypertension, diabetes mellitus. Previous baseline situation: independent for ABVD, No cognitive impairment, Married, with good family support. He was admitted after a post-traumatic right frontal intraparenchymal hematoma, which began after a stressor with chest pain in an electrocardiogram of atrial fibrillation rhythm with ST elevation in the antero-septolateral aspect. In echocardiogram akinesia septal-anterior and lateral, ejection fraction moderately reduced. In coronary angiography: absence of angiographically significant lesions in the epicardial coronary arteries. So treatment with amiodarone for heart rate control, bisoprolol and apixaban was started. In control echocardiography at

2 months, recovery of the ejection fraction and septal normocontractility were observed.

Conclusion: Stressors in the elderly can predispose to the appearance of cardiac pathology whose diagnostic approach requires clinical suspicion and confirmation through complementary tests.

Abstract # 176

AREA: Cardiovascular medicine

Is there a correlation between apixaban serum concentration and renal function in elderly patients?

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Introduction: Apixaban is a commonly used direct oral anticoagulant (DOAC). Renal excretion of apixaban represents 27% of the overall clearance, and hence no dose adjustments are recommended when the glomerular filtration rate (GFR) is above 30 ml/min. However, knowledge about the impact of renal function on apixaban pharmacokinetics in older patients is limited. The aim of this study was to monitor serum concentrations of apixaban in correlation with renal function in elderly patients acutely admitted to hospital.

Methods: Prospective observational study including patients ≥ 65 years admitted at Haukeland University Hospital, Bergen, Norway. Patients using the DOAC apixaban prior to admission were included in the study. Serum concentrations of apixaban were monitored during hospital stay, and correlated with renal function.

Results: A total of 36 apixaban-treated patients were included, with a median age of 84.5 years (range 68–96). The median GFR was 46 mL/min (range 17–127). Apixaban was mainly prescribed for atrial fibrillation (94%). A significant correlation between dose-adjusted apixaban serum concentration and GFR (Spearman $r = -0.54$, $p = 0.0008$) was shown ($n = 36$). For 72% of the patients serum concentrations were above the target reference range. Patients with GFR between 15 and 30 ml/min ($n = 8$) had an 81% higher dose-adjusted serum concentration than patients with GFR > 30 ml/min ($n = 28$, $p = 0.0005$).

Conclusion: In older acutely hospitalized patients, serum concentration of apixaban is often higher than reference levels and increases with increasing renal failure. Apixaban should be used with caution in acutely ill older patients with suspected renal failure.

Abstract # 177

AREA: Cardiovascular medicine

Phenomapping for classification of older patients with increased risk of 3-month-post discharge acute heart failure relapse

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Background: Various studies have sought at determining clinical risk factors of acute heart failure (HF) relapse; however, only few investigations have specifically attempted to evaluate the role of frailty degree in older patients with recurrent decompensated (HF). The aim of the present study is to determine the prognostic role of

frailty degree in a cohort of oldest old patients admitted to a tertiary hospital for acute HF, using a k-means clustering analysis.

Methods: In this prospective observational study, consecutive patients aged 65 years and over admitted to Geriatric Unit of University Hospital of Pisa with acute heart failure were enrolled.

Results: A total of 343 patients were enrolled in the study (51.6%-women; mean age = 86.24 ± 6.1 years). At multivariate regression analysis, CIRS and CFS and BNP levels appeared to be associated with increased 3-month mortality risk or hospitalization for HF relapse. The K-means clustering was used with the aforementioned risk factors to identify four clusters with the following general characteristics: cluster 1, Non Frail-Low BNP (NFLB); cluster 2, Non Frail High BNP (NFHB); cluster 3, Frail High BNP (FHB); cluster 4, Frail Low BNP. Cox regression analysis adjusted for age and sex revealed that FHB and FLB patients presented a 3-month mortality and recurrent HF risk, respectively, three times and six times greater than NFLB patients.

Conclusion: FHB and FLB clusters are independently related with increased risk of mortality and HF relapse. We are finally able to identify patients requiring a short-term follow up or outpatient reevaluation.

Abstract # 178

AREA: Cardiovascular medicine

CHA2DS2VASc Scale can help to predict obstructive coronary artery disease in atrial fibrillation- a cross-sectional study in older adults referred for elective coronary angiography

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Introduction: Atrial fibrillation (AF) is a significant predictor of non-obstructive coronary artery disease (CAD) in older adults referred for elective coronary angiography (CAG). There is a need to improve these patients' group stratification for the procedure to avoid unnecessary risks. The study aimed to determine which factors are independent predictors of obstructive CAD in older adults with AF referred for elective CAG.

Methods: A cross-sectional study of 1985 patients aged 65 plus years referred to the department of invasive cardiology in the Medical University of Białystok between 2014 and 2016 for elective CAG despite undergoing optimal therapy for CAD was conducted. The median age was 72, IQR: 68–76, years and 49.5% were women. The prevalence of obstructive CAD and its health correlates was assessed. Relative risks were calculated, and a multivariable logistic regression analysis model was built. The predictive performance was evaluated using receiver-operating characteristic (ROC) curve analysis.

Results: Significant stenosis (50% or more of the diameter of the left main coronary artery stem or 70% or more of the diameter of the rest of the major epicardial vessels) was diagnosed only in 1135 (51.3%) patients. The most important independent predictors of obstructive CAD were congestive heart failure (OR 5.43; 95% CI 3.14–9.39; $P < 0.001$), age of 75 + years (OR 4.0; 95% CI 1.43–11.2; $P = 0.008$), and previous history of stroke or transient ischemic attack (OR 2.1; 95% CI 1.06–4.13; $P = 0.03$). ROC analysis showed CHA2DS2-VASc scale significance as a screening tool for obstructive CAD (ROC-AUC 0.75; 0.7–0.8; $P < 0.001$), with the value of 4 or more as the best cut-off point.

Key conclusions: The results confirmed that the nonobstructive CAD concerns a high percentage of older patients with AF referred for elective CAG. Based on CHA2DS2-VASc score, a qualification procedure for the invasive diagnostic of CAD could probably be improved, but it needs further research.

Keywords: Elective coronary angiography, nonobstructive coronary lesions, older patients, atrial fibrillation, chronic coronary disease.

Abstract # 179

AREA: Cognition and dementia

Effect of acetylcholinesterase inhibitors on mortality in patients with dementia: a systematic review of randomized and non-randomized controlled trials

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Background: Acetylcholinesterase inhibitors (AChEIs) have cardiovascular effects in addition to their neurological activity. We wanted to know their impact in mortality.

Methods: We conducted a systematic review. We searched PubMed, EMBASE, Cochrane CENTRAL, ClinicalTrials.gov, and ICRTIP up to May 2021 and included randomized controlled trials (RCTs) and parallel cohorts comparing AChEIs treatment with placebo or usual treatment in patients with dementia. Two investigators independently assessed studies for inclusion, risk of bias and extracted data, using predefined forms and Cochrane RoB2 tool. The main outcome was all-cause mortality, being cardiovascular mortality a secondary outcome. Crude death rates and multivariate-adjusted hazard ratios (HR) were pooled using a random-effect model.

Results: We found 21 studies (10 RCTs, 11 cohort studies) cumulating 67 672 patients with Alzheimer's (10 studies), Parkinson's (1 study), vascular (1 study), mixed types (5), and undefined (4 studies) dementia. Treatment with AChEIs was associated with lower all-cause mortality (unadjusted RR 0.75, 95% CI 0.65–0.84; adjusted HR 0.77, 95% CI 0.70–0.84). This effect was consistent between randomized and non-randomized studies, different types of dementia and all drugs studied. Less data was available for cardiovascular mortality (3 RCTs, 1 cohort, 3 112 patients), which was also lower in patients treated with AChEIs (RR 0.61, 95% CI 0.40–0.93).

Conclusions: In patients with dementia, there is a strong and consistent association between treatment with AChEIs and a reduction in all-cause mortality.

Keywords: Dementia, Alzheimer's, acetylcholinesterase inhibitors, all-cause mortality.

Abstract # 180

AREA: Cognition and dementia

Impact of cognitive impairment for survival people over 95 years old

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Objective: To assess the prevalence of cognitive impairment in people over 95 years old and its impact on mortality.

Methods: This is the prospective observational study including community living 95 years and above older adults, which living at home in Moscow. All people were completed a comprehensive geriatric assessment comprise assessment of the cognitive impairment (mini-mental state examination—MMSE), assessment of social status. After 3 years, the patient's status was obtained. One-way regression analysis was used to assess survival.

Results: Among 57 participants, the medium age was 98.3 ± 1.89 (from 95 to 105) years; 80% of them were female. To a large extent, participants graduated from college and university (26.6% and 44.3%, respectively). The median of the MMSE was 24 (19; 26). 28 people had dementia (49.1%), including severe (5.3%), moderate (22.8%) and mild (21.1%) dementia. Mild cognitive impairment was detected in 20 participants (35.1%). Other people (16%) had not cognitive impairment. In 3 years, 60.7% of participants with dementia died ($p < 0.05$). The average MMSE score for survivors and deceased was 24.9 ± 4.2 and 20.84 ± 5.6 , respectively. Univariate analysis identified that dementia acts as an independent factor of negative prognosis and increases the risk of 3-year death by 3.7 times (95% CI 1.0–13.5; $p < 0.05$).

Conclusions: Prevalence cognitive impairment among people 95 years and old is high: 84% (mild cognitive impairment 35.1%; demention 49.1%). Dementia is an unfavorable prognostic factor.

Abstract # 181

AREA: Cognition and dementia

Clinical case. Progressive multifocal leukoencephalopathy

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An 85-year-old hypertensive woman with follicular non-Hodgkin lymphoma, stage IV-S (diagnosed in March 2017) in chemotherapy treatment with Bendamustine/Rituximab, until July 2017. Before the lymphoma diagnosis, the patient was totally independent, without cognitive impairment. In January 2018, the patient was referred to Psychiatry and Neurology, for worsening anxiety symptoms and mental deterioration. She was diagnosed with adaptive disorder secondary to multiple pathologies and moderate-severe cortical dementia (neurodegenerative disease type Alzheimer's disease). During this period there are several visits to the Emergency Ward, due to a worsening of the general condition. At the last visit, a cranial CT scan was performed, with no findings. The patient's daughter consulted with Geriatrics for a rapidly progressive cognitive deterioration associated with serious behavioral disorders. It was decided to admit

the patient to complete the study of rapidly progressive cognitive decline. During hospitalization, a complete blood test was performed that did not show relevant findings and HIV serology that was negative. Brain magnetic resonance imaging shows a hyperintense punctiform images without mass effect in T2-weighted and FLAIR sequences, predominantly in left parieto-occipital subcortical white matter. Several differential diagnoses are suggested, including progressive multifocal leukoencephalopathy (PML), immune reconstitution inflammatory syndrome, or lymphoma. A lumbar puncture was performed, with a high opening pressure stands out. The rest of the cyto-biochemical parameters were normally. A positive PCR for the human neurotropic virus JC Polyomavirus, confirmed the diagnosis of PML. Symptomatic treatment was adjusted. The patient was included in a palliative care program, dying 2 months after diagnosis.

Abstract # 182

AREA: Cognition and dementia

Evaluation of the “Hospital Cognition Screening” in elderly patients admitted to a German hospital

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Introduction: In the growing cohort of elderly persons admitted to hospitals, cognitive deficits associated with a high delirium risk are frequent. A fast and easily to perform cognition screening tool is essential for identification of these patients to provide an appropriate delirium prevention. Here, we evaluated the Hospital Cognition Screening [HoCS: 3 questions concerning age, reason for hospital admission, and place + subjective impression] in elderly patients in an acute hospital setting.

Methods: 155 patients with an age between 70 and 102 years (median 83) admitted to the departments of cardiology, plastic surgery, and urology between 11/15/2020 and 12/16/2020 were screened for cognitive deficits by the cognition team of the hospital using the HoCS (maximum 4 points) and the Six-Item Screener (SIS, maximum 6 points). HoCS values < 3 and SIS values < 4 were considered as hints for cognitive deficits. Correlation and consistency of HoCS and SIS results were analyzed.

Results: Identification of cognitive impairment by the two tests showed consistency in 92%. 26.3% of patients were screened cognitively conspicuous by the HoCS, and 26.9% by the SIS (Fisher's exact test: $p = 1$). Correlation of HoCS and SIS results was strong (Spearman $r = 0.72$, $p < 0.0001$). In comparison to the SIS, the HoCS was rated easier, faster, and less embarrassing for the patient by the members of the cognition team.

Key conclusions: Results of the HoCS and the well validated SIS show high consistency concerning the identification of patients with suspected cognitive impairment. Due to its easy and fast performance, the HoCS can be integrated in the admission process in acute settings and appears an appropriate screening tool for identification of hospital patients at risk for delirium.

Abstract # 183**AREA: Cognition and dementia****Late-life depressive symptomatology, motoric cognitive risk syndrome and incident dementia: the “NuAge” Study results**

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Background: Late-life depressive symptomatology and motoric cognitive risk (MCR) have independently been associated with an increased risk for incident dementia. This study aims to examine the association of late-life depressive symptomatology, MCR and their combination on incident dementia in community-dwelling older adults living in Quebec (Canada).

Methods: The study was carried out in a subset of 1098 community-dwellers aged > 65 recruited in the “Nutrition as a determinant of successful aging: The Quebec longitudinal study” (NuAge), an observational prospective cohort study with 3 years follow-up. At baseline, MCR was defined by the association of subjective cognitive complaint with slow walking speed, and late-life depressive symptomatology with a 30-item Geriatric Depression Scale (GDS) score > 10/30. Incident dementia, defined as a Modified Mini-Mental State score ≤ 79/100 test and Instrumental Activity Daily Living score < 4/4, was assessed at each annual visit.

Results: The prevalence of late-life depressive symptomatology in individuals without MCR was 7.7%, of MCR in individuals without late-life depressive symptomatology 3.5% and the combination of late-life depressive symptomatology and MCR 0.7%. The combination of late-life depressive symptomatology and MCR at baseline was associated with significant overall incident dementia (odd ratio (OR) = 3.57 with P = 0.013) but not for MCR only (OR = 1.70 with P = 0.432) or late-life depressive symptomatology (OR = 1.11 with P = 0.879) only.

Conclusions: The combination of late-life depressive symptomatology and MCR is associated with incident dementia in older community-dwellers. The results suggest an interplay between late-life depressive symptomatology and MCR exposing to an increased risk for dementia.

Abstract # 184**AREA: Cognition and dementia****Dementia prevalence and geographical variation in New Zealand (NZ) from 2012–2015 utilising routinely collected data within the Integrated Data Infrastructure (IDI)**

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Background: There are no national dementia epidemiological studies using NZ data. Currently, NZ estimates use other countries’ data extrapolated to NZ. Healthcare data is routinely collected within a national database in NZ, the Integrated Data Infrastructure (IDI). This study’s aims were: (1) Investigate NZ’s late-onset dementia

prevalence within IDI (2012–2015); (2) Compare this with published NZ estimates; (3) Compare variations between the North and South Islands and ethnicity.

Method: A population-based retrospective cohort study was used analysing routinely collected de-identified health and administrative data within NZ’s IDI system. Health data comprised secondary healthcare data (publicly-funded hospital discharges and dispensing of medications) and mortality data. For each year (2012–2015), dementia cases (numerators) were counted. Dementia was defined by any mention of ICD-10-AM (Australian modification version) dementia codes; or dispensing of anti-dementia drug. Dementia cases were calculated by year, subtype, ethnicity and geographical region. For ethnic comparisons of dementia rates we used direct age-sex standardisation.

Results: Approximately 2% of the > 60 year old population had dementia, lower than published estimates. The mean age for dementia ranged from 81.9 to 82.5 (SD 7.7–7.8). Europeans were the largest ethnic group contributing most to the overall dementia counts (88–89% of dementia cases). Māori with dementia contributed 5–6% of dementia cases. When dementia cases were separated by ethnicity and calculated as a proportion of the ethnic group overall, the numbers differed less substantially (Europeans 2% vs Māori 1%). Following age and sex standardisation, the ethnic variation changed with dementia cases higher for Māori than Non-Māori (2% vs 1%). Additionally, dementia was higher in the North versus South Island; and 9% had > 1 dementia sub-type recorded.

Conclusions: In conclusion, this study shows it is possible to ascertain dementia within NZ’s IDI. To our knowledge, this is the first study to do this. Our estimates should be interpreted cautiously and might be considered as “lower bound” estimates. Several explanations for these variations should be considered for future work. Our research highlights the need for further work including a national epidemiological study of dementia, using additional datasets to increase dementia ascertainment and further understand NZ’s dementia ‘diagnosis gap.’

Abstract # 185**AREA: Cognition and dementia****Factors associated with the development of delirium in elderly patients undergoing scheduled surgery for colorectal cancer. Preliminary results**

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Aims: To describe the clinical characteristics associated with the development of postoperative delirium in patients undergoing scheduled surgery for colorectal cancer (CRC).

Methods: All patients ≥ 80 years admitted due to elective surgery for CRC were included from October 1st 2018 to March 31st 2021. A preoperative Comprehensive Geriatric Assessment was conducted: comorbidity using the Cumulative Illness Rating Scale for Geriatrics (CIRS-G Scale), polypharmacy, anesthetic risk (ASA), cognitive status (GDS Reisberg) and frailty study (Frail Scale and Frail-VIG Index). During hospital admission, daily clinical follow-up was performed by a geriatrician, with special attention to the development of delirium.

Results: Sixty-six patients were included. The mean age was 83.5 ± 4.1 years. Of them 21.2% had high comorbidity, 18.2% polypharmacy (≥ 10 drugs), 75.8% high anesthetic risk ($ASA \geq III$) and 9.1% cognitive impairment ($GDS \geq 3$). The presence of frailty was variable according to the scale used: 15.1% Frail Scale and 16.7% Frail-VIG Index. Postoperative delirium developed in 19.7% of patients. Delirium was associated with high comorbidity (35.7% vs 15.4%, $p = 0.09$), polypharmacy (50% vs 13%, $p < 0.05$. Odds ratio (OR) 6.7; 95% CI 1.7–26.7), high anesthetic risk (26% vs 0%, $p < 0.05$), cognitive impairment (50% vs 16.7%, $p = 0.05$) and frailty (Frail Scale (50% vs 14.3%, $p = 0.09$. OR 4.9; 95% CI 1.2–19.9) and Frail-VIG Index (45.5% vs 14.5%, $p < 0.05$. OR 6.0; 95% CI 1.4–25.5)).

Conclusions: The development of delirium is common in patients undergoing surgery for CRC and its presence is associated with polypharmacy and frailty. Multidisciplinary pre- and perioperative management of these patients may help to reduce the incidence of postoperative delirium.

Abstract # 186

AREA: Cognition and dementia

Efficacy of benzodiazepines and related drugs in patients over 75 years of age and impact on cognition

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Background: In France, despite the known risks, the use of benzodiazepines and related (BZD) and other psychotropic drugs is excessive, particularly in older populations. It is estimated that over the age of 70, 1 person in 2 uses BZD on a long-term basis. This is a chronic use because it often exceeds 3 years, whereas it is recommended not to exceed 12 weeks. In order to compensate for the numerous undesirable effects and to maintain a positive benefit-risk balance, these treatments must therefore be very effective and play an important role in improving quality of life.

Objectives: To determine whether the efficacy of BZD in treating anxiety outweighs their adverse effects in older population.

Methods: In a population of 109 patients with cognitive impairment and hospitalized at the Saint Quentin Hospital in France, we recorded the use of BZD and medical background (history of falls). Neuropsychological assessments allowed cognitive and thymic evaluation (MoCA, MADRS, Goldberg). Flow MRI was used to assess cerebral blood flow.

Results: In our cohort, 50% of the subjects were BZD + and 78% were women. Depression (MADRS) and anxiety (Goldberg's anxiety scale) scores were higher in the BZD + group and cognition and executive function assessment scores (MoCA, BEC96, Figures of Rey) were lower in the BZD + group. Other common adverse effects of BZD in older population such as falls and hypotension were not more common in the BZD + group than in the BZD- group. Cerebral blood flow showed no difference between groups.

Conclusion: Long-term treatment of anxiety with BZD in patients over 75 years of age is not effective. Moreover, the deleterious impact of this treatment on cognition has been demonstrated. These findings lead us to alternative and non-medicinal therapies for anxiety in older

population. These results also show that the mechanism of action of BZD is not vascular.

Abstract # 187

AREA: Cognition and dementia

Neurofilament light chain a promising biomarker for refining the diagnosis of neurodegenerative diseases: evidence from a clinical sample in a tertiary memory clinic

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Introduction: Plasma neurofilament light (NfL) is a promising biomarker of axonal damage and neuronal death, with elevated levels in most of neurodegenerative disorders compared to controls. Our objective was to compare the measurements of plasma NfL in different etiological subcategories of neurocognitive disorders to assess its potential role as a discriminating biomarker.

Methods: Retrospective, cross-sectional, monocentric study, from Paris North tertiary memory clinic. Patients benefited from CSF Alzheimer's Disease (AD) biomarkers and plasma collection. Diagnoses were made by a multidisciplinary team (Geriatrician, Neurologist, Neuropsychologists, Neuroradiologist), based on the most recent criteria. Plasma NfL were compared regarding etiological diagnosis, cognitive impairment level and on the degenerative character of their disease.

Results: Participants (N = 637, mean age = 69.2 ± 8.7 , 56% women) showed higher plasma NfL levels in all etiological subcategories compared to controls. Plasma NfL levels were also significantly higher in Fronto-temporal lobar degeneration and AD than in Disease with lewy body and Non neurodegenerative Diseases. Plasma NfL was significantly higher in the degenerative than in the non-degenerative group and was associated with the stage of cognitive impairment ($p < 0.001$). In a logistic regression model, including age and MMSE score, the area under the curve for discriminating degenerative and non-degenerative conditions was 0.80 ($p < 0.001$).

Conclusion: NfL appeared as an accurate biomarker for discriminating neurodegenerative from non-degenerative disorders in older adults. Plasma NfL also reflected the cognitive impairment stage. Further studies are warranted to define the most appropriate setting for the use of NfL in these patients.

Abstract # 188

AREA: Cognition and dementia

The effect of curcumin on acetylcholinesterase levels in a model of scopolamine-induced cognitive impairment

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Introduction: In our previous study titled “Prevention of Cognitive Deficit by Curcumin in Scopolamine-Induced Rat Models of Cognitive Impairment”, we obtained models of cognitive impairment by an intraperitoneal single dose of 16 mg/kg scopolamine. We concluded that curcumin administration of 200 mg/kg/day for 7 days before scopolamine administration had a protective effect on cognitive functions. In this study, we measured acetylcholinesterase enzyme activity in the frontal cortex of the same rats.

Methods: The activity was highest in the scopolamine group and lowest in the control group. It was also lower in the curcumin group than the scopolamine group. This result biochemically supports the negative effect of scopolamine on cognitive functions. AChE levels were measured in brain frontal cortex tissues of the untreated control group, treated with scopolamine group, and treated with prophylactic curcumin and then exposed to scopolamine group, using a commercial rat ELISA kit (BTLab, Cat.No E0724Ra, China). We used SPSS version 22.0 (IBM, Armonk, NY) to analyze the data.

Results: AChE activity was the highest in the scopolamine group and the lowest in the control group ($p = 0.006$). In the subgroup analysis, it was concluded that the AChE activity in the scopolamine group was higher than both the control group and the curcumin group. The results are summarized in tables 1 and 2.

Conclusion: The result obtained from AChE levels is consistent with the knowledge that scopolamine causes cognitive impairment and prophylactic curcumin administration reduces this negative effect.

Keywords: Acetylcholinesterase, cognitive impairment, curcumin, scopolamine.

Abstract # 189

AREA: Cognition and dementia

Comprehensive evaluation of #dementia posts on twitter

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Background: We aimed to make a quantitative and qualitative analysis of the dementia debate on Twitter using the # Dementia hashtag.

Methods: Other users' shares were reached via the Twitter feed API. TAGS (Twitter Archiving Google Page) 6.1 version was used for data mining. The posts were grouped in terms of content, location, days of sharing, and whether they were shared by an account that posted for the first time.

Results: Seven hundred eighty-eight posts were analyzed. Most posts were shared from the USA with 231 posts. Most of the tweets were informative ($n = 443$). First-time tweet posting users posted fewer tweets on weekends relatively, and the ratio of first-time users was low among posts with an unknown location ($p < 0.01$, $p < 0.01$). The users who posted for the first time were mostly sharing about social projects.

Discussion: To evaluate the effect of social media on the management of dementia and other psychiatric diseases, it is important to examine the content of the posts on this subject. It would be beneficial to do more studies on this subject.

Keywords: Dementia, Microblogging, Social media, Twitter.

Abstract # 190

AREA: Cognition and dementia

Comparing mini ace with moca in hospitalised older patients

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Comparing the Mini-Addenbrooke's Cognitive Examination (Mini-ACE) with the Montreal Cognitive Assessment (MoCA) in hospitalised older patients Hassan N, Subramanya N, Ansari B, Ansari, Ahmed S, Adeyeye T, Masud T Department of Healthcare for Older People, Nottingham University Hospitals NHS Trust, Nottingham, UK

Introduction: Cognitive assessment tools are commonly used in hospitalised older patients to diagnose cognitive impairment including dementia. In our hospital we have recently started using the Mini-Addenbrooke's Cognitive Examination (Mini-ACE) instead of the Montreal Cognitive Assessment (MoCA) due to the latter's copyright concerns. Both tools have a maximum value of 30. We performed an audit comparing both tools in older hospitalised patients.

Methods: Consecutive patients aged ≥ 60 years admitted to the Geriatric Medicine department were studied. Both MoCA and Mini-ACE tests were performed by the same clinician on each patient in one sitting. Results were compared using SPSS version-24.

Results: 50 patients, (19 women), mean age (SD) = 82.6 years (± 7.7), range 64–95 years were studied. There was excellent linear correlation between the total scores (Spearman rho = 0.801; $p < 0.001$). Using established cut-offs in the literature for cognitive impairment for both tools (≤ 25), MoCA and Mini-ACE classified 41 (82%) and 45 (90%) respectively ($\chi^2 = 25.31$; $p < 0.001$) as being cognitively impaired. The regression line suggested that the MoCA equivalent of ≤ 25 cut-off for Mini-ACE was 21.

Discussion: The mini-ACE had a high linear correlation with MoCA, however using the same ≤ 25 cut-off, Mini-ACE over-diagnosed cognitive impairment. The literature suggests two possible cut-offs for Mini-ACE (≤ 25 and ≤ 21) with different sensitivities/specificities (Hsieh et al,2015). Our audit suggests that Mini-ACE can replace the MoCA successfully but the scores are not equivalent between the tests, and in hospitalised geriatric patients the lower cut-off of ≤ 21 may be more appropriate, as the higher cut-off may over-diagnose impaired cognition.

Abstract # 191

AREA: Cognition and dementia

Dementias at home during the COVID_19 pandemic

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Introduction: Addressing dementias is a public health priority and a major social and health problem. It presents Spanish society with the challenge of planning and implementing decisive actions, capable of promoting advances in adequate, specific and comprehensive responses for the affected people (patients and their families).

Method: Descriptive, moderate-severe dementia, 2020 addresses. Variables: demographic, Barthel index (BI), dementia: GDS, frailty with index based on comprehensive geriatric assessment (IF-VIG),

FRAIL and abbreviated Charlson, Geriatric syndromes, recent admissions, interventions. Deaths. Processed with SPSS v. 26.

Results: N: 136. Average age: 84, (DS: 7). 70.6% women. Higher Risk Person (PMR): 26.5%, average BI: 24.6. Average GDS: 5.8. GDS moderate (3–4–5): 27.2%, severe (6–7): 70.6%, mild (1–2): 1.5%. IF-VIG mean: 0.52. FRAIL: Fragile: 90.4% Charlson: Medium: 3. Family: 86.8%. Widowers: 48.5%. Formal caregiver: 41.2% 0.73.2% urban. 52.8% primary studies. Comorbidities: HBP: 79.9%, Diabetes: 35.1%, Dyslipidemia: 49.3%, nephrological: 29.9%, cardiological: 59%, neurological: 67.2%. Urinary incontinence: 94.1%, fecal incontinence: 72.6%, polypharmacy (> 5): 83.7%, dysphagia: 63%, constipation: 40%, malnutrition with GLIM criteria: 62%. Median previous drugs: 8, posterior: 7. Income: 21.8%. Referrals: 90% AP joint follow-up. 7% Deaths.

Conclusions: Being of maximum risk, for COVID-19, humbly attended to at home, to relatives, providing preventive measures for complications of dementia, hospital admissions and mortality have not been higher than expected without times of Pandemic. Even with the complexity they present, they will continue to be attended at homes.

Abstract # 192

AREA: Cognition and dementia

Predicting post-stroke cognitive impairment using acute CT neuroimaging: a systematic review and meta-analysis

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Introduction: Identifying whether acute stroke patients are at risk of cognitive decline could improve prognostic discussions and management. Structural computed tomography (CT) neuroimaging is routine in acute stroke, and may, identify those at risk of post-stroke dementia (PSD) or post-stroke cognitive impairment (PSCI). We aimed to systematically review the literature to identify which acute or pre-stroke neuroimaging features on acute stroke brain CT scans are associated with incident PSD or PSCI.

Methods: We searched electronic databases up to December 2020, and included studies reporting brain CT at time of stroke, and later diagnosis of a cognitive syndrome and/or cognition testing. We extracted all CT features. We created summary estimates of size of unadjusted association between CT features and cognition.

Results: Of 9548 citations, twenty-eight studies (41 papers) were eligible (N = 7078, mean age range 59.8–78.6 years, proportion of females 18–54%). Cognitive outcomes were PSD (10 studies), PSCI (17 studies), and one study analysed both. Fifteen studies (N = 2952) reported data suitable for meta-analyses. White matter lesions (WML) (6 studies, N = 1054, OR = 2.46, 95% CI 1.25–4.84), cerebral atrophy (4 studies, N = 558, OR = 2.80, 95% CI 1.21–6.51), and pre-existing stroke lesions (3 studies, N = 352, OR = 2.38, 95% CI 1.06–5.32) were associated with PSD. WML (4 studies, N = 473, OR = 3.46, 95% CI 2.17–5.52) were associated with PSCI. Other CT features were either not associated with PSD or PSCI, or there were insufficient data.

Key conclusions: Features seen on visual assessment of acute stroke CT brain scans, are strongly associated with cognitive outcomes. Stroke clinicians should consider how best to use this prognostic information.

Abstract # 193

AREA: Cognition and dementia

Supporting informal caregivers of older people living with dementia: a systematic literature review

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Introduction: Dementia is a major challenge for society and health services as well as a source of stress for informal caregivers who quite often experience high levels of burden, depression, and poor quality of life. The purpose of this systematic literature review was to provide an update of information available in published research literature regarding supporting guidance and psychosocial interventions for family members and caregivers of dementia patients.

Methods: The authors performed an advanced bibliographic search at PubMed database online with search filters regarding dementia, caregivers and guidelines, for the period 2015–2019. Articles published in English or Greek language were only included.

Results: After careful screening of the 110 research articles identified, 18 were selected for inclusion in the study. A narrative synthesis of these studies was constructed. Supporting guidance for caregivers was associated with the use of smart health technology applications to monitor patients' physical and mental health. Other supportive guidance concerned improving sleep, incontinence problems, feeding and managing aggressive behavior both of patients and caregivers themselves, specific training in disease management and interventions to promote their personal mental and physical health.

Key conclusions: The effective use of scientific evidence to combat mental and physical burden of caregivers and improve the quality of their life is a major challenge for health professionals. The geriatric interdisciplinary team must regularly update scientific evidence and disseminate all resources available for supporting and improving the quality of life of informal caregivers of dementia patients which in turn will improve the care they provide.

Abstract # 194

AREA: Cognition and dementia

Alpha-synuclein: a good biomarker to diagnose dementia with lewy bodies?

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Context: Biomarkers have been increasingly used to refine the diagnosis of neurodegenerative diseases. The diagnostic value of α -synuclein, measured in cerebrospinal spinal fluid (CSF) in patients affected by Dementia with Lewy Bodies (DLB) and Alzheimer's disease (AD) has revealed contradictory results, mostly due to the use of non-standardized ELISA protocols.

Objectives: To study whether the concentration of α -synuclein in CSF, measured by a validated standardized commercial ELISA kit,

would be significantly different between DLB, AD, and neurological controls individuals.

Methods: In this study, patients from the tertiary Memory Clinic of Paris Nord (France), diagnosed with DLB, AD, or neurological controls were included between December 2008 and January 2021. The main outcome was the measure of the concentration of α -synuclein in CSF using a commercial validated sandwich ELISA kit (ADx EUROIMMUN). We compared the levels of α -synuclein in these 3 groups and assessed its diagnostic value using receiver operating characteristic analyses.

Results: Overall, 127 patients were included in the study (mean age = 69.3 years, women = 58.3%): 45 with DLB, 50 with AD, and 32 neurological controls. α -synuclein was significantly increased in patient with AD compared to DLB ($p < 0.001$) and showed a good accuracy for the differential diagnosis between AD and MCL (area under the curve = 0.85). There was no significant difference of the median concentration of α -synuclein between DLB and neurological controls.

Conclusion: Alpha-synuclein could improve the diagnosis of DLB, in association with existing biomarkers of other neurodegenerative diseases.

Abstract # 195

AREA: Cognition and dementia

Vascular dementia due to bilateral paramedian thalamic infarction

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Introduction: Strategic infarcts can cause vascular dementia that occurs after a single cerebral infarction, often of a small artery. However, they can generate a deep cognitive impairment due to their critical location. Bilateral paramedian thalamic infarctions affect posterior thalamic and subthalamic arteries and show a “butterfly wings” pattern on imaging due to occlusion of a rare variant in which both posterior cerebral arteries arise from a single root, the Percheron artery. This type of infarct is infrequent (< 5% of vascular dementias) but easily recognizable.

Methods: We describe a 76-year-old woman with good baseline functional and cognitive status, and a medical history of high blood pressure and transient ischemic attack. She was admitted to the emergency room with the abrupt onset of intense drowsiness, bradypsychia and associative visual agnosia. Neurological examination showed slight right central facial paresis.

Results: Both CT-scan and cranial MRI revealed bilateral thalamic ischemic infarction, probably caused by lipohyalinosis affecting an anatomical variant (Percheron artery). Patient's condition improved gradually over the initial admission, with attenuation of drowsiness, discrete residual nominal thalamic aphasia, disorientation and global amnesia. In the Psychogeriatrics appointment 6 months later the patient showed features of vascular dementia as recent memory alteration, constructive apraxia, anhedonia, emotional lability and

depression. Duloxetine was prescribed for improvement of her mood disorder.

Key conclusions: Strategic infarcts combine salient neurological symptoms and specific topography in imaging tests. In patients who develop dementia with drowsiness, aphasia, anhedonia and emotional lability we should investigate the possibility of an underlying bilateral thalamic infarction.

Abstract # 196

AREA: Cognition and dementia

Cocooning consequences – an evaluation of ‘cocooning’ in older people living with dementia and their carers in a community setting

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Introduction: Following the declaration of a global pandemic in March 2020, the Irish government advised those aged over 70 years to ‘cocoon’. The intent was to protect older adults, however there have been unforeseen consequences for people living with dementia (PLWD) and their carers.

Methods: This is a descriptive mixed methods study of carers perceptions and the impact of ‘cocooning’ on their relative (PLWD). Patients were recruited from our Geriatric Medicine clinic. A cross-sectional survey using a questionnaire was administered over the telephone. Ethical approval was granted locally.

Results: 31 patient/carer dyads were interviewed. Median age of patients was 82 (IQR 73–86), and 54% were female. Carers were more likely to be female (64%), and median age was 65 (IQR 50–78.5). Over half our respondents reported a change in function (53%), memory (56%) and mood/behaviour (53%) of the PLWD. 69% reported a change in their caregiver role, with a median score of 16 (IQR 12–20.5) on the Short Burden Scale for Family Caregivers. There was a 21% increase in reported neuropsychiatric symptoms. On a 3 point Likert scale, all symptoms had worsened with a median severity score of 2 compared to 1 pre-cocooning. This was associated with mild to moderate carer distress.

Conclusions: Cocooning was well-intended, however it resulted in a notable decline in PLWD in terms of cognition, function and mood. Neuropsychiatric symptoms became more prevalent and more severe. Carers reported increased responsibility and distress. Investment is now needed in community services to support PLWD and their carers.

Abstract # 197

AREA: Cognition and dementia

Community-based intervention promoting active and healthy aging in Crete*

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Introduction: Mental health and well-being are important in later life. There are humanitarian, social and economic reasons why we should focus on these issues.

Methods: Our 3 month controlled study aimed to improve cognition, attitudes of life, and socialization. A total of 134 men and women 64–90 years of age were included in the study; experimental (N = 75) and active control group (N = 39). The experimental group attended weekly cognitive exercises, psychological support, music therapy, fitness sessions, social & leisure activities, the use of social media, and learning a foreign language. Controls attended only 72 h of cognitive training. All participants underwent cognitive assessment pre and post intervention including: MoCA, RAVLT, RBMT, ROCFT.

Results: Statistical analysis post intervention demonstrated significant improvement in visual perception ($p = 0.000$), visual memory ($p = 0.000$), and global cognition ($p = 0.008$) in the experimental group. Qualitative analysis showed new positive perceptions regarding aging and socialization and benefits of cognitive training. Controls deteriorated in verbal memory ($p = 0.011$).

Key conclusions: The community based multidisciplinary holistic intervention was effective in terms of cognition and psychosocial wellbeing. * Funded by TIMA CHARITABLE FOUNDATION.

Abstract # 198

AREA: Cognition and dementia

Characterization of caregivers of the elderly with alzheimer dementia

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Introduction: In recent years, the aging of the population and the increase in the prevalence of chronic diseases, including Alzheimer's disease (AD), is a characteristic of Brazil. Informal caregivers are often responsible for caring for older adults with AD. Knowing the characteristics of the caregiver and their work is very important to obtain good care.

Objective: To characterize the socioeconomic conditions of the caregiver, to assess the caregiver's level of burden and the level of safety for care.

Method: Descriptive, exploratory and quantitative study, in which 80 caregivers answered a form sent online. They were accessed by social networks. To assess the level of caregiver burden, the Zarit scale was used. To assess the level of safety of caregivers, a Likert scale from 1 to 5 was created.

Results: the caregivers were mostly female (93.7%), 40–60 years old (33.7%), married (50.0%) and relatives of the elderly with AD (78.7%). The assessment using the Zarit scale identified severe overload (53.7%). The results showed safer caregivers to help with bathing and feeding than to help with relaxation, walking and cognitive activities.

Final considerations: It is important to recognize the characteristics of elderly AD caregivers in order to develop intervention protocols to assist informal caregivers.

Abstract # 199

AREA: Cognition and dementia

The ability to generate appropriate inferences from linguistic material: a social cognition dimension measured in early cognitive impairment in aging

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Introduction: "Social cognition" is the sum of the abilities that allow individuals of the same species to interact. Recent studies have identified a series of more specific dimensions of it. Among them is the ability to generate appropriate inferences from linguistic material denoting indirect speech. Given that the extant research supports that the aforementioned abilities are affected by neurodegeneration related to aging, the aim of the present work was the design of a psychometric tool measuring humor, irony, and faux pas detection and understanding, to discriminate different levels of cognitive impairment in aging.

Method: Fifty-five participants, cognitively healthy older adults (CHOA) and older adults diagnosed with mild cognitive impairment (MCI) were recruited. The two groups were matched in age, education, and gender. The tools administered were a series of tasks measuring humor, irony, and faux pas detection (1st order Theory of Mind) and understanding (2nd order Theory of Mind). Among them, tasks that do not require Theory of Mind were also used as control tasks.

Results: Even if there are differences as regards the performance on each type of indirect speech tasks, the total score of indirect speech understanding (2nd order Theory of Mind) leads to very good discrimination among CHOA and MCI patients.

Conclusion: The Indirect Speech Understanding Task can be used to detect cognitive impairment in aging from its early manifestations since it can capture potential slight changes of the complex social neuropsychological substrate of this decline.

Abstract # 200

AREA: Cognition and dementia

COVID-19 and neurocognitive function

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It is known that beta coronaviruses have neuroinvasive capabilities either through axonal transport via the olfactory nerve, by way of infected monocytes and macrophages that migrate through the BBB or by binding to ACE2 expressed in the capillary endothelium of the BBB [1, 2]. Neuroinflammation and viral infection are known etio-pathogenic factors of neurodegeneration [3, 4]. Significant cognitive impairments and brain atrophy have been reported in patients with

acute respiratory distress syndrome [5]. Emerging reports describe both subjective and objective cognitive impairments months after COVID-19 recovery such as memory difficulties, having trouble concentrating, attention impairments and executive dysfunction. SARS-Cov-2 infection could be linked to neurocognitive impairment through several mechanisms. Immune mediated thromboembolic events, inflammatory storm, RAS dysregulation leading to endothelial injury, hypercoagulability and hypoxemia have been discussed in the context of severe cases of COVID-19 presenting with stroke or delirium. Macrovascular events and microvascular angiopathy could be the underlying pathological pathways for neurocognitive dysfunction in COVID-19 survivors. Older patients are especially vulnerable due to existing comorbidities, the preservation of their functional independence and quality of life being the ultimate goal. Screening for neurocognitive impairments in older COVID-19 survivors should be part of the post SARS-Cov-2 infection management.

Keywords: Cognitive function, COVID-19, SARS-Cov-2, older people

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Abstract # 201

AREA: Cognition and dementia

The ability to process mental verbs: a social cognition dimension that facilitates the detection of early cognitive impairment in aging

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Background: “Social cognition” is the sum of the abilities that allow individuals to interact with each another. Recent studies in the field of neurosciences have identified a series of more specific dimensions of social cognition that are affected by neurodegeneration related to aging, including the ability to process mental verbs, namely, verbs that denote inner mental states.

Objective: The aim of the present work was the design and the development of a novel psychometric tool measuring mental verb understanding, in order to discriminate different levels of cognitive impairment in aging.

Method: Ninety-seven participants, young adults (YA), cognitively healthy older adults (CHOA) and older adults diagnosed with mild cognitive impairment (MCI) were recruited for the purpose of the study. The tool administered includes a series of cognitive and social mental verb tasks.

Results: A significant difference between healthy groups and MCI patients was found only for cognitive mental verb understanding. Social mental verb understanding was found to decrease in both groups of older adults, healthy and MCI patients, compared to young adults. However, the total score of mental verb tasks leads to very good discrimination among people with MCI and the healthy groups.

Conclusion: The new instrument can be used to detect cognitive impairment in aging as it can capture potential slight changes of the neuropsychological substrate of this decline.

Abstract # 202

AREA: Cognition and dementia

The status and change of memory storage and processing in mild cognitive impairment: cross-sectional and longitudinal measurements

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Background: The aging brain has lower blood flow and gets less efficient at recruiting different areas into operations. Memory is created in various brain systems that involve different forms of memory. Long-term and short-term memory deficits are common in mild cognitive impairment (MCI) patients. However some specific aspects of main memory systems appear to be more vulnerable during cognitive impairment in aging.

Objective: The aim of the present work was to examine which are the most affected memory systems in mild cognitive impairment status and its different types.

Method: Two hundred and twenty participants, cognitively healthy older adults (CHOA), and patients with mild cognitive impairment (MCI) or dementias were collected from the Alzheimer's Hellas database. The measurements were a series of neuropsychological tests measuring different aspects of short-term memory and long-term memory.

Results and conclusion: Factor analyses will be used, at the cross-sectional phase of data processing, in order to confirm the ‘existence’ of the two higher-order systems of memory on which the scores of the specific measurements load. Mixed measures ANOVAs will be performed in order to compare the systems cross-sectionally and longitudinally in the different levels of cognitive impairment as represented by the neuropsychological and medical diagnosis of the participants. Path models will be used to find the directed relationships between the systems and ROC curves analyses will be applied to the data to reveal which memory system should be measured to capture different levels of cognitive impairment in aging.

Abstract # 203

AREA: Cognition and dementia

Nutrition and dementia care: developing an evidence – based model for nutritional care at Enaya specialized care center

ALAnoud Ali ALFehaidi¹

¹HMC

Introduction: Enaya Specialized Care Centre provides care for people who are Diagnosed with Dementia.. Currently there are 23 patients diagnose as Dementia (13 on oral Intake, 8 on NGT and 3 on PEG). Elderly suffering from dementia are at increased risk of mal-nutrition due to various nutritional problems, and the question arises which interventions are effective in maintaining adequate nutritional intake and nutritional status in the course of the disease.

Methods: A quality Improvement project is conduct by using “Plan-Do-Study-Act (PDSA) quality improvement methodology”. All stakeholders were involved and interventions were carried out in three steps. First step was to establish Management of Weight Loss in the Elderly protocol (1st PDSA), Second step to Provide Provision of adequate food according to individual Dysphagia Levels and needs with respect to personal preferences (2nd PDSA), Third step was use of Oral Nutrition Supplement to improve nutritional status.

Results: Following WHO multimodal improvement strategy (build it, teach it, check it, sell it and live it) showed all patients gaining weight after Dietitian Intervention by increase calorie, Protein and add Oral Dietary Supplement, there is significant improvement of oral intake comparing 6 months ago to present. This resulted to progressive increase in BMI and improve albumin level.

Conclusion: Nutrition intervention is important in order to address the feeding concerns that are present in different stages of Dementia. This is to ensure that patient is adequately fed and to achieve a healthy weight. However, this project has shown prevent weight loss is possible if early interventions are implemented by Dietitian.

Abstract # 204

AREA: Cognition and dementia

Effectiveness of cognitive behavioral intervention in dementia caregivers

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Summary: The present study presents a cognitive-behavioral intervention performed on dementia caregivers at the Psychogeriatric Association “Nestor”, aimed at reducing their discomfort and at empowering them to better meet the demands of care while engaging with themselves. The intervention is based on the modification of caregivers’ dysfunctional thoughts about caregiving and is consisted of 11 home-based, individual, weekly, therapeutic sessions and, besides the primary goal of modification of caregivers’ dysfunctional thoughts, the other intervention’s parts focused on activating them, involving their social network, learning them skills in order to deal with the patient’s behavioral disorders and training them in problem solving technique. Questionnaires administered before and after the intervention were used to measure the variables of burden, stress, depressive symptomatology and the number of dysfunctional thoughts. To compare the results of the questionnaires before and after the intervention, t-test analyzes of dependent samples were

performed. A final sample of 20 people completed the intervention, the results of which showed a reduction in depressive symptomatology (pFDR = 0.045), anxiety (pFDR = 0.009), dysfunctional thoughts (pFDR = 0.001) and in the burden of caregivers ZBI (pFDR = 0.009). Due to the limitations of the present study it shouldn’t be appropriate to generalize the results, however, the intervention indicates that unrealistic expectations and interpretations of the patient’s attitudes interfere with the quality of care and behavior of the caregiver towards patient and cause greater burden.

Keywords: CBT, dementia, caregivers, burden.

Abstract # 205

AREA: Cognition and dementia

Cerebral amyloid angiopathy-related inflammation (CAA-RI): 3 cases

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Background: CAA symptoms include intracerebral hemorrhages, transient focal neurologic episodes or rarely an inflammatory response (CAA-RI).

Methods: Case-report.

Results: 3 cases of CAA-RI diagnosed in our department from 2016 to 2021. Case 1: a 86-year-old female with a dysexecutive deficiency consulted for an acute worsening of her symptoms. Brain-MRI showed cortical microbleeds in the left parietal territory in T2*-weighting, a left frontal parietal edema in high-intensity on FLAIR-weighting. Diagnosis of CCA-RI was retained and treatment by high dose of corticosteroid reduced the symptoms and imaging lesions at 1 month. Case 2: a 84-year-old female presented a fall with convulsive seizures and a right hemiplegia. Brain-MRI showed a massive left edema of the parietal, temporal and occipital cortex, associated with multiple microbleeds. CCA-RI was hypothesized and treatment by high dose of corticosteroids led to regression of hemiplegia, seizures and edema. Case 3: a 82-year-old female, known for a cerebellar hematoma 9 years ago, consulted for paraphasia, right hemiplegia and a cerebellar syndrome. Brain-MRI showed a high-intensity on FLAIR-weighting of the frontal, parietal, occipital and temporal cortex, with numerous microbleeds and cortical superficial siderosis. CCA-RI is hypothesized, and treatment by corticosteroids was recently started.

Conclusion: An inflammatory flare-up is a rare complication of AAC but in the case of an acute worsening of cognitive impairment and focal symptoms it is crucial to keep in mind this possibility. The diagnosis may be suggested by an edema associated to microbleeds on brain-MRI. Patients are usually improved by immunosuppressive therapy.

Abstract # 206**AREA: Cognition and dementia****The use of Alpha1-adrenoceptor antagonists in benign prostate hyperplasia and the risk of Alzheimer's disease**

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Introduction: Alpha1-adrenoceptor antagonist tamsulosin has been associated with dementia, but the results have been inconsistent. Concerns have been raised about using exposure assessment time too close to the outcome. We investigated the association between alpha1-adrenoceptor antagonist use and risk of Alzheimer's disease (AD) using different exposure windows.

Methods: The study population (24,602 cases and 98,397 matched controls) included men from the Finnish nationwide nested case-control study on Medication and Alzheimer's disease (MEDALZ). Cases received clinically verified AD diagnosis during 2005–2011 and were community-dwelling at the time of diagnosis. Use of alpha1-adrenoceptor antagonists in 1995–2011 was defined from the Prescription Register. Exposure was categorized based on whether it had occurred within 3 years before AD diagnosis (lag time) or before that. Dose-response analysis, based on purchased defined daily doses of drug (DDDs), was conducted. Associations were investigated with conditional logistic regression, adjusted for confounders and mediators.

Results: The use of alpha1-adrenoceptor antagonists before lag time was associated with an increased risk of AD (OR 1.24 [1.20–1.27]). After adjustment for comorbidities and concomitant drug use throughout the assessment time (confounders) and healthcare contacts within the lag period (mediators), the association weakened (aOR 1.10 [1.06–1.14]). We found no evidence of dose-response-relationship when comparing the users of higher than median DDDs to the users of lower than median DDDs.

Key conclusions: Our findings, especially the lack of dose-response-relationship and attenuation after mediator adjustment, do not provide strong support for the previous hypothesis on alpha1-adrenoceptor antagonists as a risk factor for dementia.

Abstract # 207**AREA: Cognition and dementia****Hippotherapy: the method of communication...**

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Introduction: The various technical approaches, gerontechnologie, artificial intelligence, hyperspecialization and telemedicine, are taking more and more space in the care of geriatric patients. But did this medicine succeed in the first, second, third wave of the COVID pandemic ? Instead, caregivers faced their helplessness and the unknown. The lockdown may have saved the lives of our older patients but at the cost of a significant deterioration in their quality of life. We are faced with very complex clinical pictures (pain, anxiety, depression, constipation, hypotension, urinary disorders, sexual disorders, sleep disorders, behavioral disorders, accelerated evolution of cognitive disorders ...) in connection with isolation. Communication

with older patients, especially those suffering from cognitive impairments after the long period of confinement has become very difficult. Complementary medicines and non-medicinal techniques such as hippotherapy offer a more global approach to the patient combining body and mind, as well as more attentive doctor/patient communication with personalized care.

Methods: Case report3 patients from the nursing home of the Saint Quentin hospital center, participated in hippotherapy sessions. The session begins with the reception with its essential points: the emotional and physical state of the person, his experience with horses and his possible psychological follow-up. Then the hippotherapist explains during the session, which is based on the relationship with the horse, the work on the presence, the emotional stability and possibly the physical activities. The phase of relaxation precedes contact with the animal. Depending on the needs, the state of mind, the physical state of the patient, several workshops can be proposed. Once the session is over, the hippotherapist invites the patient to discuss what happened, his experience, his difficulties, his satisfactions, his sensations and his emotions.

Results: Mrs L: "I haven't seen that there are so many things around, I hear cars, birds"... About a horse: "It is soft as a cushion but strong at the same time"... later, she talked about her childhood biography... said she considered her current life to be a prison, "no one tells me what disease I have... I don't have access to my money..."... she didn't want to stay in the retirement home... She never returned, although she encouraged two other patients to participate, the caregivers of the retirement home reported that she was too depressed to participate in the other sessions...Mr L: He didn't want to participate... he was "labeled" "demented", "frontal", during the consultations, he focused only on his sexuality...due to psycho-behavioral disorders he was undergoing an ineffective treatment olanzapine...as he approached the horse, he confessed to feeling abandoned by his wife who lived in their house. After a few minutes in presence of the horse, he touched it and even tried to dominate it verbally and then he started talking about his artistic productions that he does in his room in nursing home. It had to be separated from the horse...Mr P told to a horse: "You are in prison here (the horse was in enclosure for security of patients) like me in my own body... and in the retirement home." Later, he talks about his childhood...at the beginning of hippotherapy session he kept his passive posture, marked by a camptocormia, then he changed his way of walking, tried to stand upright, to do exercises... He never came back, he died of COVID separated from his family.

Conclusion: There is no treatment for neurocognitive diseases as for social isolation... both are a kind of prison. Our mission in the post-COVID period should be not only to save lives, BUT also to save the quality of life. Non-pharmacological interventions can be of interest due to the lack of effectiveness of evidence-based medicine. The horse is and remains the oldest friend of the human being, we find it in work, literature, arts. Hippotherapy is an interesting aid that deserves to be evaluated.

Abstract # 208**AREA: Cognition and dementia****Associations between plasma MCP-1 and changes on cognitive function in community-dwelling older adults**

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Background: Monocyte Chemoattractant Protein-1 (MCP-1), a glial-derived chemokine, mediates neuroinflammation and may regulate memory outcomes among older adults. We explored associations of plasma MCP-1 (alone or combined with β -amyloid deposition—A β 42/40) with overall cognitive evolution among older adults.

Methods: Analyses including 1097 subjects (mean age = 75.3 years $\pm$ 4.4) from the Multidomain Alzheimer Preventive Trial. MCP-1 (higher is worse) and A β 42/40 (low is worse) were measured in plasma. MCP-1 in continuous and as a dichotomy (values in the highest quartile (MCP-1 +)) were used, as well as a dichotomy of A β 42/40. Outcomes were measured over 4 years and included: cognitive composite z-score (CCS), the Mini-Mental State Examination (MMSE), and Clinical Dementia Rating (CDR) sum of boxes (overall cognitive function); composite executive function z-score, composite attention z-score and Free and Cued Selective Reminding Test (FCSRT—memory).

Results: Plasma MCP-1 as continuous was associated with declines in episodic memory over 4-years. MCP-1 + was associated with worse evolution in the CCS and CDR sum of boxes. In domain-specific analyses, MCP-1 + was associated with declines in FCSRT delayed recall. In the presence of low A β 42/40, MCP-1 + was not associated with greater declines in cognitive functions. The interaction with continuous biomarkers values A β 42/40xMCP-1time was significant in models with CDR sum of boxes and FCSRT DTR as dependent variables.

Conclusions: Plasma MCP-1 levels were associated with declines in overall cognitive and episodic memory performance in older adults over a 4-year follow-up. Whether plasma MCP-1 interacts with A β 42/40 to determine cognitive decline should be clarified by further research.

Abstract # 209

AREA: Cognition and dementia

Diagnostic groups of hospital stays and outpatient visits within 10 years before Alzheimer’s disease

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Introduction: Healthcare costs are known to increase already before the Alzheimer’s disease diagnosis, but less is known how different morbidities contribute to this.

Methods: We investigated the relative contribution of different diagnosis categories on the accumulation of hospitalisations and specialised healthcare outpatient visits during 10 years before Alzheimer’s disease (AD) diagnosis in a nationwide study of persons

with and without AD with 10-year follow-up before their diagnosis. The AD cohort contained 42,934 community-dwelling persons who received clinically verified AD diagnosis in 2008–2011 in Finland and a matched comparison cohort. Stays and visits were categorized by the main diagnosis, according to the ICD-10 chapters. AD and dementia were separated to their own category. The number of persons with visits and stays was calculated every 6 months. The relative contribution of different diagnosis categories was evaluated.

Results: The number of persons with visits and stays peaked in AD cohort from 1.5 years before the diagnosis when the differences in relative contribution of different diagnosis categories also became evident. The largest differences were observed for cognitive disorders, symptoms of unspecified diseases, psychiatric disorders, and those with missing diagnoses 6 months before the diagnosis.

Key conclusions: Our results extend the earlier literature on higher healthcare costs before AD diagnosis by showing that although persons with AD had more primary and specialized hospital stays and outpatient visits in specialized healthcare within 10 years prior to their diagnosis, there were surprisingly small differences in the relative contribution of different diagnosis categories until the latest timepoints.

Abstract # 210

AREA: Cognition and dementia

Risk profile of patients with mild cognitive impairment: a retrospective study from geriatric wellness clinic Qatar

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Introduction: Risk factor control for persons with mild cognitive impairment (MCI) has been of considerable interest given its role in preventing the progression towards dementia. We aim to assess the risk profiles of older adults with MCI, attending the geriatric wellness clinic and to understand the impact of interventions.

Methods: In this retrospective study, we retrieved data from medical records for all patients who attended the geriatric wellness clinic, geriatrics and long-term care department, Rumailah hospital Qatar from 1st December 2020 to 31st May 2021.

Results: Out of 45 patients who attended, 33 had a formal diagnosis of MCI. Amongst the MCI cohort 63.6% were male, and their mean age was 67.1 years (SD $\pm$ 4.7 years). Hypertension (72.7%), diabetes mellitus (69.9%), Dyslipidemia (60.6%), physically inactive (59.4%), obesity (50%), were the commonest of the known risk factors for dementia. Prevalence of other known dementia risk factors are as follows—hearing impairment (21.9%), sleep apnea (15.2%), depression (12.1%), smoking (12.1%), and alcohol (3%). Using multidisciplinary interventions, 9.5% of patients achieved the target goals of adequate control of risk factors and 23.8% partially.

Conclusion: The risk profile of our cohort of MCI patients who attended the wellness clinic was similar to the known risk factors of dementia. Our study suggests that controlling vascular risk factors,

diet and enhancing physical activity through interventions from a geriatric wellness clinic using a multi-disciplinary approach can result in a significant improvement in controlling the known risk factors of dementia.

Abstract # 211

AREA: Cognition and dementia

Pain in people with advanced dementia: the opinions of Kazakh medical students

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Background: The attitude of medical students toward pain in persons with advanced dementia, while being an essential factor in care, has rarely been assessed. The aim of our study was to perform such assessment in medical students in Kazakhstan to enable an improvement of the existing curriculum, similarly to what we previously did in Poland.

Methods: We analyzed the knowledge about pain using a short anonymous questionnaire completed by 112 students of the Medical University of Aktobe, Kazakhstan.

Results: On average, students listed symptoms of 1.4 ± 1.2 (out of 6 analyzed) pain areas (median 2.0). The symptoms related to changes in mental status were indicated the most often (57 students: 50.9%). The students who listed these symptoms also indicated a higher number of symptoms from the remaining domains (1.1 ± 1.0 [median 1.0] vs 0.6 ± 0.8 [median 0.0]; $p < 0.01$). Observational methods were listed by 44 students (39.3%), but only one participant (0.9%) was able to name an observational scale. Eighteen students (16.0%) provided correct answers. The answers of 47 participants (42.0%) were very general but suggested the same treatment regardless of cognitive status.

Conclusions: The study revealed gaps in the knowledge of Kazakh medical students regarding pain in advanced stages of dementia. The demographics and coexistence of pain with dementia mean that medical students worldwide must have sufficient knowledge and skills to adequately care for the continually growing number of people with these conditions. It is imperative in countries like Kazakhstan, where the dementia burden was unrecognized until now.

Abstract # 212

AREA: Cognition and dementia

A capacity assessment prompt on standard consent forms increases the use of best interests consent processes in cognitively impaired older patients undergoing emergency surgery

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Introduction: Previous audits indicated suboptimal consent in patients undergoing surgery with only 17% of patients with cognitive impairment having a completed best interests form (consent form 4-CF4) in whom only 25% had a recorded capacity assessment. In response, the standard consent form (CF1) was modified to include a prompt to consider decision-making capacity. We undertook a re-audit to determine whether the modified CF1 resulted in an increase in use of CF4.

Methods: Consecutive patients ≥ 70 years admitted to Oxford University Hospitals requiring surgical intervention (March–April 2021) were included. In a retrospective medical records review, data were extracted on consent form used and documentation around capacity including rates of completion of the capacity prompt box on CF1. Cognitive impairment was defined as 10-point abbreviated mental test score (AMTS < 8) and/or a diagnosis of dementia or delirium.

Results: Among 95 patients (mean/SD age = 81.4/7.0 years) from trauma (38), vascular surgery (29), general surgery (17), neurosurgery (6), and spinal surgery (5), 35 (37%) had cognitive impairment. Of these, 18/35 (51%) had CF4, and 17 (49%) had CF1 and 29 (83%) had documentation that the patient's decision-making capacity had been considered (18 CF4, 11 CF1). 11/17 (65%) of CF1 for patients with cognitive impairment used the prompt box to indicate decision-making capacity.

Key conclusions: Introduction of a prompt to consider decision-making capacity on standard consent forms resulted in an increase in the use of best interests consent processes in patients with cognitive impairment. Importantly, this was accompanied by a near fivefold increase in documentation of decision-making capacity.

Abstract # 213

AREA: Cognition and dementia

Musical interventions in neurodegenerative diseases: influences of social factors on motor and socio-emotional engagement

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Introduction: Given the limited effectiveness of pharmacological treatments, the use of musical interventions as non-drug management for patients with neurodegenerative disease is strongly recommended. Although music therapy engender clinical benefits, the impacts of social and musical factors of such activities on socio-emotional and motor engagements are poorly understood.

Methods: To address this issue, non-verbal behaviors of 97 patients with or without major cognitive impairment (CI) were assessed when listening to music or a metronome in front of a musician who was present physically (live) or virtually (video). Socio-emotional engagement was quantified as emotional facial expression production and gaze direction. Motor engagement was quantified as overall body motion and the production of rhythmic movements.

Results: In both groups, positive facial expressions were more frequent and rhythmic motor activities lasted longer with music than with a metronome, and during a live performance rather than a video performance. Relative to patients without CI, patients with CI moved less with music, expressed fewer emotions, and spent less time

looking at the musician in the video condition and in the metronome condition.

Key conclusions: The relative reductions in motor and socio-emotional engagements in patients with CI might be markers of disease progression, and may be predictive of the effectiveness of music interventions. However, the presence of a live partner induces older adults to engage emotionally and physically in musical activities emphasizing the relevance of using live performance as motivational levers during music therapy. These results offer promising outcome measures for future clinical applications.

Abstract # 214

AREA: Cognition and dementia

Low vitamin D level increases risk of dementia in oldest-old in nursing homes

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Objective: to determine serum concentration of 25 (OH)D3 and to evaluate its effect on cognitive status of oldest-old in nursing homes.

Materials and methods: 181 subjects (24% men) aged 90–99 years (mean age 92.6 ± 2.4 years) who live in nursing homes were examined. Serum concentration of 25 (OH)D was measured using chemiluminescent microparticle method (normal values 30–100 ng/ml). Mini Mental State Examination (MMSE), clock drawing test, Frontal Assessment Batter (FAB), and verbal fluency test were used to assess cognitive functions.

Results: Serum concentration of 25 (OH)D3 ranged from 3 to 36 (median 6; interquartile range 5–8) ng/ml. Only 1 (0.6%) subject had normal level, 2 (1.1%) had insufficiency (20–29 ng/ml), 28 (15.4%) had deficiency (10–19 ng/ml) and 150 (82.9%) had severe vitamin D deficiency (< 10 ng/ml). The MMSE score ranged from 1 to 30 (median 23; interquartile range 16–26). Dementia (MMSE score ≤ 23) was diagnosed in 105 (58%) subjects. We revealed positive correlation between serum 25 (OH)D3 level and MMSE score ($r = 0.41$; $p < 0.001$), FAB score ($r = 0.26$; $p = 0.001$), clock drawing test results ($r = 0.39$; $p < 0.001$), phonemic ($r = 0.33$; $p < 0.001$) and semantic ($r = 0.36$; $p < 0.001$) fluency results. Univariate regression analysis with age and sex adjustment demonstrated that severe vitamin D deficiency was associated with a 2.9-fold increase in risk of dementia (odds ratio (OR) 2.91; 95% confidence interval (CI) 1.34–6.31; $p = 0.007$). Univariate regression analysis with considering serum 25 (OH)D3 level as a continuous variable showed that serum 25 (OH)D3 concentration increase by 1 ng/ml is associated with dementia risk reduction by 14% (OR 0.86; 95% CI 0.77–0.95; $p = 0.002$).

Conclusions: Serum 25 (OH)D3 level is significantly decreased in oldest-old who live in nursing homes and correlate directly with cognitive impairment. Most of oldest-old (82.9%) have severe vitamin D deficiency that is associated with 2.9 times dementia risk increase.

Abstract # 215

AREA: Cognition and dementia

Why do people with dementia switch back to the past: a constructionist view

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Introduction: It is common to say that people living with dementia are anchored in the past but there are no studies reporting how they perceive their past, present and future. In this study we would like to fill this gap by describing their attitudes towards those three time perspectives taking a constructionist view.

Methods: 26 people with late-onset moderate dementia took part in semi-structured interviews. They were asked how they experienced themselves in relation to dementia, progressive disability and aging. Obtained data were transcribed, coded and subjected to critical discourse analysis.

Results: All participants spontaneously described their present needs, past experiences, and expectations towards the future. They, however, devoted significantly more time to stories about the past, in which they stressed their independence, empowerment and experience of social acceptance. In contrast, they reported that now they rather experience loneliness, limited living space and social prejudices. They predicted that in the future they would face death, deteriorating mental and physical condition, due to which their dreams will be impossible to fulfill.

Conclusions: Nostalgic revisits to the past by old adults living with dementia were triggered by powerlessness in the prospect of increasing disability. As such it can be treated as a retrotopian strategy that lets them deal with perceived progressive deterioration. Thus, non-pharmacological interventions encouraging them to recall positive nostalgic stories should be utilized to help them accept their present condition and reduce their fear of the future.

Abstract # 216

AREA: Cognition and dementia

Emotional expressions in elderly patients with mild and major cognitive impairments

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Introduction: Cognitive abilities in elderly are characterized by a progressive decline. The early stage of neurocognitive disorder is called Mild Cognitive Impairment (Mild CI), which can progress to the stage of Major Cognitive Impairment (Major CI). At this stage, the patient is no longer able to carry out daily life activities. To examine the impact of cognitive decline, as well as the effect of the severity and the etiology of the neurocognitive disorder, we examined the emotional expressions (i.e. facial emotion, gaze contact, social engagement) of elderly patients with Mild CI and Major CI during a face-to-face interview.

Methods: The patients with neurocognitive disorders were included during a consultation in a geriatric day hospital. They participated in a face-to-face interview, based on a semi-structured interview method. The social interaction was filmed and the emotional blinded assessors rated the valence of patients' facial expressions. The outcome measures were the frequency of positive or negative emotional facial expressions (EFE +, EFE-), the direction of gaze (towards the partner), the intensity of the engagement of the responses and the valence of discourse.

Results: 112 participants were included (Mild CI $n = 41$; Major CI = 71). Mild CI patients produced more EFE + and positive discourse than Major CI. They tended to be more engaged in the social interaction. The social engagement and the positive discourse were positively correlated with MMSE and DRS (Dementia Rating Score) scores. The most severely impaired patients were less engaged in the social interaction (less positive discourse and less + EFE). However, we found no significant difference in emotional expressions according to the etiology of CI.

Conclusion: Thus, our study showed that the severity of cognitive impairments had a negative impact on emotional expressions during a verbal exchange. A better understanding of communication skills and social cognition in patients with CI could guide social remedial interventions. It could improve the quality of life, decrease neuropsychiatric symptoms and the burden of caregivers.

Abstract # 217

AREA: Cognition and dementia

The effectiveness of a multicomponent home-based intervention in people with dementia and their caregivers

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Background: Home care is an important factor in the psychological burden of dementia informal family caregivers who provide ongoing care in people with dementia living in their home and deal with both cognitive and neuropsychiatric symptoms of them. Single-component or multicomponent interventions have shown broad effects but home-based programs are seldom applied. We herein examine the effectiveness of a multicomponent home-based program in Greece towards neuropsychiatric symptoms of people with dementia and burden and depression of their caregivers during the first 6 months of the intervention.

Methods: We included 144 dyads of caregivers and care-recipients with available data both at baseline and 6-month follow-up. We collected data regarding sociodemographic features, care-recipients' clinical data, cognitive status (Mini-Mental State Examination), activities of daily living (Instrumental Activities of Daily Living; Katz Index of Independence in Activities of Daily Living), neuropsychiatric symptoms (Neuropsychiatric Inventory), and caregivers' burden (Zarit Burden Inventory) and depression (Center for Epidemiological Studies-Depression) and compared baseline and 6-month follow-up measures, controlling for multiple comparisons (pFDR < 0.05).

Results: We detected significant decreases in the severity and associated distress of neuropsychiatric symptoms, as well as caregivers' burden and depressive symptoms. As expected, care-recipients' cognitive status and measures of activities of daily living were significantly deteriorated.

Conclusion: Despite the fact that care-recipients' cognitive status and activities of daily living worsened over time, our study indicates that a home-based 6-month multicomponent intervention had significant effects on care-recipients' neuropsychiatric profile and caregivers' burden of care and depressive symptoms.

Abstract # 218

AREA: Cognition and dementia

Differentiation of mild cognitive impairment (MCI) progression to Alzheimer disease (AD) or dementia with lewy bodies (DLB): Is this possible neuropsychologically?

Panagiota Voskou¹

¹Dr

Objective: Aim of the present review study was to describe and compare the neurocognitive features of MCI which could predict its progression to DLB vs AD.

Background: Progression of MCI to AD or DLB is a relatively recent field of study with emphasis on the clinical or neuropsychological features of MCI which could potentially predict its progression to specific types of dementia.

Methods: A literature review in the Pubmed database has been made, after the year 2005, using the key-words: neuropsychological assessment; MCI; AD; progression to dementia. Seventeen relevant articles have been found.

Results: Data from most studies supports that, in MCI, impairment in executive, attentional and visuospatial functions, as well as letter fluency and fluctuating concentration are mainly related to progression to DLB. In contrast, prominent episodic and recognition memory deficits are mostly found in MCI which progresses in AD. Furthermore, non-amnesic MCI has been related most often to progression in DLB, whereas the amnesic type to AD, although memory loss may not necessarily predict the development of AD. Nevertheless, fewer studies suggest that MCI-DLB is related to cognitive profile similar to that of MCI-AD, while cognitive scoring alone does not accurately predict MCI-DLB vs MCI-AD. Interestingly, quantitative electroencephalogram has been found to help in predicting the progression of MCI to DLB, while preservation of hippocampal volume is associated with increased risk of DLB vs AD, especially in non-amnesic MCI. Moreover, specific patterns on neuroimaging MCI may predict progression to AD in contrast to DLB.

Conclusions: Predicting the progression of MCI to AD or DLB based on neuropsychological profiles is challenging and useful for early therapeutic interventions. More studies are needed, since there are some conflicting findings and, at present, the combination of clinical symptoms with neurocognitive assessment and neuroimaging is the ideal method for the prediction of MCI progression to various types of dementia.

Abstract # 219

AREA: Cognition and dementia

Delayed diagnosis of prosopagnosia following a hemorrhagic stroke in an elderly man: a case report

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Introduction: Acquired prosopagnosia is a rare condition characterized by the loss of familiarity with previously known faces and the inability to recognize new ones. The initial identification of prosopagnosia generally relies on a patient's self-report, which can be challenging if it lacks an associated chief complaint.

Methods: We present a case of delayed diagnosis of prosopagnosia after a right hemisphere stroke in an elderly man whose chief complaint was persistent and progressive "blurred vision" without facial recognition impairment.

Results: A 72-year-old man was admitted with sudden severe dizziness. A brain MRI revealed a right temporal-occipital lobes hemorrhagic stroke. Eleven days later he started to complain about progressive "blurred vision". An MRI ruled out new brain lesions. Ophthalmic tests revealed a homonymous left upper quadrantanopia, with normal visual acuity. He was found by accident to barely recognize familiar faces. The patient showed severe deficit in face recognition and perception tests, and mild memory loss in neuropsychological assessments. Further functional MRI revealed the visual recognition deficits were face-specific. After behavioral intervention, the patient started to rely on other cues to compensate for poor facial recognition. His prosopagnosia showed no obvious improvement 8 months after the stroke, which had negative impact on his social network.

Key conclusions: Our case demonstrates that the presentation of prosopagnosia can be atypical, and visual difficulties might be a clinical manifestation solely of prosopagnosia, which emphasizes the importance of routinely considering face recognition impairment among elderly patients with brain lesions.

Abstract # 220

AREA: Cognition and dementia

A novel lighting intervention to reduce nighttime falls for persons with dementia

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Falls are the primary cause of fatal and non-fatal injuries among persons 65 years of age and older. Dementia is a primary risk factors for falls, and the majority of long-term care (LTC) residents have dementia; therefore, LTC is a critical setting in which to reduce falls. A significant number of falls occur during evening hours and when LTC staff are not present, thereby limiting their ability to intervene. However, the cause of many of these falls—impaired nighttime vision and related postural instability—suggests a promising avenue for intervention: a lighting system that does not require staff effort, and that targets orientation and postural stability in the evening and night when lighting is poor and residents may not be fully awake. Based on previous work, this project tested a novel lighting intervention consisting of unobtrusive, low-intensity, horizontal and vertical lights that outline the doorframe in LTC residents' rooms. A total of 38 LTC residents participated in a cluster randomized crossover trial and were

monitored for falls over 9 months between the hours of 7:00 PM to 7:00 AM using a motion-activated infrared camera. Results indicated a 34% decrease in falls due to the novel lighting intervention. Virtually all LTC residents' families and the LTC staff were satisfied with the lights' functioning and reliability and believed that the lights reduced falls. This presentation will describe the lighting intervention, conceptual underpinning to reducing falls, and research methods, and put the findings into context for future research and widespread implementation.

Abstract # 221

AREA: Cognition and dementia

Lifestyle interventions for the prevention of cognitive decline; have we targeted the wrong unit for randomisation? A systematic review and meta-analysis

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Background: Lifestyle interventions targeting households may be an effective means of promoting healthier cognitive function in later life, with extended benefit to other household members. In this systematic review and meta-analysis, we sought to assess the effect of targeting lifestyle behaviours of households on cognitive outcomes.

Methods: An electronic search strategy was designed to identify randomised controlled trials (RCTs) where households were randomised to receive a lifestyle intervention for the prevention of cognitive decline, from database inception until April 2020. Our initial search identified no eligible studies, so we revised our search strategy to include trials enrolling dyads. Primary outcomes were cognitive decline or change in cognitive test scores. Secondary outcomes included function, admissions to long term care, mood, caregiver burden and other health outcomes for household members. **Findings:** We identified no RCTs which randomised households to receive a lifestyle intervention for preventing cognitive decline. We identified five RCTs (n = 1721, with mean follow-up of 9•6 months) which randomised dyads, which evaluated diet (two trials) and physical activity (three trials). No intervention was associated with change in cognitive or functional outcomes.

Conclusion: Trials evaluating dietary and exercise interventions in dyads were identified. We found no significant association of interventions with change in cognitive testing, functional outcomes or long-term care admissions, although trials were small with short-term follow-up. Future studies should consider targeting lifestyle behaviours of households for prevention of dementia.

Abstract # 222

AREA: Cognition and dementia

Prevalence of oral anticoagulants use among people with and without Alzheimer's disease

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Background: Although cardio- and cerebrovascular diseases are common among people with Alzheimer's disease (AD), it is unknown how the prevalence of oral anticoagulant (OAC) use changes in relation to AD diagnosis. We investigated the prevalence of OAC use

in relation to AD diagnosis in comparison to a matched cohort without AD.

Methods: Register-based Medication Use and Alzheimer's disease (MEDALZ) cohort includes 70,718 Finnish people with AD diagnosed between 2005 and 2011. Point prevalence of OAC use (prescription register) was calculated every 3 months with 3-month evaluation periods, from 5 years before to 5 years after clinically verified diagnosis and compared to matched cohort without AD. Longitudinal association between AD and OAC use was evaluated by generalized estimating equations (GEE).

Results: OAC use was more common among people with AD until AD diagnosis, (OR 1.17; 95% CI 1.13–1.22), and less common after AD diagnosis (OR 0.87; 95% CI 0.85–0.89), compared to people without AD. At the time of AD diagnosis, prevalence was 23% and 20% among people with and without AD, respectively. OAC use among people with AD began to decline gradually 2 years after AD diagnosis while continuous increase was observed in the comparison cohort. Warfarin was the most common OAC and atrial fibrillation was the most common comorbidity in both groups.

Conclusion: Decline in OAC use among people with AD after diagnosis may be attributed to high risk of falling and problems in monitoring. In the care of older people with AD, prescribing must be individualized by balancing risks and benefits.

Abstract # 223

AREA: Cognition and dementia

Prevalence, time-trends and factors associated with post-stroke dementia: population-based study, systematic review and meta-analysis

Aubretia McColl¹, Sarah Pendlebury¹, Peter Rothwell¹

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Introduction: According to a previous review one-in-ten patients develop dementia after their first stroke but numerous studies have since been published and stroke care has improved mandating a need for an update.

Methods: A systematic review and meta-analysis on studies of post-stroke dementia was completed. Studies were included if they were on patients with symptomatic stroke with results collated with data from a recent longitudinal population-based study. Pooled prevalence rates of post-stroke dementia (up to 1-year) were calculated in conjunction with modelling of the time-trend of the rates. Pooled odds ratios were also produced for associated factors and data on independent associations extracted where available.

Results: 64 studies on post-stroke dementia were included. The pooled prevalence of post-stroke dementia was lowest in population-based studies of first stroke excluding pre-stroke dementia (10.3%, 95% CI 6.5–14.1%) and highest in hospital-based studies of recurrent stroke including pre-stroke dementia (40.5%, 26.4–54.7%). Post-stroke dementia prevalence rates in published studies have halved over the past two decades (after any stroke: 20.6% in 1989 to 8.3% in 2015). Independent associations with post-stroke dementia reflect those associated with the stroke itself (severity, recurrence) and with those associated with cognitive susceptibility (age, low education, prior cognitive impairment).

Conclusion: Rates of post-stroke dementia (within the first-year) remain high but the prevalence is declining. This may be attributable in part to the improved acute stroke care and secondary prevention leading to a reduction in stroke severity and stroke recurrence with both factors independent predictors of subsequent post-stroke dementia.

Abstract # 224

AREA: Cognition and dementia

Prevalence, incidence and factors associated with pre-stroke dementia: population-based study, systematic review and meta-analysis

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Introduction: According to a previous review one-in-ten patients who have a stroke also have pre-stroke dementia. However, due to the small number of studies included the review was limited.

Methods: An updated systematic review and meta-analysis of studies on pre-stroke dementia was completed. Studies were included if they were on patients with symptomatic stroke either through recruitment of consecutive eligible patients or volunteers in prospective cohorts. The results were collated with those from a recent longitudinal population-based study. Pooled rates of pre-stroke dementia were calculated along with an assessment of the impact of methodological factors (e.g. diagnosis method) upon the rates. Reported independent associations were also extracted.

Results: 46 studies on pre-stroke dementia were included. The pooled prevalence in studies using an informant-based structured interview (13.6%, 95% CI 11.6–15.5%) was higher than in studies using medical records/coding only (6.1%, 5.2–6.9%). The setting of the patient cohort had only a limited impact on the prevalence rates once other factors had been controlled for (hospital-based: 12.3%, 10.3–14.3%, population-based: 12.5%, 11.3–13.6%). Pre-stroke dementia prevalence rates were unchanged over the past two decades. Independent associations included factors associated with Alzheimer's disease (age, female sex, medial temporal lobe atrophy) and factors associated with vascular dementia (prior stroke, silent strokes, diabetes, stroke severity).

Conclusions: This study reaffirms that approximately one-in-ten patients presenting to hospital will have pre-stroke dementia. However, methodological factors impact significantly upon the measured prevalence rates. Independent associations with pre-stroke dementia reflect likely contributions from both neurodegenerative and vascular pathology.

Abstract # 225

AREA: Cognition and dementia

Impact of season and time-of-day on cognitive screening performance in older subjects

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Introduction: Studies have suggested that cognitive performance exhibits both diurnal and seasonal variation, being better in the morning than in the afternoon, and better in the Summer/Autumn than in the Winter/Spring. However, it is uncertain whether any such effects would influence the outcome of brief cognitive screening.

Methods: Older participants (≥ 70 years) with hypertension enrolled in an ongoing trial of blood-pressure lowering completed telephone cognitive screening assessments (T-MoCA; TICS-M) between 9 am and 6 pm with the assessments repeated at 6-months. Assessments in the morning (before 12 pm) and the afternoon (after 12 pm) were compared after adjusting for age, sex and education. The difference between baseline and 6-month scores were compared in the

participants that had baseline assessments in Winter/Spring (December–May) versus Summer/Autumn (June–November).

Results: Telephone cognitive assessments were completed for 1003 participants at baseline and 912 at 6-months. 399 (39.8%) baseline assessments were completed in the morning and 604 (60.2%) in the afternoon. Lower cognitive scores were associated with male gender, low education and increasing age (T-MoCA –all $p < 0.001$), but not with time-of-day (T-MoCA $p = 0.190$, TICS-M $p = 0.332$). Among the 745 participants who had their baseline and 6-month assessments in different seasons, participants tested at baseline in Winter/Spring ($n = 338$) had a greater improvement when tested again in Summer/Autumn compared with those first tested in Summer/Autumn ($n = 407$)—but for the T-MoCA alone (difference in mean change: T-MoCA— $p = 0.020$; TICS-M— $p = 0.351$).

Conclusion: Time-of-year but not time-of-day may affect the results of cognitive screening assessments in older participants.

Abstract # 226

AREA: Cognition and dementia

Paradoxical sarcasm: similar theory of mind deficits in MCI patients and older adults with vascular risk profile

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Recent research deals with disorders and deficits caused by vascular syndrome in an effort of prediction and prevention. Cardiovascular health declines with age, due to vascular risk factors, and this leads to an increasing risk of cognitive decline. Mild Cognitive Impairment (MCI) is defined as the negative cognitive changes beyond what is expected in normal aging. The purpose of the study was to compare older adults with vascular risk factors (VRF), MCI patients, and healthy controls (HC) in social cognition and especially in theory of mind ability (ToM). The sample comprised a total of 109 adults, aged 50–85 years ($M = 66.09$, $S.D. = 9.02$). They were divided into three groups: (a) older adults with VRF, (b) MCI patients, and (c) healthy controls (HC). VRF and MCI did not differ significantly in age, educational level or gender as was the case with HC. Specifically, for assessing ToM, a social inference test was used, which was designed to measure sarcasm comprehension.

Results: Showed that the performance of VRF group and MCI patients is not differentiated, while HC performed significantly higher compared to the other two groups. The findings may imply that the development of vascular disorder affecting vessels of the brain is associated from its “first steps” to ToM decline at least as regards specific aspects of it such as paradoxical sarcasm understanding.

Abstract # 227

AREA: Cognition and dementia

Personalized non-drug approach to behavioral and psychological symptoms in Alzheimer’s disease and psychoeducation for family caregivers at home

Anne-Julie Vaillant-Ciszewicz¹, Alice Cuni¹, Alissandre Girod¹, Laura Lantermino¹, Sabine Maccario¹, Oriane Said¹, Olivier Guérin¹

¹Centre Hospitalier Universitaire De Nice

Introduction: Today in Europe, Alzheimer’s disease and other related disorders affect 9 780 678 people. The prevalence rates of psychological and behavioral symptoms of dementia (BPSD) can

reach 90%. It weakens and reduces their autonomy, quality of life as well as their self-esteem. 67% of them live at home and are looked after by their family carers. The latter often find themselves powerless when faced with their loved one’s behavioural disorders and loss of autonomy. In order to avoid caregiver burnout, the pilot study “PsyDoMa” at the University Hospital of Nice offers personalised multidisciplinary support for those receiving care (non-drug approaches) and for their carers (psychoeducation) at home.

Method: PsyDoMa is a study of 14 caregiver/patient dyads, set up by a team of gerontopsychologists, a nurse and an occupational therapist. During 6 months the patient will receive three personalised non-drug approaches sessions per week, and the carer a psychoeducation session once a week. Measures included BPSD (NPI, CMAI), quality of life (DQOL) psychotropic drug prescription for the patient as well as the burden experienced by the carer (Zarit, CRA).

Results: The expected results are a reduction in BPSD, the use of psychotropic drugs as well as an improvement in the patients’ quality of life and self-esteem. Positive outcomes for carers including reductions in emotional exhaustion, improvements in mood and acquisition of new skills (pathology, practical tools) are also expected.

Conclusion: This study attempts to respond to the ageing of the population, an increasingly important societal issue, with personalised home care.

Abstract # 228

AREA: Cognition and dementia

Personalized non-drug approach to behavioral and psychological symptoms in Alzheimer’s disease and psychoeducation for family caregivers at home

Anne-Julie Vaillant-Ciszewicz¹, Alice Cuni¹, Alissandre Girod¹, Laura Lantermino¹, Sabine Maccario¹, Oriane Said¹, Olivier Guérin¹

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Conclusion: This study attempts to respond to the ageing of the population, an increasingly important societal issue, with personalised home care [1]. Dementia in Europe Yearbook 2019 (2019) Estimating

the prevalence of dementia in Europe [2] HAS (2009). Recommandations de bonnes pratiques. Maladie d'Alzheimer et maladies apparentées: prise en charge des troubles du comportement perturbateurs [3] BVA APRIL (2018), Baromètre des aidants, quatrième vague.

Abstract # 229

AREA: Cognition and dementia

Effectiveness of tDCS to improve true recognition

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Introduction: Human memory is susceptible to distortions and false memories that tend to increase during both healthy and pathological aging. Recently, there has been considerable interest in the use of transcranial direct current stimulation (tDCS) to improve cognition. The objective of our study is to analyze whether tDCS through the application of anodal stimulation is effective in improving true recognition.

Methods: 29 older adults were randomly assigned to receive either tDCS or sham stimulation (16 treatment group and 13 sham group). The stimulation/sham was carried out in two sessions over 2 consecutive days. Anode was placed over site F7 and cathode over Fp2. The stimulation application time was 20 min, with 30 s ramping up and down of current; the same procedure was used for sham stimulation.

Results: A mixed ANOVA with 2 conditions $\times$ 2 sessions (Before vs After treatment; within subjects) $\times$ 2 groups (Treatment vs Control; between subjects) showed that the main effect of the sessions was significant ($p < 0.01$) indicating that true recognition increases from before treatment to after it ($M = 0.52$ and $M = 0.60$, respectively) and the mean of the treatment group was significantly higher than the mean of the control group after treatment ($M = 0.69$ and $M = 0.51$, respectively).

Conclusions: The results support the hypothesis that the application of anodic tDCS in older adults will lead to higher memory accuracy on the memory recognition task. These results can be generalized in dementias.

Abstract # 230

AREA: Cognition and dementia

Cognitive stimulation as a protector of dependence in people with dementia

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⁴University of Valencia

Introduction: There is evidence of beneficial effects of cognitive stimulation (CS) in people with dementia.

Objective: The objective of evaluating the protective effect of CS in the dependence of people with dementia is proposed.

Method: 102 subjects from various day centers in the province of Valencia participated. 51 went to the treatment control group while 49 carried out the intervention (2 did not finish the intervention). The treatment group received two sessions a week of 50 min of group

cognitive stimulation (memory exercises, attention...) for 2 months (16 sessions). The control group remained active. An ANOVA analysis with post-hoc measurement was carried out to see the results of the intervention.

Results and conclusions: The interaction effects obtained after the intervention (time $\times$ group) were significant $F(1, 98) = 10.33$; $p < 0.002$ $\eta^2_p = 0.095$; the simple effects of time were also significant $F(1, 98) = 9.7$; $p = 0.02$; $\eta^2_p = 0.015$. The post-hoc analyzes showed that in the post-treatment the control group ($M = 79.02$) obtained a lower score than the treatment group ($M = 86.22$; $p = 0.036$). The control group significantly lowered their baseline assessment score at post ($M1 = 82.94 > M2 = 79.02$, $p < 0.001$). The treatment group did not experience differences between times. The results suggest that CS exerts a "protective" effect on the dependence associated with the progressive deterioration of dementias.

Abstract # 231

AREA: Cognition and dementia

Role of cognitive stimulation on executive functions in people with moderate Alzheimer's disease

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Introduction: There is evidence of beneficial effects of cognitive stimulation (CS) in people with Alzheimer's disease.

Objective: Effects of a cognitive stimulation program on executive functions in people with moderate Alzheimer's disease.

Method: 71 subjects from various day centers in the province of Valencia participated. 30 went to the treatment control group while 29 carried out the intervention, 12 subjects dropped out of the study due to illness, death, or resignation. The treatment group received two sessions a week of 50 min of group cognitive stimulation of executive functions (planning, verbal fluency, problem solving ...) for 2 months (16 sessions). The control group remained active. An evaluation was carried out with a neuropsychological battery. An ANOVA analysis with post-hoc measurement was carried out to see the results of the intervention.

Results and conclusions: A significant increase in scores was observed in some EEFF tests in the treatment group compared to the control group, in the follow-up the patients returned to their initial scores. The tests that obtained positive results were verbal fluency (TBR-SEM, TBR-PHON) or spatial planning (CLOCK-D) Thus, CS appears to be beneficial for executive functions in people with moderate Alzheimer's disease.

Abstract # 232

AREA: Cognition and dementia

Prevalence of atrial fibrillation and dementia in patients admitted in a long term care unit

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Introduction: Atrial fibrillation (AF) is a supraventricular arrhythmia with uncoordinated atrial electrical activation, resulting in ineffective atrial contraction. AF can be a risk factor for dementia and other cardiovascular risk factors, and these in turn contribute to the development of dementia. The aim of this study was to evaluate the association of AF and dementia.

Methods: A Retrospective descriptive cross-sectional study was carried out. All patients admitted from January 1 of 2019 to December 31 of 2020 in a long term care unit at San Juan de Dios hospital, were included. Sociodemographic, functional variable (Barthel Index), scores CHA2DS2-VASC and HAS-BLED scales of patients with AF, reasons for the introduction or withdrawal of oral anticoagulants (OAC) and reason for the change from acenocumarol to direct oral anticoagulants, were collected.

Results: 341 patients were included, of which 136 individuals had AF and 221 had dementia. A total of 85 patients had both illnesses, the mean age was 85.8 ± 7.4 years; 55.3% were women and the Barthel index was 55.5 ± 31.2 . Patients without dementia had a mean age of 80.1 ± 8.2 years, the Barthel Index was 80.37 ± 26.44 . The 76.5% received OAC. There was no differences observed when compared with the non-dementia patients in taking OAC or in scores on the CHA2DS2-VASC and HAS-BLED scales. The most common reason for switching from acenocumarol to direct oral anticoagulation was labile International Normalized Ratio (INR).

Conclusions: The coexistence of AF and dementia is very common in older people. The patients with dementia and AF were older and more dependent.

Abstract # 233

AREA: Cognition and dementia

A systematic review of interventions to reduce anticholinergic burden in older people with dementia in primary care

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Introduction: Anticholinergic burden (ACB) remains high in people with dementia (PwD), despite known risks to physical and cognitive functioning [1, 2]. This systematic review aimed to assess the types and effectiveness of interventions that aim to reduce ACB in PwD in primary care.

Methods: One trial registry and eight electronic databases were searched to identify eligible English language studies until December 2020. Inclusion criteria were: randomised controlled trials (RCTs) and non-randomised studies (NRS) including controlled before-and-after studies and interrupted time-series studies of interventions to reduce ACB in PwD aged ≥ 65 years (either community-dwelling or care home residents). All outcomes were to be considered. Quality was to be assessed using the Cochrane Risk of Bias tool for RCTs and ROBINS-I tool for NRS. If data could not be pooled for meta-analysis, a narrative synthesis was to be conducted.

Results: In total, 1400 records were found, with 1230 records remaining after removal of duplicates. Following title/abstract screening, 20 full-text articles were assessed for eligibility. None of these met the inclusion criteria for this review. Reasons for exclusion were incorrect study design, ineligible study population, lack of focus on ACB, and study setting outside primary care.

Key conclusions: This 'empty' systematic review highlights the lack of interventions to reduce ACB in PwD within primary care, despite this being highlighted as a priority area for research in recent clinical guidance [3]. Future research should focus on development and

testing of interventions to reduce ACB in this vulnerable patient population through high-quality clinical trials.

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Abstract # 234

AREA: Cognition and dementia

Assessing the unmet needs of elderly people with cognitive decline and receiving home-based care

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Introduction: It is well documented that the health needs of patients with cognitive decline including dementia increases along with its severity. We hypothesized therefore that a large number of important psychosocial needs for the patients' might be not accomplished.

Purpose: To evaluate the factors affecting the psychosocial unmet needs as the severity of cognitive decline increases in older adults aged 65 years old and over.

Methods: In this pre-screening program we enrolled 200 registered members of 3 Home Care Programs in the region of Crete, Greece. Participants were asked to respond whether specific psychosocial needs (items of the Psychosocial Needs Inventory (PNI) were accomplished by their caregivers in a 5-point Likert type scale (1–5). Responses 1 or 2 were considered as unmet needs (not accomplished). The Mini-Mental-State-Examination (MMSE) was used to assess the incidence of cognitive decline. Non-parametric and trend linear regression models were used to access the association between cognitive decline and unmet needs.

Results: The mean age of the 200 participants (48.5% male) was 76.9 ± 10.1 years old. 62% were identified with cognitive decline. Trend linear regression revealed that only the 'Support Network' was found to be significantly associated with an increased risk of cognitive decline (OR = 1.088, 95% CI 1.02–1.16 p = 0.014), suggesting that the needs for a support network increases by 8.8% for each grade decrease of MMSE.

Conclusions: Our data analysis suggests that several of the unmet needs are not early recognized by their caregivers highlighting the importance of social network at the community level.

Abstract # 235**AREA: Cognition and dementia****Staying sharp beyond the age of 65 years: a social marketing approach to the promotion of cognitive health in Luxembourg**Mathilde Barbier¹, Anna Elena Kornadt², Carine Federspiel³, Jean-Paul Steinmetz³, Claus Vögele¹¹University of Luxembourg, ²Univeristy of Luxembourg, ³Zitha

Offerings for active ageing in developed economies have been increasing. The WHO report on ageing and health has made recommendations to align health systems to the needs of older people. Yet during the time since this report was issued, no one has yet described these specific needs and how the WHO's recommendations can be properly followed. There is little scientific evidence on how participation in activities designed for the promotion of cognitive health can be increased. Using the Behaviour Change Wheel, this study aims to identify, for the first time, how elderly people perceive their capability, opportunity, and motivation to adopt cognitive health promoting behaviours. Semi-structured interviews with older people aged 65 + years without cognitive impairment (n = 20), and physicians (n = 10; general practitioners and geriatricians), in Luxembourg are used to assess elderly people's perceptions. The data from the interviews transcripts are analysed using content analysis. The findings emphasise the importance of the social role one which must be preserved past State retirement age. From a social marketing perspective, we will discuss clear strategies to ensure the adequacy of pension systems in responding to the older people's needs. The results of this qualitative study will provide information to be integrated into a large questionnaire survey. In due course, it hopes to empower older people and ultimately enable them to remain both active, healthy and well-being beyond the age of 65 years.

Abstract # 236**AREA: Cognition and dementia****Use of virtual reality for cognitive assessment in elderly people: a brief review**Florian MARONNAT¹, Samir OTMANE²¹Adef Residences, ²Universite D'evry - Paris Saclay

Introduction: Alzheimer's disease (AD) affects 47 million people worldwide. Troubles evolve from an isolated mild cognitive impairment (MCI) to dementia stage where an autonomy loss and behaviour troubles occur. Usual cognitive assessments are based on paper tests which need to be proceeded by an examiner. Numerous tests exist and explore precise cognitive functions or global cognition as MMSE (Mini Mental Status Examination) or MoCA (Montréal Cognitive Assessment). Nevertheless, they are not ecological without well appraising the impact of cognitive impairment on daily activities. Within a few years, several authors have explored the possibility of using virtual reality (VR) in medical practice as surgery or psychiatry. VR lets an immersion and a close interaction with the environment and so appears to be more ecological to evaluate cognitive disorders throughout real situations. We aim to achieve a brief review of VR use for cognitive assessment.

Methods: We conducted a search on PubMed database using MeSH terms "Virtual Reality", "Alzheimer" and "cognitive assessment". A selection was made on studies including patients with MCI or AD. Cognitive assessments should be done with both neuropsychological

tests and virtual environment. We distinguished the different kinds of VR: non-immersive, half-immersive and immersive VR.

Results: (1) Non-immersive VR: First VR developed, it needs simple materials as screens or tablet device. The degree of immersion is low. Significant correlations ($p < 0.01$) were found between virtual and classical tests as BADS (Behavioral Assessment of the Dysexecutive Syndrome), MMSE or MoCA. One study demonstrated that virtual assessments had a more accurate precision of classification (healthy subjects/cognitive impaired patients) than MMSE (0.873 versus 0.667) (2) Half Immersive VR: Despite the possibility for the user to interact with real environment, half immersive VR offers a better immersion by increasing depth's feeling using 3D screens for example. Virtual assessments were significantly correlated ($p < 0.02$) with MMSE and MoCA. (3) Immersive VR: Patient experiments a high degree of immersion by using VR glasses combined with movements trackers allowing the appearance of virtual hands. It is also possible to add interaction functions as touching and moving objects. Results show significant relationships ($p = 0.01$) between virtual tests and MoCA. Other less known classical tests as Dr Oz Questionary, Visual Association, Dichotic earing Test and Dichotic earing test right ear also shew significant relationships ($p < 0.05$) with virtual assessments.

Conclusion: Despite the heterogeneity of the presented studies, results demonstrate significant relationships between usual and virtual evaluations suggesting an interest in RV in cognitive assessment. With a estimated prevalence of 132 million of patients affected by AD in 2050, physicians will need new innovative, reliable et easy tools as VR to assess or screen cognitive functions.

Abstract # 237**AREA: Cognition and dementia****Vesicle-associated membrane protein 2 (VAMP2) and dementia in older persons**Evelyn Ferri¹, Andrea Saul Costa², Franca Rosa Guerini², Mario Clerici³, Matteo Cesari⁴, Beatrice Arosio⁵

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Introduction: The phenotype of Alzheimer's disease (AD) and vascular dementia are often superimposed. Therefore, mixed forms (other dementias, OD) are increasingly recognized. This study investigated the role of vesicle-associated membrane protein 2 (VAMP2), involved in neurotransmitter release, in Mild Cognitive Impairment (MCI), AD and OD and subjects without cognitive decline (CT).

Methods: 102 MCI, 73 AD, 122 OD and 140 CT were characterized. 37 out of 102 MCI evolved to dementia (19 to AD (MCI-AD), 18 to OD (MCI-OD)). VAMP2 gene expression was analysed in peripheral blood mononuclear cells (PBMCs) by QuantStudio 12 K Flex OpenArray. The 26 bp Ins/Del polymorphism was genotyped by PCR.

Results: VAMP2 gene expression (median, IQR) was higher in MCI and OD (0.74, 0.56–0.94 and 0.71, 0.55–0.95, respectively) than AD and CT (0.63, 0.50–0.73 and 0.63, 0.47–0.81; $p < 0.01$). MCI-OD

showed higher VAMP2 gene expression than MCI-AD (0.87, 0.74–1.00 and 0.67, 0.42–0.74; $p < 0.001$), identifying MCI-OD from evolved MCI with AUC 0.73 (95% CI, 0.63–0.82). According to VAMP2 minor allele Del, gene expression was different between Ins/Del and Del (0.67, 0.50–0.84 and 0.69, 0.54–0.94; $p = 0.02$).

Key conclusions: The up-regulation of VAMP2 gene expression in PBMCs from MCI and OD highlights its role in the preclinical stage and in mixed forms. Interestingly, the highest gene expression observed in MCI-OD seems to confirm that VAMP2 could be considered an early peripheral biomarker able to discriminate MCI that will evolve to OD. Finally, the functional role of 26 bp Ins/Del polymorphism suggests that Del allele could be a risk factor for OD.

Abstract # 238

AREA: Cognition and dementia

A useful screening in preventing dementia - vitamin D level

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Introduction: More than 44 million people worldwide suffer from dementia from which 80% of patients are over 75 years. Recent studies have found that vitamin D deficiency corresponds to an increased risk of cognitive impairment.

Material and methods: Observational study on 89 patients over 65 years, hospitalized between May and December 2020 in the Geriatric Clinic “Sf. Luca” Bucharest with COVID-19 negative test. We analyzed the correlation between serum levels of 25-OH-vitamin D and cognitive impairment stages assessed by neuropsychological tools-Montreal Cognitive Assessment (MOCA) and Mini Mental State Examination (MMSE). Statistics made by SPSS.

Results: Distribution statistic: 38% are part of the “elderly” age group (65–74 years), 26% in the 75–84 years age group and 6% > 85 years. Average level of 25-OH-vitamin D (19.66 ng/ml) is the lowest at 75–84 years age group patients. Neuropsychological tools scores show: mean MMSE score = 17.01 points; mean MOCA score = 14.39 points-which means moderate cognitive decline by both scales. More patients (71.91%) obtained < 24 points by MMSE scale comparative with those which obtained < 26 points by MOCA scale (44.94%). The correlation between Vitamin D and low MMSE score (< 24p) was Pearson correlation 0.027 ($p < 0.05$) at 48% of patients. 38% of patients with low MOCA score had vitamin D deficiency with Pearson correlation coefficient 0.035 ($p < 0.05$).

Conclusions: The results confirm the link between vitamin D deficiency and cognitive decline in our patients by neuropsychological tools. Detecting vitamin D level as a risk factor for dementia, earlier at 50-th years, would prevent it. A rich diet in vitamin D would provide multiple protection, showing its role in successful ageing.

Abstract # 239

AREA: Cognition and dementia

Applicability of music therapy program on patients with dementia and neuropsychiatric disorders

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Objectives: Applicability and response (4 dimensions: motor, communication, cognitive, emotional/social) to music therapy on patients with moderate-severe dementia with neuropsychiatric disorder.

Material/methods: Descriptive qualitative prospective study. Therapist trained in Music Therapy conducts groups, 3 sessions/week; 45 min/session. Data collection: bio-demographic, clinical, psycho-behavioral, functional data and number of neuropsychiatric disturbance. Response to Therapy evaluated qualitatively according to SEMPA protocol (Music Therapeutic Evaluation System for People with Alzheimer and other Dementias). Inclusion criteria: admissions June 1st-Dec. 4th 2020. Non confusional. Tolerance to group therapy. **Sample description:** 74 patients admitted, 45 (61%) included. Average per patient 7.4 h, 9.8 sessions. Average age 83 (66–96), 67% women. 56% Alzheimer's dementia (average GDS 5.5), 20% mixed. All sample symptomatic. 91% psychological and behavioral. 5% only one dimension. Main behavioral alteration in activity (33, 77%) followed by psychological/affective disorder (27, 60%).

Results: Response: motor 34 (76%); communicative 26 (58%); cognitive 27 (60%); emotional/social 27 (60%). In 1 dimension, 3 (7%). In all dimensions 24 (53%). No response 10 (22%). 15 patients (33%) with musical background, in statistical association with the mean of responses according to SEMPA ($p = 0.035$; 95% CI 0.078–1.98). No statistical association for variables such as sex ($p = 0.71$), academic skills ($p = 0.89$) or type of dementia ($p = 0.73$).

Conclusions: Positive response for any kind of dementia/symptoms (78% presented any kind of response, 53% in all 4 dimensions). Recommended to customize therapy according to musical background. Suitable as non-pharmacologic control of symptoms without side effects.

Abstract # 240

AREA: Cognition and dementia

Characteristics of specialized units for people with dementia and very severe challenging behavior in the Netherlands: a mixed method study

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Introduction: Little is known about specialized units for patients with dementia (PwD) and very severe challenging behavior (VSCB). This study describes the organizational and treatment characteristics of a sample of these units.

Methods: Characteristics were studied with digital questionnaires completed by the unit managers, interviews with the main physician (s) and observation of the physical environment.

Results: Thirteen units participated. Five units were part of a mental health (MH) institution, seven units were part of a nursing home (NH)

organization and one unit was a cooperation of MH and NH. Unit sizes ranged from 10 to 28 places. The age of patients was estimated at 75 years. The percentage of involuntary admitted patients was 53% at MH-units and 18% at NH-units. Unit managers mentioned that due to a difference in reimbursement between MH and NH units had difficulty providing the specialized care. Units strived for expertise in general staffing from both MH and NH. The education level of the nursing staff was comparable between MH and NH. At every unit a physician with background in elderly care medicine or geriatrics and a psychiatrist was involved. Interviewees stressed the role of the nursing staff in the treatment. They were key in providing the care and treatment that, since the main goal of interventions is treatment of and coping with VSCB.

Key conclusions: The main finding of this study is that units caring for PwD and VSCB, despite barriers in regulations and staffing shortage, search for combining expertise from NHs and MH.

Abstract # 241

AREA: Cognition and dementia

Study design of FINGER-NL: a multidomain lifestyle intervention in Dutch older adults to prevent cognitive decline

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Introduction: Previous multidomain lifestyle intervention trials to prevent cognitive decline in non-demented elderly have found conflicting effects, with positive findings including the multidomain FINnish GERiatric intervention (FINGER) study [1], and in specific at-risk subgroups in other trials [2, 3]. As part of a world-wide effort to replicate and build on these results, FINGER-NL aims to investigate the effectivity of a 2-year multidomain lifestyle intervention in Dutch older adults to prevent cognitive decline.

Methods: FINGER-NL is a Dutch multi-center, randomized, controlled, multidomain lifestyle intervention trial among 1206 older adults at risk for cognitive decline with a duration of 24 months. Participants will be randomized in a 1:1 ratio to either of two groups. The high-intensity intervention comprises 8 modules, namely physical exercise, cognitive training, management of metabolic and vascular risk factors, nutritional counseling, Souvenaid®, sleep counseling, stress management, and social activities. The low-

intensity group receives online lifestyle-related health education. Primary outcome is 2-year change from baseline on a cognitive composite score covering processing speed, executive function and memory. Secondary outcomes including changes in specific cognitive domains, Amsterdam Instrumental Activity of Daily Living Questionnaire (A-IADL-Q), LIBRA score, and lifestyle component specific outcomes. Participant recruitment will start in June 2021.

Results and conclusion: Results of FINGER-NL will provide further insight in the effectiveness and feasibility of a multidomain lifestyle intervention to prevent cognitive decline in older adults. Given the current lack of curative treatment options and the growing prevalence of cognitive impairment and dementia, lifestyle interventions may play an important role.

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Abstract # 242

AREA: Cognition and dementia

Establishing a pilot post-diagnostic dementia service during 2020

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Introduction: Despite their benefits, post-diagnostic supports for people with Dementia and their caregivers are inadequately accessible in Ireland [1, 2]. Temporary cessation of usual supports during COVID-19 restrictions heightened this need [3]. In order to address this unmet need we established a pilot service for community dwelling older adults with dementia.

Method: The Dementia Support Service (DSS) is an Advanced Nurse Practitioner (ANP) led clinic supported by Occupational Therapy, Social Work, Geriatric Medicine and Old Age Psychiatry. We conducted a 4 month period of planning and development. Inclusion criteria were agreed and shared with referrers. The planning involved careful consideration of infection prevention controls in view of COVID-19. A proforma was developed for the initial assessment focusing on identifying dementia-related unmet need and included the caregiver Zarit Burden Interview. Interventions were provided based on need. Telephone support was provided for all service users by the ANP (Mon-Fri 9–5).

Results: In the first 8 weeks of the service 18 patients were referred. 12 met inclusion criteria and had an initial in-person assessment. COVID-19 restrictions necessitated switching to entirely virtual follow up assessments and interventions, including tutoring carers to access online platforms and supporting them with onward referrals. Half of the carers showed significant carer burden and a virtual psychoeducational support programme was developed. Seven carers used the DSS telephone line for ANP advice.

Conclusion: Our pilot highlights the degree of unmet need of people with dementia, the importance of multidisciplinary interventions and the challenges of setting up a service mid pandemic.

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Abstract # 243

AREA: Cognition and dementia

One country 77 events reaching to 9000 plus population in 18 months - is it time to close down dementia awareness campaigns?" - Reflections from our memory clinic nurse

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Introduction: Dementia is the twenty-first century health and social care crises. It is one of the major causes of disability and dependency among older people worldwide that significantly impacts not only the individuals, but also carers, families, communities, and societies. Dementia diagnosis is surrounded by stigma leading to delayed help seeking, which impacts the quality of life both of patients and carers. Evidence suggest stigma associated with dementia is a pivotal factor in delaying diagnosis and seeking help. Raising awareness and education across all sectors helps in minimizing stigma enables better awareness better acceptance of care and enhances the quality of life.

Methodology: Qatar -What We Did so far over last 2 yearHeld 77 healthcare and Community Events targeting a population of 9340 people.

Results: Our National Awareness Project achieved following Key Outcome over the Years 1. Dementia made as a Public Health Priority 2. Formed national dementia carer's group 3. Qatar National dementia plan launched on 27th November 2018.

Key conclusions: The questions asked is—do we still need dementia awareness campaigns in our country? Our memory clinic nurse will share a Firsthand Personal Experience she had in one of our Recently Held Community Dementia Awareness Project which will help us answer this question. Not from Evidence based Research report -But Human Evidence of a Powerful Emotive Account from Our Community Highlighting the Fact that Our Job has just Begun in terms of patient and carer Engagement with reference to Dementia.

Abstract # 244

AREA: Cognition and dementia

Bringing dementia care at doorsteps – together we aspire

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Introduction: Dementia remains the biggest Health and Social Care Crisis of the 21st Century. With an increase in ageing population and the absence of a cure, the focus is on risk reduction, early diagnosis, and intervention across the globe. In Qatar, population estimates project elderly population (65 +) to grow significantly to 30% over the next three decades. This could contribute to a growth in dementia prevalence which will have a significant impact on the Health and Social care sectors. Qatar National Dementia Plan (QNDP) promotes the need for early diagnosis of dementia, but stigma and reduced awareness has posed a significant barrier to achieving this. With a well-established Primary Health Care model in Qatar which provides easy accessibility of service in a less stigmatizing environment, We established an Integrated Memory Clinic in the Primary Health Care Corporation (PHCC) with input from Specialist Geriatric Services

from the Tertiary Health Care sector to serve the complex needs of the elderly with memory concerns.

Aim: To establish an integrated memory assessment clinic in the PHCC with Specialist input from Tertiary Health Care Sector.

Method: Establishment of memory clinics with specialist input from Geriatric Psychiatrist, Geriatrician, and multidisciplinary team Sector in the major PHCC's across the country.

Results: Since the establishment of 3 memory clinics 18 months ago, there has been a significant increase in the number of patients accessing our memory care services. Author will present further details about this innovative service and the future expansion plans.

Abstract # 245

AREA: Cognition and dementia

Dementia – breaking barriers and building bridges

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Introduction: Dementia is one of the major causes of disability and dependency among older people worldwide that significantly impacts not only the individuals, but also carers, families, communities, and societies. Dementia diagnosis is surrounded by stigma leading to delayed help seeking, which impacts the quality of life both of patients and carers.

Problem: Evidence suggest stigma associated with dementia is a pivotal factor in delaying diagnosis and seeking help. Raising awareness and education across all sectors helps in minimizing stigma enables better acceptance of care and enhances the quality of life.

Aim: Launch of National Dementia Awareness Project to Raise awareness of dementia across healthcare settings and community in the state of Qatar.

Methods: We identified the following three groups as they play a pivotal role in supporting and enhancing dementia care in Qatar. 1. Healthcare Professionals 2. Community 3. Carers Group As part of project, we designed and developed Specific Tailored Dementia awareness and educational programs for the above three groups over the year.

Results: With 17 healthcare events targeting a population of 748 professionals. 23 community events targeting 2782 community members. 6 Carer events focused for 110 Carers Over the Year, The National Awareness Project achieved following Key Outcome. 1. Dementia made as a Public Health Priority 2. Formed national dementia carers group 3. Qatar National dementia plan launched on 27th November 2018.

Conclusion: National Dementia Awareness raised the profile of dementia to be the public health priority.

Abstract # 246

AREA: Cognition and dementia

Qatar national dementia plan - the first in an Arab Nation “How did we get there?”

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Background: Dementia undoubtedly remains 21st Century biggest challenge faced by Health and Social care systems globally. With someone in the world developing dementia every 3 s it is projected that there will be 150 million people living with dementia worldwide by 2050. Dementia also has wider impact on their carers, families, and society. In Qatar, based on 2017 UN Population estimates of those over 60 Years of age, there is a chance that over 4400 people currently have dementia which is expected to rise tenfold with over 41,000 people expected to have some form of dementia by the year 2050 in Qatar.

Aim: To set out the vision for future services and deliver dementia care in Qatar for people with dementia, and their families to enable them to live with dignity and autonomy.

Method: The Qatar National Dementia Plan (QNDP) was borne out of the recognition that unless addressed the human and economic costs related to this condition will rise at an accelerated pace, necessitating the need to keep dementia as public health priority in the Country. With Healthcare at its heart, recognizing the growing elderly population in our country and their needs, the concerted effort by the Ministry of Public health and Qatar's Dementia Stakeholder Group led to the development of QNDP (2018–2022).

Results and conclusion: Clinical Leaders worked collaboratively for Dementia Plan being launched in record time outlining the seven action areas necessary to improve the quality of care for people with dementia in Qatar.

Abstract # 247

AREA: Cognition and dementia

Trajectory of positive cognitive screening from Qatar's primary health care

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Introduction: As per Alzheimer's Disease International (ADI) someone in the World Develops dementia every 3 s with estimates of Global prevalence of 130 million by 2050. In Qatar, population of individuals over age of 65 is set to increase by 30% over 3 decades by year 2050. These observations highlight dementia becoming a growing concern in our country as the population ages. Under the auspices of Qatar Government, Ministry of Public Health initiated a Pilot survey in Nov 2017 to evaluate estimate the prevalence of Cognitive Impairment in our elderly population.

Aim: The aim of this pilot survey was to determine estimate the prevalence of positive screening test for cognitive impairment in the elderly population in Qatar, aged 65 and over.

Methods: Following approval from the local ethics and IRB committee, individuals aged 65 and over attending 8 of the 23 selected Primary Healthcare centers were approached for participation for in these community survey after their consent. General Health and Sociodemographic Questions followed by further screening using. General health and sociodemographic questions Patient Health Questionnaire-2 GAD-2 (General Anxiety Disorder) Mini-Cog Individuals with positive scores on MINICOG screen were referred to specialized memory clinic for further evaluation, after obtaining consent.

Results and conclusions: 54% (542/1009) of the surveyed sample scored positive for the test for cognitive impairment (Mini Cog). Positive Screened Individuals are going through our Specialist Memory Clinic it raises the Challenges of need for Culturally adapted Cognitive screen Questionnaire for our population groups.

Abstract # 248

AREA: Cognition and dementia

In-hospital delirium as a prognostic factor for new cognitive disorder in a one-year post-hip fracture follow-up

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Background: Older hip fracture patients are at high risk of delirium during acute hospital care. Pre-fracture dementia is known to increase the risk of in-hospital delirium. Data on the development of new cognitive disorders in patients with delirium are scarce.

Objective: To evaluate the prognostic significance of in-hospital delirium on the development of new cognitive disorders in a 1-year follow-up in older hip fracture patients.

Material and methods: Data consisted of 476 hip fracture patients aged 65 years or more with no known cognitive disorder on admission. Delirium was assessed using the Confusion Assessment Method (CAM). Cognitive disorders were diagnosed following the national guidelines. Information on the new diagnoses of cognitive disorders (NDCD) at 1-year follow-up was elicited in a telephone interview and confirmed from the electronic patient files. Logistic regression analyses were conducted to examine the association of delirium with NDCDs.

Results: Of the 476 patients, 87 (18%) had delirium during hospital stay. Patients with delirium were older, they had poorer nutritional status, lower mobility level and more supported living arrangements than did patients without delirium. At the 1-year time point, 205 (43%) had NDCDs or were strongly suspected of this. CAM result was statistically significantly associated with development of NDCD in multivariable-adjusted analysis (OR 2.29; 95% CI 1.39–3.79). Also, poor nutritional status continued to be associated with NDCDs (multivariable-adjusted OR 1.58; 95% CI 1.03–2.43).

Conclusion: Delirium during hospitalization and poor nutritional status on admission are independent prognostic factors for development of subsequent cognitive disorders in older hip fracture patients.

Abstract # 249

AREA: Cognition and dementia

Cardiovascular Disease Risk Score Qrisk 3 is correlated with qmci scores: a proof of link between cardiovascular risk and cognitive functions

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Introduction: Several studies have identified that cardiovascular risk factors are related to higher risk for cognitive decline and dementia [1, 2]. The objective of this study is to determine the association between cardiovascular disease risk and cognitive functions.

Materials and methods: One hundred and thirty patients without previous history of dementia and cardiovascular diseases (Coronary artery disease, congestive heart failure or stroke) were reviewed retrospectively. Demographic and clinical characteristics were noted. Quick mild cognitive impairment screen (Qmci) was used to assess cognitive functions [3, 4]. To evaluate the cardiovascular disease risk, QRISK3 score of all subjects were calculated [5]. To establish any

putative relationship between Qmci and QRISK3 scores Spearman correlation analysis was performed.

Results: There were 89 (68.5%) female and 41 (31.5%) male patients. Median (IQR) age was 70 (67–74) years. Almost half of the subjects were graduated from primary school or they were illiterate ($n = 71$, 54%). Median Qmci score was 60 (49–67). Qmci scores increased as the education level increased ($p < 0.001$). Median QRISK3 score of the patients was 20.3 (15.5–26.1). There is a negative correlation between Qmci and QRISK3 scores ($p < 0.001$, $r = -0.59$).

Conclusion: Patients with higher cardiovascular disease burden had lower cognitive test scores which could be indicative of future cognitive decline and dementia. Further evaluation will be needed as this was a cross-sectional and retrospective study.

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Abstract # 250

AREA: Cognition and dementia

Validation the Spanish version of the quick mild cognitive impairment screen (Qmci-S)

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Introduction: The prevalence of neurocognitive disorders, including mild cognitive impairment (MCI) and dementia is increasing. It is important to differentiate between MCI and dementia, because treatment options are different. We validated the Spanish version of the Quick Mild Cognitive Impairment Screen (Qmci-S) and compared it to the Montreal cognitive Assessment (MoCA).

Method: cross-sectional validation study. The Qmci-S was compared to MoCA and both to an independent blind neuropsychological battery performed in the following 3 weeks (gold-standard). Three groups of patients were recruited from consecutive patients attending six primary care centers in Barcelona, according to their a priori cognitive status: patients with mild to moderate dementia, MCI and normal cognition (NC). Area under the curve (AUC), adjusted for age

and education, for both Qmci and MoCA scores were calculated to discriminate between NC vs MCI and MCI vs dementia.

Results: 377 patients with an average age of 78 years, of whom 57% were female. NC 176 (46.7%); MCI 125 (33.2%) and dementia 76 (20.2%). The average Qmci score was 49.3 and MoCa 19.4. Qmci was performed in 4.9 min vs 12.7 for the MoCA. Mean Qmci scores in NC 60.57, MCI 44.75 and dementia 30.75 ($p < 0.001$) with a Qmci-MoCA correlation of $r = 0.76$. AUC for Qmci NC vs MCI was 0.852 and 0.806 for MoCA. AUC for Qmci MCI vs Dementia was 0.828 and 0.775 for MoCA.

Key conclusions: Qmci-S is shorter and easier to administer than MoCA. It is a valid tool that discriminates better than MoCA between NC-MCI and MCI-Dementia.

Abstract # 251

AREA: Cognition and dementia

Carers’ reaction and management of persistent and challenging neuropsychiatric symptoms (NPS) in persons with dementia

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Background: The aim of this study is to investigate the persistent or difficult-to-manage NPS identified by carers [1, 2] in both institutional and community-based settings, plus their reaction to and management of these challenges.

Methods: Formal carers from both nursing homes and community-care programs were invited to complete questionnaires designed to gather both quantitative and qualitative information on their clients’ NPS that considered persistent and difficult-to-manage. Qualitative data concerning NPS were coded and categorized based upon the Neuro-psychiatric Inventory (NPI). Carers’ emotional reactions and responses were also analyzed to understand the impact of the identified NPS and the management strategies attempted.

Results: 81 completed questionnaires were collected, 18 were excluded as symptoms apparently being unrelated to dementia. Of those remained, 48% of the care-recipients were males ($n = 30$); 27 resided in nursing facilities while the rest lived in the community. The male/female ratio in both settings were comparable to that of the overall sample. Agitation/Aggression category of NPI ($n = 47$) was the most-identified challenge, which were followed by delusions and aberrant motor behaviors. Physical aggression and non-aggressive agitation were significantly correlated with care-recipients’ gender ($r = 0.27$, $p < 0.05$; $r = 0.34$; $p < 0.01$). These correlations were stronger ($r = 0.41$, $p < 0.05$; $r = 0.48$, $p < 0.01$) for nursing-care recipients. In terms of feelings evoked, community-based carers tended to feel fearful, uncertain or incompetent, while carers in institutions reported more aversive and annoying feelings. Which might account for differences in responding strategies.

Conclusion: Analysis of the persistent and difficult-to-manage NPS identified by carers may offer relevant and contextual-specific solutions in carer support and training.

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Abstract # 252**AREA: Cognition and dementia****Insomnia, cognitive impairment and patterns of inappropriate prescribing of hypnotic drugs in seniors in ambulatory care practice: outputs from the INOMED and the EUROAGEISM H2020 ESR7 projects**

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Introduction: Insomnia is frequently present in patients with neuropsychiatric comorbidities (anxiety, depression, cognitive impairment, dementia). Older adults with insomnia and treated by hypnotics are at greater risk of development of neurocognitive symptoms or even disorders. The aim of our study was to determine the prevalence of insomnia and cognitive problems in ambulatory care seniors in the Czech Republic and to investigate the patterns of inappropriate prescribing of hypnotic drugs.

Methods: 563 ambulatory geriatric patients (≥ 65 years) participated in the study from 4 regionally different geriatric ambulances. They underwent a comprehensive geriatric assessment (CGA) using the EUROAGEISM H2020 assessment protocols, 2019 Beers criteria and 2015 EU (7)-PIM list were applied to determine inappropriate patterns of hypnotic drug use. Descriptive statistical analyses were conducted using R-software (vers. 4.0.3).

Results: Insomnia was diagnosed in 30.6% ($N = 172$) of assessed older ambulatory patients (and in 34.8% ($N = 196$) of patients diagnosed with cognitive impairment). The most often prescribed hypnotics in the sample of patients diagnosed with insomnia were Z-drugs (8.2%), benzodiazepines (BZDs 7.6%) and from „off-label” hypnotics antipsychotics (17.8%) and sedative antidepressants (9.2%). In nongeriatric doses and nongeriatric duration of therapy were the most often prescribed Z-drugs (6.0% and 2.7% > 4 , respectively), BZDs (2.7% and 11% > 4 weeks, respectively) and antipsychotics in long-term use (17% of users > 6 months).

Conclusion: Cognitive impairment was present in 34.8% of ambulatory geriatric patients, insomnia in 30.6% of seniors. Among patients treated for insomnia in ambulatory care, problems in inappropriate prescribing of hypnotics were determined mainly in long-term use of antipsychotics and inappropriate dosing and length of therapy of BZDs and Z-drugs. Grants: Works of researchers have been supported by the EuroAgeism H2020 project MSCF-ITN-764632, Inomed project NO.CZ.02.1.01/0.0/0.0/18_069/0010046, Progress Q42 (KSKF2), Faculty of Pharmacy, Charles University, START/MED/093 CZ.02.2.69/0.0/0.0/19_073/0016935, SVV 260551 and I-CARE4 OLD H2020 project ID: 965341.

Abstract # 253**AREA: Cognition and dementia****Integration of vision and hearing is associated with gait velocity in a large sample of middle-aged and older adults**

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Introduction: Multisensory integration is the ability to appropriately merge information from several senses for the purpose of perceiving and acting in the environment. Walking is an important function in which information from multiple senses must be integrated appropriately to coordinate effective movements. In the present study, we tested the association between a well characterised multisensory task, the sound-induced flash illusion (SIFI), and gait velocity in 3164 participants from The Irish Longitudinal Study on Ageing. The SIFI is the illusory perception of two flashes when one flash is presented with two beeps. High susceptibility to this illusion characterises older adults and has been associated with cognitive and functional impairments. We hypothesised that high SIFI susceptibility would be associated with slower gait velocity.

Method: Gait was measured under three conditions; usual pace, cognitive dual tasking, and maximal walking velocity. A cumulative link mixed model with a logit link was run for each gait condition SIFI correct responses as the dependent variable, while controlling for covariates including age, sex, education, vision and hearing abilities, Body Mass Index, and cognitive function.

Results: Across walking conditions, slower gait was associated with higher illusion susceptibility, particularly at longer temporal intervals between the flash-beep pair and the second beep, indicating a less efficient pattern of integration.

Key conclusions: These findings extend growing evidence showing that mobility, susceptibility to falling and balance control are associated with multisensory processing in ageing; in particular, these mechanisms appear related to the temporal dynamics of sensory integration.

Abstract # 254**AREA: Cognition and dementia****Effects of the COVID-19 pandemic on cognitive performance on older adults with mild cognitive impairment**

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Introduction: Effects of cognitive training may persist over time [1, 2]. The disruption of daily-life routines, including hospital cognitive training, linked to the COVID-19 pandemic has caused increased disorientation and a worsening of functional independence and cognitive symptoms in people with cognitive impairment [3, 4], so an impact on cognitive performance is expected.

Method: A longitudinal study was designed involving 14 individuals with mild cognitive impairment (MCI) who underwent computerized cognitive training (CCT) with the Guttman Neuropsychological Trainer© program at a day hospital ($= 285 \pm 82.89$ sessions) before the strict lockdown due to COVID-19 pandemic. The whole sample was assessed with a comprehensive neuropsychological battery, a self-report measure of depression (GDS), and an ad hoc questionnaire to evaluate the COVID-19 lockdown impact.

Results: We included 14 individuals with MCI (78.6% men, age 76.86 ± 7.75 , range 60–90), with a mean time of 28.57 ± 11.98 weeks without cognitive training. Remote memory ($z = -2.11$, $p = 0.035$) and naming ability ($z = -2.31$, $p = 0.021$) were significantly impaired after the COVID-19 lockdown. No additional significant differences were found in other cognitive functions, emotional state, nor functional and cognitive training measures ($p > 0.05$).

Conclusion: The effects of CCT are lasting over time and promote a possible slowdown in cognitive impairment. Therefore, despite the COVID-19 pandemic, and its mean 7 months without assisting at day hospital, no significant decrease has been identified in cognitive performance in our sample, except for remote memory and naming ability, which indicates that this two functions should be further stimulated.

Abstract # 255

AREA: Cognition and dementia

Clinical efficacy of cognitive stimulation in aged subjects with mild and moderate cognitive impairment

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Introduction: Rehabilitative treatments, based on cognitive stimulation (CS), have been recently proposed as useful approaches to improve or stabilize cognitive functions in patients with mild or moderate cognitive impairment [1]. The aim of this study is to verify if, in chronic post-stroke patients with mild to moderate cognitive impairment, CS delivered from a distance by a telerehabilitation system, may improve cognitive performances and/or activities of daily living.

Methods: A population of consecutive outpatients were enrolled for examination at the Neurorehabilitation Unit of Institute Sant'Anna of Crotone. The enrolled patients were randomized in two groups. The telerehabilitation group has received a session of specific CS treatment delivered at home, from a distance by a Telerehabilitation system. The control group has received the usual outpatients care. Before and after treatment, a trained researcher will blindly has administered the clinical evaluations.

Results: The mean MMSE score improved significantly after CS treatments, delivered from a distance by a telerehabilitation system.

Key conclusions: The telerehabilitation could supply homebound subjects with treatments, without displacement of therapist or patient [2].

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2. Maresca, G, Maggio, M. G, De Luca, R, Manuli, A, Tonin, P, Pignolo, L, & Calabrò, R. S. (2020). Tele-Neuro-Rehabilitation in Italy: State of the Art and Future Perspectives. *FrontNeuro*,11

Abstract # 256

AREA: Cognition and dementia

Serum calcium as biomarker in geriatric patients with Alzheimer disease

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Hyperphosphorylation of the microtubule associated protein tau can result in the self-assembly of tangles of paired helical filaments and straight filaments, which are involved in the pathogenesis of Alzheimer's disease. Tau protein is involved in Calcium mediated signaling producing dysregulation of calcium homeostasis on mitochondrial and cytosolic level. We collect serum samples from 80 patients from our hospital 34 patients with Alzheimer disease and 46 without as control group. Patients who was critically ill or have chronic disease like diabetes were excluded. We found hypocalcemia in 8 of 34 patients and all 46 have normal serum calcium levels from control group respectively. P value was Calculated with 2 by 2 table and we get significant level of 0.0216. Aberrant calcium signaling has been considered a phenomenon which can occur in both neuronal and nonneuronal cells. We need larger studies for better understanding of cellular mechanisms focused on Calcium involved in the pathogenesis of Alzheimer disease.

Abstract # 257

AREA: Comprehensive Geriatric Assessment

Scale construction and norm establishment of geriatric comprehensive health evaluation system

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Introduction: Healthy aging is a major public health burden globally. China is in the stage of rapid progression of aging. The construction of comprehensive health evaluation system facilitates the screening and grading of individual health status by quantitative assessment in the elderly.

Methods: The geriatric comprehensive health evaluation system was constructed by Delphi survey. Both the reliability and validity were tested, and the norm of geriatric comprehensive health score was formulated through an empirical study of population.

Results: A 29-item comprehensive health evaluation system was developed after a two-round Delphi survey, which encompassed three dimensions as follows: physiology, psychology, and social support/environment. This evaluation system was tested with good reliability and validity. The Cronbach's α coefficient was 0.875. The scale-level content validity index/universal agreement (S-CVI/UA) was 0.81, and the S-CVI/average was 0.98. Explanatory factor analysis produced a clear ten-factor construct, explaining 54.92% of the total variance. The geriatric comprehensive health score was calculated by the weight distribution of the above evaluation system. Each dimension score was correlated with geriatric comprehensive health score (correlation coefficient = 0.749, 0.744, and 0.523 for physiology, psychology and social support/environment respectively, all $P < 0.001$). The mean, percentile and demarcation norm of comprehensive health score according to different age and gender groups were established through an empirical study, which recruited 2040 non-hospitalized elderly people.

Key conclusion: The geriatric comprehensive health evaluation system has good reliability and validity, and it could be used for quantitatively measuring the health status of elderly populations.

Abstract # 258**AREA: Comprehensive Geriatric Assessment****Prevalence of older people presenting acutely to a regional spine unit in the United Kingdom**Ahmad Tarawneh¹, Chia Wei Tan¹, Opinder Sahota¹¹Nottingham University Hospitals NHS Trust

Background: It is projected that residents aged 65 years and over will represent 25% of the UK population by 2040. Older patients living with multiple chronic health conditions are at an increased risk of perioperative complications, mortality and prolonged hospitalization.

Objective: To investigate the incidence of all in-patient referrals to the Regional Spinal unit (catchment population of 4.5 million) for patients aged 70 years and above.

Methods: A retrospective 30-month review (Jan 2017–Aug 2019) was undertaken. Patient demographics, co-morbidities, cause of referral, treatment modality (conservative vs. surgical), length of hospital stay, discharge destination (home vs. rehab) and mortality rates were collected and analysed.

Results: A total of 677 (Male: 335, Female: 342) in-patients' referrals for patients aged 70 years and above were received. The mean age at presentation was 82.3 ($\pm$ 7.48) years. Trauma (low and high energy) was the most common cause of inpatient referrals (n = 448; 66.2%). Low trauma (insufficiency) fractures contributed to more than half of the total referrals (n = 256). Spondylodiscitis was the least common cause of referral (n = 34; 5%). 545 patients were treated conservatively (80.5%). Average length of stay was 16.7 days ($\pm$ 19.9). 81 of the discharged patients (13.5%) were transferred to rehabilitation after discharge, and the over-all 30-day mortality rate was 11.5% (n = 78).

Conclusion: An ageing population represented a significant proportion of admissions, with protracted length of stay despite a majority being managed conservatively. An ortho-geriatric model of care, embedding comprehensive geriatric assessment for these patients, should be adapted on the spinal unit to improve patient outcomes.

Abstract # 259**AREA: Comprehensive Geriatric Assessment****The effect of geriatric intervention in frail older patients receiving chemotherapy for colorectal cancer: a randomized trial (GERICO)**Cecilia Lund¹, Kirsten Vistisen², Anne Pries Olsen³, Pernille Bardal⁴, Martin Schultz¹, Troels Gammeltoft Dolin¹, Finn Rønholdt¹, Julia Sidenius Johansen², Dorte Nielsen²

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Background: Chemotherapy dose reductions or discontinuation occur among many older patients with colorectal cancer (CRC). Comprehensive geriatric assessment (CGA) predicts survival and chemotherapy completion in patients with cancer, but the beneficial effect of geriatric interventions remains unexplored.

Methods: A randomized controlled trial including patients $\geq$ 70 years receiving adjuvant or first-line palliative chemotherapy for

CRC. Vulnerable patients (G8 questionnaire $\leq$ 14 points) were randomized 1:1 to CGA-based interventions or usual care, along with standardized chemotherapy. Primary outcome was chemotherapy completion without dose reductions or delays. Secondary outcomes were toxicity, quality of life (QoL) and survival.

Results: Of 142 patients, 58% received adjuvant and 42% received first-line palliative chemotherapy. Interventions included changes in medication (62%), nutritional therapy (51%), and physiotherapy (39%). More patients in the intervention group completed scheduled chemotherapy compared with controls (45% vs. 28%, P = 0.0366). Severe toxicity occurred in 39% of controls and 28% of interventional patients (P = 0.156). QoL improved in interventional patients compared with controls with decreased burden of illness (P = 0.048) and improved mobility (P = 0.008).

Conclusion: Geriatric interventions compared with standard care increased the number of older, vulnerable patients with CRC completing adjuvant chemotherapy, and may improve burden of illness and mobility.

Abstract # 260**AREA: Comprehensive Geriatric Assessment****The perspective of gender in geriatric medicine**Yanira Aranda¹, Silvia De Pablo², Mónica Merino³, Laura Aranda⁴, Elena Cano⁵, Inmaculada García⁶, Angela Bedmar⁷, Eva Fernández¹

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We are living through a transformative and challenging time. We need to provide evidence for why gender equality matters in medicine. In spite of the evolving landscape of global gender data; the overall pattern of gender equality for women in medicine is one of mixed gains and challenges. Restrictive gender norms affect everybody, including the elderly female patient. These differences can make us make mistakes in diagnoses, treatments, biases ... Some clinical trials are only carried out in men, which results in a lack of sufficient evidence on the effects of certain drugs in women. We must know the difference in the expression of symptoms in men and women to reduce diagnostic errors. Women are 2.5 times more likely to suffer from side effects after the consumption of cardiovascular drugs. Diagnosing women using the male pattern of symptoms of a heart attack can result in false negatives. On the other hand, in the case of osteoporosis, diagnosing men can result in underdiagnosis because this disease is mainly explored in women at the time of menopause. Even in a retrospective study it was found that male sex was associated with an increased probability of being treated with recombinant IV tPA. Despite the fact that females presented with higher-risk characteristics and having higher in-hospital risks, women are treated less aggressively than men. As geriatricians, we must work for equality in healthcare.

Abstract # 261**AREA: Comprehensive Geriatric Assessment****The prevalence of shoulder abduction dysfunction and concurrent eye drop usage amongst geriatric inpatients**Yixi Bi¹, Asmithaa Prabhakaran¹, Keith Harkins¹¹Manchester NHS Foundation Trust

Background: Musculoskeletal (MSK) issues present a large morbidity burden amongst the elderly population with shoulder conditions accounting for approximately 5% of all MSK problems. Shoulder dysfunction can have a disproportionate impact on activities of daily living (ADLs) including dressing, cooking and administering topical medications such as eye drops thereby impacting upon physiological reserve.

Methods: We investigated 99 patients aged over 65 who were inpatients at a large teaching hospital in the UK across general medical and acute medical wards to determine the prevalence of shoulder abduction dysfunction. We also collected data regarding which patients had been investigated for shoulder problems as well as eye drop usage.

Results: 15% of these patients were unable to abduct one or both shoulder over 90 degrees. 9% of the cohort were unable to abduct their dominant shoulder. Approximately half of the patients with unilateral shoulder dysfunction had never undergone formal assessment regarding this. 28.4% of surveyed patients used some form of eye drops including over the counter and prescription formulations. 12% of eye drop users had some form of shoulder abduction dysfunction however none of these patients had been investigated for their shoulder issues.

Conclusions: Shoulder dysfunction is common and in this population was under-recognised in terms of formal assessment. This may have important implications on function, mobility and independence. A large proportion also used eye drops and shoulder dysfunction may impact on compliance with those prescriptions.

Abstract # 262

AREA: Comprehensive Geriatric Assessment

Associations between polypharmacy and physical performance measures in older adults

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Introduction: Polypharmacy is a common problem seen in older adults and associated with adverse outcomes like falls and fractures. Ambulation is an indicator of good functionality and health status. Therefore, the relationship between polypharmacy and physical performance is an issue that needs to be clarified. Our aim was to study the association of polypharmacy with physical performance measures.

Methods: This retrospective, cross-sectional study was conducted in a geriatric outpatient clinic on community dwelling older adults. Using ≥ 5 medications was accepted as polypharmacy. Usual gait speed (UGS), chair sit-to-stand test (CSST), timed up and go test (TUG) and short physical performance battery (SPPB) were performed to assess physical performance status. We studied the association of polypharmacy with the performance measures by univariate and multivariate analyses. We created two models for logistic regression analyses: Model 1 was adjusted for age, sex and body mass index (BMI). We added comorbidities to Model 1 and further created Model 2.

Results: There were 392 participants (69.1% were female, mean age: 73.9 ± 6.2 years). Polypharmacy was seen in 62.5%. All of the physical performance measures studied were significantly associated with polypharmacy. Polypharmacy was independently associated with slow UGS, poor SPPB scores and long CSST in all of the created models in regression analyses; except for UGS in Model 2.

Conclusion: Polypharmacy may be related to impairment in physical performance and this may be the keypoint of its relationship with falls, fractures and disabilities. Further studies are needed to understand the relationship of polypharmacy to mobility and physical performance.

Abstract # 263

AREA: Comprehensive Geriatric Assessment

Prevalence and determinants of multimorbidity, polypharmacy, and potentially inappropriate medication use in the older outpatients: Findings from EuroAgeism H2020 project in Ethiopia

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Background: Little is known about the multimorbidity (2 + chronic disease) and rational geriatric prescribing in Africa. This study aimed to describe the prevalence and determinants of multimorbidity, polypharmacy (5 + medications), and potentially inappropriate medication (PIM) use according to 2019 Beers criteria in the older population attending chronic care clinics in Ethiopia.

Methods: A cross-sectional study was conducted among 320 randomly selected older adults from March 12 to August 30, 2020. A comprehensive geriatric assessment was performed to explore the factors related to multimorbidity, polypharmacy, and PIM use. Multivariable logistic regression analysis was performed to identify the predictors of outcome variables.

Results: The mean age was 71.9 ± 6.0 years, and the average number of medications per patient was 3.4 ± 1.7 . The prevalence of multimorbidity was 59.1%, polypharmacy (24.1%), and 47.2% exposed to at least one PIM. Insulin sliding scale (8.8%), amitriptyline (7.8%) to avoid in older adults, diuretics (10%), and aspirin (6.9%) in ≥ 70 years old to be used with caution were frequently inappropriately used. Patients with dyslipidemia were more likely to had multimorbidity (AOR: 9.31, 95% CI 4.48–18.91). Persistent anger (AOR: 3.33; 1.71–6.47) and using walking assistance devices (AOR: 2.41, 1.35–4.28) were associated with polypharmacy, and using multiple cardiovascular medications increases the likelihood of PIM exposure in older adults (AOR: 8.82; 5.13–15.16).

Conclusion: High prevalence of multimorbidity and PIM use was observed in Ethiopian older patients attending chronic care clinics and identified several important determinants that can be modified by applying PIM criteria in routine practice. Funding: EuroAgeism H2020 MSCF-ITN-764632, Inomed NO.CZ.02.1.01/0.0/0.0/18_069/0010046, Progress Q42-Faculty of Pharmacy, Charles University, START/MED/093 CZ.02.2.69/0.0/0.0/19_073/0016935, SVV 260551 and I-CARE4OLD H2020-965341.

Abstract # 264**AREA: Comprehensive Geriatric Assessment****Profile of the elderly cancer patient: a real life descriptive study in a haemato-oncogeriatric ward**

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Background: Due to population ageing, cancer prevalence in the elderly is increasing during the last decade. In this descriptive study we want to sketch the profile of the geriatric cancer patients in our institution.

Methods: The subjects admitted in the Geriatric-Onco-Haematologic Department between August 2017 and February 2019 were selected from the databank of our institution on the basis of the presence of active neoplasm. The recorded data included various parameters of the Comprehensive Geriatric Assessment (Katz, Lawton, Tinetti, MNAsf, MMSE, Charlson, mini-GDS) as well as the G8, Carey, and Lee onco-geriatric scores. Results are expressed as median $\pm$ 95% confidence interval.

Results: 273 onco-haematologic patients aged 84 ± 0.7 years old were recorded: respectively 180 (66.2%), 86 (31.6%) and 6 (2.2%) had oncologic, haematologic and mixed haemato-oncologic pathologies. In the oncologic group, gastro-intestinal and urological neoplasms were the two most prevalent cancers (32%) and metastasis were already present in 53% of the solid cancers. In the haematology group, lymphoma (34.8%) and myeloma (27.2%) were the most prevalent malignancies. The median G8 score was 9 ± 0.4 , MNAsf was 8 ± 0.4 , Katz was 11 ± 0.6 and Lawton was 2 ± 0.3 .

Conclusion: The geriatric cancer patient has a particular profile marked by increased risk of frailty. The median G8-score highlighted that our population was well oriented to the geriatric ward. The risk of undernutrition (MNAsf) and the dependency (Katz/Lawton) were important. Therefore, comprehensive geriatric assessment and intervention are essential.

Abstract # 265**AREA: Comprehensive Geriatric Assessment****Does comprehensive geriatric assessment predict treatment interruption in the elderly oncologic and haematologic patient?**

Vandenberghe Liselot¹, Chirita Nada¹, Descamps Olivier¹, Gilbert Marie¹, Ngrabacu Marie-Christine¹, Petit Benedicte¹, Du Bois Marc², Hanotier Pierre¹, Bettens Sophie¹

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Introduction: Comprehensive geriatric assessment (CGA) in onco-haematology practice is essential. It determines the level of frailty and identifies geriatric impairments undetectable during routine clinic consults.

Objectives: In this study, we evaluated the association between the interruption of oncologic or haematologic treatment and the impairment in one of the domains of the CGA (MNAsf, MMSE, Katz, Lawton and Tinetti scores), onco-geriatric scores (G8, Lee, Carey, Charlson) or the presence of a geriatric syndrome.

Methods: In this retrospective study, subjects with active malignancies admitted in the Geriatric-Onco-Haematologic Department of a general hospital were included consecutively between August 2017

and February 2019. The recorded data included parameters of the CGA, onco-geriatric scores and medical information. The statistical analyses were assessed using a univariate and a multivariate analysis with SPSS 26.0 software. Results are expressed with 95% confidence interval (CI).

Results: 273 onco-hematologic patients aged 84 ± 0.6 years were enrolled: respectively 180 (66.2%), 86 (31.6%) and 6 (2.2%) had oncologic, haematologic and mixed onco-haematologic pathologies. 210 patients received oncologic or haematologic treatment at a given point of time and 29% stopped prematurely. After univariate analysis, we found an association between the premature interruption of treatment and lower MNAsf scores ($p = 0.016$), presence of metastasis ($p = 0.004$), chemotherapy ($p = 0.001$) and adverse effects ($p = 0.0001$). The multivariate analysis found the same significant associations for MNAsf score (OR: 1.25—95% CI 1.06–1.41) and presence of metastasis (OR: 3.19—95% CI 1.03–9.81).

Conclusion: Low MNAsf score (OR: 1.25) and the presence of metastasis (OR: 3.19) are risk factors for treatment interruption in our population.

Abstract # 266**AREA: Comprehensive Geriatric Assessment****Characteristics of granulomatosis with polyangiitis: are there any differences in terms of clinical aspects for older patients?**

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Introduction: Granulomatosis with polyangiitis (GPA) is an autoimmune, multisystemic small-vessel vasculitis that is included in the group of anti-neutrophil cytoplasmic antibody (ANCA)-associated small-vessel vasculitis. This study aimed to clarify the differences between older and younger GPA patients in our vasculitis center.

Methods: A total of 83 patients diagnosed with GPA at our vasculitis center were included in this retrospective cohort study. GPA patients were divided into older (≥ 60 years) and younger groups (< 60 years), and their clinical records were reviewed.

Results: Within the 83 patients, 21 patients (25.3%) were aged 60 years and older. ANCA positivity was not different between groups. The Median Birmingham Vasculitis Activity Score (BVAS) score was 16 (IQR; 9–25) in the younger group whereas 25 (IQR; 14–29) in the older group ($p = 0.104$). There were no statistical differences between groups regarding renal, gastrointestinal, ear-nose-throat, cardiovascular, skin, joints, eye, and nervous system involvement except for lung involvement. Lung involvement was significantly higher in the older group (59% versus 85%, $p = 0.034$). The C-reactive protein, AST, leukocyte, albumin, hemoglobin, creatinine, and erythrocyte sedimentation rate were found to be similar between groups.

Conclusion: Lung involvement was significantly higher in the older group. Renal, gastrointestinal, ear-nose-throat, cardiovascular, skin, joints, eye, and nervous system involvements, and laboratory results were not different for older people. However, comprehensive geriatric assessment is needed to define older patients' results for future studies.

Abstract # 267**AREA: Comprehensive Geriatric Assessment****Assessing the impact of a dedicated frailty multidisciplinary team to deliver a proactive virtual Comprehensive Geriatric Assessment to the local community**

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Introduction: Surrey Downs Health and Care (SDHC) is an innovative partnership between acute and community providers, local general practitioner (GP) federations and adult social care. The NHS Long Term Plan emphasises the importance of ageing well and supporting people living with frailty by improving integrated proactive services in the community. To achieve this, SDHC collaborated with local Primary Care Networks (PCNs) to develop a frailty multidisciplinary team (MDT) to deliver proactive virtual Comprehensive Geriatric Assessments (CGA).

Methods: A monthly frailty MDT meeting was introduced across two PCNs. MDT members included a geriatrician, GP, frailty nurse, community matron, district nurse, therapists, social prescriber, paramedic practitioner and social worker. A reactive-proactive model was utilised; patients over 65-years-old already referred to the community teams were proactively screened for frailty and scored using the Clinical Frailty Scale (CFS). Patients that scored 6 and above were discussed at the MDT and a virtual CGA completed.

Results: 151 patients were referred for MDT discussion over 8 months. Patients had a mean age of 86 years and a modal CFS score of 6. In the 8-weeks following MDT discussion compared with the 8-weeks prior, patients attended 11% fewer GP consultations, a 9% decrease in community visits and 30% fewer emergency department (ED) attendances.

Conclusion: The implementation of a dedicated PCN frailty MDT who conducted proactive CGAs reduced patient attendance to ED and resulted in fewer consultations with community services. This success has led to a system wide implementation of the model to the other local PCNs.

Abstract # 268**AREA: Comprehensive Geriatric Assessment****Evaluation of frailty in COVID-19 patients during and after hospital admission**

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¹MBAL Devin, ²MBAL Plovdiv

Introduction: Elderly patients are the highest risk group for severe COVID 19 and its complications. Single aspects, such as chronological age and concurrent disease, cannot truly reflect their overall health status. In recent decades frailty assessment has been used as a predictor of mortality and risk of worse outcomes such as falls, lower quality of life and increased dependency in older people.

Aim: Our study was to evaluate an unselected elderly population with COVID 19 for the occurrence of frailty or worsening frailty score during and after hospitalisation.

Methods: 168 patients age 65 and above, were assessed for frailty using Edmonton Frailty Scale on admission to MBAL Devin. Patients were re-assessed on day 14, as well as at 1 and 3 months to determine any changes in the frailty score.

Results: 168 patients with symptomatic COVID 19 were included in the study. The mean age was 75.7 ± 3.2 years; 104 were men (55%). All of them were admitted to the hospital with severe or very severe form of Covid-associated pneumonia. On admission 92 were not frail; 36 were vulnerable; 24 had mild frailty; 10 had moderate frailty and 6 were severely frail. 8 patients died within 14 days of admission—4 with severe frailty, 3 with mild and 1 without frailty. On day 14 the number of patients scoring less than 5 dropped from 92 to 58, vulnerable patients and those with moderate frailty increased to 54 and 36 respectively. Two patients with moderate frailty became severely frail by day 14. The main domains where deterioration occurred were cognition, functional performance, mood and nutrition. All the patients with severe and moderate frailty, as well as 1 patient without frailty died by the end of first month. In the remaining group of patients, no changes in the frailty score were observed at 1 month. At 3 months the number of people without frailty remained the same, vulnerable people increased to 79; 7 patients had mild frailty, 3 developed moderate frailty and 1 person continued to deteriorate and became severely frail.

Conclusion: Higher frailty score is associated with poor prognosis. During hospital stay additional nutritional support, as well as maintaining functional and cognitive performance, are vital to reduce the risk of deterioration in older patients. Mortality rate in the first 30 days after discharge from acute care remains high and is linked to worsening cognition, nutritional status and polypharmacy. Most COVID-19 hospitalized elderly people exhibit frailty and require continuing care following a discharge from acute hospital.

Abstract # 269**AREA: Comprehensive Geriatric Assessment****Association between dental status, nutritional intake and frailty among older adults in Bulgaria**

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Aim: To assess whether there is a relationship between nutritional intake and number of teeth/denture use, and whether nutritional intake is linked to the level of frailty.

Methods: A sample comprising 35 older adults was assessed by dentists and split into three groups—having a partial denture; having a total denture and non-denture-wearer with fewer than 20 teeth. The Mini Nutritional Assessment-Short Form (MNA-SF) was used to assess their nutritional status. The level of frailty was determined by The Edmonton Frailty scale.

Results: The mean age of the participants was 71.5 years and 68% were women. 81% of the older adults had fewer than 20 teeth. Having fewer teeth was associated with deficiency of nutritional intake and a higher frailty score. There was no significant difference in the frailty score between partial- and complete-denture wearers, however there was difference in their nutritional status. Those with complete dentures were at higher risk of malnutrition.

Conclusion: This study suggests that using partial dentures in elderly is critical to maintaining a healthy nutritional status. Poor nutritional intake related to the dental status might play a role in degree of frailty.

Abstract # 270**AREA: Comprehensive Geriatric Assessment****Effects of a new early municipality-based versus a geriatric team-based transitional care intervention on readmission and mortality among frail older patients – a randomised controlled trial**

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Introduction: Previous studies have reported reduced risk of readmission, mortality and shorter length of hospital stay (LOS) among geriatric patients receiving an early (< 24 h), hospital-based geriatric team intervention after discharge. The objective of this study was to compare a novel, early municipality-based, nurse-led and general practitioner (GP)-supported transitional care intervention (TCI) to an established hospital-based TCI among frail, older, geriatric patients.

Methods: A randomised controlled trial was conducted within a single geriatric department and the adjacent municipality. Inclusion criteria: acutely admitted, frail patients 75 + years old. Eligible patients were randomly allocated (1:1) to the two TCIs. Primary outcome was 30-day unplanned, all-cause readmission. Secondary outcomes were 90-day all-cause mortality and LOS. Stratified analysis according to type of dwelling was made. Odds ratios (OR) with 95% confidence intervals (CI), and number needed to treat (NNT) were reported.

Results: 2150 patients (median age (interquartile range (IQR)): 87 (82–91); 59% female) were included. Readmission rates were 22% in the municipality-based intervention (n = 237/1073), and 18% in the hospital-based intervention (n = 192/1077); OR was 1.31, 95% CI (1.06–1.62), p = 0.014 and NNT = 24. OR for cohabiting patients was 1.73, 95% CI (1.11–2.71); p = 0.017. No significant difference was observed in mortality (21% vs. 20%; OR = 1.12, 95% CI (0.91–1.38), p = 0.290) or LOS (median (IQR): 6 (2–8) vs. 5 (2–8) days, p = 0.295).

Key conclusions: The new municipality-based, nurse-led and GP-supported intervention was inferior to the hospital-based geriatric team intervention in preventing 30-day readmission among frail, geriatric patients. There was no significant difference between the two interventions in regard to 90-day mortality or LOS.

Abstract # 271**AREA: Comprehensive Geriatric Assessment****Can comprehensive geriatric assessment support frail older people growing older in better health?**

Theresa Westgård¹

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Background: The comprehensive geriatric assessment (CGA) designed to manage frail older people requiring acute medical care, is responsible for diagnostics, assessment, treatment, and planning while addressing a person's medical, psychological, social, and functional capabilities. The aims were to investigate if CGA had an effect on frail older people's activities of daily living (ADL) status, self-rated health, and satisfaction with hospital care after receiving CGA.

Methods: A two-armed design with frail people aged 75 or older who required an unplanned hospital admission were randomized to either

the CGA ward or to an acute medical ward. Analyses were made based on the intention-to-treat principle (ITT). The primary outcome was ADL. Data were analysed using Chi-square and odds ratio. A subgroup analysis was performed due to non-adherence and contamination (after 6 months), and the change in dependence in ADL 2 weeks prior to hospital admission and at the 12-months follow-up was analysed.

Findings: At the 12-month follow-up four participants in the control (5.2%) and 12 in the intervention group (15.4%) had improved their ADL compared to 2 weeks before inclusion, odds ratio (OR) = 3.332 (95% CI 1.02–10.79, p = 0.046) in the intention-to-treat analysis. The corresponding numbers for complete cases were 4 (10.0%) and 11 (28.9%), OR = 3.67 (95% CI 1.05–12.78, p = 0.041). Attrition in this study was mainly due to mortality. Additionally participants' perceptions of quality of care 1 month after discharge were statistically significant for the intervention group, as they reported to a higher degree receiving written information from the hospital (OR 2.19) and that the care received in the hospital met their needs (OR of 2.83).

Interpretation: In-hospital CGA improves frail older people's ADL long term and they are more likely to report receiving written information from the hospital and feeling that the care met their needs.

Abstract # 272**AREA: Comprehensive Geriatric Assessment****Meta-regression analysis of worldwide Herpes Zoster incidence**

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Background: Many studies have been conducted worldwide to estimate Herpes Zoster (HZ) incidence rates. We synthesized studies of HZ incidence rates in the general population using meta-analysis models.

Methods: A random-effects meta-analysis was conducted to estimate HZ incidence from a published worldwide systematic literature review (SLR) including only individuals aged 50 years and older. Meta-regression was used to explore if variability in incidence rates could be explained by a combination of study-specific characteristics including age, gender, continent and year of data collection. The impact of adding additional covariates: case detection, case definition, study design, incidence type, patient type and latitude was explored.

Results: 65 studies were included in the analysis: 27, 20, 11, 7 from Europe, North America, Asia and Oceania, respectively. There was variability in study methodology and outcomes. Heterogeneity of incidence rates was greatest across studies conducted in Asia. Meta-analysis showed that: incidence increased with age; was lower in males compared to females; was lower in Europe and North America compared to Asia and Oceania; and increased over time. The final meta-regression model included continent, year of study data, gender, age, cubic and quadratic terms for age, and an age × gender interaction term. The difference in incidence between males and females was greater in younger ages (e.g. 50–59), whereas in older age groups (e.g. 80 +) incidence rates are similar between males and females. None of the additional covariates contributed significantly to the model.

Conclusion: Incidence rates were shown to vary by age, gender, continent, and over time.

Abstract # 273

AREA: Comprehensive Geriatric Assessment

Analysis of the use of comprehensive geriatric assessment on specialty wards

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Introduction: Comprehensive geriatric assessment (CGA) is widely known to improve outcomes whilst reducing morbidity and mortality for frail, older patients. Such adults are found throughout the hospital, including in specialty wards. This project aimed to analyse whether principles of the CGA are being adopted on these wards.

Method: Data was collected on three randomly selected dates over a 6-week period from Cardiology, Gastroenterology, and Respiratory wards. Documentation of the following areas was reviewed: age and CFS distribution, up-to-date problems list, Delirium assessment, inpatient falls data and assessment, and MDT note.

Results: Cardiology had the largest proportion of patients ≥ 65 , followed by respiratory and gastroenterology. Gastroenterology had the largest proportion of patients CFS ≥ 5 followed by respiratory and cardiology. Documentation of up-to-date problem lists was variable depending on specialty: gastroenterology (32%), respiratory (72.7%), cardiology (76.3%). No specialty recorded delirium assessment, and MDT note documentation was variable, ranging from 0% in cardiology, 11% in gastroenterology and 12.7% in respiratory. Only 1 patient in each specialty had an inpatient fall documented.

Conclusion: Specialty wards care for large proportions of patients for whom CGA would be beneficial. By increasing the implementation of CGA principles on specialty wards, we can improve patient outcomes. We have created an MDT proforma on EPR to be completed for every patient daily to standardise documentation across wards. We have presented these findings to the Frailty Steering Group to ensure that improvement work is undertaken across all wards and allow future business cases for elderly care input on specialty wards.

Abstract # 274

AREA: Comprehensive Geriatric Assessment

Prevalence of frailty in a Acute Geriatric Unit

Maria Elena Baeza Monedero¹, Tania Indira Sánchez Sánchez¹, Irene Lozano Rosique¹, Paula Fernández Montalbán¹, Sara Martínez Flores¹, María Alcántud Ibáñez¹, Brian Dax Vázquez Brolen¹, Carlos Oñoro Algar²

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Introduction: frailty is a geriatric syndrome characterized by a loss of functional reserves and an increased vulnerability of the patient. Despite its reversibility, it is associated with functional and mental deterioration.

Objectives: To know the characteristics of the patients admitted to a Acute Geriatric Unit of a second level hospital, as well as the prevalence of frailty.

Material and methods: Descriptive and prospective study that included all patients admitted to a Geriatric Unit, in Infanta Leonor Hospital, Madrid, from July 2019 to December 2019. Age, sex, and functional status were collected (using the Barthel Index -BI- and the Functional Ambulation Category -FAC-). For the assessment of frailty, the FRAIL criteria were used.

Results: 154 patients were included. The participants' mean age was 86.98 years (SD 5.23), 66.9% were women (103 patients). A third of the sample was independent for the Activities of Daily Living (ADL) (BI 80–100), and more than half were independent to walk, (FAC 4–5). According to Frail's criteria, 62.33% were defined as “frail”, 33.7% as “pre-frail” and 3.8% of our population was considered “not frail”.

Conclusions: Despite the fact that more than half of the patients were independent to walk and a third were independent for ADL, the prevalence of frailty according to the FRAIL criteria was high. It is important to assess frailty and not just the ability to walk and independence for ABVD in patients admitted to the Acute Geriatric Unit to detect the most vulnerable patients.

Abstract # 275

AREA: Comprehensive Geriatric Assessment

Comprehensive geriatric assessment in older patients with severe aortic stenosis

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Objectives: He aim of the study is to assess results of comprehensive geriatric assessment in elder patients with severe aortic stenosis, before Transcatheter aortic valve implantation (TAVI) and identify vulnerable patients.

Method: all patients over 75 years with severe aortic stenosis were evaluated, from 2017 to 2020. The comprehensive geriatric assessment in older patients with severe aortic stenosis included the analysis of several aspects. Age, sex and functional status were collected (using the Barthel Index -BI-, Short Physical Performance Battery -SPPB- and the Functional Ambulation Category -FAC-). For the assessment of frailty, the FRAIL criteria were used. Pfeiffer scale was used as screening of cognitive impairment. Nutritional assessment (Mini Nutritional Assessment -MNA-) and comorbidity (Charlson index) were also included. Based on the previous assessment, the patients were classified as frail, robust or subsidiary to palliative care. Each assessment was presented to a multidisciplinary tumor committee.

Results: 32 patients (mean age 86.5 years, female gender 70%) were evaluated. Of these, 42% were frail. 55% of the sample, underwent surgery. Mortality (at three years) was around 15%, being half of them frail. All patients in the sample had polypharmacy and 2 out of 10 were malnourished. The mean Barthel index was 80 points and 35% had cognitive impairment.

Conclusions: A high prevalence of frailty was present in geriatric patients with severe aortic stenosis. Comprehensive geriatric assessment prevent complications and providing quick assessment to detect vulnerable patients.

Abstract # 276**AREA: Comprehensive Geriatric Assessment****Integration of comprehensive geriatric assessment (CGA) in daily ward round proforma**Aishwarya Chitnis¹, Mary Pissaridou¹, Veena Borkar¹¹Department of Medicine for Older People, Buckinghamshire Healthcare NHS Trust, Stoke Mandeville Hospital, Aylesbury, UK

Introduction: A multi-disciplinary comprehensive geriatric assessment (CGA) is beneficial in long term management whilst improving survival and function by formulating appropriate management strategies with multi-disciplinary team (MDT) input. The aim of this study was to introduce an integrated and collaborative approach to documentation, ensuring continuity and improving patient care, aiding MDT handovers and effective updates to next of kin during the COVID-19 pandemic.

Methods: A 10-item Likert-scale questionnaire to gather input from MDT members regarding current practice to understand expectations and identify gaps in documentation and handovers. Data collated into forming a CGA and Daily ward round proforma. After 4 weeks, the survey was repeated to assess the efficacy of the new documentation system, identify areas of improvement and reintroduce with amendments.

Results: 83% respondents felt a CGA proforma would be useful. 35% were satisfied with the previous system. Despite 65% being aware of what needs to be documented, only 39% were clear about the management plans and 13% were aware if they were executed. Only 22% felt there was good update of next of kin. Comparatively, 79% were satisfied with the introduction of a CGA proforma.

Conclusion: The care of elderly patients involves a thorough assessment of their comorbidities, psychosocial and functional status to formulate management strategies whilst being considerate of their advance directives. The introduction of CGA proforma was shown to improve documentation and holistic care by effective handovers and continuity of care, without losing vital information, especially during their long hospital stay in hospital.

Abstract # 277**AREA: Comprehensive Geriatric Assessment****Overview of the social prescriptions issued and results of baseline evaluations carried out on participants referred to the first hospital based social prescribing program in Ireland**Bernie McGowan¹, Mary Buckley², Laura Bailey², Ciaran Murray², Gerard Boyle³, David Robinson⁴

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Introduction: With financial support from Sláintecare, the Medel Institute for Successful Ageing (MISA) at St James's Hospital, Dublin, introduced the first hospital based social prescribing program (SPP) in Ireland in May 2020 at the height of the COVID-19 pandemic.

Method: All information pertaining to referrals to the SPP Co-ordinator is recorded on a PSPP database including the number and type of social prescriptions generated from the Local Asset Mapping Project (LAMP) and results of initial wellbeing scores on a sub group of participants using the MYCAW, WEMWBS and WHO 5 Wellbeing scales. The results presented are based on the first 68 people referred to the program.

Results: The mean number of prescriptions generated from LAMP per person for community based assets/services offering some form of service and from programs developed by the SPP in St James's Hospital during this period was 5.04 (std dev $\pm$ 2.82). The mean number of contacts per person made by the SPP co-ordinator was 8.23 (std dev $\pm$ 4.67). The results of the initial evaluations on a sub group of 37 participants using MYCAW indicated that 43% of patients had a fear of social isolation and loneliness. The WHO-5 Wellbeing score identified that 39% of participants had a score of $\leq$ 50 indicating poor wellbeing and 25% scored $\leq$ 28 indicative of depression.

Conclusion: Social Prescribing as a non-medical response to health and wellbeing challenges should continue and be extended to operate alongside other established medical referral pathways.

Key words: Social prescribing, older person, evaluations, dementia, co-morbidities, COVID-19, LAMP.

Abstract # 278**AREA: Comprehensive Geriatric Assessment****Risk of unplanned hospitalizations. The predictive accuracy of five Resident Assessment Instrument-Home Care (RAI-HC) scales**Jukka Rönnekkö¹, Heini Huhtala², Harriet Finne-Soveri³, Jaakko Valvanne⁴, Esa Jämsen⁵

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Introduction: The aim was to identify predictive case finding tools that classify the risk of unplanned hospitalization among home care clients, utilizing four Resident Assessment Instrument-Home Care (RAI-HC) scales (The Activities of Daily Living Hierarchy (ADLh), The Cognitive Performance Scale (CPS), The Changes in Health, End-Stage Diseases, Signs, and Symptoms Scale (CHESS), The Method for Assigning Priority Levels (MAPLe)) and a RAI-HC-based Detection of Indicators and Vulnerabilities for Emergency Room Trips Scale (DIVERT) algorithm.

Methods: This register-based study was based on the RAI-HC assessments (n = 7744) of 3091 Finnish home care clients (mean age 80.9 years) and hospital discharge records. The outcome was an unplanned hospitalization within 180 days after RAI-HC assessment. Sensitivity, specificity and Area Under the Receiver Operating Characteristics curve (AUC) were determined for all scales and the time from assessment to hospitalization for every DIVERT level.

Results: Of 7744 assessments, 1658 (21.4%) were followed by an unplanned hospitalization. The DIVERT Scale had an AUC of 0.62 (95% confidence interval 0.61–0.64) but the value was poorer in the older age groups (< 70 years: 0.71 (0.65–0.77), 70–79 years: 0.66 (0.62–0.69), 80–89 years: 0.60 (0.58–0.62), 90 years: 0.59 (0.56–0.63)). AUCs for the other scales ranged from 0.55 (ADLh) to 0.60 (CHESS). Time to hospitalization after assessment was shorter in clients with higher risk for emergency admission according to DIVERT.

Key conclusions: Despite its limited accuracy, the DIVERT Scale offers an approach to identifying clients in the increased risk of hospitalization, especially among younger home care clients. Clients scoring high in the scale and experiencing the outcome earlier than others, should be the primary group for more detailed assessment.

Abstract # 279

AREA: Comprehensive Geriatric Assessment

Is care based on comprehensive geriatric assessment with mobile teams better than usual care?

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Introduction: Comprehensive Geriatric Assessment (CGA) based healthcare has proven benefits for older people in acute care settings. The evidence for CGA in community-dwelling older people is more scarce. The primary aim of this study is to investigate whether CGA-based out-patient care is superior to usual care with regards to days in the hospital, the number of hospital admissions, and mortality.

Methods: This is a single-center, randomized controlled trial. All participants were identified via local healthcare registries. Inclusion criteria: age ≥ 75 years, ≥ 3 different diagnoses, and ≥ 3 visits to the emergency care unit (with or without admittance) during the past 18 months. 450 participants were recruited between October 2016 and June 2018 with follow-up after 24 months. Participants in the intervention group (IG, $n = 224$) were given tailored, CGA-based care by a multidisciplinary team in addition to usual care. The control group (CG, $n = 226$) received usual care only.

Results: There was no difference between the two groups in the mean number of days in hospital after 24 months: IG 16.2 days (standard deviation (SD) 22.3), CG 17.6 (SD 25.5), $P = 0.14$. Moreover, there was no difference in mortality after 24 months: IG 23%, CG 22%, $P = 0.57$ or in the mean number of hospital admission after 24 months: IG 2.3 (SD 0.17), CG 2.5 (SD 3.0), $P = 0.14$.

Key conclusions: No differences were found in primary endpoints relating to hospital care use and mortality. Further analyses will explore secondary outcomes including the use of social services and health economic outcomes.

Abstract # 280

AREA: Comprehensive Geriatric Assessment

Impact of male gender on prognosis after hip fracture in the elderly

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Introduction: Hip fracture is a frequent and serious condition in elderly patients, associated with an excess of mortality, particularly in men. We hypothesized that male excess mortality could be linked to differences in comorbidities, preoperative autonomy and postoperative complications.

Materials and methods: We performed an retrospective, monocentric, cohort study. The data collected related to age, sex, comorbidities, preoperative autonomy and frailty, characteristics of surgery, postoperative complications and follow-up at 6 months. Our main outcome was all-cause mortality at 6 months.

Results: 926 patients were included. Men represented 25% of the cohort, were significantly younger with better autonomy before fracture, more comorbidities, in particular cardiovascular, and more postoperative complications. In a multivariate analysis, male gender was associated with a 6 month excess mortality after hip fracture surgery (OR = 1.98, 95% CI [1.22–3.21]). Other factors of poor prognosis were atrial fibrillation, heart failure, cancer, pre-fracture autonomy and some postoperative complications as acute pulmonary edema, infections and bedsores.

Discussion: The male gender is an independent risk factor for hip fracture mortality at 6 months. This excess mortality could be linked to factors including differences in immune response, nutritional and muscle status.

Conclusion: Male gender is independently associated with mortality at 6 months after hip fracture.

Abstract # 281

AREA: Comprehensive Geriatric Assessment

Functional assessment of the elderly

Yolanda Martins¹, Heloísa Ribeiro¹

¹Centro Hospitalar de Entre o Douro e Vouga

Introduction: In elderly patients adequate recognition of functional difficulties can lead to interventions that may prevent or arrest the decline and improve quality of life, reduce morbidity, mortality and health care costs. Since 2013, the validated screening tool “AVD-DezIs” (0–20, 20 expressing max disability) is used in our Internal Medicine ward to evaluate older adults.

Methods: Prospective study of > 65 years old patients admitted from January 2013 to December 2020. Functional assessment was performed using the “AVD-DezIs”.

Results: Older patients were responsible for 78.8% (20,918) of all hospitalizations. The median AVD-DezIs score in patients aged 65–74 was 3, in 75–84 was 9 and in the > 85 years was 12 ($p < 0.001$). The median hospital stay in 65–74 and 75–84 years old group was 7 days and over 85 years old ways 6 days ($p = 0.002$). In patients younger than 85 years, there was a significant relationship between length of hospital stay and AVD-DezIs score. The score was higher in patients who died during hospitalization (8 vs 13; $p < 0.001$) and in those who died after discharge (median of 9 versus 13; $p = 0.000$). Patients who were readmitted in Emergency department and in our Internal Medicine had a higher score (8 vs 11, $p < 0.001$; 9 vs 11 $p < 0.001$ respectively).

Conclusion: Function impairment evaluated by “AVD DezIs” is an important predictor of length of stay, in-/out-hospital mortality and readmissions. These results may have important clinical implications and should generate alerts to health care providers and social workers in order to provide better care to geriatric population.

Abstract # 282**AREA: Comprehensive Geriatric Assessment****Functional assessment of the elderly**Yolanda Martins¹, Heloísa Ribeiro¹¹Centro Hospitalar de Entre o Douro e Vouga

Introduction: In elderly patients adequate recognition of functional difficulties can lead to interventions that may prevent or arrest the decline and improve quality of life, reduce morbidity, mortality and health care costs. Since 2013, the validated screening tool “AVD-DezIs” (0–20, 20 expressing max disability) is used in our Internal Medicine ward to evaluate older adults.

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Abstract # 283**AREA: Comprehensive Geriatric Assessment****Exploring elder neglect: new theoretical perspectives and diagnostic challenges**Agata Stodolska¹, Agnieszka Parnicka¹, Beata Tobiasz-Adamczyk¹, Tomasz Grodzicki¹¹Jagiellonian University Medical College

Introduction: Elder neglect is a complex and important social problem which is difficult to detect. The aim of the analysis is to explore and categorize different characteristics of neglect of older adults, to facilitate a uniform conceptualization and provide recommendations for identification of the phenomenon.

Methods: A systematic review was performed in PubMed, Web of Science, and CINAHL using keywords related to elder abuse and neglect. Articles published between January 1990 and February 2019, both from developed and developing countries, were taken into consideration. Only articles regarding the concept of elder neglect, identifying or measuring this phenomenon were included. The identified indicators were categorized according to the Maslow's hierarchy of needs.

Results: From 7207 articles found in the initial search, 63 relevant studies were selected for the final analysis. Indicators most frequently used by researchers (functionality, physical appearance and health, social and psychological background, mental health, and environment) correspond to different aspects of needs. Caregiver's

responsibility, satisfaction of needs, and risk of harm are the core elements to consider in identification of neglect.

Key conclusions: The identified elements and categories of indicators provide the framework for developing standard definitions and measures of elder neglect. The review demonstrates gaps in identification and provides additional aspects for detection of potential neglect in various categories of needs. Further research based on uniform methods and classified indicators identifying elder neglect should allow comparisons between countries.

Abstract # 284**AREA: Comprehensive Geriatric Assessment****Vitamin D deficiency in adults in the province of Kastelli, Crete Greece**Maria Maisi¹, Georgios Tsioulos¹, Emmanouela Maisi², Anna Christoforaki¹, Emmanouil Markakis¹¹Kastelli Health Center, ²Pagni Hospital

Purpose: Reporting vitamin D levels in patients of Kastelli Health Center during a year.

Theory: Vitamin D is a substance that acts both as vitamin and as hormone. It is produced by the skin after the sun radiation effectiveness or it is consumed by food. Its major function is that of calcium and phosphorus absorbance regulation. In recent years, there's a great interest, regarding public health, in vitamin D levels in Greece and in other countries with plenty of sunshine, since vitamin D deficiency has been observed in a significant number of people.

Methods: Levels of vitamin D in patients aged over 18 years old that were examined in Kastelli Health Center from January until December 2017 were reported. Patients with Vitamin D deficiency (< 20 ng/ml) were evaluated.

Findings: Totally 132 adults over 18 years old, of which 91 female (68.9%) and 41 male (31.1%) were examined. Vitamin D deficiency was reported in 107 patients (81.1%) of which 80 female and 27 male while in 25 patients there was vitamin D sufficiency.

Discussion: Vitamin D deficiency was reported in a great percentage (81.1%) in adults over 18 years old in the prefecture of Kastelli Health Center and mostly in women. Vitamin D deficiency makes for a public health problem as it is related with many pathological conditions and in long term the risk of cardiovascular disease and cancer onset is increased.

Abstract # 285**AREA: Comprehensive Geriatric Assessment****Impact of geriatric co-management on outcomes in frail, older, hospitalised, cardiology patients**R.C.M.A. Raijmann¹, H.L. Koek², M.H. Emmelot-Vonk², J. Swaving³, W.R.P. Agema⁴, A.P.M. Kerckhoffs⁵, C.J.P.W. Keijsers⁶

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Introduction: Cardiovascular disease and frailty are highly prevalent within the oldest of old [1]. In a recent meta-analysis, geriatric co-

management for frail, elderly, hospitalised patients was effective in reducing the length of hospital admission, and possibly other negative health-related outcomes [2]. However, there is limited evidence evaluating geriatric co-management for cardiology in-patients specifically.

Methods: A retrospective cohort study was performed in a large regional Dutch hospital. We compared patients aged 85 years and older admitted to the cardiology ward before (control group) and after implementation of standard geriatric co-management. The following outcomes were analysed: readmission rate, mortality, length of stay, number of consultations, psychiatric disorder, delirium and falls incidence.

Results: In total 1.163 patients were analysed. Of these patients, 621 (53%) were part of the standard geriatric co-management group of which 370 (59%) actually received geriatric co-management. The other patients did not receive geriatric co-management due to short admission (eg. chest pain observation) or at the treating physicians' discretion. Baseline characteristics were comparable between co-management and control groups. Patients in the standard geriatric co-management group had a reduced length of stay (-0.9 day, $p = 0.02$) compared to the control group. For other outcomes, we did not find a significant difference between the groups.

Key conclusions: After the implementation of standard geriatric co-management, admission length was significantly reduced. Other outcomes did not differ significantly. The effect of geriatric co-management could be underestimated as only half of patients actually received the intervention.

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Abstract # 286

AREA: Comprehensive Geriatric Assessment

Development of an optimal-massive intervention in older patients with oropharyngeal dysphagia

Paula Viñas¹, Alberto Martín¹, Omar Ortega¹, Alicia Costa¹, Stephanie Riera¹, Viridiana Arreola¹, Weslania Nascimento¹, Mireia Bolívar-Prados¹, Pere Clavé¹

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Oropharyngeal dysphagia (OD) is a geriatric syndrome with high prevalence especially on elderly people. Poor oral health (OH), aspirations and frailty are associated with OD complications including malnutrition (30%), dehydration, lower respiratory tract infections (LRTI) (40%), hospital readmissions (5%), institutionalization and mortality. To develop an Optimal Massive Intervention (OMI) feasible in all older patients with OD admitted to any general hospital for any acute disease to avoid OD complications during admission and following discharge. We first designed a minimal massive intervention (MMI) including: (a) clinical screening of OD; (b) fluid thickening and texture-modified foods; (c) OH recommendations during hospitalization and following discharge. After a case-control study (186 patients) we found a significant improvement in functional and nutritional status and perceived quality of life, a significant decrease in general hospital readmissions and readmission for LTRI as well as increased survival after 6 months. We performed a critical analysis of these results to improve and optimize MMI. OMI includes universal screening among hospitalized patients with artificial

intelligence (AIMS-OD), clinical assessment with V-VST, fluid thickening and appropriate viscosities, professional OH, texture modified diets, oral nutritional supplements and patient education using workshops and specific webpages. We designed a randomized clinical trial, with two parallel arms and 6 months follow-up. 500 hospitalized patients (≥ 70 years) by an acute process will be included (NCT04581486). OMI might become a new simple and cost-effective strategy to further avoid OD complications during hospitalization and follow up in the geriatric population admitted with an acute disease to a general hospital.

Abstract # 287

AREA: Comprehensive Geriatric Assessment

Quality of life in geriatric patients undergoing hemodialysis

Brunilda Elezi¹, Erjona Abazaj², Skender Topi³

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Introduction: Geriatric patients undergoing dialysis showed lower levels of quality of life on physical functioning, role-functioning emotional, mental health, and pain. The aim study is to evaluate quality of life and importance to geriatric patients undergoing dialysis.

Methods: Data of 103 maintenance dialysis patients aged ≥ 60 until to more than 81 years old were surveyed using the World Health Organization Quality of Life for Older Adults (WHOQOL) instruments during the 2 years. We categorized participants into three age groups (≥ 60 –70, 71–80, and ≥ 81 years) and described the summary data for the question of QOL that includes 25 questions classified into five dimensions, which are mobility, personal care, common activities, discomfort and pain, anxiety and depression. The software SPSS version 20.0, were used to analyze and evaluate the data obtain in this study and P value < 0.05 was considered statistically significant.

Results: Among the 103 geriatric patients, average age was 68.9 ± 6.7 Sdt deviation with min age 60 and max 82 years old. The age groups ≥ 60 –69 presented the higher percentage among patients with 65.1%, 27.1% were 70–79 years old, and 7.8 were ≥ 81 years old. The most predominant sex was male 76.78% (79/103) compared to female 23.3% and 27.8% (24/103), without significant level. In our study, among geriatric dialysis patients is seen a significantly association scored between the QoL and ages ($p = 0.001$), BMI ($p = 0.032$). Also the age were significantly associated with the QOL for modality ($p = 0.001$) and anxiety and depression ($p = 0.041$). About the questionnaire, “How good or bad your health is today” most of the patients that answered to this question, declared to feel in status marked from 50 to 70 scale score.

Conclusion: Our findings presented a considerable number of men among the geriatric patients p undergoing dialysis and the most predominate age was 60–70 years old. We funded the association between QoL and ages and BMI. Modality, anxiety, and depression QOL became worse in geriatric age. Other studies have been presented a poor QoL among geriatric patients and this makes situation more challenging than usual. Therefore, novel instruments are likely needed to improvement QoL in older haemodialysis patients. We suggest that management of the adequate factors as ages and BMI and having a social support in older adults receiving dialysis will improve the QoL of these patients.

Abstract # 288**AREA: Comprehensive Geriatric Assessment****‘Ageism’ is associated with multidimensional frailty in community-dwelling older subjects: a population-based study**

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Introduction: Ageism is stereotyping, prejudice, and discrimination against people based on their age. Ageism may impact the quality of life of older people and the quality of care they receive, a problem that can be even greater if the older person is ‘frail’. However, very few studies explored the role of frailty as a factor potentially related to ageism. The aim of this study was to assess the association between perceived age discrimination (PAD), i.e. ageism, and frailty in community-dwelling older adults.

Methods: 1337 community-dwelling subjects over-65 years were asked to fill out a structured questionnaire to collect psycho-socio-economic and behavioral information. Multidimensional frailty was assessed by the Selfy-Multidimensional Prognostic Index Short-Form (Selfy-MPI-SF). PAD over the past 5 years was assessed based on explicit criteria.

Results: 83 out of 1337 participants (6.2%) reported PAD. These subjects were older, more frequently women, with greater economic difficulties, lower level of cultural fruition, social network and psychological well-being, and a greater degree of frailty compared to participants who did not report PAD. After adjustment for age and gender, high grades of multidimensional frailty (Selfy-MPI-SF score) and of negative affectivity (PANAS) were the two only factors significantly ‘predictors’ of PAD (Selfy-MPI-SF Odds Ratio: 1.19, 95% CI 1.029–1.370; PANAS negative: Odds Ratio: 1.06, 95% CI 1.033–1.099).

Conclusion: Frailty and negative affectivity are independently associated with PAD in community-dwelling older people. Interventions to prevent and cure frailty could be useful to reduce ageism and improve the well-being of older people.

Abstract # 289**AREA: Comprehensive Geriatric Assessment****Impact of the chronic disease self-management programme (CDSMP) on self-perceived frailty condition: the EU-EFFICHRONIC project**

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Introduction: The Chronic Disease Self-Management Programme (CDSMP) improves self-efficacy and health outcomes in people with chronic diseases. Over a 6-month follow-up, we evaluated the usefulness of CDSMP in relieving frailty conditions as assessed by the self-administered version of the Multidimensional Prognostic Index (SELFY-MPI), identifying also potential predictors of a better response.

Methods: The SELFY-MPI explores mobility, basal and instrumental activities of daily living, cognition, nutrition, comorbidities, medications, and socio-economic status. Participants were stratified into three groups according to the 6-month change of SELFY-MPI: those who improved after CDSMP (Δ SELFY-MPI < 0), those who remained unchanged (Δ SELFY-MPI = 0), and those who worsened (Δ SELFY-MPI > 0). Multivariable logistic regression was modeled to identify predictors of SELFY-MPI improvement.

Results: Among 270 participants (mean age 61.45 years) a benefit from CDSMP intervention, in terms of decrease in the SELFY-MPI score, was observed in 32.6% of subjects. SELFY-MPI improvement was found in participants with higher number of comorbidities (1–2 chronic diseases: adjusted odd ratio (aOR) = 2.38, 95% confidence interval (CI) = 1.01, 5.58; ≥ 3 chronic diseases: aOR = 3.34, 95% CI 1.25, 8.90 vs no chronic disease), poorer cognitive performance (Test Your Memory (TYM) ≤ 42 : aOR = 2.41, 95% CI 1.12, 5.19 vs TYM > 42) or higher risk of malnutrition (Mini Nutritional Assessment-Short Form (MNA-SF) ≤ 11 : aOR = 6.11, 95% CI 3.15, 11.83 vs MNA-SF > 11).

Conclusion: This study supports the hypothesis that the CDSMP intervention contributes to decreasing the self-perceived severity of frailty condition (SELFY-MPI score) in more vulnerable participants with several chronic diseases and lower cognitive performance and nutritional status.

Abstract # 290**AREA: Comprehensive Geriatric Assessment****Correction of anaemia in moderately to severely frail vs. mild to non-frail patients**

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Introduction: Assessing the prevalence and correction of anaemia could highlight opportunities for improved healthcare outcomes in the frail older adult.

Aim: To assess anaemia correction in moderate-severely frail (ms frail) vs. mild to non-frail patients in an acute hospital. To assess whether ms being moderate-severely frail impacts the likelihood of anaemia being corrected.

Method: A retrospective cohort study in a 240-bedded acute hospital. All patients who had comprehensive geriatric assessment by a frailty team between June 2019 and August 2020 were included. Clinical

Frailty Score above and below 5, age, gender, haemoglobin level at time of review, iron studies, further investigations (endoscopy or CT TAP) and haemoglobin level at least 6 months post assessment were evaluated. The percentage of patients with corrected anaemia was identified according to their level of frailty.

Results: 56.5% (n = 297) patients were anaemic. 81% of these were ms frail. 21% of the ms frail anaemic cohort had their anaemia corrected. 53.5% (n = 116) ms frail patients had iron-deficient anaemia, of which 20.7% (n = 24) had their anaemia corrected. Further investigations were performed in 38% of ms frail patients who had their anaemia corrected compared to 31% in those who did not.

Conclusion: This study shows a small proportion of those with anaemia have their anaemia corrected. Further investigation appeared to be associated with an increased likelihood of anaemia correction. Further work on standardising an approach to anaemia correction in the frail older adult is required.

Abstract # 291

AREA: Comprehensive Geriatric Assessment

Is asking whether a patient suffers dysphagia enough? Prevalence and relationship with malnutrition and function

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Introduction: Dysphagia has been related to adverse health outcomes such as longer hospital stays, aspiration pneumonia and death. Its prevalence varies among series, but it is thought to be an under-diagnosed problem. Our primary aim was to compare the prevalence of dysphagia as related by patients and their families with the prevalence obtained by the usage of validated methods in an Acute Geriatrics Ward of a tertiary hospital in Spain.

Methods: We have conducted a transversal study in which we recorded an individual interview with patients older than 75 years of age who were able and willing to take part. We recorded previous diagnosis of dysphagia, to later perform an assessment by using the “Eating Assessment Tool-10” (EAT-10) questionnaire and the “método de exploración clínica volumen-viscosidad (MECV-V)”. We have also recorded analytical and functional data.

Results: We have included 47 patients with a mean age of 88.5 years, 70.2% of which were women. 21.4% had a previous dysphagia diagnosis, while 53.5% were diagnosed after conducting the aforementioned validated diagnostic methods. We found statistically significant associations between said diagnosis and a high score on the EAT-10 ($p < 0.05$) and a lower hand-grip measure ($p < 0.01$).

Key conclusions: Despite our sample being small, we consider that the association with worse functional results (lower hand-grip) warrants the need for an early diagnosis and treatment. We speculate that early diagnosis in these patients prevented worse analytical malnutrition numbers and, therefore, explains the absence of association we found. Therefore, we consider the implementation of diagnosis protocols to be essential due to the potentially fatal consequences of dysphagia.

Abstract # 292

AREA: Comprehensive Geriatric Assessment

The burden of the association between obesity and osteoarthritis in older Chileans

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Background: Besides a rapid aging of the population, Chile face an Obesity epidemic reaching $> 30\%$ of older Chileans. Although obesity is associated with longer life expectancy in Chileans, it don't means that this longer life is in healthy state. Osteoarthritis is a chronic condition affecting mostly women, that means a high burden in terms of pain, quality of life deterioration and functional limitations.

Objective: To study the association between obesity and osteoarthritis with pain and functional limitations.

Methods: Cross sectional study in 1110 people ≥ 60 years (68.5% women; mean age 72 years ± 6.7) from the Alexandros cohort, designed to study disability associated with obesity in community-dwelling older people living in Santiago/Chile. BMI classified people as underweight (< 20), normal weight (20–24.9), overweight (25–29.9) and obesity (≥ 30). Self-reported osteoarthritis, pain, ADL, IADL and mobility limitations were registered.

Results: The prevalence of osteoarthritis was higher in women than in men (49.4% vs 22.9%, $p < 0.01$). Osteoarthritis was present in 46.7% of obese people, 35.5% in overweight, 28.6% in normal and 16.7% in underweight (crude OR = 2.2; IC 95% 1.2–3.8), $p < 0.001$). Mild/severe pain was more frequent in obese than non-obese with osteoarthritis (75% (95% CI 65.3–82.7) vs. 53.1% (95% CI 43–62.9). After adjusted logistic regression analysis pain associated with osteoarthritis was higher in obese OR = 1.58; 95% CI 1.08–2.31. Functional limitation was associated with osteoarthritis and obesity only in women (adjusted OR = 2.23; 95% CI 1.23–4.05).

Conclusion: Considering the high frequency of osteoarthritis and obesity in older people, mainly in women, and the severe burden posed by pain and functional limitations, higher in obese people, is highly recommended to design programmes focused on pain and functionality in people with osteoarthritis and obesity. Funding: Fondecyt Grant 1130947.

Abstract # 293

AREA: Comprehensive Geriatric Assessment

Radiological normality in the mild cognitive impaired brain

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Background: Individuals with MCI are a heterogeneous population and the diagnostic benefit of radiological brain atrophy scores remain disputed. Schelten's Medial temporal atrophy score (MTA) with age-specific pathological cut-off, parietal atrophy score (PA), Fazekas and the frontal subscore of the global cortical atrophy score (GCA-S) were used to examine 51 MCI patients and 51 closely matched normal controls.

Methods: Matching was done by socioeconomic status, age, gender and years of education. The participants underwent magnetic resonance imaging (MRI) examinations. The MRI images were investigated separately by two experienced radiologists blinded for group adherence. Modified MTA score with age specific cut-off and GCA-F with lowered threshold was used by first calculating combined mean scores from both hemispheres. The MTA pathological thresholds were set to ≥ 1.0 for persons under 65 years, ≥ 1.5 for 66–74 years of age, and ≥ 2 for those ≥ 75 years. GCA-F utilized a pathological threshold of ≥ 1.5 for all ages. PA was used unmodified. For Fazekas the pathological threshold > 1 was considered pathological. Two tailed independent sample t-tests were applied to investigate possible group-related differences for the different scores. For prevalence calculations, the radiological scores were dichotomized, according to their threshold.

Results: 21 out of 51 individuals with MCI had a pathological MTA score, as compared to 3 in the control group ($p < 0.0001$). No significant between groups differences were found for the other scores. **Conclusion:** In MCI patients, except for age-specific modified MTA, there is still limited value of radiological scoring systems.

Abstract # 294

AREA: Comprehensive Geriatric Assessment

Association of cognition, motoric and daily activity performance with patient outcome in in-hospital older persons

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Background: Cognitive, motoric and daily activity performance correlate to and to some extent predict patients' recovery outcome. The aim of this study was to investigate this relationship in the first German-wide hospital setting fully comanaged by Internal Medicine and Medicine of the Aged (Ward Universitäre Altersmedizin, University Hospital of Cologne).

Patients and methods: Seventy-four patients (age = 80 years $\pm$ 7.2, 54% male) admitted to the Universitäre Altersmedizin Ward with multimorbidity, risk of functional loss and requiring high-tech diagnosis and treatment for organ disease were included in this preliminary analysis. On admission and at discharge, patients underwent a Comprehensive Geriatric Assessment-based Multidimensional Prognostic Index (MPI) calculation and were subdivided in low (MPI-1, score 0–0.33), moderate (MPI-2, score 0.34–0.66), and severe (MPI-3, score 0.67–1)-risk of mortality at 1 month and 1 year. Admission and discharge Montreal Cognitive Assessment (MoCA) and Trail Making Test (TMT) A and B to evaluate cognitive performance, the Barthel Index (BI) for functional coevaluation as well as the DeMorton- Mobility Index (DEMMI) for motor performance testing were collected in all inpatients.

Results: A strong correlation was found between BI ($r = -0.67$, $p < 0.001$) as well as MPI ($r = 0.70$, $p < 0.001$) at admission with MPI at discharge. ADL at admission correlated ($r = -0.52$, $p < 0.001$) with MPI at discharge as well. MoCA ($r = 0.60$, $p < 0.05$) and TMT A ($r = -0.50$, $p = 0.001$) were significantly correlated to BI at discharge. TMT B showed a moderate correlation ($r = -0.53$, $p < 0.01$) to DEMMI at discharge.

Conclusion: As cognitive and motoric measures correlate with each other and with functional outcomes, their systematic evaluation in high-tech medical settings should inform more comprehensive clinical decision making. A further step for this line of research is to investigate their longitudinal, multidimensional prognostic signature.

Abstract # 295

AREA: Comprehensive Geriatric Assessment

Multidimensional frailty and circulating carotenoids in older patients admitted to the Emergency Department

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Background: Multidimensional frailty is a critical determinant of prognosis in advanced age and circulating carotenoids appear to play a role in the maintenance of robustness (Lancet Frailty Series, 2019; Polidori et al, Redox Biology 2021). Aim of the study was to evaluate the Comprehensive Geriatric Assessment (CGA)-based multidimensional prognosis and to investigate its relationship to carotenoid profiles in patients admitted to the Emergency Department (ED).

Patients and methods: One-hundred sixty-six patients admitted to the ED (mean age 76.6 years, 32% female) underwent a CGA-based Multidimensional Prognostic Index (MPI) calculation—including standardized evaluation of multimorbidity (Cumulative Illness Rating Scale), polypharmacy, social status, decubitus risk (Exton-Smith Scale), cognitive performance (Short Portable Mental Status Questionnaire), basic and instrumental Activities of Daily Living (ADL) and nutritional status (Mini Nutritional Assessment)—as well as blood withdrawal. Six plasma carotenoids including lutein, zeaxanthin, β -cryptoxanthin, lycopene, α - and β -carotene were measured by HPLC with UV/vis detection. Patients were subdivided in low (MPI-1, score 0–0.33), moderate (MPI-2, score 0.34–0.66), and severe (MPI-3, score 0.67–1)-risk of mortality at 1 month and 1 year.

Results: 37% of patients belonged to MPI-1 (0.26 ± 0.11) and 39% to MPI-2 (0.46 ± 0.08) class, MPI-3 patients had a mean MPI of 0.67 ± 0.03 . Logistic regression analysis after adjustment for age, gender and nutritional status showed that plasma levels of all carotenoids were inversely correlated with the MPI value. Correlations reached statistical significance for lutein and zeaxanthin ($p = 0.037$ and $p = 0.039$, respectively).

Conclusion: This preliminary analysis shows that profiles of plasma carotenoids appear to be associated to multidimensional frailty also in emergency settings, where a comprehensive assessment might more adequately inform prognosis and clinical decision making in advanced age with respect to usual care.

Abstract # 296

AREA: COVID-19

Analysis of fragility hip fractures in the COVID-19 era - a local centre review

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Background: Frailty is a state of physiological decline associated with an increase in adverse health events [1]. Fragility fractures are fractures that occur from a standing height [2]. Bone mineral density, muscle mass and muscle strength are used as markers of frailty; declining values are linked to increased fragility fractures. In March 2020 the Irish Government advised individuals > 70 years to cocoon due to COVID-19 [3]. We propose that cocooning increases frailty and leads to increased hip fractures [4].

Methods: We assessed our hip fracture database to examine the impact of COVID-19 on patients > 60 years presenting with hip fractures.

Results: At the time of submission data availability is limited due to the HSE Cyber Attack. Preliminary results show that pre-pandemic (15/12/19–15/03/20) there were 59 hip fractures. Of those admitted from home, 7 were discharged to Long Term Care (LTC). During the first COVID-19 wave (16/03/20–15/06/20), there were 51 hip fractures, with 2 new LTC discharges. Following this wave (16/06/20–15/09/20) there were 28 hip fractures, with 3 new LTC discharges. Complete analysis will be performed for the year preceding the pandemic and for the year since the pandemic began.

Conclusion: During the first COVID-19 wave and in the following 3 months we observed a reduction in hip fractures. However, due to the likely gradual increase in frailty as a result of cocooning, we theorise that an increase in hip fractures will be observed with prolonged analysis.

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Abstract # 297

AREA: COVID-19

Collaborations during COVID-19: visiting geriatric service contributes to urinary catheter management in aged-care facilities

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Introduction and objectives: We assess the trends of both ED presentations and referrals to visiting geriatric services for catheter-related issues prior to, and during the COVID-19 pandemic. While catheter-related issues may be referred to emergency department

(ED), such management strategies potentially have negative consequences for the resident and the healthcare system. Additionally, during coronavirus-19 (COVID-19) pandemic, transfers to hospital ED for straightforward catheter issues places additional burden on already strained healthcare system.

Methods: We assessed the medical records of a tertiary-teaching hospital for RACF residents with catheter-related issues transferred to hospital ED and those referred to visiting geriatric services between 2018 and 2020. Those who received urinary catheter for reasons other than primary urinary tract pathology were excluded. Flushing, repositioning, or changing of catheter was deemed suitable for management by visiting geriatric service at RACF.

Results: Prior to COVID-19, an average of 150 ED presentations per year occurred for RACF residents with catheter-related issues. During COVID-19, ED presentations dropped by 27.3%, while referrals to visiting geriatric service increased by 28.1%. Within those presented to ED, 70.3% were deemed suitable for management in RACF. For those referred to visiting geriatric service, 64.1% were for catheter blockage or bypass. Additional management requiring ED transfer occurred in 13.6%.

Conclusion: Visiting geriatric services for urinary catheter management in RACF is a suitable alternative to ED presentation. This would reduce unnecessary hospital transfers, especially during COVID-19 pandemic. Further collaboration between ED, urology, and geriatric medicine can further streamline this process to identify appropriate residents to be managed in RACF.

Abstract # 298

AREA: COVID-19

Older women's experiences of a community-led walking program using activity trackers before and during the COVID-19 lockdown

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Introduction: Promoting physical activity represents a major public health goal particularly considering the effects of the COVID-19 pandemic on older adults. Community-led exercise programmes present the opportunity to promoting active lifestyles. This qualitative study investigated the experiences and attitudes of older women who completed a community-led walking programme either before or during the COVID-19 lockdown based on the use of activity trackers.

Methods: Eleven community-dwelling older women aged 60 + completed individual phone interviews following their involvement in a 6-week walking programme. The programme, co-designed with a group of senior citizen, equipped participants with wrist-worn activity trackers and included biweekly check-in sessions with a researcher to monitor progress and support motivation. The interviews explored participants' views on the programme and its implementation during the COVID-19 lockdown.

Results: Thematic analysis produced three main themes related to the "programme as a source of motivation", the "user experiences with the technology" and participants' "views on social dimension of the programme". Overall, participants highlighted the self-monitoring usefulness of activity trackers as most beneficial for their exercise levels. They also highlighted that the programme was beneficial for remaining active during the COVID-19 lockdown.

Key conclusions: This study provides insights into the personal and social factors perceived by older adults in relation to factors promoting an active lifestyle, particularly using activity trackers, before and during the COVID-19 lockdown. Our findings have implications

for future research and interventions using technological devices to improve physical activity in older adults.

Abstract # 299

AREA: COVID-19

“It meant I could be with him” - Hospital @ Home for the treatment of severe COVID-19 in older adults living with frailty

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Background: Hospital @home (H@H) services bring the ward to the patient; providing acute care at home, delivered by a multi-disciplinary team. Our H@H rapidly adapted to support older patients with severe COVID-19 infection living with frailty who would otherwise have required hospitalisation for treatment.

Methods: An evidence-based guideline for the treatment of severe COVID-19 infection by H@H was developed. Patients were referred from community and hospital settings. A “bundle” including dexamethasone, oxygen, IV fluids and thromboprophylaxis was used at first contact. Retrospectively outcomes were extracted from notes of H@H COVID positive patients admitted 16/12/2020—14/02/2021. Service users were contacted for feedback.

Results: Of 125 COVID patients treated by H@H, 33 (26%) were managed with the severe COVID bundle. These patients were severely frail (mean Clinical Frailty Score (CFS) 7, IQR 6–8). 19 (58%) were treated in private residences, and 14 (42%) in nursing homes. Average length of stay with H@H was 8 days. 30-days post-discharge, 13 patients (39%) were alive in the community (mean CFS 6, IQR 6–7), 1 (3%) was in hospital and 19 (58%) were deceased (mean CFS 7, IQR 7–8). Feedback themes from users included the importance of being able to be with loved ones, benefits of a familiar environment and the value of respecting patients' wishes to be at home.

Conclusion: H@H gave older patients living with frailty who developed severe COVID-19 the choice to have level 1 hospital care in their home environment. This service was very much appreciated by patients and their families.

Abstract # 300

AREA: COVID-19

Physical activity and health-related quality of life - comparison between younger and older adults before, during and after the COVID-19 lockdown periods in Germany

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Introduction: The purpose of the study was to assess physical activity of middle-aged and older adults, and to compare their health-related quality of life (HrQoL) in the context of the COVID-19 lockdown periods in Germany (LDP1, LDP2).

Methods: 35 middle-aged (26 females, 56 ± 6 years, 25 ± 5 kg·m⁻²) and 56 older adults (31 females, 72 ± 6 years, 26 ± 4 kg·m⁻²) were interviewed regarding their daily physical activity habits before, during and after LDP1 as well as before and during LDP2. HrQoL was assessed using the SF-12 questionnaire

after LDP1 and during LDP2. Statistical analyses were performed applying ANOVA (age*time).

Results: Energy expenditure (EEXP) during physical activities decreased significantly over the pandemic period ($p = 0.032$), with no effects for age ($p = 0.545$) or age*time ($p = 0.212$). Post hoc, a significant difference for EEXP was found between before (5436 kcal 2wks-2) and during LDP2 (4438 kcal 2wks-2; $p < 0.001$). The mental component summary (MCS) of the SF-12 did not change significantly over time (time: $p = 0.522$, time*age: $p = 0.074$), but significant differences were found between the age groups (middle-aged: 53.2 vs. older: 55.7, $p = 0.037$), independent of time. No differences for time, age or time*age were shown for the physical component summary.

Key conclusions: Physical activity was most affected by LDP2 (winter), without differences between the age groups. Interestingly, the MCS of the HrQoL was better in older adults. It may be speculated, that younger adults were slightly more affected by the psychological stresses of the LDPs compared with older adults, although it was not possible to assess baseline MCS levels before LDP1.

Abstract # 301

AREA: COVID-19

Sex-gender differences in frailty and functionality two months after hospital discharge for COVID19 in patients' ≥ 70 years of age

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Objectives: To compare the frailty status and functional evolution between women and men aged ≥ 70 years 2 months after hospital discharge due to COVID19.

Methods: Observational study with telephone follow-up in a randomized sample of all confirmed COVID19 patients ≥ 70 years admitted to the Hospital General Universitario Gregorio Marañón (Madrid, Spain) from March 1 to April 30, 2020. Data collected by phone call were: functional evolution: change in ADLs (Barthel) and IADLs (Lawton-Brody) and frailty (Frail).

Results: 1070 patients were admitted (♀: 46% vs. ♂: 54%). Fifty percent were randomly selected. Inclusion criteria were not met by 3%, and 41% died in hospital (♂: 56%). A total of 333 survived, 12% were lost, and the final analysis was 266 (♀: 46%; ♂: 54%). There were no differences in mean age (♀: 80 vs. ♂: 79; $p = 0.1$), nor in a percentage of severe pneumonia (♀: 52% vs. ♂: 52%; $p = 0.6$), ICU admission (♀: 4% vs. ♂: 4%; $p = 0.9$), high-flow O₂ use (♀: 9% vs. ♂: 9%; $p = 0.9$), or length of stay (♀: 15 vs. ♂: 16 days; $p = 0.2$). At 2 months 48% were frail (♀: 54% vs. ♂: 43%; $p = 0.07$), more women referred asthenia (♀: 64% vs. ♂: 42%; $p = 0.001$), poor muscle strength (♀: 58% vs. ♂: 44%; $p = 0.038$) and slow gait (♀: 35% vs. ♂:

23%; $p = 0.036$). More women referred loss of independence for ADLs (♀: 19% vs ♂: 9%; $p = 0.021$) but not in loss of independence for instrumental activities (♀: 29% vs ♂: 21%; $p = 0.112$).

Conclusions: The elderly who survive hospital admission for COVID19 present a high prevalence of frailty. Likewise, a higher percentage of women report loss of function compared to baseline than men at 2 months.

Abstract # 302

AREA: COVID-19

Sex-gender differences in health perception, sequels of illness, and quality of life after two-month hospital discharge by COVID19 in 70 years and over patients

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Objectives: To study the self-perception of health, sequels of the disease, and quality of life 2 months after hospital discharge due to COVID19 and the differences between women and men.

Methods: Observational study with 2-month follow-up in a randomized sample of all COVID19 confirmed patients ≥ 70 years admitted to the Hospital General Universitario Gregorio Marañón (Madrid, Spain) from March 1 to April 30, 2020. A telephone interview was conducted asking about: self-perceived health, depressive symptoms (Yesavage), cognitive status (SPMSQ), and quality of life (EQ5D3L questionnaire).

Results: 1070 patients were admitted (♀: 46% vs. ♂: 54%). Fifty percent were randomly selected. Inclusion criteria were not met by 3%, and 41% died in hospital (♂: 56%). A total of 333 survived, 12% were lost, and the final analysis was 266 (♀: 46%; ♂: 54%). There were no differences in mean age (♀: 80 vs. ♂: 79; $p = 0.1$), nor in a percentage of severe pneumonia (♀: 52% vs. ♂: 52%; $p = 0.6$) or length of stay (♀: 15 vs. ♂: 16 days; $p = 0.2$). More women reported not feeling healed (♀: 36% vs. ♂: 25%; $p = 0.046$), worse independence (♀: 49% vs. ♂: 36%; $p = 0.04$), memory sequelae (♀: 31% vs. ♂: 19%; $p = 0.023$) and worse mood (♀: 56% vs. ♂: 21%; $p < 0.001$). There was higher percentage of women with SPMSQ 3–7 (♀: 24% vs. ♂: 7%; $p < 0.001$). Women self-reported a lower EQ5D3L (♀: 0.69 vs. ♂: 0.87; $p < 0.001$), and EQ-VAS (♀: 64 vs. ♂: 72; $p = 0.024$).

Conclusions: Two months after hospital discharge for COVID19 older women perceive more sequels of the disease, both physical and cognitive, and a worse quality of life than men.

Abstract # 303

AREA: COVID-19

Mapping multidimensional frailty in community-dwelling people over 80 years vaccinated against COVID-19: focus on functional and clinical differences between women and men

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Introduction: The COVID-19 vaccination campaigns required identifying the most vulnerable groups in order to protect them first. Aging and frailty are conditions that can exacerbate the negative effects of the COVID-19 infection. The aim of this study was to describe the multidimensional frailty condition of community-dwelling older people vaccinated against COVID-19 in an Italian Hospital.

Methods: The Self-Administered version of the Multidimensional Prognostic Index Short-Form (SELFY-MPI-SF) was used to assess the multidimensional frailty condition by exploring eight domains: mobility, basal and instrumental activities of daily living (Barthel mobility, ADL, IADL), cognition (Test Your Memory Test), nutrition (Mini Nutritional Assessment Short-Form), comorbidity, number of drugs and co-habitation.

Results: 790 elderly people filled in the SELFY-MPI-SF (mean age 84.95 ± 4.2 years; women 58.9%). Among 682 valid questionnaires (86.3%), 497 subjects (72.9%) were at low risk of frailty, 173 subjects (25.4%) were in the intermediate-risk category and 12 subjects (1.8%) were assessed as frail subjects. The SELFY-MPI score was significantly correlated with the age of participants (Pearson's coefficient: 0.22, $p < 0.001$). Women were significantly older (85.4 ± 4.4 vs 84.4 ± 3.9 , $p = 0.025$) and frailer than men (SELFY-MPI 0.29 ± 0.16 vs 0.24 ± 0.15 , $p = 0.005$). Moreover, women showed a significantly higher impairment in mobility (Barthel-MOB, 3.9 ± 7.8 vs 1.7 ± 5.5 , $p = 0.002$) and malnutrition (MNA 11.9 ± 2.1 vs 12.9 ± 1.5 , $p < 0.001$) than men.

Conclusions: Functional and clinical differences were observed between women and men vaccinated against COVID-19. These findings suggest that health strategies that prevent frailty and promote active and healthy aging need sex-targeted and personalized interventions taking into account gender characteristics of the older population.

Abstract # 304

AREA: COVID-19

COVID-19: characteristics and factors associated with mortality in older patients admitted to an intermediate care hospital

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Objectives: To describe the characteristics and factors associated with mortality in older patients who presented with COVID-19 infection in an Intermediate Care Hospital (ICH).

Methods: A descriptive of retrospective study of all older patients diagnosed with COVID-19 admitted to an ICH between March 2020 and May 2021. We collected data on previous dependency and at admission, multi-morbidity (Charlson Index), presence of dementia, initial COVID-19 symptoms, geriatric syndromes, oxygen therapy requirements, and mortality along hospitalization. Data were analyzed using SPSS 25 statistical software.

Results: 143 patients were included; mean age of 83.25 ± 9.81 ; 90 females (62.94%). Prior to admission 28 (19.6%) were independent and 40 (28%) severely dependent; 63 (44.06%) had dementia. Mean (SD) Charlson Index was $2.54 (\pm 0.17)$. At admission, 34 (23.8%), 32 (22.4%) and 72 (50.3%) had mild, moderate and severe dependency, respectively. The most prominent symptoms/geriatric syndromes were: fever (46.9%), dyspnea (53.1%), cough (58.7%), delirium (53.8%). 111 (77.62%) required oxygen therapy. Mortality was 32.2%. In a bivariate analysis, older age, more severe dependency (previous and at admission), presence of fever, dyspnea and delirium, and higher oxygen therapy requirements were associated with a higher risk of mortality ($p < 0.05$).

Key conclusions: Older persons admitted to our ICH had several degrees of previous dependency, and relevant multi-morbidity and dependency at admission. Mortality after COVID-19 infection was relevant. The degree of dependency prior to admission and at admission, presence of fever, dyspnea, delirium and the need for oxygen therapy might be associated with a higher risk of mortality in this population.

Abstract # 305

AREA: COVID-19

Factors associated with one-year mortality among older patients with COVID-19 admitted to an intermediate care hospital

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Objectives: To describe the factors associated with 1-year mortality among older patients discharged from an Intermediate Care Hospital (ICH) with a diagnosis of coronavirus disease 2019 (COVID-19).

Methods: Descriptive, retrospective study of older patients discharged from an ICH with a diagnosis of COVID-19 from March 2020 to March 2021. Data was collected on: age, sex, living situation, previous level of dependency, dementia, multi-morbidity (Charlson Index), level of dependency at admission and at discharge, Geriatric Syndromes during admission, symptoms of COVID-19, and 1-year mortality after discharge. Factors potentially associated with 1-year mortality after discharge were analyzed using bivariate analyses.

Results: Eighty-one patients were included. One-year mortality was 5.79% ($n = 14$). Factors associated with a higher risk of 1-year mortality after discharge vs. survival were: older age ($84.36 (\pm 10.51)$ vs $83.72 (\pm 7.87)$, $p < 0.05$); living at home (51.7% vs. 42.9%, $p < 0.05$); of patients; being more severely dependent at admission (61.5% vs. 37.5%, $p < 0.05$); more severe multi-morbidity (Charlson Index $2.54 (\pm 1.20)$ vs. $2.27 (\pm 1.63)$, $p < 0.05$). As most prominent symptoms associated with a higher risk of 1-year mortality were 42.9% fever (42.9%), dyspnea (50%), and delirium (42.9%).

Key conclusions: Older persons who died within the next year after discharge from an ICH with a diagnosis of COVID-19 were older, lived more frequently at home previous to admission, had more severe multi-morbidity and had higher dependency at admission. Further studies are necessary to confirm these results.

Abstract # 306

AREA: COVID-19

Delirium in older COVID-19 patients: evaluating predisposing risk factors

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Background: Older patients with COVID-19 are affected with high rates of delirium. We aimed to evaluate potential associations between traditional predisposing risk factors, and the Clinical Frailty Scale (CFS) with delirium in older COVID-19 patients.

Methods: This substudy of the multicenter COVID-OLD cohort study included patients aged ≥ 60 years hospitalized with COVID-19 between February and May 2020 in the Netherlands. Data were collected on demographics, co-morbidity, and geriatric parameters. Associations of traditional predisposing risk factors with delirium, and of CFS, were evaluated using multivariable logistic regression analysis.

Results: 504 patients were included (median age 74, 61% men), 410 stayed at the general ward, and 94 were admitted to the Intensive Care Unit (ICU). Delirium was present in 110 (21.8%) patients, 82 (20%) at the general ward and 28 (30%) at the ICU, respectively. Traditional predisposing risk factors: higher age (OR 1.07; 95% CI 1.01–1.13), previous delirium (OR 11.2; 95% CI 3.5–35.8), and pre-existent memory problems (OR 7.5; 95% CI 3.3–17.0) were associated with delirium in patients at the general ward, but not in patients at the ICU. KATZ-ADL score and Charlson Comorbidity Index were not associated with delirium at the general ward and ICU. A high CFS score was associated with a high delirium prevalence at the general ward (OR 1.60; 95% CI 1.35–1.89), but not at the ICU (OR 1.15; 95% CI 0.81–1.61).

Key conclusions: Traditional predisposing delirium risk factors, and a high CFS score are associated with delirium risk in patients admitted to the general medicine ward, but not at the ICU.

Abstract # 307

AREA: COVID-19

A comparative descriptive study of a COVID-19 outbreak in an intermediate care hospital during the first wave of the pandemic

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Objectives: To compare the main characteristics of a sample of domicile-based patients (DP) admitted to a COVID-19 unit of an Intermediate Care Hospital (ICH) during March 2020 with the characteristics of a sample of hospital-acquired COVID-19 inpatients (HaCOVIDiP) hospitalized at the same hospital during the same period.

Methods: A descriptive, comparative study of the retrospective data of both DP and HaCOVIDiP samples. The following main characteristics of the two study samples were compared using bivariate analysis: sociodemographic, physical functioning status (Barthel Index) at the pre-admission (BIP), admission (BIA) and discharge (BID), dementia, comorbidity (Charlson index), medium-high

COVID-19 severity level (Modified Early Warning Score ≥ 5), initial clinical (dyspnea, acute renal failure (ARF)) and diagnostic imaging COVID-19 symptoms (pulmonary infiltrates), geriatric syndromes and inpatient mortality.

Results: Of the total ($N = 130$) patients included, 104 (80%) were DPs and 26 (20%) HaCOVIDiPs. Comparing the main characteristic of the DPs with the HaCOVIDiPs, there were found that the DPs were older (85.96 ± 8.34 vs 81.15 ± 9.32 ; $p < 0.01$), lived more frequently in a geriatric center (59.61% vs. 11.53%; $p < 0.01$), had a higher moderate-severe functional dependence (58.65% vs 30.77%; $p < 0.05$) and had a higher percentage of dementia (52.88% vs 19.23%; $p < 0.01$) than HaCOVIDiPs. DPs also had higher percentages of initial clinical (dyspnea: 62.50% vs 38.46%; $p < 0.01$. ARF: 48.07% vs 23.07%; $p < 0.05$) and diagnostic imaging COVID-19 (pulmonary infiltrates: 64, 42% vs 38.46%; $p < 0.01$) symptoms than the HaCOVIDiPs.

Conclusions: Domicile-based patients admitted to a COVID-19 unit of an ICH during the setoff of COVID-19 pandemic were older, lived more frequently in geriatric centers, had greater history of functional and cognitive impairment, and had worse COVID-19 medical symptomatology than the hospital-acquired COVID-19 inpatients. No differences regarding mortality between the two groups were observed.

Abstract # 308

AREA: COVID-19

Pitfalls of early administration of systemic corticosteroids among geriatric patients with COVID-19 pneumonia

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Background: The role of systemic corticosteroids in the treatment of early-phase of SARS-CoV-2 infection is still controversial, particularly in older adults. The aim of the present study is to determine the effectiveness of early corticosteroid therapy in preventing the progression of disease, and improving clinical outcome in older patients admitted to an acute-care geriatric ward for COVID-19 pneumonia.

Measurements: Patients aged 65 or older, admitted to a tertiary care hospital with COVID-19 underwent clinical examination and blood testing.

Results: A total of 65 subjects (60% women; mean age = 81.97 ± 6.9 years) were evaluated in the study. Early corticosteroid therapy (ECT) was administered to 24 out of 65 patients before the hospitalization; median time of “at-home” therapy assumption resulted 4 days (range 2–15). We found no significant difference at admission between patients receiving ECT therapy compared to controls in terms of PaO₂/FiO₂ ratio [median 261 (IQR 138) vs 304 (IQR 106), $p = 0.06$]. ECT patients showed higher baseline levels of CRP (mean 11.3 ± 7 mg/dL vs 6.1 ± 5.1 mg/dL, $p = 0.002$) and a significant worsening of PaO₂/FiO₂ ratio during the hospitalization (nadir median 138 (IQR 128) vs 252 (IQR 191) $p = 0.017$). Finally, although not significant, patients with ccs had higher intra-hospital mortality compared to controls (25% vs 14.6%, respectively, $p = 0.29$).

Conclusions: Early use of corticosteroids at the onset of dyspnea was associated with worse clinical outcomes in geriatric patients with COVID-19 pneumonia, showing no benefit in attenuating the progression of the disease or reducing the escalation of care.

Abstract # 309

AREA: COVID-19

Risk factors for mortality in older patients with COVID-19

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Background: COVID-19 pandemic had dramatic consequences in global health. A significant proportion of affected individuals presenting with severe, life threatening disease are older individuals. However, risk factors for mortality in older patients have not been fully elucidated. The aim of this study was to assess the characteristics and outcomes of older patients admitted with COVID-19 in a tertiary care unit.

Methods: A retrospective cohort study involving patients older than 65 years with COVID-19 was performed in the University Hospital of Heraklion, Greece, from March 2020 to April 2021. All eligible older patients with COVID-19 were included. Patient characteristics including clinical and laboratory data as well as data on treatment and outcomes were recorded and evaluated.

Results: In total, 224 patients older than 65 years were included in the analysis, 119 (53.1%) were male and median age was 75 years, while 83 (37.1%) had severe COVID-19 (according to IDSA criteria). Treatment included dexamethasone in all patients, remdesivir in 141 (62.9%) and fresh frozen plasma in 26 (11.6%). A total of 30 patients (13.3%) died. Subgroup analysis of male and female patients revealed that male patients were more likely to have increased ferritin, c-reactive protein, higher troponin, procalcitonin and D-dimer values, lower lymphocytes and platelets, whereas they also had a trend for a higher mortality incidence. A multivariate logistic regression analysis identified age and need for high flow oxygen therapy to be independently associated with mortality.

Conclusions: In older patients with COVID-19, increased age and need for high flow oxygen therapy were independently associated with higher mortality.

Abstract # 310

AREA: COVID-19

Psychological impact in older adults during an outbreak of COVID-19 in an intermediate care hospital

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Introduction: The presence of outbreaks in hospitalization wards during the COVID-19 pandemic forced patients to be kept in isolation despite being admitted for other clinical reasons. Our objective is to examine the psychological impact that the irruption of a COVID-19 outbreak in a geriatric rehabilitation facility caused on patients and their families.

Methods: Geriatric patients admitted into an intermediate hospital for rehabilitation during March 2020 were assessed collecting socio-demographics, comorbidities, presence of cognitive impairment (CI), prescribed drugs, incidence of delirium (4A-Test), the Neuropsychiatric Inventory (NPI) and the Cornell Scale. The Impact of Events

Scale-Revised (IES-R) was administered but only on family members and those patients without CI.

Results: Final sample consisted of 23 patients (3 exitus, age 79.4 ± 8.4 , 65.2% women, 43.5% CI, 34.8% previous psychopathology, Barthel at admission 52.3 ± 29.9). During isolation, 52.2% ($n = 12$) developed delirium and 65.2% ($n = 15$) presented symptoms of severe depression measured by Cornell Scale. Main psychopathological symptoms observed were sadness ($n = 20$; 87%), anxiety ($n = 17$; 74%), apathy ($n = 17$; 74%) and irritability ($n = 16$; 70%). Patients with CI had more neuropsychiatric symptoms (17.8 ± 4.3) than those without CI (11 ± 3.5 , despite not reaching statistical significance). The prevalence of posttraumatic stress disorder symptoms (IES-R > 24) was higher among relatives (35%) than among patients (only 27%).

Conclusions: COVID-19 infection in older people implies high mortality and high incidence of delirium. Besides, due to isolation, a significant psychological impact for both, patients and their families, has been observed. Patients with previous cognitive impairment might be at increased risk of experiencing higher psychological impact.

Abstract # 311

AREA: COVID-19

Prevention of hospital-associated disability in frail older patients with COVID-19 in an Acute Care for Elders unit at a long-term care facility

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Introduction: Older adults admitted in a COVID-19 unit are at increased risk of hospital-associated disability as a consequence of the severity of the COVID-19 and the particularities of confined COVID-19 units, including strict quarantines and restricted social activities. The purpose of this study was to describe the effectiveness of an Acute Care for Elders (ACE) unit to reduce hospital-associated disability and medical complications of older patients with COVID-19. **Methods:** Older adults with frailty (Clinical Frailty Scale score ≥ 5) and symptomatic COVID-19 admitted to an ACE unit located in a long-term care facility were included in the study. Patients received geriatric care, including the basic nursing interventions to promote and maintain mobility and basic self-care. Functional decline was defined as a decrease in the Barthel Index score of > 5 points from admission to discharge.

Results: 51 patients with a mean age of 80.2 ± 9.1 years and 28 (54.9%) women were included. Median Barthel index was 50 (IQR: 30–60) and Charlson of 6 (IQR: 5–7), and 33 (64.7%) patients had cognitive impairment. Severe COVID-19 cases affected 19 (37.3%) patients. One or more acute medical events developed in 33 (64.7%) patients during admission: delirium in 17 (33.3%), decompensated chronic disease 11 (21.5%) and others geriatric syndromes in 4 (7.8%)%. At discharge, 36 (70.6%) patients had no functional decline and 15 (29.4%) patients scored a median of 10 (5–20) points lower.

Key conclusions: An ACE unit at a long-term care facility constitutes an alternative to hospital care to prevent hospital-associated disability for frail older patients with COVID-19.

Abstract # 312

AREA: COVID-19

Impact of a COVID-19 outbreak in a long-term care facility in Barcelona, Spain: role of patient characteristics

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Introduction: Identifying clinical risk factors is essential to prevent COVID-19 outbreaks in long-term care facilities. The aim of the study was to analyze risk factors for COVID-19 among people residing in a long-term care facility during an outbreak.

Methods: A descriptive study was conducted in a long-term care facility with 4 care units, which was affected by a COVID-19 outbreak in March 2020. The ORION statement for reporting outbreak was followed, using the attack rate (number of COVID-19 cases/total number of exposed individuals) and case fatality rate (deceased COVID-19 cases/total number of COVID-19).

Results: Two geriatric (unit-1 and 2) and one psychiatric (unit-4) units were affected by the outbreak. Attack rates were 26/47 (55.3%) for unit-1, 15/29 (51.7%) for unit-2 and 11/46 (23.9%) for unit-4 ($p < 0.01$). Case fatality rates were 3/25 (12.0%) for unit-1 and 2/16 (12.5%) for unit-2 ($p 0.96$) and no patient of the unit-4 died. Among healthcare professionals, total attack rate was 30/124 (24.2%) with no differences between units and none died. Residents of geriatric units were older [80.4 ± 9.1 (unit-1), 77.3 ± 4.1 (unit-2) 55.4 ± 6.3 (unit-4), $p 0.04$] and had lower median functional index [40 (unit-1), 40 (unit-2), 100 (unit-4), $p 0.01$] and higher median comorbidity [6.5 (unit-1), 6 (unit-2), 1.5 (unit-4), $p 0.06$] compared to the residents from the psychiatric unit.

Key conclusions: COVID-19 outbreak resulted in high impact on infection and mortality rates of the residents and affect a considerable number of healthcare professionals. Geriatric patients are at higher risk of COVID-19, especially older patients with high comorbidity and functional dependency.

Abstract # 313

AREA: COVID-19

Mortality and intensive care unit admission in the elderly during the 1st and 2nd waves of COVID pandemic in a tertiary hospital

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Introduction: SARS-CoV-2 virus was first reported at the end of 2019 in Wuhan, having travelled the world afterwards. In this work we aim to evaluate the differences in the elderly in intensive care unit (ICU) admission and mortality and correlate them with the comorbidities during the first and second wave.

Methods: We performed a retrospective study of all patients admitted in the COVID ward from early March up to end of December 2020. We collected patient demographics, comorbidities, and outcomes (ICU admission and in-hospital mortality) and compared the elderly with the under 65 years old.

Results: A total of 549 patients were admitted in this period, of those 341 (62%) were over 65 years old. Male gender predominance was less significant in the elderly (66% vs 50%). Elderly patients were more dependent (6% vs 26%) and more frequently resident in nursing home (4% vs 26%). Regarding comorbidities, the most frequent in the elderly were COPD (2.6% vs 19%) and heart failure (10% vs 52%). The severe phenotype was the most frequent in the elderly (27 vs 40%), and the elderly had higher length of stay (10 vs 14.5 days). ICU admission was slightly higher in the younger, though not significant (19% vs 15%), however mortality was particularly higher in the elderly (1% vs 22%), even when adjusted to comorbidities.

Key conclusions: Our results showed that the elderly suffered from more severe disease, which accompanied the most frequently associated comorbidities prevalence, and this resulted in a high in-hospital mortality.

Abstract # 314

AREA: COVID-19

Geriatric patients hospitalized with COVID-19 in the University Hospital In Krakow (Poland) during 14 months of epidemic

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Introduction: On 4 March 2020 the first case of SARS-CoV-2 infection was reported in Poland, and 2 weeks later the first patient with COVID-19 was admitted to the University Hospital in Krakow (UHK). In the presented analysis, we analyzed data on the age structure and clinical course of COVID-19 older patients hospitalized in the UHK during 14 months of the pandemic.

Methods: Data from all hospitalizations due to COVID-19 from March 2020 to June 2021, length of the hospital stay and mortality rate were obtained retrospectively from the hospital database.

Results: Of all 5199 hospitalizations, patients aged 60–79 constituted 47% (n = 2442), aged 80–99 years: 14% (n = 754), while the number of centenarians was three. Averaged length of the hospital stay was respectively: 18, 19 and 13 days. Mortality in the entire group of patients treated in UHK due to COVID-19 was 19% (n = 973), while in the elderly group it was 17% among patients 60–69 years old, 29% among patients aged 70–79 years, 37% in patients aged 80–89 years and 60% in patients aged 90–99 years. None of the hospitalized centenarians died.

Conclusions: Older patients constituted the majority of patients hospitalized during the COVID-19 epidemic. Mortality showed a close relationship with age, reaching 60% in the group of the oldest seniors.

Abstract # 315

AREA: COVID-19

A step towards recovery

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Introduction: In older COVID-19 patients under hospital care, with severely restricted mobility, the expected extent of muscle wasting is pronounced. We aimed to assess physical activity (PA) in older adults hospitalized in one of the COVID-19 wards of the University Hospital, Kraków, Poland.

Methods: We conducted an observational study of older patients hospitalised due to COVID-19. All patients were diagnosed with severe SARS-CoV-2 illness and COVID-19 pneumonia, requiring oxygen supplementation. Standard COVID-19 therapy with the best supportive care, including physical therapy when possible, was employed. Physical activity was assessed based on 24-h ActivPal accelerometer monitoring that provided records of time spent when lying and sitting, standing and walking. PA was recorded in 15 patients upon hospital admission and in 7 patients at the discharge.

Results: The mean (SD) age of 15 patients was 75.9 (11.6) years, 12 were women. The median (Q1, Q3) time spent when lying and sitting was 23.44 (22.8, 24) hours, when standing 0.55 (0, 1.2) hours, and when walking 0.04 (0, 0.18) hours. The median (Q1, Q3) number of steps recorded at the beginning of hospital stay was 52 steps (4, 610), with 7 (1, 22) transitions per day. The trend for an increase of PA in 6 patients with repeated measurements, was not significant.

Key conclusions: In a group of older COVID-19 patients, for the first time we demonstrated a pattern of in-hospital immobility in the course of severe SARS-CoV-2 infection. Physiotherapist supervision and physiotherapy tailored to patients' capabilities should be introduced promptly.

Abstract # 316

AREA: COVID-19

Factors associated with intrahospital mortality in older patients with COVID-19 in Belgium

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Objective: We aimed at assessing the association between demographic and clinical data and the intrahospital mortality in older patients with COVID-19 in Belgium.

Methods: Descriptive, retrospective study of consecutive patients admitted to Brugmann university hospital, Brussels (Belgium) due to COVID-19 (Mars-September-2020). Inclusion criteria: patients aged ≥ 70 admitted to acute care with a positive PCR-RT test, or a highly indicative computed tomography scan. Exclusion criteria: patients transferred to another institution during hospitalization. Outcome measure: all-cause intrahospital mortality. Demographic, clinical data [history of hypertension, diabetes, overweight/obesity (body mass index, BMI ≥ 25 kg/m²), cardiovascular disease, asthma, dialyses, cancer, immunosuppression, and development of acute respiratory distress syndrome (ARDS)], and comprehensive geriatric assessment (CGA) [Katz, Lawton, Mini-Mental State Examination (MMSE), Mini-Nutritional Assessment-Short-Form (MNA-SF)] were collected. Adjusted and unadjusted logistic regression were performed.

Results: From the 226 eligible patients, 160 (82.7 ± 6.5 -year-old; 57.5% females) met inclusion criteria, from which 67 (42%) died during hospital stay. A high prevalence of hypertension (113 patients, 70.6%), diabetes (54, 33.8%), cardiovascular diseases (113, s, 70.6%), and ADSR (46, 28.7%) was observed. A limited functional (Katz 14.4 ± 5.3 , Lawton 3.1 ± 2.3), cognitive (MMSE 21.9 ± 5.6), and nutritional (MNA-SF 8.3 ± 2.3) status was observed. The adjusted logistic regression showed an association between intrahospital mortality and increasing age [OR = 1.09 per 1 year increase (95% CI 1.02–1.16); $p < 0.001$], diabetes [OR = 2.75 (95% CI 1.17–6.46); $p = 0.021$], and ARDS [OR = 8.67 (95% CI 3.48–21.61); $p < 0.01$]. **Conclusions:** A higher association among intrahospital mortality with increasing age, diabetes, and ADSR was found. The prognosis value of the comprehensive geriatric assessment in older people with COVID-19 in Belgium requires further studies.

Abstract # 317

AREA: COVID-19

Understanding the role of frailty on mortality and poor outcomes in geriatric COVID-19 inpatients: a cohort study

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Introduction: The COVID-19 pandemic has had a great impact on the older population and the need for regular frailty assessments has become more evident. Research about the effect of frailty in COVID-19 patients using tools based on a multidimensional frailty approach is still limited. This study aimed to measure the effect of frailty on mortality and poor outcomes in geriatric COVID-19 patients.

Methods: We analysed a prospective cohort of COVID-19 patients that had been conducted in our hospital. We included patients who were 69 years and above and analysed a follow-up until hospital discharge or 30 days after admission. Frailty was assessed retrospectively with the FRAL-VIG tool, a deficit accumulation index that differentiates frail vs. non-frail and three frailty categories. Cox regression models adjusted for age, sex, comorbidities, acute illness severity (AIS) and COVID-19 severity and survival curves were conducted.

Results: We enrolled 262 patients. The median age was 82.47 (7.6) years; 154 (58.8%) were women and 159 (61.6%) were frail. 61 (27.1%) had mild frailty, 70 (26.7%) moderate frailty and 28 (10.7%) severe frailty. Frail patients showed increased in-hospital mortality risk (HR 5.143; 21.807–14.637) and 30-day mortality risk (HR 6.911; 2.408–19.837). Severe-frailty patients showed higher in-hospital mortality risk (HR 19.642 5.335–72.319) and 30-day mortality risk HR 27.528; 8.143–93.065). Following discharge, frail patients had higher nursing home and post-acute unit admission rates (50.5% and 12.8%, respectively). Post-acute unit mortality was higher for severe-frailty patients (46.7%).

Conclusions: These results show the independent effect of frailty on in-hospital mortality and other poor outcomes in COVID-19 geriatric patients. The FRAIL-VIG index was useful in estimating patients' prognosis.

Abstract # 318

AREA: COVID-19

Clinical characteristics and presentation of a cohort of older patients with COVID-19 admitted to a tertiary hospital in Spain

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Introduction: It is well known that COVID-19 affects older patients more severely. Several studies have been conducted in order to ascertain the different forms of presentation this disease may take in our target population and the consequences it may entail.

Methods: This is a retrospective descriptive study in which we analysed the forms of presentation COVID-19 took on patients older than 75 years of age who were admitted to a tertiary hospital in Spain between March and September of 2020.

Results: The mean age of the 426 patients studied was 82.3–5.4, 52.6% of them females. 34.7% died during stay, 4.5% during the next month. Mean Barthel Index on admission was 75.2–33, which went down to 69.9–32.7 on discharge and went back up to 75.1–32.1 on the following month. We also analysed the excess institutionalization on discharge, finding 35% were institutionalized on admission vs 31.9% on discharge. The need for domestic help, however, did double (from 6.9 to 15.4%). 48% presented with delirium, 9.7% presented with immobility syndrome and 9% presented with falls.

Discussion and conclusions: We consider this disease important in older patients due to the high mortality rate we have found (about 1/3 of the patients died). We also found a high prevalence of geriatric syndromes as disease-presentation (up to 48% with delirium), which goes along with studies previously published. We theorize many of the already dependent patients were not admitted to hospital, which may account for the good functional recuperation results we found.

Abstract # 319

AREA: COVID-19

Immunosenescence as a risk factor in SARS-CoV-2 infection

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Introduction: The SARS-CoV-2 virus infection generates a respiratory disease, COVID-19, which already reached 175,541,600 cases worldwide [1]. Epidemiological studies have shown that older adults have higher risk of developing a severe form of the disease and higher risk of mortality [2–3]. Therefore, we hypothesize that the age-associated disfunction of the immune system or immunosenescence could explain, at least partly, the severity and lethality of COVID-19 in the oldest old.

Methods: Lymphocyte populations and inflammatory profile were studied using different panels of multicolor flow cytometry (BD FACSCanto II). Blood samples of 40 controls and 60 hospitalized patients with COVID-19 from different age groups (20–29/30–39/40–49/50–59/60–69 years) were used to analyze lymphocyte populations. Serum was collected from the same donors for the study of

blood cytokines (IL-6, IL-8, IL-10, IL-1 β , IL-12p70 and TNF- α) with the BD Cytometric Bead Array.

Results: COVID-19 patients show smaller T lymphocyte and NK cell numbers than controls. Helper, cytotoxic, and regulatory T cells are also reduced in patients. Moreover, a large increase in IL-6 is observed. Besides, IL-6 and IL-10 decrease with age only in controls and Cytotoxic Naïve cells only in patients. Regarding age range comparisons, no differences were found in young adults, while a more marked immunosenescence was found in older adult patients (> 50 years) compared to controls.

Key conclusions: COVID-19 patients have an immune system with less response capacity and show an increased pro-inflammatory status. Patients show a switch in their immune profile from the age of 50, inherent of an aged immune system.

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Abstract # 320

AREA: COVID-19

Clinical and functional factors related with mortality in older patients with COVID-19 admitted to a tertiary hospital

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Introduction: Given that COVID-19 affects older patients more severely, studies are being conducted in order to ascertain the different factors most intricately related to adverse outcomes.

Methods: This is a retrospective descriptive study in which we analysed the factors related to adverse outcomes from COVID-19 on patients older than 75 years of age who were admitted to a tertiary hospital in Spain between March and September of 2020.

Results: The mean age of the 426 patients studied was 82.3–5.4, 52.6% of them females. 34.7% died during stay, 4.5% during the next month. We found statistically significant associations between mortality and lower Barthel Index ($p < 0.001$), higher Charlson Comorbidity Index ($p < 0.001$), both dyspnea or delirium as a presentation form or during the process ($p < 0.001$), the presence of a major neurocognitive disorder ($p < 0.001$), immobility both prior or secondary to the process ($p < 0.001$). We also found statistical significance in predictor factors of mortality such as lower Barthel Index ($p < 0.001$), fever or delirium as presentation ($p = 0.039$), previous chronic kidney disease ($p < 0.001$), or having had cancer ($p = 0.020$).

Discussion and conclusions: Our findings are interesting due to the importance of identifying key and predictive factors of torpid COVID-19 evolution in older patients that may help us identify at-risk patients early so that we can potentially better adjust treatment, expectations and interventions. In this vein, we find the association of delirium and worse outcomes and even its potential role as bad outcome predictor especially interesting.

Abstract # 321

AREA: COVID-19

The relationship of COVID 19 mortality and prognostic nutritional index in geriatric population

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Introduction: Corona virus disease 2019 (COVID 19) with more than 44 million cases and 1.1 million deaths in the first year has become a pandemic that affects the whole world. The mortality rate is higher in the population over 60 years of age especially due to comorbid diseases. It is well known that mortality increases with advancing age. It is also well known that success in preventing COVID 19 among older age groups directly determines the mortality rate in countries. Prognostic nutritional index (PNI) is an indicator that has been shown to be effective on prognosis in some malignancies and cardiovascular diseases. In this study we aimed to investigate the effect of PNI on prognosis and mortality among elderly patients with COVID 19 infection.

Methods: A retrospective evaluation was made of patients with COVID 19 infection diagnosed in the Ankara Bilkent City Hospital COVID 19 ward in the period between October-December 2020. A total of 401 patient included in the study, all of them were over 65 years old. PNI values were calculated using formula: $10 \times \text{serum albumin (g/dL)} + (0.005 \times \text{total lymphocyte count/mm})$. PNI was compared with laboratory and demographic data.

Results: Analysis was made of 401 patients, comprising 181 (45%) females and 220 (55%) males with a median age of 75.8 ± 7.7 years. Thirty hundred and two (75.4%) patients were in the recovered group and 99 (24.6%) patients were in the exitus group. Mean PNI value was 41.9 ± 5.9 in the recovered group and 36.9 ± 7 in the exitus group. Statistical significance was determined between the two groups ($p < 0.001$). ROC curves were made with a 95% confidence interval were produced and cut-off points were determined for whether the PNI value was a predictor of exitus in COVID-19 patients. According to multivariate logistic regression analysis, advanced age (OR = 1.064; 95% CI 1.027–1.102; $p = 0.001$), high maximum ferritin level (OR = 1; 95% CI = 1–1; $p < 0.001$), high maximum IL-6 level (OR = 1.002; 95% CI = 1–1.003; $p = 0.004$) and PNI < 40 (OR = 3.019; 95% CI 1.752–5.202; $p < 0.001$) were identified as independent risk factors predicting exitus in COVID-19 patients.

Conclusion: Prognostic nutritional index is a marker derived from the total lymphocyte count and serum albumin level and has been accepted as an indicator of the immune status and nutritional level of the patients. Cinar et al. evaluated on 249 patients with a diagnosis of COVID 19 infection, PNI was found to be an independent risk factor for mortality in hospitalized patients. Wang et al. determined similar results with 101 patients whom diagnosed COVID 19 infection. Prognostic models which including PNI scoring system, have been found to be useful in assessing the progression of COVID 19 and enhancing patient monitoring. The significant correlation between low PNI index and mortality in our study supports similar studies. In addition to all these, since all the patients included in our study were in the geriatric age group, the data we obtained may guide the course of COVID 19 infection, especially in patients in this age group.

Keywords: COVID 19, PNI, in hospital mortality, geriatric.

Abstract # 322**AREA: COVID-19****Descriptive study of the characteristics of the older persons admitted to a COVID-19 geriatric unit during the first COVID-19 wave**

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Introduction: The aim of this study was to describe the characteristics of the persons admitted to the Geriatric COVID-19 Units.

Methods: Descriptive retrospective study of persons admitted between March and May 2020 in two COVID-19 Units of a Geriatric Department in a University Hospital in Barcelona, Spain. We collected data on: age, sex, referring department, baseline functional and cognitive status, multi-morbidity (Charlson Index), established level of therapeutic intensity/adequacy (NIT, with 1 being highest and 5 being lowest intensity); severity of COVID-19 (MEWS, with 5 or more indicating higher severity); complications of COVID-19 (including geriatric syndromes), and discharge destination and mobility.

Results: N = 261 patients were admitted (57.5% women; mean age (SD) 84.83 (8.57). 62.5% came from the emergency department; 43.7% lived in care homes; 50.6% had previous moderate-severe dependency; 50.4% had dementia; mean (SD) Charlson Index was 2.51 (1.97). The most frequent complications were: incontinence (54.0%), constipation (49.4%), malnutrition (41.8%), delirium (39.5%), acute kidney failure (37.5%), urinary tract infection (22.2%), bacterial pneumonia (19.9%). 70.9% were considered to benefit from intermediate intensity of care (NIT 3–4). 7.92% suffered from severe COVID-19. At discharge 49.4% had walking capacity; 57.5% returned to their living places, 14.9% were admitted to an intermediate care unit and 27.6% died.

Key conclusions: In the first COVID-19 wave the patients admitted to the Geriatric COVID-19 Units had frequently baseline cognitive and functional impairment, being mostly considered to benefit from intermediate intensity of care. Complications and mortality were relevant but most patients could be discharged home or to intermediate care.

Abstract # 323**AREA: COVID-19****Can biomarkers be used to predict outcomes for patients over 65 years old, admitted to critical care with COVID-19?**

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Introduction: Studies have investigated potential prognostic markers in COVID-19. A link between diabetes and mortality has been

suggested, as has a correlation between raised acute phase proteins and disease severity. To date, few studies have focused on older patients. HbA1c and CRP were assessed, along with serum albumin, as both an acute phase protein and a potential indicator of frailty. It evaluated whether these have any role in predicting outcomes for patients aged 65 years and over, admitted to critical care with COVID-19.

Method: This retrospective study was undertaken at Royal Bolton Hospital, an epicentre of the pandemic in England. It identified patients, aged 65 and over, admitted to Critical Care with COVID-19. Admission bloods were reviewed, with HbA1c, albumin and CRP compared to each patient's outcome.

Results: No correlation was identified between HbA1c and survival. A low admission CRP correlated with reduced mortality, whereas a significantly elevated CRP did not appear to result in greater mortality than a mildly elevated CRP. Hypoalbuminaemic patients were more likely to die early in their admission, although overall mortality did not differ from those with a normal albumin. An admission albumin in the lower range of normal experienced greater mortality than those with a higher albumin.

Key conclusions: Whilst CRP does appear to have prognostic value in patients with COVID-19, albumin may also play a role in older adults. No correlation was identified between HbA1c and outcome. To further investigate these findings, a larger sample size including multiple units would be useful.

Abstract # 324**AREA: COVID-19****COVID-19 in Italian long-term care facilities: GeroCovid LTCFs observational study**

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Introduction: Pauci-symptomatic and asymptomatic SARS-CoV-2 infection was identified in Long Term Care Facilities (LTCFs) with rates from 16 to 69.7% [1]. This study aims to investigate the clinical presentation of COVID-19 infection in Italian Long Term Care Facilities (LTCFs).

Methods: GeroCovid LTCFs is a retrospective-prospective observational study involving residents aged ≥ 60 years with confirmed or suspected infection by COVID-19, enrolled in 39 Italian LTCFs from March 1st 2020 up to December 31st 2020. The data collection was performed in a de-identified clinical data electronic registry, developed by Blue Companion Ltd.

Results: A total of 586 residents (female: 72.9%; mean age: 84.8 ± 8.5 years) were enrolled, of these 209 residents were infected by COVID-19. Having three or more comorbidities, dementia or cognitive impairment and central and peripheral arterial disease were characteristics positively associated with COVID-19 positive swab test, while arterial hypertension was negatively associated. The 29.6% of COVID-19 positive residents did not report any symptom and 70.4% reported at least one symptom. Among onset signs and symptoms suspected of infection, delirium (OR: 11.2; 95% CI 3.38–36.8; $p < 0.0001$), fever (OR: 9.18; 95% CI 3.77–22.4; $p < 0.0001$), increased blood pressure (OR: 5.64; 95% CI 1.26–25.3; $p 0.0239$), low-grade fever (OR: 3.79; 95% CI 1.22–11.8; $p 0.0211$) were associated with COVID-19 positivity. The mortality was 19.6% and 9.6% in COVID-19 positive and negative residents respectively.

Conclusions: The LTCFs residents often present an asymptomatic or pauci-symptomatic course of SARS Cov-2. Among onset symptom, the delirium was the most reported clinical expression of the infection.

Keywords: COVID-19; Long Term Care Facilities;

Abstract # 325

AREA: COVID-19

Foggy brain in the long covid patients: a post-covid day hospital experience

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Introduction: COVID-19 is known to cause a number of persistent symptoms during the recovery phase, including cognitive and neurological ones. Aim of this study is to investigate the cognitive and neurological features of a sample of patients with confirmed diagnosis of COVID-19 evaluated in the post-acute phase through a direct neuropsychological evaluation of the subjects.

Methods: Individuals recovering from COVID-19 were assessed in an out-patient practice with a complete neurological evaluation and neuropsychological tests (Mini Mental State Examination; Rey Auditory Verbal Test, Multiple Feature Target Cancellation Test, Trial Making Test, Digit span Forward and Backward, Frontal Assessment Battery). Persistent Covid-related cognitive disturbances (PCCD) were diagnosed considering persistent self-reported Covid-related cognitive symptoms and failure in at least one neuropsychological test.

Results: 403 individuals (average age 54.5 ± 15.0 years, 44.7% females) were assessed from April 23rd 2020 until November 30th 2020. A high prevalence of self-reported persistent neurological symptoms was found in the areas of sleep (31.8%), attention (30%), and memory (22.3%) disorders. Overall MMSE mean score was 28.6. A high prevalence of failed tests was found in particular at Digit Span Backwards (45.2%), Trail Making (44.9%) and Frontal Assessment Battery (27.3%). PCCD were diagnosed in 40.4% of study subjects and on multivariate analysis, sleep disturbance, depression, history of cardiovascular diagnoses and number of persistent symptoms were found to be positively associated with this syndrome.

Conclusions: COVID-19 is capable of eliciting persistent neurocognitive alterations measurable with widely available test batteries and particularly relevant in the areas of attention and working memory. These neurocognitive disorders were found to be associated with

multiple factors: some potentially treatable, others capable of early risk stratification.

Abstract # 326

AREA: COVID-19

Indian variant epidemic in a Belgian Nursing Home (NH) whose residents are vaccinated

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Introduction: While we are witnessing a deconfinement before the summer vacations, a particularly worrying situation is to be noted within a Nursing Home of Brabant-Walloon in Belgium.

Material and methods: In 2 weeks, we counted 12 deaths in a residence of 121 elderly people, 98% of whom were vaccinated; the most serious cases were hospitalized in our hospital. We considered it essential to analyze the biological and radiological characteristics, as well as the comorbidities, the vaccination status and the serologies of these cases.

Results: 11 patients were hospitalized between May 18 and June 14, 2021; 6 died of Covid pneumonia; all had been vaccinated with 2 doses in January and February 2021. Serologies assayed among 5 patients showed high antibody levels, 3 of which were very high. 9 patients had a thoracic CT with typical opacities of SARS-Cov-2.

Discussion: While the media and scientific information tell us that the vaccine protects in large part from the delta variant, we are surprised by this epidemic among vaccinated patients. Further serological tests (neutralizing antibodies) are underway.

Conclusion: There is an urgent need to understand why the vaccine has not been able to prevent deaths in these elderly people, as it is possible that this unprecedented situation will gradually spread to other regions and countries, and that caution must remain the order of the day despite a general desire for freedom.

Abstract # 327

AREA: COVID-19

Outcomes from a specialised COVID geriatric ward in Ireland

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Introduction: Sars-cov-2 infection is associated with increased mortality in older adults [1]. During the “third-wave” of sars-cov-2 infection in January 2021, a 22-bed geriatric ward was established overnight to optimise care for sars-cov-2 positive patients with geriatric specific needs who were not for escalation of care beyond ward level, and did not require high-flow nasal oxygen (HFNO). This Consultant-Geriatrician-led service benefited from an advanced nurse practitioner and allied health professionals experienced in care of the older person and included daily safety huddles and regular virtual multidisciplinary team meetings to discuss patient progress.

Results: 65 patients were treated on the ward, 30 females (46%) and 35 males (54%). The median age was 82 years, age range 50–93 years, with six patients < 70 years. Nosocomial sars-cov-2 was the source of infection for 36 patients (55.4%). 16 patients died (25%); 13 (20%) died of covid-pneumonia on the ward, and 3 patients (5%) died within 72 h of commencing HFNO treatment on another ward. Of

those who died, 10 (62.5%) acquired sars-cov-2 infection via nosocomial transmission. 15 patients (23.1%) were discharged directly home or returned to nursing home and 9 (13.8%) were discharged to rehabilitation, with the remainder transferring to other inpatient wards for ongoing medical care.

Conclusions: The high proportion of nosocomial infection contrasted with previous covid waves experienced in this institution, with patients often diagnosed asymptomatic or early in their illness. Illness trajectory proved difficult to predict and multidisciplinary support was invaluable in daily family communication with both patients and medical staff. Prevention of future surges of infection should be a main aim of vaccination programmes.

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Abstract # 328

AREA: COVID-19

Geriatric hospitalization program in nursing homes during the pandemic year

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Introduction: Hospital Central de la Cruz Roja in Madrid began the pilot program for Geriatric Hospitalization in nursing homes. The idea arose from the need to ensure a correct continuity of health care optimizing resources adjusted to each patient profile, seeking greater efficiency. The objective of this work is to analyze the possible impact of the COVID-19 pandemic on this activity.

Methods: Descriptive study where the comprehensive geriatric assessment of the patients cared as well as the main reasons for consultation and the interventions carried out. We analyze the expenses generated and the possible avoided.

Results: During the pandemic, 695 patients were evaluated. Are 85.5 years, Charlson index 2.5, Red Cross Functional Scale 3.3, Red Cross Mental Scale 2.4. Reasons for consultation: clinical control continued to be the most demanding (47% [327/694]) with 1.8 visits/patient. Cognitive assessment (12% [84/694]). Facilitate treatments (8% [58/695]). Conduct disorders (7.9% [55/695]). Tele-dermatology (7.7% [54/695]). The COVID-19 pandemic situation and the high mortality that it caused in nursing homes, only 10 patients (1.4%) were requested intervention at the end of life. 69 direct entries were made in hospital acute unit (€ 259,509) and 4 in geriatric rehabilitation unit (€ 838,964) 0.74 hospital admissions and 159 referrals to emergency services were avoided (savings € 25,599). The polypharmacy review decreasing the number of drug by 1.71.

Key conclusions: The most frequent reasons for consultation are clinical control and cognitive assessment. The Geriatric Hospitalization in Residences program continued to be efficient despite the COVID-19 pandemic situation.

Abstract # 329

AREA: COVID-19

Management of a COVID-19 outbreak in a long-term care facility, 2020

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¹Clece Domus Areeiro

Introduction: The coronavirus pandemic 2019 (COVID-19) is having a global impact especially among the most susceptible, the elderly and those with chronic diseases. The population residing in long-term care facilities generally are those who are both old and have multiple comorbidities. Therefore, every effort has been made to protect them and implement the most effective measures to prevent transmission of the virus, including public health measures such as hand washing and sanitization and mask use. In April 2020, a positive case was found at the Dómus Areeiro senior residence in Lisbon.

Methods: We tested all the patients (n = 85) and caregivers (n = 40) for COVID-19 with nucleic acid amplification tests (NAATs) and isolated the positive cases, as well as the high risk contacts for 14 days. Positive cases were tested every 14 days until a negative test was achieved. Public health measures and strategies were implemented to prevent the spread of the infection.

Results: We found 15 positive cases in patients and 5 in caregivers. There was 1 hospitalization and no death. Using the test-track-trace-isolate strategy and implementing infection control and prevention measures, the control of the outbreak was possible and no further cases were found. In February 2021, vaccines against COVID-19 were performed for all patients and caregivers.

Key conclusions: Early public health measures have been shown to be effective in preventing and controlling infection at COVID-19, and its maintenance over time is necessary for a safe and COVID-19 free environment.

Abstract # 330

AREA: COVID-19

Loneliness in the era of COVID-19 among older adults with intact cognition, minor and major neurocognitive disorder

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Background: Loneliness is the isolation from the community or society. Recent pandemic and subsequent restrictions on public movement increased the feeling of loneliness. Loneliness is increasingly recognized as an important risk factor for mental and somatic disorders. Unfortunately, it is not widely studied in Greek elderly population, especially in those with cognitive defects. We herein examine the experienced loneliness among older adults with intact cognition, minor and major neurocognitive disorder during the last year and evaluate the contribution of mood status and quality of life.

Methods: We included 126 participants who were categorized into three groups: healthy controls with intact cognition (N = 36), minor neurocognitive disorder (N = 51) and major neurocognitive disorder (N = 39). We focus on the following measures for the purpose of the

current analyses: Mini-Mental State Examination (MMSE; general cognitive status), Alzheimer's Disease-Related Quality of Life (ADRQL; quality of life), Depression Anxiety and Stress Scale (DASS; mood status), UCLA Loneliness Scale (loneliness). We compared between-group differences on the UCLA Loneliness Scale total score and applied regression models to evaluate the contribution of general cognitive status, quality of life and mood status in loneliness across each group further considering demographic data.

Results: We did not find significant between-group differences in UCLA Loneliness Scale total score. Loneliness was significantly predicted by (a) DASS-depression and total QoLAD in HC, (b) DASS-depression, total MMSE and total QoLAD in Minor-NCD and (c) DASS-Depression in Major-NCD. Increased levels of depression, decreased QoL and better cognitive status were associated with heightened loneliness.

Conclusion: Depression may be an important risk factor for loneliness across all levels of cognitive status. QoL is independent of loneliness in those with major Neurocognitive disorder. Further studies are warranted to examine long terms effects of COVID-19 isolation to loneliness and its predictors among elders adults with different neurocognitive status.

Abstract # 331

AREA: COVID-19

Global informal caregivers' burden during COVID-19

Yaohua CHEN¹

¹TCD

Background: Prior to COVID-19, > 90% of caregivers of people with dementia experienced high levels of distress, burden, loneliness and social isolation. The burden that caregivers may experience is heterogenous. It depends on the intrinsic factors such as loneliness, social isolation, and also on the extrinsic factors such as formal system of support to caregivers, integrative pathway for people with chronic diseases. The COVID-19 pandemic has significantly increased these impacts, and differently across the countries. We aim to explore coping and caregiver burden from a global perspective during the COVID-19 pandemic.

Methods: CLIC-Caregiver was a cross-sectional, online, and global survey (June 2nd–November 15th, 2020) using self-administered questionnaires directed at informal caregivers of people with dementia. The study was embedded within a larger survey of loneliness and social isolation for general public ('Comparing Loneliness and Isolation in COVID-19' (CLIC)), including validated loneliness and isolation tools. Translated into ten different languages such as Arabic, French, Romanian, etc, the survey was disseminated over 100 countries. Respondents were included in the CLIC-caregiver sub-study if they answered yes to the question 'Do you provide care and support to a family member or friend with a long-term or life-limiting health problem or disability (including mental health)'. The CLIC project received the initial global ethical approval from Ulster University. The data were fully anonymized.

Results: From the CLIC main study, 5243 (25%) identified themselves as caregivers. 2388 (46%) had care recipients with dementia, 1761 with physical conditions (disability or long-term illness), 832 with enduring mental health problems, and 404 with intellectual disability. Among caregivers of people living with dementia, more than half came from US and European English spoken countries, followed by European non English spoken countries, South Asian countries, Latina American countries, and Arabic spoken countries. Caregiver burden, loneliness and social isolation will be analyzed with quantitative and qualitative methods, and compared across

geographic regions, sociodemographic factors, and risk factors for poor outcomes sought. Findings will be distributed to relevant stakeholders in the form of a project report, with region and country-specific outcomes. This will support recommendations and actions supporting caregivers of people with dementia.

Conclusion: This represents the largest, most widespread survey on the impact of the COVID-19 pandemic on caregivers of people with long-term conditions to date. It will be an important resource for support agencies and to inform policy.

Abstract # 332

AREA: COVID-19

200 days during pandemic in long term care facility

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¹Dr

Introduction: Multiple commodities are the reason for hospitalization of elderly patients in long term care facilities. In many countries there is increasing number of reports referencing COVID-19 spread among long term care facilities.

Methods: We analyzed 200 days in our institution as long term care facility.

Results: During this period (1 August 2020–16 February 2021) 159 patients were positive for SARS-COV2 virus. Average age of the patients was 76.19 years. The patients had 3.71 co morbid conditions due to which they were hospitalized in our institution, and their average CIRS-G score was 14.17 (from 6 to 25). The spread of the infection was twofold. The first peak lasted 41 days 18 patients were infected, mortality was 5.56%. The clinical picture of infection in these patients was milder, patients had 3.06 co morbid conditions, and their CIRS-G was 11.22 (from 6 to 16). During this peak in one moment 8.25% from hospitalized patients were infected. The second peak lasted 110 days during which time 141 patients were infected. Mortality at this peak was 24.11%. The clinical picture in these patients was more severe, these patients had 3.79 co morbid conditions due to which they were previously hospitalized in our institution, and their CIRS-G was 14.55 (from 8 to 25). During this peak in one moment 23.81% from hospitalized patients were infected.

Conclusions: Isolation of positive and suspected cases led to mortality of 22.01%. Patients who died had more severe commodities, their CIRS-G was in average 15.56 versus patients who survived the infection their average CIRS-G was 12.24.

Abstract # 333

AREA: COVID-19

Second wave of the 2019 coronavirus epidemic (COVID-19) and cardiopulmo or arrhythmia: analysis of a geriatric population in a Lombard ED

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Background: Crowding has been defined as a global problem and causes a reduction in the quality of care and patient satisfaction. It is due and identified by means of three orders of factors: those at access (input); those referable to the patient's process (throughput); and those leaving the PS (output). The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: To assess the impact of the second wave of the CoViD pandemic on the geriatric population (> 75) who went to the emergency room for heartache.

Materials and methods: We evaluated all patients who accessed our emergency room for heartbeat from 20 October to 30 November 2020 and in the same period of 2019.

Results and discussion: We enrolled 90 patients. There was a severe reduction in the total number of accesses for acute neurological disorders: 30 in the CoViD period and 60 in 2019. The vital signs were comparable. Patients in the CoViD pandemic are more frequently accompanied by ambulance (48% vs 37%). Patients of the CoViD pandemic have priority codes at the medical examination but have more need of hospitalization (24% vs 18%). Crowding input factors are little lower in the period of the pandemic: reduced attenders (30 vs 60), comparable average waiting times (93 min vs 95 min). The percentage of patients who exceeded the waiting time target set by priority code for the medical examination also decreased (36% vs 46%). Crowding throughput factors worsened: LOS (593 vs 473 min). Crowding output factors also worsened: the percentage of access blocks is comparable (7% vs 7%). The Total Access Block Time is significantly higher in the CoViD period for the examination rooms (1.863 vs 357 min).

Conclusion: The epidemic has led to a reduction in access for heart disease, especially of self-reported. Patients have more frequent hospitalization needs. The period of the pandemic presented a worse crowding for these patients due to the Exit Block resulting in an increased workload for the emergency room operators, as well highlighted by the total time access block that allows us to show the care workload and patient care that this pandemic has caused.

Abstract # 334

AREA: COVID-19

Second wave of the 2019 coronavirus pandemic (COVID-19) and attenders for dispnea: severity of disease and crowding of an Italian ED geriatric population

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Background: During the pandemic it is expected to have an increase in the number of dyspnea-Attenders and also an increase in ED overcrowding. Crowding is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding. The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for dispnea during the second wave of the coronavirus pandemic.

Materials and methods: We evaluated all the patients who were accessing our emergency room for dispnea from October 20 to November 30, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 491 patients: 260 in the CoViD period and 231 in the previous year. During the pandemic period the male attenders were greater (53% M), while the previous year female attenders were more frequent (63% F). The average age, on the other hand, is comparable (about 85 years). Patients arrived with autonomous means are reduced to a third (9% vs 30%). The higher (yellow and red) priority time to doc are overlapping (about 75%) but exit codes are worse in pandemic period (64% vs 49%), also the rate of hospitalization is worse (78% vs 56%). For the greater number of ED attenders the absolute number of hospitalized patients was even greater. Crowding input factors have little worsened during the pandemic period as for the number of patients (260 vs 231) but the average waiting times have decreased (47 min vs 81 min). Crowding throughput factors have almost doubled: ED-Length Of Stay (1308 vs 807 min). As crowding output factors: The exit block is much greater (51% vs 21%) and The Total Time Access Block has increased fivefold (139.520 vs 28.993 min).

Conclusion: During the pandemic period geriatric ED-Attenders for dispnea have increased, are more serious and have worse outcomes. All crowding indices have worsened considerably, especially throughputs and output factors, due to the exit block phenomenon and to the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks...) with a consequent workload on EDs. The reduction in waiting times in spite of the priority codes for the medical examination is probably due to the differentiation of flows for patients with fever/dyspnea and those without.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 335**AREA: COVID-19****Second wave of the 2019 coronavirus epidemic (COVID-19) and acute stroke of a geriatric population of a Lombard ED**

Gabriele Savioli¹, Iride Francesca Ceresa², Elena Novara¹, Viola Novelli³, Federico Schettini⁴, Giovanni Ricevuti⁵, Mauro Giordano⁴, Maria Antonietta Bressan⁶, Luisa Brogonzoli⁷, Rosaria Iardino⁸

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Background: Crowding has been defined as a global problem and causes a reduction in the quality of care and patient satisfaction. It is due and identified by means of three orders of factors: those at access (input); those referable to the patient's process (throughput); and those leaving the PS (output). The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for neurological disorders. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Materials and methods: We evaluated all patients who accessed our emergency room for neurological disorders from 20 October to 30 November 2020 and in the same period of 2019.

Results and discussion: We enrolled 325 patients. There was a severe reduction in the total number of accesses for acute neurological disorders: 143 in the CoViD period and 182 in 2019. The vital signs were comparable. Patients in the CoViD pandemic have high priority codes at doctor's visit and severity at discharge (yellow and red) more frequently (79% vs 62% and 55% vs 39% respectively) and more frequently need hospitalization (60% vs 54%). Crowding input factors are lower during the pandemic period: reduced attenders (143 vs 182) and reduced average waiting times (48 min vs 101 min) accesses. The percentage of patients who exceeded the waiting time target set for the priority code for the medical examination also decreased (20% vs 32%). Crowding throughput factors have only slightly worsened: LOS (673 vs 651 min). Crowding output factors have also lightly worsened: the percentage of access blocks is higher during the pandemic (20% vs 18%). The Total Access Block Time is higher in the CoViD period for the examination rooms (16.312 vs 15.158 min).

Conclusion: The epidemic has led to a reduction in access for acute neurological disorders. Patients have more frequent hospitalization needs and more severe exit codes. The period of the pandemic presented a only lightly worse crowding for these patients.

Acknowledgements: We thank all the employees of the Fondazione IRCCS Policlinico San Matteo for their extraordinary efforts during the pandemic.

Abstract # 336**AREA: COVID-19****Second wave of the 2019 coronavirus epidemic (COVID-19) and abdominal pain of an italian ED geriatric population**

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Background: the pandemic has brought about a clear change in the use of the Emergency Department and in Crowding. The latter is due and identified by means of three orders of factors: those at access (input); those referable to the patient's process (throughput); and those leaving the PS (output). The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for neurological disorders.

Materials and methods: We evaluated all patients who accessed our emergency room for abdominal pain from 20 October to 30 November 2020 and in the same period of 2019.

Results and discussion: We enrolled 240 patients. There was a severe reduction in the total number of accesses for abdominal pain: 86 in the CoViD period and 154 in 2019. The vital signs were comparable. Patients in the CoViD pandemic are more frequently accompanied by ambulance (72% vs 63%). Patients in the CoViD pandemic have priority codes at doctor's visit overlapping with 2019 but most frequently have elevated severity at discharge (yellow and red) (24% vs 14%) and more frequently need hospitalization (48% vs 36%). Crowding input factors are lower during the pandemic period: reduced attenders (80 vs 154) and reduced average waiting times (87 min vs 119 min) accesses. The percentage of patients who exceeded the waiting time target set for the priority code for the medical examination also decreased (61% vs 21%). Crowding throughput factors have worsened: LOS (708 vs 444 min). Crowding output factors have also worsened: the percentage of access blocks is higher during the pandemic (29% vs 14%). The Total Access Block Time is significantly higher in the CoViD period (13.910 vs 9.330 min).

Conclusion: The epidemic has led to a reduction in access for acute abdominal pain in geriatric population. Patients have more frequent hospitalization needs and more severe exit codes. The period of the pandemic presented a worse crowding for these patients due to exit block the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks..) with a consequent workload on ED's operator.

Acknowledgements: We thank all the employees of the Fondazione IRCCS Policlinico San Matteo for their extraordinary efforts during the pandemic.

Abstract # 337**AREA: COVID-19****Second wave of the 2019 coronavirus epidemic (COVID-19) and chest pain: a possible efficacy in the response of cardiological departments for geriatric attenders**

Gabriele Savioli¹, Iride Francesca Ceresa², Francesca Grulli¹, Sara Cutti³, Valentina Latini⁴, Mauro Giordano⁴, Giovanni Ricevuti⁵, Maria Antonietta Bressan⁶, Luisa Brogonzoli⁷, Rosaria Iardino⁸

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Premise: Crowding has been defined as a global problem and causes a reduction in the quality of care and patient satisfaction. It is due to three orders of factors: those of access (input); those referable to the patient's process (throughput); and those leaving the PS (output). The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for chest pain.

Materials and methods: We evaluated all geriatric patients who accessed our emergency room for chest pain from 20 October to 30 November 2020 and in the same period of the previous year.

Results and discussion: We enrolled 223 patients. The vital signs are overlapping. Patients in the CoViD pandemic are most frequently accompanied by ambulance (80% vs 60%, the remaining half autonomous). The priority codes at the medical examination and the severity codes at the discharge in percentage are overlapping in the two periods. Patients of the CoViD pandemic most frequently require hospitalization (40% vs 31%). Crowding input factors are lower during the pandemic: reduced attenders (81 vs 142) and reduced average waiting times (37 min vs 85 min). The percentage of patients who exceeded the waiting time target set by priority code at the medical examination is also lower during the pandemic (19% vs 43%). Crowding throughput factors worsened only slightly: LOS (591 vs 558 min). Crowding output factors worsened: the percentage of access blocks doubled during the pandemic (17% vs 49%), without however the total time access block being higher (about 11.940 min vs about 11.929 min). This effect is likely due to a more prompt response from cardiology departments. The global LOS (513 vs 330 min) and total time access block (568,947 min vs 174,499 min) for all diseases have in fact had a marked worsening.

Conclusion: The epidemic has led to a reduction in accesses for chest pain, especially in self-reported ones. Patients required hospitalization more frequently. The second wave of the pandemic resulted in a only light worsening of crowding for these patients mainly due to the Access Block.

Acknowledgements: We thank all the employees of the Fondazione IRCCS Policlinico San Matteo for their extraordinary efforts during the pandemic.

Abstract # 338**AREA: COVID-19****Second wave of the 2019 coronavirus pandemic (COVID-19) and attenders for fever: severity of disease and crowding at a Lombardy ED**

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Background: During the pandemic it is expected to have an increase in the number of fever Attenders and also an increase in ED overcrowding. Crowding is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for neurological disorders.

Materials and methods: We evaluated all the geriatric patients who were accessing our emergency room for fever from October 20 to November 30, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 166 patients: 110 in the CoViD period and 56 in the previous year. During the pandemic period the male attenders were greater (53% M), while the previous year female attenders were more frequent (57% F). The average age, on the other hand, is comparable (about 83 years). Patients arrived with autonomous means of are halved (12% vs 23%). The higher (yellow and red) priority time to doc are overlapping during the 2019 period (about 10%) but exit codes are worse in pandemic period (48% vs 38%). The rate of hospitalization in percentage got worse (75% vs 62%). For the greater number of ED attenders the absolute number of hospitalized patients was even greater. Crowding input factors have gotten worse during the pandemic period as for the number of patients (110 vs 56) but the average waiting times have decreased (58 min vs 122 min). Crowding throughput factors have almost doubled: ED-Length Of Stay (1292 vs 584 min). As crowding output factors: The exit block is much greater (53% vs 12%) and The Total Time Access Block has increased tenfold (79.276 vs 7.304 min).

Conclusion: During the pandemic period ED-Attenders for fever have increased, are more serious and have worse outcomes. All crowding indices have worsened considerably, especially throughputs and output factors, due to the exit block phenomenon and to the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks...) with a consequent workload on EDs. The reduction in waiting times in spite of the priority codes for the medical examination is probably due to the differentiation of flows for patients with fever and those without.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 339

AREA: COVID-19

Analysis of the impact of the 2019 coronavirus epidemic (COVID-19) on the presentation and crowding of patients for minor urgencies at Lombardy ED

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Background: The pandemic has brought about a clear change in the use of the Emergency Department and in Crowding. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for minor emergency.

Materials and methods: We evaluated all geriatric patients accessing our emergency room for minor medical emergencies from October 20 to November 30, 2020 and during the same period of the previous year.

Results and discussion: We enrolled 407 patients. There was a severe reduction in the total number of accesses for minor trauma: 154 in the CoViD period and 253 in the previous year. Vital parameters and age were overlapping. Patients in the CoViD pandemic tend to be more frequently accompanied by ambulance and 118 compared to the reference period (68% vs 52%, the remaining half by independent means). The priority codes for the medical examination were not different. During the pandemic, they had high discharge severity codes (yellow and red) with a higher frequency compared to the reference period (22% vs 12%) and more frequently needed hospitalization (45% vs 28%). Rarely this category of patients presents altered crowding indexes. Crowding input factors are however lower in the pandemic period: reduced attenders (154 vs 253) and reduced average waiting times (89 min vs 122 min). Reduced was also the percentage of patients who exceeded the waiting time target by priority code for the medical examination (10% vs 19%). Crowding throughput factors worsened only slightly: LOS (599 vs 502 min). Crowding output factors also slightly worsened: the percentage of access block doubled during the pandemic (16% vs 8%). The Total Access Block Time is significantly higher in the CoViD period (22.651 min vs 21.345 min).

Conclusion: The epidemic led to a drastic reduction in access for minor signs and symptoms, without significant effect on overall ED crowding. However, patients are more frequently in need of hospitalization and have more severe exit codes.

Abstract # 340

AREA: COVID-19

Second wave of the 2019 coronavirus epidemic (COVID-19) on geriatric patients presentation and crowding at a Lombardy ED

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Background: Epidemics see different behaviors of patients depending on the degree of mortality and the emotional impact of the epidemic on the population. On one hand, a high mortality epidemic may reduce the demands on the health care system, but it brings more serious patients to its attention, and vice versa. We can therefore highlight how epidemics always weigh heavily on the health care system and E.D, in particular leading to overcrowding.

Purpose: To assess the impact of the second wave CoViD pandemic on the crowding of the geriatric population of an Italian ED.

Materials and methods: We evaluated all geriatric patients accessing our PS for chest pain from October 20 to November 30, 2020 and during the same period of the previous year.

Results and discussion: We enrolled 2.952 patients. There was a clear reduction in the total number of accesses: 1.243 in the CoViD period and 1.709 in 2019. The vital parameters were overlapping without statistically significant differences. In both periods there was confirmed a slight non statistically significant male prevalence (about 53%). Patients in the CoViD pandemic tend to be more frequently accompanied by ambulance compared to the reference period (78% vs 63%, the remaining half by independent means). Patients in the CoViD pandemic have more frequently high codes (yellow and red) of priority to medical examination (50% vs 42%) and severity to discharge (39% vs 24%) compared to the previous period and more frequently need hospitalization (52% vs 35%; $p < 0.05$). Respiratory symptoms and fever increased from 10 to 23%, making it the main cause of access to the pandemic. Crowding input factors are lower during the pandemic period: reduced attenders (1.243 vs 1.709) and reduced average waiting times (59 min vs 96 min) accesses. The percentage of patients who exceeded the waiting time target set for the priority code for the medical examination also decreased (10% vs 18%). Crowding throughput factors have worsened: LOS (818 vs 525 min). Crowding output factors have also worsened: the percentage of access blocks is higher during the pandemic (51% vs 32%; $p < 0.05$). The Total Access Block Time is significantly higher in the CoViD period (330.528 vs 110.538 min; $p < 0.05$).

Conclusion: The epidemic has led to a reduction in ED access, especially self-reported access. COVID-19-compatible symptoms accounted for the majority of ED accesses. Patients presented more frequently the need of hospitalization and more severe exit codes. The period of the pandemic presented a worse crowding for these patients due to exit block the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks..) with a consequent workload on ED's operator.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary commitment during the pandemic.

Abstract # 341

AREA: COVID-19

Second wave of the 2019 coronavirus epidemic (COVID-19) and syncope: analysis of the geriatric population of a Italian ED in Lombardy

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Background: The pandemic has brought about a clear change in the use of the Emergency Department and in Crowding. The latter is due and identified by means of three orders of factors: those at access (input); those referable to the patient's process (throughput); and those leaving the PS (output). The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Purpose: assess the geriatric population (> 75) who went to the emergency room for neurological disorders. **Materials and methods:** We evaluated all geriatric patients who accessed our emergency room for syncope from 20 October to 30 November 2020 and in the same period of 2019.

Results and discussion: We enrolled 100 patients. There was a little reduction in the total number of accesses for acute syncope: 42 in the CoViD period and 58 in 2019. The vital signs were comparable. Patients in the CoViD pandemic have elevated priority codes (yellow and red) at doctor's visit slightly worse than 2019 (59% vs 53%) but most frequently have elevated severity at discharge (yellow and red) (22% vs 17%) and more frequently need hospitalization (36% vs 27%). Crowding input factors are lower during the pandemic period: reduced attenders (42 vs 58) and reduced average waiting times (85 min vs 153 min) accesses. The percentage of patients who exceeded the waiting time target set for the priority code for the medical examination also decreased (28% vs 53%). Crowding throughput factors have worsened: LOS (1060 vs 883 min). Crowding output factors have also worsened: the percentage of access blocks is higher during the pandemic (26% vs 15%). The Total Access Block Time is significantly higher in the CoViD period (8.474 vs 4.505 min).

Conclusion: The epidemic has led to a lightly reduction in access for syncope. Patients have more frequent hospitalization needs and more severe exit codes. The period of the pandemic presented a worse crowding for these patients due to exit block the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks...) with a consequent workload on ED's operator.

Acknowledgements: We thank all the employees of the Fondazione IRCCS Policlinico San Matteo for their extraordinary efforts during the pandemic.

Abstract # 342

AREA: COVID-19

Minor trauma in the second wave of 2019 coronavirus epidemic (COVID-19): on the presentation and crowding of patients for at a Lombardy ED

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Background: All the hospitals involved in the second wave coronavirus 2019 (COVID-19) epidemic in Italy have experienced a huge increase in crowding, while witnessing a reduction in the presentation of minor emergencies. These had been pointed out by some authors as one of the causes of crowding and included in the crowding input factors. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: Assess the geriatric population (> 75) who went to the emergency room for minor trauma.

Materials and methods: We evaluated all geriatric patients who were accessing our emergency room for minor trauma from October 20 to November, 2020 and during the same period of the previous year.

Results and discussion: We enrolled 255 patients. There was a severe reduction in the total number of accesses for minor trauma: 79 in the CoViD period and 176 in the previous year. Vital parameters, age and gender overlapped. Patients in the CoViD pandemic tend to be more frequently accompanied by ambulance compared to the reference period (66% vs 54%, the remaining half by independent means). The priority codes for the medical examination were not different. During the pandemic, they had high discharge severity codes (yellow and red) with a higher frequency compared to the reference period (11% vs 5%) and more frequently needed hospitalization (22% vs 11%). Rarely this category of patients presents altered crowding indexes. Crowding input factors are however lower in the pandemic period: reduced patients (79 vs 176) and reduced average waiting times (56 min vs 80 min). Crowding throughput factors worsened only slightly: LOS (457 vs 256 min). Crowding output factors also slightly worsened: the percentage of access block is higher during the pandemic (13% vs 2%). The Total Access Block Time is significantly higher during the CoViD period (13.999 vs 990 min).

Conclusion: The epidemic led to a drastic reduction in access for minor trauma, with consequent overcrowding. The burden on overcrowding is well highlighted by the percentage of exit block and the total time access block, which highlight how much more time is dedicated to the care of these patients. Patients have more frequent need for hospitalization and more severe exit codes.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 343

AREA: COVID-19

Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of attenders for neurological disorders in geriatric population. experience of Lombardy ED

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding.

Purpose: We evaluated the geriatric population who went to the ER for neurological disorders between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated all the geriatric patients (> 75) who were accessing our emergency room for neurological disorders from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 1458 patients: 726 in the CoViD period and 732 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences.. Patients in the CoViD pandemic have slightly but not statistically significant higher (yellow and red) priority time to doc and exit severity codes more frequently than in the reference period (70% vs 61% and 43% vs 38% respectively) and need of hospitalization (53% vs 49%). Crowding input factors are stackable: number of patients and average waiting times (83 min vs 76 min) are overlapping. Crowding throughput factors worsened: LOS (730 vs 587 min). Crowding output factors worsened: the percentage of access block is higher during the pandemic (18% vs 13%). The Total Access Block Time is significantly higher in the CoViD period both for the examination rooms (83.650 vs 48.915 min) and for the holding area (50.718 vs 27.665 min).

Conclusion: In the period between the two pandemic peaks ED accesses for acute neurological disorders were stackable. Patients were found to have comparable severity, need for hospitalization, and need for high-intensity care. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit. In the period between the two waves the exit block phenomenon persisted with a consequent serious workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 344

AREA: COVID-19

Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of attenders for mental disorders. experience of Lombardy ED

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding.

Purpose: As part of a study that wanted to assess the impact of the CoViD pandemic on ED acceses we evaluated the geriatric population who went to our ED for mental disorders between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated all the geriatric patients who were accessing our emergency room for mental disorders from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 91 patients: 46 in the CoViD period and 45 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. The higher (yellow and red) priority time to doc are overlapping (18% vs 22%), and exit severity codes (yellow and red) were worse during the pandemic period (15% vs 2%), the rate of hospitalization was lightly higher (19% vs 17%). Crowding input factors are overlapping: number of patients (46 vs 45) and average waiting times (95 min vs 110 min). Crowding throughput factors worsened: LOS (849 vs 540 min). Crowding output factors worsened: the percentage of access block (15% vs 8%). The Total Access Block Time is significantly higher in the CoViD period both for the examination rooms (6069 vs 1941 min) and for the holding area (6.963 vs 3.963 min).

Conclusion: in the period between the two pandemic peaks ED accesses for acute mental disorders in geriatric population were stackable. Patients were found to have worse exit code and rate for hospitalization. The pandemic period has changed the way the whole hospital works for the necessary execution of swabs on entry and exit, also for these patients. In the period between the two waves the exit block phenomenon persisted, albeit relieved, and the process time was longer with a consequent workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 345**AREA: COVID-19****Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of attenders for chest pain. experience of Lombardy ED**

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the ER (output). The latter are considered the main responsible for Crowding.

Purpose: As part of a study that wanted to assess the impact of the CoViD pandemic on time dependent diseases in geriatric patients we evaluated the population who went to our ED for chest pain between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated all the geriatric patients (> 75) who were accessing our emergency room for chest pain from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 1012 patients. There was a lightly reduction in the total number of accesses for chest pain: 460 in the CoViD period and 552 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. As for as the higher (yellow and red) priority time to doc and exit severity codes they were stackable in the two periods (about 96% and about 30% respectively) while was major the need of hospitalization (39% vs 27%). Crowding input factors are overlapping: reduced patients (460 vs 552) and average waiting times (69 min vs 72 min). The percentage of patients who exceeded the waiting time target by code of priority to the medical visit was overlapping (39%). Crowding throughput factors worsened: LOS (668 vs 561 min). Crowding output factors also lightly worsened: the percentage of access block is higher during the pandemic (14% vs 10%). The Total Access Block Time is lightly higher in the CoViD period (32.797 vs 29.946 min).

Conclusion: in the period between the two pandemic peaks we had a slight reduction in ED accesses for chest pain. Patients were found to have comparable severity but have an higher rate of hospitalization. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit, also for this symptomatology although to a lesser extent than others. In the period between the two waves the exit block phenomenon persisted, albeit relieved, and the process time was longer with a consequent workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 346**AREA: COVID-19****Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of attenders for minor emergencies in geriatric population. experience of Lombardy ED**

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding. Project "Non-Covid-patients", led by The Bridge Foundation in 2021, aims to investigate repercussions of COVID-19 pandemic on non-Covid patients through the analysis of the social, clinical, economic, and quality of life impact, setting-up a multi-professional team who will deal with a regulatory analysis of the healthcare system.

Purpose: As part of a study that wanted to assess the impact of the CoViD pandemic we evaluated the geriatric population who went to our ED for minor emergencies between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated all geriatric patients (> 75) who were accessing our emergency room minor emergencies from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 2040 patients. There was a reduction in the total number of accesses for chest pain: 927 in the CoViD period and 1113 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. As for as the higher (yellow and red) priority code for time to doc and exit severity codes they lightly worse in the pandemic period (17% vs 14% and 18% vs 13% respectively) and there was a lightly major need of hospitalization (33% vs 27%). Crowding input factors are slightly lower in the pandemic period: the number of patients was reduced (927 vs 1113) and reduced average waiting times (105 min vs 119 min). Crowding throughput factors lightly worsened: LOS (517 vs 443 min). Crowding output factors also lightly worsened: the percentage of access block is higher during the pandemic (13% vs 8%) and also the Total Access Block Time both for the visit room (81.479 vs 77.331 min) and for the holding area (22.423 vs 19.163 min).

Conclusion: in the period between the two pandemic peaks we had a slight reduction in ED accesses for minor emergencies. Patients were found to have comparable severity, need for hospitalization, and need for high-intensity care. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit, also for this symptomatology although to a lesser extent than others. In the period between the two waves the exit block phenomenon persisted, albeit relieved, and the process time was longer with a consequent workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 347

AREA: COVID-19

Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of ED attenders. Experience of Lombardy ED

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding.

Purpose: Assess the impact of the CoViD pandemic on elderly population (> 75) who went to the ED between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated elderly population (> 75) who were accessing our emergency room from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 13.017 patients. There was a light reduction in the total number of accesses for acute neurological disorders: 5.980 in the CoViD period and 7.037 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. The higher code (yellow and red) of priority to doc and the exit severity codes were stackable (49% vs 45% and 28% vs 24% respectively) and also almost for the rate of hospitalization (40% vs 31%). Crowding input factors are lower in the pandemic period: number of patients (5.980 vs 7.037) and average waiting times (78 min vs 89 min). The percentage of patients who exceeded the waiting time target by code of priority to the medical visit about overlapping (20% vs 22%). Crowding throughput factors worsened: LOS (628 vs 479 min). Crowding output factors also worsened: the percentage of access block is higher during the pandemic (17% vs 9%). The Total Access Block Time is significantly

higher in the CoViD period both for the examination rooms (671.751 vs 362.666 min) and for the holding area (205.255 vs 169.654 min).

Conclusion: In the period between the two pandemic peaks we had a reduction in ED accesses of the elderly patients. Patients were found to have comparable severity, need for hospitalization, and need for high-intensity care. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit. In the period between the two waves the exit block phenomenon persisted and the process time was longer with a consequent workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 348

AREA: COVID-19

Between the first and second wave of the 2019 coronavirus pandemic (COVID-19): presentation and crowding of attenders for minor traumas in geriatric population. Experience of Lombardy ED

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Background: During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding.

Purpose: As part of a study that wanted to assess the impact of the CoViD pandemic we evaluated the geriatric population who went to our ED for minor traumas between the first and second wave of the coronavirus pandemic.

Materials and methods: We evaluated all the geriatric patients (> 75) who were accessing our emergency room minor traumas from May 1 to October 20, 2020 and during the same period of the previous year.

Results and discussion: We have enrolled 12,168 patients. There was a lightly reduction in the total number of accesses for chest pain: 582 in the CoViD period and 805 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. As for as the higher (yellow and red) priority code for time to doc and exit severity codes they were stackable in the two periods (4% vs 3% and 5% vs 6% respectively) also is stackable the rate of hospitalization (about 12%). Crowding input factors are slightly lower in the pandemic period: the number of patients was

reduced (582 vs 805) and reduced average waiting times (67 min vs 79 min). The percentage of patients who exceeded the waiting time target by code of priority to the medical visit was overlapping (about 7%). Crowding throughput factors lightly worsened: LOS (359 vs 255 min). Crowding output factors also lightly worsened: the percentage of access block is higher during the pandemic (6% vs 2%), as The Total Access Block Time both in the visit room (21.355 vs 8.191 min) and the holding area (10.907 min vs 5.304).

Conclusion: In the period between the two pandemic peaks we had a slight reduction in ED accesses for minor traumas. Patients were found to have comparable severity, need for hospitalization, and need for high-intensity care. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit, also for this symptomatology although to a lesser extent than others. In the period between the two waves the exit block phenomenon persisted, albeit relieved, and the process time was longer with a consequent workload on EDs.

Acknowledgements: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary efforts during the pandemic.

Abstract # 349

AREA: COVID-19

Test of institutional crisis management during COVID 19 pandemics

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Introduction: Crisis situations are frequent in our facilities due to multiple problems. Insufficient management knowledge and training multi-pathological profile of the residents which renders clinical situations complex to manage lack of staff. Lack of overall geriatric expertise for some of these structures. Crises are difficult to avoid but some crises can be warded off or their impact alleviated if some principles of crisis management are carefully followed. In 2010 we published a model of crisis management in institutions based on simple models used in companies, simple, based on keywords in order to prevent or better integrate different phases of a crisis. (Annales de gérontologie 2010).

Methods: The objective of this study is to retrospectively analyze the management of the COVID 19 crisis in five different facilities (three nursing homes and two reeducation centers) over a period of March 2020 to the end of April 2021. To analyze crisis management in these facilities, we used our management model and compared for each structure what was achieved for each element of the model.

Results: The elements of the model were analyzed at different times from March 2020 to March 2021 1 Risk prevention: all the structures had protocols on hand hygiene and prevention of ARI, the implementation of an adapted protocol for COVID isolation was rapid for all the structures However, only 2 out of the 5 facilities proposed and disseminated in an effective way the protocols on the symptomatology and the treatment of COVID. 2 Understand the situation: the crisis in all the structures was underestimated, and this regardless of when the crisis occurred (from March 2020 to April 2021) 3 The crisis unit: a single structure had a crisis unit with relevant stakeholders, and included in its composition "an irritating thorn" ... 4 Alerting, deciding, informing, training: the alert was generally ignored at the beginning, only one structure had established isolation

protocols and made them fully known to all its staff. 5 Be transparent, only one structure reported to the Health authorities all possible cases of COVID in the absence of a test in March April May 2021, a single structure communicated in real time to families and patients during the crisis ... 6 Being consistent, the main errors concerned the wearing a mask during staff recess breaks. 7 Be ready for the next crisis, no structure has engaged in feedback after its crisis Conclusion In view of our model, skills in risk management and crisis management must be strengthened in our structures. The full results of the study will be presented during the conference communication.

Abstract # 350

AREA: COVID-19

Communication during the COVID-19 pandemic: evaluation-study on self-perceived competences and views of health care professionals

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Introduction: The aims of this study were to describe communication experiences while wearing a mask during COVID-19 pandemic in 2020, in order to identify possible mask-related barriers to COVID-19-adapted communications and to investigate whether the ABC mnemonic (A: Attend Mindfully; B: Behave Calmly; C: Communicate Clearly) might address these.

Methods: This study was a cross-sectional, voluntary, web-based survey between January and February 2021. A 22-item survey was developed using the SurveyMonkey platform and question-styles were varied to include single choice and Likert scales. The respondents were also asked to view a short video presentation, which outlined the ABC mnemonic. CHERRIES (Checklist for Reporting Results of Internet E-Surveys) was used to ensure completeness of reporting.

Diverging stacked bar charts were created to illustrate Likert scale responses.

Results: We received 226 responses. The respondents were mostly women (60.2%) and the majority worked in a teaching hospital (64.6%). The majority of the respondents indicated issues related to lack of time during clinical encounters, uncertainty about how to adapt communication, lack of personal protective equipment, lack of communication skills and lack of information about how to adapt their own communication skills. In addition, the participants indicated acknowledging emotions and providing information using clear, specific, unambiguous, and consistent lay language while wearing a mask were among the main communication challenges created during the COVID-19 pandemic. Finally, the study showed significantly improved self-perceived competency regarding key communication after watching the short video presentation.

Conclusion: Effective communication in medical encounters requires both verbal and nonverbal skills.

Abstract # 351

AREA: COVID-19

COVID-19 pandemic and its effect on mental health in the elderly population: a case series

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SARS-COV-2 pandemic and the resulting lockdown have had detrimental effects on the elderly population. We report a case series on the effects of the pandemic. Social isolation in older adults reported high levels of stress, anxiety and depression. Prolonged isolation led to the emergence of new neuropsychiatric symptoms that appeared to be particularly severe and challenging. Case 186 years old, frail female, nursing home resident, presented with pseudo ileus. She admitted four times between March and Sep'20 where low mood was a predominant feature. Her first arrival to care home and not be able to see family throughout this time made her significantly depressed. She passed away in Oct '20, spending only 14 days out of the hospital in three-and-a-half months. Case 2A 78-years woman with mild cognitive problems, presented from her own home with urosepsis. Upon the first admission in July 2020, she had a Rockwood Frailty score of 4, being vulnerable. She was referred to a rehab facility. By the time of her last admission, she had a total of 6 months of isolation. Difficult family conversations revealed that her cognition becomes worse during a pandemic, which limited her rehab potential. She was sent to NH with palliative care. Case 3A 79-years female, residential home, good baseline, admitted to hospital with delirium and behavioral problems. Lack of contact with family had affected her well-being and this had detrimental effects on her mental health. Her cognition did not improve and she passed away 4 months later.

Abstract # 352

AREA: COVID-19

Experiences and priorities of older adults during the COVID-19 pandemic

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Introduction: Throughout the COVID-19 pandemic, older adults have been prioritized in public health campaigns to limit social

interactions and “cocoon” in their homes. This limits the autonomy of older people and may have unintended adverse consequences. This study aims to ascertain the self-reported physical and psychological effects of ‘cocooning’, and the expressed priorities of older adults themselves during the pandemic.

Methods: This is a cross-sectional, survey-based study. Participants included 93 patients aged 65 and older, attending geriatric medicine out-patient and ambulatory day hospital services or our in-patient rehabilitation units. Demographic data was obtained from the medical records. Frailty level was calculated using the Clinical Frailty Scale, and disease burden was calculated with the Charlson Co-morbidity Index.

Results: Mean age was 79.1 (range 66–96), 24% had dementia, and most were mildly frail (CFS < 5). One third reported new feelings of depression, decreased mobility, and loss of enjoyment as a consequence ‘cocooning’. Loneliness was more prevalent amongst in-patients (38% vs 9%, $p > 0.001$). Respondents worried more about the risks of COVID-19 to their family than themselves. Expressed priorities varied from ‘enjoying life as much as possible’, to ‘protecting the development of children’.

Key conclusions: Adverse consequences of ‘cocooning’ were commonly expressed amongst older adults. Public health policy should take into account the heterogeneity of this population and be sensitive to their self-expressed wishes and priorities.

Abstract # 353

AREA: COVID-19

Multisystemic inflammatory syndrome associated with SARS-CoV-2 infection and type 2 diabetes mellitus

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Patient, female, 58 years old, fever up to 39° for 6–7 days, headache, dyspnea on small efforts and pharyngeal discomfort, without cough. Referred to the hospital for suspected Covid infection.

Background: Type 2 diabetes mellitus (DM2) and obesity. In treatment with metformin 850 mg 0-1-0. The patient was admitted to the Resuscitation Unit and required orotracheal intubation. He received triple therapy treatment with the COVID 19 protocol + corticosteroid therapy, in addition to sedation with propofol and remifentanyl and low-dose inotropic support. During her admission, she was diagnosed with bacteremia due to *Staphylococcus epidermidis* and methicillin-resistant *Staphylococcus haemolyticus*. Also urinary infection associated with bladder catheterization by *E. coli* and pulmonary superinfection by *Serratia marcescens* and *Candida albicans*. Detection of SARS-COV2 and positive for *Acinetobacter baumannii* in bronchial aspirate treated with Tigecycline + Colistin. A week later, she requires a tracheostomy (critically ill polymyopathy). The head CT scan revealed ischemic lesions in the left thalamus and the left cerebellar hemisphere. A chest radiograph revealed a minimal right apical pneumothorax and another week later a right pneumothorax that was treated with drainage (pleur-ecath). After treatment, a radiological improvement of the right pneumothorax was observed compared to a previous study, without altering the rest of the parenchymal involvement. DIAGNOSIS SARS-CoV2 pneumonia and subsequent superinfection by *Acinetobacter* B. COMMENTARY SARS-CoV19 infection is a multisystem disease. The work carried out by Primary Care Physicians is essential, since they are the ones

who have to detect cases early, refer to the emergency room if necessary and indicate hygiene measures to those infected, as well as detect close contact with the patients. The main comorbidities in COVID-19 infection include obesity, DM2, high blood pressure, and coronary heart disease. In this case, DM2 is a significant predictor of severity and death in coronavirus-infected patients.

Abstract # 354

AREA: COVID-19

The impact of the health crisis on patients' psychological feelings during the second wave of COVID-19 in geriatric wards

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Introduction: The health crisis has had many consequences such as isolation and the feeling of abandonment of our seniors. Belgium did not initially put the priority on the elderly. Difficult decisions had to be taken, such as restrictions on visits to nursing homes, or the limitation of material resources. We wanted to study the mental state of geriatric patients hospitalized between the second and third waves in non-Covid units.

Methods: Geriatric patients' data were collected successively in a prospective study between 16/11/2020 and 24/12/2021 at CHU Saint Pierre and between 11/01/2021 and 07/03/2021 at Centre Hospitalier de Nivelles-Tubize. The inclusion criteria for geriatric patients was an Minimal mental State (MMSE) $\geq 20/30$ and an age ≥ 70 years. Our study consisted of administering the validated Hospital Anxiety Depression Scale (HADS) and Perceived Stress Scale (PSS) after obtaining informed consent.

Results: Among 81 patients hospitalized in Geriatrics, 30% presented a positive score for anxiety and the depression scale was found to be definite for 17%. Furthermore 65% of the patients interviewed perceived high stress during this period.

Conclusion: This study confirms that the pandemic has had a deleterious effect on the mental state of our elderly. It can be assumed that several factors played a role, such as the isolation of the elderly following the measures in force, a delay in action within the Nursing Homes, and perhaps a latent ageism in Belgium which it would be good to analyze after the pandemic.

Abstract # 355

AREA: COVID-19

Could be the production of antibodies a prognostic factor for COVID-19?

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Objectives: To study the prevalence of patients with anti-SARS-CoV-2 antibodies (IgG and IgM) in elderly hospitalised patients diagnosed with COVID-19.- To analyse which other clinical variables are related to IgG antibodies production.- To analyse the differences in terms of mortality according to the immune response.

Material and method: Observational cohort study. We included patients diagnosed with COVID-19 in the geriatric unit of the Hospital San José-Teruel from March to November 2020 and who had COVID-19 antibody testing after the first 2 weeks of being diagnosed.

Results: 101 patients were included, produced immunoglobulin M (IgM) 78.2% and immunoglobulin G (IgG) 85.1%. Mean age was 86.24 years (SD 7.73), female 53.5%, institutionalised 58.4%, I. Barthel > 60 55.4%, cognitive impairment 57.4%, hypertension 79.2%, type II diabetes 30.7%, chronic kidney disease 30.7%, cardiovascular disease 49.5% and vitamin D deficiency 47.5%. The mean hospital stay was 14.87 days (SD 11.8). In the analysis by groups according to IgG positivity, significant differences were found in COVID-19 pneumonia (p 0.04) and mortality (p .001). No significant differences were found in other clinical or laboratory variables. After multivariate analysis, patients with pneumonia (OR 18.47 CI 95% 1.44–23.6) are more likely to develop IgG antibodies, and mortality (OR 0.23 CI 95% 0.002–0.28) is lower with positive IgG antibodies.

Conclusions: We observed that a high proportion of our patients were IgG positive. Developing pneumonia increases the IgG adaptive immune response to COVID-19. We also observed a lower probability of mortality among IgG positive patients.

Abstract # 356

AREA: COVID-19

Nutritional status in the elderly with COVID-19

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Objectives: To describe and analyse nutritional screening with Mini Nutritional Assessment Short Form (MNA-SF) in hospitalised elderly patients diagnosed with COVID-19.- To analyse the influence of nutritional supplementation on mortality and hospital admission.

Material and method: Retrospective observational cohort. We included patients admitted to the geriatric unit, diagnosed with COVID-19 and nutritional screening using the MNA-SF test between March and November 2020. Screening score according to MNA-SF: 12–14 (Normal), 8–11 (risk of malnutrition) and 0–7 (malnutrition).

Results: 113 patients. Mean age: 85.88 years (SD 7.9). Women 54.9%. Nursing home 66.4%. Functional dependence 62.8%, hypertension 77.9%, heart disease 46.9%, dementia 47.8%. Groups according to MNA-SF: normal 13.3%, risk of malnutrition 38.9% and malnutrition 47.8%. Risk factors for malnutrition (p < 0.05): functional dependence (OR 3.05 CI 95% 1.36–6.82) and dementia (OR 2.44 CI 95% 1.14–5.21). More deaths in the malnourished group (51.4%, p 0.81) and a mean hospital stay of 17.38 days, 2.5 days longer than in the non-malnourished group (p 0.36). 31% of patients received oral nutritional supplementation during admission. The mean hospital stay was 23.42 days (SD 19.9) for the treated group, 10.46 days longer than the untreated group (p 0.001). A lower proportion of deaths (27.8%, p 0.49) was observed in the treatment group.

Conclusions: The prevalence of malnutrition in the elderly hospitalised patients with COVID-19 is high.- Dementia and functional dependence are more likely to be associated with malnutrition.- Survival in patients who received oral nutritional supplementation was apparently better, which explains why this group had a longer hospital stay.

Abstract # 357**AREA: COVID-19****The Local Asset Mapping Project (LAMP): a review of service availability during the COVID-19 pandemic**

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Background: Social prescribing is a means for health professionals to refer patients to a link worker, who can help a patient with their practical, emotional or social needs connect to resources in their community often provided by the voluntary sector, with a view to improving their health and wellbeing. The impact of the COVID-19 pandemic on the provision of many community-based services, such as addiction and family resources centres has not yet been formally studied.

Methods: Using the St James's Hospital Local Asset Mapping Project (LAMP) database, a random selection of addictions services and family resource centres on the database were identified. Family resource services, included childcare facilities, after schools' clubs, various extracurriculars for all ages, and addiction services. Individual services were contacted by telephone and were asked to respond to a validated questionnaire, incorporating both descriptive elements and a Likert scale.

Results: From a total of 44 services identified, 19 (43%) responded to the survey. (addiction services 9 out of 21 family services 10 out of 24). Thematic analyses found that the COVID-19 pandemic and government restrictions have led to significant alterations in services provided; 'open-door' policies are no longer operating, classes and counselling have moved to online based alternatives. For family services, most are still open, but the majority, (90%) felt their services were affected by COVID. A minority felt that they reach the same number of clients (30%), and most expressed concerns that their clients had no adequate internet access (60% agreed or strongly agreed) or technology (70% agreed or strongly agreed) to avail of their services. Findings were similar in addiction services, with most feeling that their services have been affected by COVID-19, and concerns were expressed over the client's access to technology and internet for provision of online services.

Conclusion: Community services have seen significant disruption due to the COVID-19 pandemic, in both family and addiction services. Digital inequalities are evident in this community, which must be addressed to allow social prescribing to effectively tackle the social determinants of health.

Abstract # 358**AREA: COVID-19****What have we learnt so far after a year into COVID-19 pandemic? A review of healthcare delivery for over 75 years old through two COVID-19 peaks in UK district general hospital**

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¹Ashford and St Peters NHS Foundation Trust

Introduction: Global crisis of COVID-19 pandemic isn't over yet despite vaccination efforts at industrial scale. With different variants of virus emerging at speed, we must not drop our guard yet. It is important that we continuously monitor, review and evaluate our

performance to learn the lessons and improve healthcare delivery to our most vulnerable older population.

Method: Data collected and compared for over 75 years old presenting to St Peters Hospital, Chertsey, UK during 1st (March–May 2020, peak period April 2020) and 2nd (Jan–March 2021, peak period Jan 2021) wave of COVID-19 pandemic.

Results: Variables March–May 20, Jan–March 21 April 20 Jan 21 ED attendance (n) 3568 446 (20.16% high) 1010 1523 (33.68% high) COVID-19 positive (n) 317 610 (48% high) 212 368 (42.39% high) conversion to admission: 59.1% 55.86% (3.24% less) 65.3 57.60% (7.70% less) inpatient deaths (n) 297 310 4.19% (more) 131 120 (8.40% less) (avg 99/month) (avg 103/month). Over all crude mortality rate 13.1% 11.6% (1.50% less) 19.1% 18.70% (no change) (CMR) (avg)CMR in COVID-19 positive 43.8% 28.9% (14.9% less) 43.4% 32.60% (10.80% less) non elective LOS 7.18 6.97 (no change) 5.95 7.44 (1.50 days (days) (avg)more) 30 day readmission (avg) 22.73% 21.46% (no change) 21.1% 20.40% (no change).

Conclusion: Increased ED attendance during 2nd wave along with increased COVID-19 positivity was likely due to more infectious viral strains in 2nd wave. However, less mortality was observed due to more effective treatments like dexamethasone and effective vaccination campaign providing much needed immunity in this cohort.

Abstract # 359**AREA: COVID-19****Mortality attributable to COVID-19 in nursing home residents: a retrospective study**

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Aim: Coronavirus-19 disease (COVID-19) is a widespread condition in nursing home (NH). It is not known whether COVID-19 is associated with a higher risk of death than residents without COVID-19. Therefore, the aim of this study was to assess whether COVID-19 is associated with a higher mortality rate in NH residents, considering frailty status assessed with the Multidimensional Prognostic Index (MPI).

Methods: In this retrospective study, made in 31 NHs in Venice, Italy, the presence of COVID-19 was ascertained with a nasopharyngeal swab. Frailty was evaluated using the MPI, modified according to the tools commonly used in our NHs. A Cox's regression analysis was used reporting the results as hazard ratios (HRs) with 95% confidence intervals (CIs), using COVID-19 as exposure and mortality as outcome and stratified by MPI tertiles. Similar analyses were run using MPI tertiles as exposure.

Results: Overall, 3946 NH residents (median age = 87 years, females: 73.9%) were eligible, with 1136 COVID-19 + . During a median follow-up of 275 days, higher values of MPI, indicating frailer people, were associated with an increased risk of mortality. The incidence of mortality in COVID-19 + was more than doubled than COVID-19- either in MPI-1, MPI-2 and MPI-3 groups. The presence of COVID-19 increased the risk of death (HR = 1.85; 95% CI 1.59–2.15), also in the propensity score model using MPI as confounder (HR = 2.48; 95% CI 2.10–2.93).

Conclusion: In this retrospective study of NH residents, COVID-19 was associated with a higher risk of all-cause mortality than those not affected by COVID-19 also considering the different grades of frailty.

Abstract # 360**AREA: COVID-19****Multi-component rehabilitation after COVID-19 for nursing home residents**

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Background: COVID-19 is a widespread condition in nursing homes. The consequences of COVID-19 may include sarcopenia, bedridden syndrome, and mortality. However, studies reporting data on the effect of rehabilitation and nutritional supplementation in nursing home residents previously affected by COVID-19 are still underrepresented. Therefore, the aim of this study is to report our experience in nursing home residents previously affected by COVID-19, using a rehabilitative and nutritional supplementation program.

Methods: Nursing home residents in Villa Althea, Venice, Italy previously affected by COVID-19 were enrolled between November 2020 and January 2021 and followed-up for 30 days. To all the participants, a physical rehabilitation program, supervised by trained physiotherapists, and a multi-component nutritional supplementation with a 220 ml drink containing 1.5 g of calcium HMB (Beta-Hydroxy-Beta-Methylbutyrate), were administered. The differences between baseline and 30-days evaluation were calculated using a pairwise Student T-test.

Results: 28 nursing home residents (mean age: 87.8 ± 7.3 years, 85.7% females) were included. The mean Barthel Index, in terms of activities of daily living (53.7 ± 6.0 vs. 45.3 ± 7.9 ; $p < 0.0001$), mobility (38.7 ± 2.4 vs. 34.8 ± 5.3 ; $p < 0.0001$) and total score (92.4 ± 7.6 vs. 80.0 ± 12.3 ; $p < 0.0001$) significantly improved between the 30-days and the basal evaluation. Similarly, the risk of pressure sores was significantly reduced between the two evaluations (9.7 ± 1.5 vs. 12.4 ± 1.3 ; $p < 0.0001$).

Conclusion: A multi-component nutritional supplementation containing HMB and physical rehabilitation are able to significantly improve disability in very old nursing home residents previously affected by COVID-19, indicating the need to early intervene in these patients for reducing the risk of consequences due to disability and pressure sores.

Abstract # 361**AREA: COVID-19****Clinical presentation and outcomes of COVID-19 in older hospitalised patients assessed by the record-based Multidimensional Prognostic Index, a cross-sectional cohort study**

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Purpose: Older people are the most frequently hospital admitted patients with COVID-19. We aimed to describe the clinical presentation of COVID-19 among frail and non-frail older hospitalised patients and to evaluate the potential association between frailty and clinical course, decision about treatment level, outcome change in functional capacity, and survival.

Methods: We performed a multi-center, retrospective cross-sectional cohort study examining data on clinical presentation and frailty-related domains for hospitalised people aged 75 + years with a positive

severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) test. Frailty was assessed at admission using record-based MPI (rMPI) and Clinical Frailty Scale (CFS). Decision on treatment level about invasive ventilation and cardiopulmonary resuscitation (CPR), change in CFS-score from admission to discharge, changed need of home care, and in-hospital, 30-day and 90-day mortality were registered.

Results: 100 patients (median age 82 years (IQR 78–86), 56% female) with COVID-19 were included. 54 patients were assessed moderately or severely frail (rMPI-score = 2 or 3) and compared to non-frail (rMPI-score = 1). At admission, frail patients presented more frequently with confusion. At discharge, functional decline measured by change in CFS and increased home care was more prevalent among frail than the non-frail. Decisions about no invasive ventilation or CPR were more prevalent among frail older patients with COVID-19 than non-frail. Ninety-day mortality was 70% among frail patients versus 15% in non-frail.

Conclusion: Frailty seems to be associated with confusion, more frequent decisions about treatment level, larger functional decline at discharge, and a higher mortality rate among older patients with COVID-19.

Abstract # 362**AREA: COVID-19****Health status of survivors older than 70 years old after hospitalization with COVID-19. Observational follow-up study at 12 months**

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Introduction: The impact of the SARS-CoV-2 virus on the elderly population has been devastating. There is ample scientific evidence on the characteristics of the pandemic in terms of in-hospital mortality and morbidity, but limited data on the medium- and long-term consequences on the health status of elderly people who have suffered from COVID-19. The follow-up of these patients represents a new healthcare need that requires multidisciplinary work. Therefore, the aim of this study was to describe characteristics and analyze factors associated with 12-month mortality and readmissions in patients over 70 years of age who survived hospital admission for SARS-CoV-2.

Methods: Patients aged > 70 years old, discharged after hospitalization with COVID-19. Outcome variables: mortality and readmissions at 12 months follow-up.

Results: 165 cases discharged between March and May 2020. At 12 months after discharge, 16.4% died and 37.6% required at least one readmission. The main cause of death in 55.5% was respiratory disease and the most frequent causes of readmission were respiratory (22.2%), urinary (22.2%) and cardiological (22.2%). In the bivariate analysis, 50% of those who died had high comorbidity and 59.3% had been readmitted within the last 6 months. Of those readmitted after 12 months, 43.5% had high comorbidity: 66% had high blood pressure and 30.6% had heart failure. In multivariate analysis, the presence of high comorbidity (OR 0.46, 95% CI 0.23–0.92), severe frailty (OR 0.27, 95% CI 0.09–0.92) and readmission at 6 months (OR 0.04, 95% CI 0.01–0.10) were not associated with an increased risk of mortality at 1-year follow-up.

Key conclusions: High comorbidity and the presence of baseline frailty did not demonstrate an association with increased risk of 12-month mortality.

Abstract # 363

AREA: COVID-19

COVID-19 and vitamin D deficiency in hospitalized elderly

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Objectives: To know the prevalence of Vitamin D (VitD) deficiency in the elderly with COVID-19. To compare groups with and without deficiency of VitD among patients with COVID-19. To analyze whether VitD supplementation during admission is related to lower intrahospital mortality and lower hospital stay.

Method: Descriptive and retrospective study. Patients diagnosed with COVID-19 admitted to the geriatric unit of Hospital San José-Teruel between march to november 2020 with dosage of VitD during admission. Sociodemographic and clinical variables were collected. Classification according to VitD levels: Normal (≥ 30 mg/dL), insufficiency (20–29 mg/dL), deficiency (< 20 mg/dL).

Results: 117 patients were included. Mean age: 86.16. Women: 67 (57.3%). Institutionalized: 76 (65%). Malnutrition (Mini Nutritional Assessment-Short Form): 36 (45%). Functional dependent (Barthel index): 88 (81.5%). Cardiopathy 59 (50.4%), dementia 57 (48.7%). Average hospital stays: 15.3 days. Intrahospital mortality: 42 (35.9%). Normal VitD: 28 (23.9%), Insufficiency 23 (19.7%), deficiency 66 (56.5%). When analyzing study variables between patients with and without VitD deficiency, no statistically significant differences were observed. 60 patients received VitD supplementation. More deaths were observed in the group that did not receive VitD supplementation (28) ($p 0.004$). Average hospital stays: 13.23 days in the untreated group vs 17.25 days in the other group ($p > 0.05$).

Key conclusions: High prevalence of VitD deficiency in hospitalized elderly diagnosed with COVID-19. Groups with and without vitD deficiency had similar comorbidity, nutritional status, functional status, hospital stay and mortality. Patients who were treated with VitD supplements during hospitalization had lower mortality compared to those who did not.

Abstract # 364

AREA: COVID-19

A single-site experience in waves 1 and 2 of the COVID-19 pandemic. baseline characteristics, frailty, and survival

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Introduction: Literature from the first wave of COVID-19 has demonstrated that frail, older adults are disproportionately affected by poorer outcomes. There is little evidence comparing the first and second waves of the pandemic. We compare baseline characteristics, survival, frailty prevalence and impact in wave 1 vs wave 2 patients.

Methods: Prospective observational study of patients admitted between 27/02/2020 and 28/04/2020 (wave 1), and 01/10/2020 to 10/11/2020 (wave 2) with COVID-19. Data was collected on demographics, co-morbidities, biochemical parameters, and frailty (using the Clinical Frailty Scale). The primary endpoint was in-hospital

mortality. Cox proportional hazards model was used to associate wave and frailty with mortality. Logistic regression model was used to associate patient characteristics with wave.

Results: 700 participants were included ($n = 429$, wave 1; $n = 271$, wave 2). In wave 1, 42% were female; median age was 72; 37% were non-survivors, 49% were frail. In wave 2, 38% were female; median age was 73; 30% were non-survivors, 39% were frail. Baseline characteristics were similar in both waves. Patients were more frail in wave 1. There was a significant reduction in mortality in wave 2, aHR = 0.71 (95% CI 0.53–0.94). Higher scores of frailty were associated with higher mortality.

Conclusions: Frailty was highly prevalent in patients hospitalised with COVID-19 in both waves, and associated with increased mortality. Patients were more frail in the first wave. Mortality was significantly reduced in the second wave.

Abstract # 365

AREA: COVID-19

Norwegian Scabies In A 96-Year-Old Institutionalized Patient; Ivermectin-SARS-COV-2

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Introduction: 96 years old female, medical history of: hypertension, diabetes, ischemic cardiopathy, chronic renal failure. In treatment with: acetylsalicylic acid, furosemide, mirtazapine, insulin. geriatric assessment: institutionalized, high dependency to daily life activities. Severe cognitive impairment.

Case study: Admitted in the geriatric ward with decreased level of consciousness due to an episode of morning hypoglycaemia, treated with fluids. Blood analysis: eosinophilia and elevated Interleukin-6. PCR and serology for SARS-CoV2 was negative. Physical examination showed a pruritic rash in thoracic and abdominal area, associated with hyperkeratosis in palmar, interdigital area and nail dystrophy. Treated with corticosteroids and antihistamines without improvement. Due to the clinical presentation, the suspected diagnosis was Norwegian scabies, treated with permethrin cream 5% (two applications). With a clinical improvement, persisting several papular lesions in the neck and abdomen. Completed treatment with ivermectin 12 mg (two doses) with total resolution. Owing to the pandemic, before discharge a COVID 19 PCR was made, with a positive result, patient was asymptomatic. Discharge 21 days later once the swab was negative, but the patient didn't develop antibodies with a negative serology.

Discussion: It has been considered the possibility that treatment with ivermectin produces a reduction in symptoms, viral load and antibodies in patients with SARS-CoV2. It may interfere in the entrance of the virus inside the cell what could explain that the patient remained asymptomatic, with low viral load and without antibodies. Although, it is unsure, and it would be important to make more clinical trials to establish hard conclusions based in scientific evidence.

Abstract # 366**AREA: COVID-19****COVID-19 mortality risk factors in older people in a long-term care center**

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Purpose: Despite high rates of COVID-19 infection and increased related mortality have been reported among older adults admitted in long-term care facilities, a limited amount of information is available about the natural course of this pandemic and prognostic factors in such population. In the current study, we aimed to investigate the epidemiologic, demographics, clinical, or therapeutic factors that may predict the prognosis in a cohort of COVID-19 infected institutionalized older in a nursing home.

Methods: We conducted a retrospective analysis of all COVID-19 confirmed institutionalized older in a nursing home from March 15 to June 5, 2020. Epidemiological, demographic, and frailty status before infection, and clinical, laboratory, treatment, and outcome data during infection were collected. We used bivariate analysis and multivariate logistic regression to identify risk factors for mortality.

Results: The analysis comprised all 100 COVID-19 confirmed cases during the study period. The median age was 85 years; 62% were female. The case fatality rate was 20%. In the bivariate analysis, male gender, fever, respiratory symptoms, severe cognitive decline, a low Barthel index, and lymphocytopenia were significantly associated with mortality. Multivariate logistic regression analysis identified male gender, low Barthel index, no pharmacological treatment, and lymphocytopenia as independent risk factors associated with mortality.

Conclusions: Male gender, low Barthel index, and lymphocytopenia are independent risk factors for COVID-19 mortality in institutionalized older patients in long-term care nursing homes. Treatment with hydroxychloroquine and azithromycin was associated with lower mortality in these patients.

Abstract # 367**AREA: COVID-19****COVID 19 in French nursing home: an epidemiological risk study of structural factors and crisis management**

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Introduction: Nursing home (NH) residents accounted for half of the deaths during 2020 spring wave of the COVID-19 epidemic in France. Our objective was to identify structural and managerial factors associated with COVID-19 outbreaks in NH.

Method: We conducted a retrospective study by questionnaire addressed to directors of NH in the Brittany region of France. The questions related to structural characteristics of the establishment, human resources, and crisis management decisions. The primary

endpoint was the occurrence of at least one confirmed case of COVID-19 among residents between 1 March 1 and 31 May 2020. The secondary endpoint was total mortality during this period. We used multivariate regressions to identify factors associated with these outcomes.

Results: Responses were collected from 231 NH hosting 20,881 residents, representing a participation rate of 47%. In 24 (10%) NH, at least one resident presented a confirmed COVID-19. NH often implemented stringent protective measures, with 65% of them choosing to confine residents to their rooms. In multivariate analysis, factors associated with a reduced risk of case occurrence were in-room meal service, early ban of family visits, and daily access to an outdoor space. No association was found between mortality and the factors studied.

Conclusion: Cessation of communal dining seems to be the main measure likely to be effective in preventive terms. It does not seem that preventive room lockdown and cessation of group activities should be recommended, particularly if mask wearing is possible. Our observations raise ethical questions concerning respect of the rights and of the well-being of nursing home residents during this period.

Abstract # 368**AREA: COVID-19****Relationships between malnutrition, sarcopenia, and frailty and the incidence of COVID-19 in older adults: data from the SarcoPhAge cohort**

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Introduction: This study aimed to evaluate the association between the incidence of COVID-19 and malnutrition, sarcopenia, and frailty.

Methods: 65 Years old community-dwelling older adults from the Sarcopenia and Physical Impairments with Advancing Age (SarcoPhAge) cohort were included. Malnutrition, sarcopenia and frailty were assessed at the last available follow-up from the SarcoPhAge cohort (i.e., the fifth year that ended in June 2019) according to the

Mini-Nutritional Assessment short-form, the European Working Group on Sarcopenia in Older People (EWGSOP2), and the Fried criteria, respectively. Information regarding the COVID-19 was gathered by phone calls interviews to measure its self-declared incidence between March 2020 and April 2021. Adjusted Cox-regressions and Kaplan–Meier curves were performed.

Results: The present study comprises 241 participants (median age 75.6 (73.0–80.6) years, 63.1% women) who were assessed for the three diseases and for which we have obtained information regarding the COVID-19. Among them, 27 participants (11.2%) developed the non-fatal COVID-19. Its association with malnutrition (adjusted HR: 1.14 [0.26–5.07]) and sarcopenia (adjusted HR: 1.14 [0.26–5.07]) were nonsignificant. However, the COVID-19 incidence was significantly impacted by the frailty status ((adjusted HR: 3.97 [1.56–10.10]), which was confirmed by the Kaplan–Meier curves ($p < 0.001$)). Among the Fried criteria, a low physical activity level was the only one significantly associated with an increased risk of COVID-19 (adjusted HR: 5.18 [1.37–19.54]).

Conclusion: A 4-fold increased risk to develop COVID-19 was observed for the frailty syndrome. Further investigations are needed to elaborate on our findings.

Abstract # 369

AREA: COVID-19

Effect of bolus vitamin D3 supplementation on COVID-19 severity and 14-day survival in hospitalized frail elderly patients: results from a quasi-experimental study

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Background: The objective of this quasi-experimental study was to determine whether bolus vitamin D3 supplementation taken either regularly over the preceding year or after the diagnosis of COVID-19 was effective in improving survival among hospitalized frail elderly COVID-19 patients.

Methods: Seventy-seven patients consecutively hospitalized for COVID-19 in a geriatric unit were included. Intervention groups were participants regularly supplemented with vitamin D3 over the preceding year (Group 1), and those supplemented with vitamin D3 after COVID-19 diagnosis (Group 2). The comparator group involved participants having received no vitamin D supplements (Group 3). Outcomes were 14-day mortality and highest (worst) score on the ordinal scale for clinical improvement (OSCI) measured during COVID-19 acute phase. Potential confounders were age, gender, functional abilities, undernutrition, cancer, hypertension, cardiomyopathy, glycated hemoglobin, number of acute health issues at admission, hospital use of antibiotics, corticosteroids, and pharmacological treatments of respiratory disorders.

Results: The three groups ($n = 77$; mean $\pm$ SD, 88 ± 5 years; 49% women) were similar at baseline (except for woman proportion, $p = 0.02$), as were the treatments used for COVID-19. In Group 1 ($n = 29$), 93.1% of COVID-19 participants survived at day 14, compared to 81.2% survivors in Group 2 ($n = 16$) ($p = 0.33$) and 68.7% survivors in Group 3 ($n = 32$) ($p = 0.02$). While considering Group 3 as a reference (hazard ratio (HR) = 1), the fully-adjusted HR for 14-day mortality was HR = 0.07 ($p = 0.017$) for Group 1 and HR = 0.37 ($p = 0.28$) for Group 2. Group 1 had longer survival time than Group 3 (log-rank $p = 0.015$), although there was no difference between Groups 2 and 3 (log-rank $p = 0.32$). Group 1, but not Group

2 ($p = 0.40$), was associated with lower risk of OSCI score ≥ 5 compared to Group 3 (odds ratio = 0.08, $p = 0.03$).

Conclusions: Regular bolus vitamin D3 supplementation was associated with less severe COVID-19 and better survival in frail elderly.

Abstract # 370

AREA: COVID-19

Impact of COVID-19 infection to hematopoietic system of patients treated in our hospital

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Introduction: COVID-19 disease is caused by a new corona virus strain which provokes severe acute respiratory syndrome. Hematological bio indexes, such as lymphopenia, neutrophilia and PMN/Lymphocyte Ratio (NLR) increase, are associated with increased severity and mortality.

Materials and methods: In total 98 blood count tests of COVID-19 patients, treated in our hospital, were assessed. 56 of them (57.2%) were male while 42 (42.8%) were female. Hematological analyzer BeckmanCoulter-DxH600 was used and the microscopic examination of blood smear was stained with May Grunwald-Giemsa. Blood count tests with pathological values of leukocytes (leukocytosis $> 10.5 \times 10^9/\mu\text{l}$, leukopenia $< 3.800/\mu\text{l}$), neutrophils (neutrophilia $> 7.500/\mu\text{l}$, neutropenia $< 2.000/\mu\text{l}$), lymphocytes (lymphocytosis $> 3.500/\mu\text{l}$, lymphopenia $< 1.500/\mu\text{l}$), haemoglobin (< 11.9 g/dl in women, < 13.4 g/dl in men) and platelets (thrombocytosis $> 400.000/\mu\text{l}$, thrombocytopenia $< 150.000/\mu\text{l}$) were evaluated.

Results: Leukocytosis was revealed in 15 patients (15.3%) and leukopenia in 19 (19.4%). Neutrophilia appeared in 26 patients (26.5%), while neutropenia in 8 patients (8.2%). Characteristic laboratory finding was lymphopenia in 90 patients (91.8%). Anemia was observed in 36 patients (36.7%), thrombocytopenia in 23 patients (23.5%) and thrombocytosis in 5 patients (5.1%).

Conclusions: COVID-19 patients appeared to have number of leukocytes within normal range. The most common finding was lymphopenia in 90 patients (91.8%) while quite common was thrombocytopenia. It seems that worsening lymphopenia and NLR increase constitute main hematological findings with negative predictive value.

Abstract # 371

AREA: COVID-19

Prevalence of sarcopenia and dinamopenia after discharge from an Acute Geriatric Covid Unit (AGCU)

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Introduction: It is well known that older patients are at risk of sarcopenia, and this risk increases in survivors of COVID-19. This is due to bedrest, inactivity, anorexia, low protein-intake, cytokine response/inflammation and corticosteroid therapy. Although sarcopenia is associated with increased risk of adverse events, muscle strength or muscle quantity are not measured in clinical routine. The aim of the study is to identify the prevalence of sarcopenia and/or dinamopenia in patients discharged from the AGCU E. O. Ospedali Galliera in Genova and to verify the need of a specific nutritional intervention.

Patients and methods: From March 2021, 20 patients (mean age 75 ± 2 years old $\pm$ SD, 12 women and 8 men), discharged from AGCU were examined, 20 days from discharge. Patients underwent clinical examination, Comprehensive Geriatric Assessment/Multidimensional evaluation, including the following aspects: functional, cognitive, nutritional, risk of pressure sores, comorbidity, polypharmacy and cohabitation status, so as to calculate the Multidimensional Prognostic Index (MPI). This index provides information about prognostic mortality and other negative outcomes (institutionalization, duration of hospital stay) and it is widely validated in the elderly and identifies three classes (low MPI-1, moderate MPI-2, high MPI-3). Patients with MPI score 1 were included. Muscle strength was measured using a dynamometer (Hand-gripTest). Muscle quantity was measured by Bioelectrical Impedance Analysis (BIA). Routine blood samples were collected including Vitamin D, folates and total protein with albumin.

Results: The body mass index (BMI) at visit time was $19 \pm 2 \pm$ SD kg/m^2 in males and $21 \pm 2 \pm$ SD kg/m^2 in females. All patients presented low levels of Vitamin D (range 4–17 ng/ml) and low folates (range: 2.4–3.1 ng/ml). Albumin was: $3.1 \pm 0.2 \pm$ SD g/dl. The nutritional evaluation revealed a low-intake of proteins. MPI was $0.30 \pm 0.02 \pm$ SD at visit time and $0.28 \pm 0.04 \pm$ SD at discharge ($p = \text{ns}$). The hand-grip Test revealed a medium muscle strength of 10 ± 2 kg in women and 20 ± 2 kg in men. BIA revealed a medium SMI in men of $10.1 \pm 0.1 \pm$ SD kg/m^2 and $7.3 \pm 0.4 \pm$ SD kg/m^2 in women. Vitamin D integration was prescribed. A supplementation with whey proteins was suggested.

Conclusions: Clinicians need to be aware of a new entity called: “acute sarcopenia”, that might occur within 6 months from COVID-19 infection. Measurement of muscle strength and mass permits an earlier identification of sarcopenia or pre-sarcopenia condition and that could lead to a better clinical care and a major impact of interventions even in low risk older patients (MPI 1). The correction of the nutritional deficits by the encouragement of a balanced nutrition or the intake of vitamins and essential aminoacids deficits, and the creation of an individual exercise therapy may prevent or reverse disability. Geriatric patients, even with a low risk MPI, must be strictly monitored in order to prevent sarcopenia.

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Abstract # 372

AREA: COVID-19

Factors determining the COVID-19 infection outcome in people ≥ 65 years of age

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Introduction: To investigate which factors are associated with the outcome of a COVID-19 infection in elder individuals, and understand how the interaction of these factors may have affected infection severity.

Methods: Retrospective observational study based on the electronic health records' data of the Basque public health system (North of Spain). Infected cases ≥ 65 years of age were studied, after excluding institutionalised and individuals admitted to a hospital at home unit. Three outcome severity categories were considered: infections followed in primary care (PC), hospitalised and intensive care unit (ICU) admissions, and deaths. Sociodemographic data, chronic medications and chronic diseases were analysed, implementing Classification and Regression Trees (CART).

Results: Of the 3354 included individuals, 53% were admitted to Hospital/ICU, and 21% died. The inter-relations between baseline variables ($p < 0.0001$), certain chronic drugs and pathologies ($p < 0.0001$) were capable of defining different outcome severity groups. Cases with better health status, female sex, non-consumers of blood nor nervous system drugs received mainly PC attention (50.5%), with a small death rate (2.6%). On the other extreme, cases with worse baseline health status, male sex and chronic nervous system drug use, presented low PC attendance and high death rates (33.5%). Cases with psychosis had the highest death rate (50.0%), among all identified subgroups.

Key conclusions: Comprehend the inter-relations of the factors that condition infection severity can lead to better prevention and treatment plans. The CART methodology can assist in this direction. Our data has generated further hypotheses, related to the digestive system diseases, currently tested by our group.

Abstract # 373

AREA: COVID-19

Body Mass Index and Mini Nutritional Assessment-Short Form as predictors of in-geriatric hospital mortality in older adults with COVID-19

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Overweight and obesity have been consistently reported to carry an increased risk for poorer outcomes in coronavirus disease 2019 (COVID-19). Existing reports mainly comprise patient cohorts usually not representative of the population with the highest mortality, i.e. the geriatric patients. Accordingly, little is known about the risk patterns related to body composition and nutrition in these patients. Our aim was to assess the relationship between (i) Body Mass Index (BMI), and (ii) nutritional status characterized using the Mini-Nutritional Assessment -Short Form (MNA-SF) scale and in-geriatric hospital mortality among patients treated for COVID-19. As a reference, the analyses were performed also in patients without COVID-19. We analyzed up to 10,031 geriatric patients with a median age of 83 years of which 1409 (14%) were hospitalized for COVID-19 and 8622 (86%) for other diagnoses in seven geriatric hospitals in the Stockholm region, Sweden during March 2020–January 2021. The associations of BMI and nutritional status with in-geriatric hospital mortality were analyzed using electronic medical records and logistic regression. After adjusting for age, sex, comorbidity, polypharmacy, frailty and the wave of the pandemic, underweight (BMI < 18.5) increased the risk of in-hospital mortality in COVID-19 patients (odds ratio [OR] = 2.30; confidence interval [CI] = 1.17–4.31), but overweight and obesity did not. Malnutrition i.e. MNA-SF 0–7 points increased the risk of in-hospital mortality in COVID-19 (OR = 2.03; CI = 1.16–3.68) and non-COVID-19 patients (OR = 6.01; CI = 2.73–15.91). Our results indicate that obesity is not a risk factor for older patients with COVID-19, but emphasize the role of underweight and malnutrition for in-hospital mortality in geriatric patients with COVID-19.

Abstract # 374

AREA: COVID-19

COVID-19 cluster management in a behavioral and psychotic symptoms of dementia (BPSD) unit

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Introduction: Response to a COVID-19 cluster in a BPSD unit requires compliance with health protective measures combined with the continuity of psycho-behavioral disorders care.

Methods: COVID-19 cluster occurred in a 20-bed BPSD unit from 08.04.2021 to 10.05.2021 in Rennes Psychiatric Hospital, France. All patients but one were vaccinated with two doses of Pfizer® vaccine, 7 have been detected positive for SARS-Cov-2 but have remained asymptomatic. We compared the frequency of behavioral disorders

before and during the cluster and drug and non-drug management in this context. In particular, we analyzed the clinical description of behavioral disorders from medical files, the prescription of psychotropic drugs and the awakening and relaxing therapeutic activities carried out during this period.

Results: No change regarding residents behaviors was identified comparing the two periods. We didn't find any new psychological disturbance during the cluster. The prescription of psychotropic drugs (antipsychotics and anxiolytics) has decreased while individual activities were carried out only in residents single rooms, targeted and of short duration: individual conversation, reading, relaxation, Snoezelen, aesthetic care, massage, drawing, memory workshop.

Key conclusions: Adapting the non-drug management of people with BPSD to the health context by favoring individual therapeutic activities has helped to stabilize the behavior of residents and avoid additional psychotropic drugs prescription.

Abstract # 375

AREA: COVID-19

Characteristics of 896 older patients with and without COVID-19 admitted to an Italian emergency department

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Introduction: SARS-CoV-2 pandemic had a huge impact on health systems worldwide and older persons paid the highest death toll, either if affected by COVID-19 or not.

Methods: Data on 70 + year-old 896 patients (with and without COVID-19) admitted to the ER of Spedali Civili hospital were retrospectively collected. In-hospital mortality was investigated using Kaplan–Meier estimators. Differences between older and younger patients (cut-off: 85 years old) were assessed using log-rank tests and stratifying by COVID-19 diagnosis.

Results: The median age was 80.7 years and 54.7% were males. Among those without a COVID-19 diagnosis (N = 567), the proportion of persons 85 + year-old, the number of chronic conditions, the prevalence of atrial fibrillation, cognitive impairment, falls, and the proportion of chronic prescription of neuropsychiatric drugs were higher. Among those admitted to the hospital (N = 561, 62.6%), 10-day in-hospital mortality was 32.7% in patients diagnosed with COVID-19 and 8.5% among the others. Among patients diagnosed with COVID-19, a significant difference in mortality was observed between younger and older ones.

Conclusion: Our data about older patients admitted to a major ER in Northern Italy show that a share of the older population sought emergency care for clinical conditions other than SARS-CoV-2 infection. Whether the relationship between older age and COVID-19 mortality is entirely explained by a biological substratum or at least partially related to management decisions due to saturation of intensive care capacity during the worst days of the pandemic, should be further investigated.

Abstract # 376

AREA: COVID-19

A-synchronous and synchronous remote exercise interventions to prevent physical decline during COVID-19 lockdown in community-dwelling older adults

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Background: More than 50% of seniors are physically inactive which is one of the major causes of physical declines. COVID-19 lockdown accentuated these phenomena. Exergames are a potential solution to counteract physical performance declines in older adults but requests specific materials. Our study aimed to explore if different remote physical activity modalities (interactive (I) vs. recorded (R)) prevent physical decline during COVID-19 lockdown (wave 1&2) in community-dwelling older adults.

Methods: 129 older adults (> 60 years, inactive (< 150 min/week)) were randomized in 4 groups (G) to follow a 12-week intervention (3-sessions/week, 1 h/session): (1) I-G (n = 38); (2) Interactive-Recorded-Interactive-G (IRI-G; n = 22); (3) Recorded-Interactive-Recorded-G (RIR-G; n = 24); (4) R-G (n = 45). Interactive sessions were supervised by kinesiologists and realized in synchronous mode (using Zoom®). Recorded sessions were unsupervised and realized in asynchronous mode (using a website).

Results: Drop-out rates were 16% in I-G, 14% in IRI-G, 29% in RIR-G and 46% in R-G. Adherence was acceptable and similar across groups (> 75%). Each group reported a similar level of satisfaction (> 65%) and enjoyment (> 60%). Functional capacities (walking speeds; 5rep-Sit-to-Stand; balance), muscle power (10-rep-Sit-to-Stand) and muscular endurance (30-s-Sit-to-Stand) improved significantly in all groups (p < 0.05). Muscle power and endurance improved to a greater extent in groups having a higher level of interactivity.

Conclusion: The use of different remote physical activity modalities seems feasible, acceptable and beneficial. However, having more interactive sessions than pre-recorded sessions in the intervention modality ratio seems more effective to promote lifestyle habits and physical health. Further researches are needed to confirm our promising results.

Abstract # 377

AREA: COVID-19

Weight loss in nursing home older adults during the first COVID-19 pandemic wave: viral infection or disruption of nutritional care organization?

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Introduction: During the first COVID-19 pandemic wave, older adults living in nursing homes were severely affected by the viral disease and by disruption of the nutritional care organization at the time of containment. We aimed to measure the residents' weight change and identify the factors involved in weight loss during this period.

Methods: Retrospective study in three nursing homes during the 3-months period of first pandemic wave. At the beginning of the containment, collected data included: weight, BMI, disability, legal protection, food texture and required assistance for eating. Weight was also collected at the end of containment. The COVID-19 was confirmed by RT-PCR. Residents deceased during the period were not included.

Results: Among the 317 included residents (72% female, mean age 88, 48% with severe disability, 41% under legal protection), 111 developed COVID-19 and survived. A weight loss $\geq 5\%$ in 3 months was observed in 32% of residents. The COVID-19 (OR 1.97; IC 95% [1.06–3.71], p = 0.03) and the need for stimulation to eat (OR 2.59 [1.17–5.83], p = 0.02) were associated with weight loss $\geq 5\%$ after adjustment for the loss disability severity, legal protection, food texture, BMI, age, and center.

Key conclusions: The COVID-19 negatively impacted the nutritional status of older adults living in nursing homes. Weight loss was particularly observed in residents who were affected by the infection and those who needed a stimulation to eat, suggesting direct nutritional consequences of COVID-19, as well as organizational difficulties in providing nutritional care during this period.

Abstract # 378

AREA: COVID-19

When the COVID-19 pandemic hit nursing homes in Japan: proactive strategies for community infections and organizational resilience

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Introduction: During the COVID-19 pandemic, nursing homes have been particularly hard hit internationally. In Japan, between February 2020 and May 2021, approximately 20% of the total COVID-19 outbreaks have been found in nursing homes. Nursing homes had to continue providing services, while ensuring preparedness for community infections. This paper aims to report these efforts in nursing homes based in western Tokyo, and their impact on the ground.

Methods: The case study method was used to test the strategies adopted in our nursing homes (78 beds). At the outset, as minimum official guidelines and supports were offered, counter-measures had to be devised locally based on the information available. We adopted an infrared monitoring camera and a negative pressure clean booth in order to keep the number of contacts to a minimum. Polymerase chain reaction (PCR) and antibody tests have been carried out on a regular basis.

Results: During the 15-month period, there were only three cases where admissions had to be declined due to the risk of infection. While responding to the increasing demand, there were 10 cases where older people were admitted to our facilities even when they exhibited some undiagnosed symptoms. As of May 2021, none has been affected by COVID-19. These results are significant given that higher positive rates of antibody are recorded for this locality in Tokyo.

Key conclusions: Faced with the challenge of balancing risk and duty of care for the community, organizational resilience was provided by proactive implementation of evidence-based counter-measures and constant monitoring. This study was in part supported by the Japan Keirin Autorace Foundation and the Toyota Foundation.

Abstract # 379

AREA: COVID-19

Impact of the COVID-19 pandemic on unplanned hospitalizations for geriatric syndromes in France from January to October 2020

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Introduction: The fear of COVID-19 and control measures taken since the beginning of the crisis have modified lifestyles and utilization of the healthcare system. The objective was to study the national and regional impact of the COVID-19 pandemic on unplanned hospitalizations for geriatric syndromes (GS) among persons aged 65 years and older between January and October 2020 in France.

Methods: Data from the French Health Insurance Database were used to identify unplanned hospitalizations from January 2017 to October 2020 for eight GS. National and regional incidence rate ratios (2020 versus 2017–2019) were estimated using Poisson regressions (during and after lockdown, and biweekly). Subgroups analysis according to age, sex, comorbidities, type of residence and region were done.

Results: A significant decrease in hospitalizations for all GS was observed during the first lockdown: – 41% for dementia, – 46% for cognitive decline, – 17% for delirium, – 33% for pressure ulcers, – 54% for incontinence, – 35% for dehydration, – 38% for malnutrition, – 29% for falls/injuries. This decrease persisted after lockdown for dementia, dehydration, malnutrition and falls/injuries.

A dose–response relationship was observed between decrease in hospitalization and regional level of COVID-19 mortality.

Conclusion: In France, the COVID-19 pandemic, mostly during the first lockdown, led to a dramatic decrease on unplanned hospitalizations for GS. It was not compensated after lockdown. This underuse of care for important health issues may have a mid- to long-term impact on frailty, functional decline and mortality. It seems necessary to monitor this evolution and to set up prevention actions to reduce its impact.

Abstract # 380

AREA: COVID-19

“RAHA”-rises AMIDST COVID 19 pandemic in Qatar

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Introduction: Dementia with its wider impact straining through the fabric of Individuals, families, society, globally at large during regular times, undoubtedly during this unprecedented time of COVID Pandemic carries the risk of breaking the carer support systems. Surveys across the globe has highlighted the increased level of stress and isolation among people with Dementia and their caregivers. Hence for our Dementia carers in Qatar, Qatar National Dementia Plan Task-force Team unveiled the unique carer support service—“RAHA” (Comfort -in Arabic) -The National Alzheimer’s and Memory Services Helpline.

Objectives: To establish a Helpline which is Easily accessible to all the sections of the society across the State of Qatar Provide confidential support to people with dementia and the care givers. Has input from highly skilled Multispecialty Team including Geriatricians and Geriatric Psychiatrist. Direct access to Memory Assessment services for a prompt and comprehensive assessment. Easy accessibility for evaluation of physical and mental health needs including community outreach services.

Methods: “RAHA” “The National Alzheimer’s and Memory Services Helpline remains unique in its structure as it is manned by a multi-disciplinary team with multi-lingual skills assigned to support callers who contact the helpline.” RAHA “ works in collaboration with National Geriatric Helpline which provides immediate telephonic consultation from a Geriatrician and other specialties for physical health issues.

Results: Since the launch of this Helpline on June 15th, 2020, It has received over 1500 calls from service users from all sectors including Government and Independent sector healthcare.

Abstract # 381

AREA: COVID-19

Impact of the first covid19 wave in nursing homes on psychological and emotional distress in Nursing home residents, staff and families

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Introduction: The Covid pandemic and its consequences had an important impact among older subjects, particularly those living in Nursing Homes (NH). A complete lockdown was declared in France from 17 March–10 May 2020. The lockdown associated to a major spread and mortality related to COVID-19 in NH brought stress and psychological consequences for all the persons living or working in NH.

Methods: The French national geriatric and gerontology society created an online and cross sectional survey sent to psychologists, occupational therapists and psychomotor therapists at the end of the first Covid 19 lockdown in France. The study was approved by the Nice Ethical committee.

Results: Over the 1080 respondents (60% psychologists, 29% occupational therapist, 11% psychomotor therapists), professionals reported feeling fear (75.9%), fatigue or exhaustion (84.6%) and inability to manage the emotional burden of the health care (78.3%). The most frequent consequences for residents were suffering from not seeing their relatives (88.0%) and feeling sad (80.1%); for the nurses ‘staff, anxiety (76.1%) and fear to contaminate the residents (74.8%); and for the relatives, sadness (84.1%). However the latter were satisfied by the numeric communication organized by the NH staff (78.6%). One-third of the respondents worked in NH with at least one Covid case. The figures did not differ according to NH with or without Covid cases.

Discussion: The first wave of the pandemic lockdown had a high psychological and emotional distress for the NH residents, their relatives and the NH staff, including nurses and psychological professionals.

Abstract # 382

AREA: COVID-19

COVID-19 and elderly mental health

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Introduction: Our aim was to review the relationship between COVID-19 associated factors and mental health issues.

Methods: The sample was comprised of 60 participants. Our inclusion criteria were a minimum age of 65 years and consent to participation in this study. We assessed the psychiatric impact with the Depression, Anxiety, and Stress Scale (DASS21).

Results: Thirty-three cases (55%) were male. The mean age was 71 ± 6 , 47. The prevalence of depression, anxiety, and stress was 55%, 70%, and 30%; respectively. Twenty participants (33%) had a confirmed COVID-19 referring to positive RT-PCR. Anxiety was associated with COVID-19 related symptoms (before the test), and the positive infection status of a family member or a friend (p : 0.03 and 0.003 respectively). While the duration of hospital stay was substantially and independently correlated with depression score (r : 0.807, p : 0.005), none of the COVID-19 status and its severity was correlated to depression, stress or anxiety. Other stressors such as fear of contracting an infection (75%), health-related issues including COVID-19 infection, pain and worsening of existing diseases (66.1%), fear of death (56.7%), and family tension (26%) were often reported by participants. Participants reporting health-related issues and family tension were more likely to develop depression (p = 0.007 and p = 0.06 respectively).

Conclusion: The severity of COVID-19 as an infectious disease does not necessarily imply the outbreak of mental health issues. As a point of fact, stressors due to isolation and the dire need for hospitalization lead to mental health disorders within the patient.

Abstract # 383

AREA: COVID-19

COVID-19 and bridging the gap of age-related disparities in non-urgent, out-of-hours unplanned care telehealth services: a make-or-break opportunity?

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Background: The use of telehealth services for managing patients remotely has escalated during the COVID-19 pandemic. However, empirical evidence monitoring uptake of these services by older adults is lacking. We therefore seek to explore changes in the use of telehealth services by older adults aged 65 years and over surrounding the COVID-19 pandemic.

Methods: A retrospective descriptive study was conducted using register data obtained from the 1733 telephone-based non-urgent, out-of-hours unplanned care service in the Flemish region of Belgium. All calls received between January 1, 2019 and December 31, 2020 were analyzed.

Results: N = 56,766 calls were included for analysis. Of the total incoming calls, n = 10,890 (19.2%) involved cases related to older adults and were distributed as n = 5617 (22.2%) and n = 5273 (16.7%) before- and during the COVID-19 period respectively (p < 0.001). The majority of calls dispatched as “higher urgency” also involved older adults (n = 2159 (82.7%) before- versus n = 1658 (76.9%) during the COVID-19 period (p < 0.001)). Of all COVID-19 related calls, only n = 714 (6.7%) of the cases concerned older adults.

Conclusion: Our results highlight a notable decline in the number of calls made to the OOH 1733 service during the COVID-19 period concerning older adults compared to the previous year (i.e. non COVID-19 period). While older adults continue to account for a large majority of higher urgency calls, findings show a significant decline in call urgency during the COVID-19 period for this population group. Older adults are also less not likely to contact non-urgent, out-of-hours unplanned care services regarding COVID-19 related concerns.

Abstract # 384

AREA: COVID-19

A study on the optimization of treatment in patients surviving COVID-19 in the 2 week period following discharge from an acute COVID-19 ward at St Vincent de Paul Hospital

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The purpose of this study was to monitor the optimization of treatment made in older patients following discharge from an acute COVID-19 ward. Prior to returning to their long-term ward these patients were transferred to a transitional ward where they were reassessed by an MDT with the aim of giving these patients a 2-week period of rehabilitation and precautionary quarantine. The study was carried out in a specialized hospital for the elderly and includes 56 patients seen over a 2-week period. The ward consultant and his team carried out treatment changes using clinical and evidence-based expertise. The researcher kept track of the changes in an attempt to uncover any trends in medication reviews. The data showed that the top three most commonly stopped medications post COVID-19 infection were enoxaparin, benzodiazepines and oral rehydration solutions. The most commonly started medications following

COVID-19 infection were laxatives and warfarin. By therapeutic class, the most commonly started medications fell into the classes of laxatives, supplements and anticoagulants. Recommendations for assessment and further treatment adjustment were left in the patients' file upon their return to their long-term care wards. The study revealed that following a period of acute illness secondary to COVID-19 infection a period of observation that allowed optimization of medications is an essential element of their holistic rehabilitation.

Abstract # 385

AREA: COVID-19

COVID-19 in-hospital mortality and use of renin-angiotensin system blockers in geriatrics patients

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Introduction: The role of treatment with renin-angiotensin-aldosterone system blockers at the onset of COVID-19 is not known in the geriatric population. The aim of this study was to assess the relationship between angiotensin receptor blockers (ARBs) and angiotensin-converting enzyme inhibitor (ACEI) use and in-hospital mortality in geriatric patients hospitalized for COVID-19.

Methods: This observational retrospective study was conducted in a French geriatric department. Patients were included between March 17 and April 18, 2020. All consecutive 201 patients hospitalized for COVID-19 were included. All non-deceased patients had 30 days of follow-up and no patient was lost to follow-up. Demographic, clinical, and biological data and medications were collected. In-hospital mortality of patients treated or not by ACEI/ARB was analyzed using multivariate Cox models.

Results: Mean age was 86.3 (8.0) years, 62.7% of patients were institutionalized, 88.6% had dementia, and 53.5% had severe disability (activities of daily living [ADL] score < 2). Sixty-three patients were treated with ACEI/ARB. In a multivariate Cox regression model including age, sex, ADL score, Charlson index, renal function, dyspnea, C-reactive protein, and white blood cell count, use of ACEI/ARB was significantly associated with lower in-hospital mortality (HR = 0.52, 95% CI 0.27–0.99), P = 0.048).

Conclusion: In very old subjects hospitalized in geriatric settings for COVID-19, mortality was significantly lower in subjects treated with ARB or ACEI before the onset of infection. The continuation of ACEI/ARB therapy should be encouraged during periods of coronavirus outbreak in older subjects.

Abstract # 386

AREA: COVID-19

SARS-CoV-2 causing postural orthostatic tachycardic syndrome in previously healthy adults

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This case series focuses on excessive orthostatic hypotension leading to a diagnosis of postural tachycardic syndrome (POTS) post COVID-19 infection. This condition is one of the most common autonomic disorders with a wide range of clinical manifestations including postural tachycardia, dizziness, orthostatic intolerance, presyncope, chest pain, palpitations and exercise intolerance. ¹POTS is characterised by a sustained heart rate increment > 30 beats/min within 10 min of standing or head up tilt. All patients reported a history of postural light-headedness, pre-syncope, exercise intolerance and palpitations. They were all known or referred to our falls clinic for work up. Autonomic testing was abnormal in all patients tested. Clinicians should be alert to these symptoms in order to identify symptomatic patients, targeted therapy can enhance their quality life. None of this previously healthy cohort have returned to work and the case series highlights the future burden that 'long covid' will have on our healthcare systems.

Abstract # 387

AREA: COVID-19

Serologic response to the BNT162b2 COVID-19 vaccine in older cancer patients

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Introduction: Older adults and individuals receiving immunosuppressive therapy have demonstrated lower seropositivity to the BNT162b2 mRNA COVID-19 vaccine. The aim of the study was to compare older and younger cancer patients' serologic response to the vaccine.

Methods: Patients in the daycare unit or oncology clinic at Hadassah Hebrew University Medical Center (HHUMC) were invited to participate in the study. A blood sample was collected from patients at a median of 55 days (range: 21–97) after they received the second vaccine. Serum samples were analyzed at the virology laboratory at HHUMC for the spike protein (S) (Liaison SARS-CoV-2 S1/S2 IgG, DiaSorin, Saluggia, Italy).

Results: Seronegativity was similar between patients ≥ 65 years old (8/68, 11.8%) and < 65 years old (12/71, 16.9%, p = 0.4). Active chemotherapy treatment was associated with seronegativity but was less common among older patients treated with chemotherapy (6/39, 15.4%) than among the younger ones (9/39, 23.1%). On the other hand, the longer the interval from receiving the second vaccine, the more prominent the decline in the antibody titer, especially among cancer patients ≥ 65 years old.

Conclusion: Response to the BNT162b2 mRNA COVID-19 vaccine is similar between older and younger cancer patients, although signs of the antibody titer's decline were observed after long intervals from receiving the vaccine. Testing for COVID-19 should therefore be considered in the case of suspicious symptoms or exposure to

COVID-19 patients, mainly among older cancer patients treated with chemotherapy.

Abstract # 388

AREA: COVID-19

Prevalence of oropharyngeal dysphagia and malnutrition among hospitalized patients with COVID-19 at the three waves of the pandemic

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Patients' phenotype affected by SARS-COV-2 infection changed between the three waves of the pandemic mainly according to age and functional status. Our study aimed to assess the prevalence of malnutrition (MN), weight loss (WL), oropharyngeal dysphagia (OD) and mortality rate among the 3 waves of COVID-19 pandemic in patients hospitalized at Mataró Hospital (Catalonia, Spain). A prospective observational study (NCT04346212) was performed with a clinical, nutritional and swallowing assessment. The intervention during the first wave was mainly observational and a systematic multimodal nutritional intervention (screen and treat) was implemented in the 2nd and 3rd wave consisting on a texturized hypercaloric-hyperprotein diet, oral nutritional supplements (600 kcal + 30 g protein/day) and fluid thickening. 205 patients (69.3 ± 17.5 years; 30.2% from nursing home (NH)) in the 1st, 226 (66.4 ± 17.5 years; 9.0% NH) in the 2nd and 100 (71.0 ± 17.0 years; 14.0% NH) in the 3rd wave were included (age: $p = 0.031$ 2nd vs. 3rd). Prevalence of MN was 45.5%, 35.5% and 40%, respectively. WL was maximal in the 1st wave (6.6 ± 5.8 kg) and reduced during 2nd (3.3 ± 4.2 kg ($p < 0.0001$ vs. 1st) and 3rd waves (4.6 ± 4.8 kg) (ANOVA: $p < 0.0001$). Prevalence of OD on admission was 51.7% on the 1st, 31% on the 2nd and 39% on the 3rd wave. Mortality was 10.7%, 13.5% and 20.8% ($p = 0.023$ between 1st vs 2nd wave). Prevalence of OD, MN and mortality were very high among hospitalized COVID-19 patients in the three waves of the pandemic. An early and proactive multimodal intervention greatly improved nutritional status and minimized the WL in hospitalized COVID-19 patients.

Abstract # 389

AREA: COVID-19

Can integrated care help in meeting the challenges posed on out health care systems by COVID-19? Some preliminary lessons learned from the European VIGOUR Project

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Introduction: The COVID-19 pandemic puts health and care systems under pressure and constitutes a critical issue, especially for older, vulnerable people and patients with pre-existing medical conditions [1]. Against this background, care systems are in need of answers: how can vulnerable populations be protected while also getting the best care in this exceptional situation and how can care systems be equipped to continue complex care management during the pandemic? This paper highlights challenges arising in the care for older and vulnerable populations in this context and reflects upon possible perspectives making use of nested integrated care approaches developed within the EU-funded project VIGOUR (Grant Agreement Number 826640).

Methods: Current challenges, lessons learned and requirements to foster integrated care during the COVID-19 pandemic were systematically collected from the VIGOUR partner regions, analysed and clustered into thematic categories.

Results: Three major pillars for driving innovation in integrated care under emergency situations were detected: (1) the need for technology related innovation, such as remote service delivery to individuals; (2) the need for quarantine related innovation, such as cross-service guidelines for home isolation and (3) the need for care pathway related innovation, such as integrated clinical management of COVID-19 patients.

Key conclusions: eHealth, quarantine management and integrated clinical management represent essential features leading health and social care systems towards a more integrated care approach and serve as valuable tools for facilitating integrated care processes also during the COVID-19 pandemic.

Reference:

1. World Health Organization. Q&A on coronaviruses (COVID-19). Available from: <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>

Abstract # 390

AREA: COVID-19

One COVID-19 outbreak on a general medical ward one year into the global pandemic

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Introduction: Nosocomial spread of Coronavirus disease 2019 (COVID-19) can be catastrophic in a healthcare setting where patients are likely older and co-morbid, therefore vulnerable to severe infection. Midland Regional Hospital Tullamore experienced a COVID-19 outbreak in a general medical ward in January 2021. The ward was then closed to further admissions, all patients were declared close contacts, kept in isolation for 14 days and underwent repeat polymerase chain reaction (PCR) testing. We aimed to assess the complications of being a close contact of a COVID-19 positive patient in a general medical ward.

Methods: This was a retrospective study of all patients on the ward on 26/01/2021. Each patient underwent repeat PCR testing on day 0 and if symptomatic as per infection control guidelines at the time of the outbreak. We performed descriptive analyses of the outbreak with chart reviews.

Results: There were 31 patients. The mean age was 71 (range 30–92). 11 discharges were delayed—the average of which was 24 days. There were 3 failed discharges. 3 individuals were still inpatients at the time of writing, 7 weeks later. 10 patients (1/3) contracted COVID-19 during their admission. 4 COVID-positive patients had severe infection. One surgical procedure was cancelled due to COVID-19 infection. Two patients died as a result of severe infection.

Key conclusions: This outbreak serves as an example of the devastating outcomes of nosocomial spread of COVID-19. A focus on reduction of nosocomial spread is essential in protecting our vulnerable inpatient population.

Abstract # 391

AREA: COVID-19

COVID-19 & ISTH guidelines for prevention of thromboembolic disease: safety or not in older adults ?

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Prevention of thrombosis in COVID-19 is a challenge especially in older adults regarding the tolerance and bleeding risk. The International Society on Thrombosis and Haemostasis (ISTH) had published in July 2020 guidelines for this management completed by American Society of Hematology recommendations in January 2021. New strategies appeared for anticoagulant management between standard prophylactic dose or increasing prophylactic dose or introduction of curative dose. We make the hypothesis that older adults didn't have a higher risk of bleeding if ISTH guidelines were applied compared to younger. This preliminary study was a retrospective study leading from 03/01/2020 to 12/31/2020 in medicine departments of Hospital University of Bordeaux. Inclusion criteria were: hospitalized adult of 50 years and more, with RT PCR COVID 19 positive. Descriptive and comparative analysis were performed between the group treated according ISTH/ASH guidelines and the group not treated according those recommendations. Multivariate linear regression was led for identified risk factors of bleeding. 214 patients were included, 123

were treated according to ISTH/ASH guidelines (57%). No difference was observed between the two groups at the exception curiously of more frequent patients with D dimer level > 3000 ng/ml in the group without ISTH/ASH recommendations (38% vs 8%, p value < 0.0001). CALL score was no different between the two groups. Presence of comorbidities in CALL Score were significantly higher in group without following of ISTH/ASH guidelines (72% vs 57%, p = 0.04). Following ISTH/ASH recommendations was not associated to hemorrhagic events. Risk factors associated to major hemorrhagic events were: D-dimer level > 3000 ng/ml (OR 28 IC 95% [2; 379], p 0.012), oral anticoagulant before hospitalisation (OR à 2.1 IC 95% [1.2; 3.5], p = 0.008), antecedent of gastric duodenal ulcer (OR = 45, IC 95% [2.5; 815] p = 0.01). Risk factors of minor hemorrhagic events were: BMI > 30 kg/m² (OR = 5, IC 95% [1.1; 24.9], p = 0.04), cognitive impairment (OR = 4.8, IC 95% [1.2; 18.7], p = 0.025), cancer without metastasis (OR = 5.7, IC 95% [1.5; 21.8], p = 0.012). Following ISTH/ASH recommendations was nearly protective of hospital mortality (OR = 0.23, IC 95% [0.05; 1], p = 0.06). Risk factors of hospital mortality were: BMI < 18 kg/m² (OR = 55, IC 95% [4.9; 616], p = 0.001), hemorrhagic event during hospitalization (major: OR = 15, IC 95% [1.8; 140], p = 0.01; minor: OR = 29, IC 95% [4; 210], p = 0.001) and venous thromboembolism during hospitalization (OR = 269, IC 95% [5.5; 13150], p = 0.005). Application of ISTH guidelines in management prevention thromboembolism seems to be as safe in older adults than in younger. Particular attention is necessary for patients treated by anticoagulants at long term, BMI > 18 or BMI < 30, gastric duodenal ulcer, cognitive impairment.

Abstract # 392

AREA: COVID-19

Repercussions of the pandemic on the health care of the non-COVID patient

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The COVID-19 pandemic has been a challenge for health systems. Mortality rates differ 0.1–25% (SMO). However, death from non-communicable diseases continues to be more frequent. Of the 56 million people who died in 2017 in the world (49% older than 70 years), the most relevant etiology was cardiovascular, oncological and respiratory diseases. 23% of deaths in the first 5 months of 2020 were caused by diseases of the circulatory system. Infectious diseases, which include COVID-19, were the second leading cause of death (20.9%). All of this should make us reflect on the deterioration in healthcare for non-COVID patients. Cancer patients have been particularly affected by the delay in tests and treatments: an increase of up to 9.6% in deaths from breast cancer at 5 years and from colon cancer of 16.6% is estimated. The number of chemotherapy treatments fell 9.5% during 2020 compared to 2019. Even the number of patients recruited into the trials suffered, with the implications for future scientific advances that this may mean. In the care of acute myocardial infarctions, the treatment delay has increased by 15%. In elderly patients, especially institutionalized, social isolation constitutes functional and cognitive deterioration, depressive syndromes ... worsening their quality of life. The Spanish Patient Organizations Platform highlights that 22.8% of the patients tried to resist as much as possible so as not to travel to health centers, for fear of contagion. We must learn from the mistakes of the past so as not to repeat them in the future.

Abstract # 393**AREA: COVID-19****Health trajectories of frail, older people while cocooning during the COVID-19 pandemic**

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Introduction: Cocooning, i.e. staying at home and reducing interaction with others, was a key part of the strategy to protect older people during the COVID-19 pandemic. Unfortunately, there are concerns this has had a negative impact on the physical and mental wellbeing of those who have been isolated.

Methods: We completed a survey of 150 patients (55% female, mean age 79.8 years, average Clinical Frailty Scale 4.8) attending ambulatory medical services in a large university hospital. Questions were focused on: access to healthcare services, mental health, physical health, and attitudes to COVID-19 restrictions.

Results: Almost 40% reported that their mental health was 'worse' or 'much worse' while cocooning, while over 40% reported a decline in their physical health. Over 57% had a scheduled healthcare-related visit cancelled while cocooning, most frequently hospital outpatient appointments. Worryingly, almost 1/6 reported not seeking medical attention for an illness that they would usually. Of these, half did not as they were worried about catching COVID and 46% did not as this service was not currently available to them.

Key conclusions: The COVID-19 pandemic and lack of access to essential services, both medical and social, has had a devastating impact on older people. This is evident in both the acute presentations to hospital and the longer-term impact it has had on health and function. It is important that in the future clear policies are in place to enable older people to access care when they need it.

Abstract # 394**AREA: COVID-19****Effectiveness of acquired or induced immunity in a SARS-CoV-2 geriatric cluster**

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Background: A major problem of SARS-CoV-2 pandemic has been the appearance of clusters of patients in geriatric wards with a very high rate of attack.

Methods: During April 2021 we identified two cases of symptomatic SARS-CoV-2 infection in a geriatric post-stroke rehabilitation service. A screening of all 21 patients was therefore performed systematically every 5 days until the 15th day after the last detected case by a nasal molecular test (PCR). We then assessed the number of COVID-19 cases detected based on three factors: geographic isolation (the service is spread over two different floors of a single building), vaccine administered at least 21 days before the appearance of the first case (1 or 2 doses of Comirnaty), and medical history of COVID-19 (all confounded viral mutations).

Results: Of the nine patients previously affected by SARS-CoV-2, none was found to be infected. Of the five vaccinated patients, none was positive no more. Among the seven unvaccinated patients without previous history of COVID-19, four were found to be infected (66%). The outbreak practically occurred on only one floor of the ward, sparing patients on the floor below.

Key conclusions: In our patient group, infection by SARS-CoV-2 occurred only in non-immune patients (previous disease or vaccine). In this group, the virus spread according to a criterion of geographic proximity. Immunization of patients to SARS-CoV-2, either by infection or by vaccine, should stop the extension of infectious clusters into geriatric services; however, isolation of detected cases remains a cornerstone in the control of hospital epidemics.

Abstract # 395**AREA: COVID-19****COVID-19 outbreaks in long-term care facilities despite full vaccination with BNT162b2 of a majority of residents: a national French survey**

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Background: The effectiveness of SARS-CoV-2 vaccination is poorly known in subpopulations at high risk, like older people in long-term care facilities (LTCF).

Methods: We identified, using national professional networks, LTCF that suffered COVID-19 outbreaks despite having completed a SARS-CoV-2 vaccination campaign. Facilities that accepted to participate sent data, using predefined collecting forms, on the number of residents exposed, their vaccination status and the number, characteristics and evolution of patients infected. COVID-19 cases were defined by a positive RT-PCR.

Results: We identified 31 LTCF suffering an outbreak in March–April 2021, of which 27 participated, cumulating 1768 residents, 77.9% fully vaccinated (two doses of vaccine completed > 7 days before outbreak onset) and 5.7% partially vaccinated. All facilities employed BNT162b2 vaccine. There were 365 cases of SARS-CoV-2 infection. Mean attack rate were 18.0% (95% CI 12.8–23.2) among fully vaccinated residents and 27.5% (95% CI 16.3–38.7) among unvaccinated ones. Severe cases developed in 55.3% of unvaccinated patients, compared with 22.9% of fully vaccinated (RR 4.17, 95% CI 2.43–7.17). Mortality was 26.3% in unvaccinated and 6.5% in vaccinated patients (RR 5.11, 95% CI 2.49–10.5). Estimated vaccine effectiveness was 34.5% (95% CI 18.5–47.3) for preventing SARS-CoV-2 infection, 58.6% (43.8–69.6) for preventing severe disease and 75.2% (54.6–86.4) for preventing death from COVID-19.

Conclusions: Outbreaks of COVID-19 including severe cases can occur in LTCF despite full vaccination of a majority of residents. Overall, vaccine effectiveness seems to be diminished in this population but remains high for preventing severe disease and death. Preventive measures should not yet be abandoned in those settings. Keywords: COVID-19, SARS-CoV-2, vaccination, outbreak, older adults, long-term care facility.

Abstract # 396

AREA: COVID-19

Evaluation of the presence of dermatological symptoms in covid cases treated in primary care

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Objective: ¹To determine the frequency of the dermatological symptoms of the disease by COVID in the population of two Basic Urban Health Zones. (2) Analyze the clinical dermatological pathologies that required evaluation by the hospital dermatology service.

Design: Descriptive, cross study.

Setting: Two Primary care centres. Subjects. All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with dermatological symptoms for every 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 inter consultations (IC) were made to hospital specialists. 8.1% of these ICs went to dermatology (87.4% with normal indication, 10.6% preferential and 2% urgent). Of the 41 patients referred to dermatology with normal priority, the causes stand out, 46.34% due to nonspecific dermatitis, 7.3% due to viral warts and 7.3% due to acne. The 5 patients referred preferably were 2 cases of dyschromia and the rest due to condylomata acuminata, open wound and alopecia. One patient was urgently referred for melanoma.

Conclusions: The clinical evaluation of the COVID-19 patient with persistent dermatological symptoms in Primary Care (PC) has to follow principles similar to those of the usual clinical practice of dermatological symptoms in the field of PC (anamnesis, ruling out previous pathologies and symptom-oriented physical examination). Evidence-based clinical practice guidelines are necessary for the management of the dermatological symptoms of COVID-19 in PC.

Abstract # 397

AREA: COVID-19

Evaluation of the presence of gynecological symptoms in covid cases treated in primary care

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Objective: ¹To determine the frequency of the gynecological symptoms of the disease by COVID in the population of two Basic Urban Health Zones. (2) Analyze the gynecological clinical pathologies that require evaluation by the gynecology service of the hospital.

Design: Descriptive, cross study.

Setting: Two primary care centres.

Subjects: All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with gynecological symptoms for every 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 interconsultations (IC) were made to hospital specialists. 9.56% of these CI attended gynecology (89% with normal referral and 11% with preference). Of the 49 patients referred to gynecology with normal priority, the causes stand out, 21.8% due to preventive activities, 9% due to human papillomavirus infection, 7.3% due to polycystic ovary and 7.3% due to the presence of an intrauterine device. The 6 patients referred with preferential priority were in 2 cases for postmenopausal metrorrhagia and the remaining 4 for uterine leiomyoma, cervical neoplasia screening, nipple fissure and vulvitis.

Conclusions: The clinical evaluation of the COVID-19 patient with gynecological symptoms in PC should follow similar principles to those of the usual clinical practice of gynecological symptoms in the field of PC (anamnesis, ruling out previous pathologies and symptomatic physical examination). Evidence-based clinical practice guidelines are necessary for the management of gynecological symptoms in COVID-19 cases in PC.

Abstract # 398

AREA: COVID-19

Use of antibiotic therapy at the end of life

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¹Ramón y Cajal Hospital

Objective: To review the use of antibiotics in the last year of life of patients who died after admission to a geriatric acute care unit.

Methods: Observational, retrospective study of all patients who died in an acute geriatric hospitalization ward in 2018. We registered demographic, functional and clinical data; number of infections; use of antibiotics and hospital admissions due to infection in their last year of life; cause of death; and care received in the final phase of life.

Results: 117 patients (mean age 92 years, 71.6% women), 25.9% living in care homes, most with severe physical and mental disability and geriatric syndromes. 53.45% had been diagnosed with a terminal disease, 30.2% had advanced dementia. However, only 6% were under follow-up by a palliative care team. 71.6% died from an infection. 87.9% were treated with antibiotic therapy during hospitalization, only 8.6% had a microbiological confirmation. 45.7% continued with antibiotic therapy in the 48 h prior to death. In the final year of life, 46.6% received 3 or more cycles of antibiotics and 84.6% had at least an additional hospitalization due to an infection. As complications, 10% developed infections with multi-resistant bacteria and 0.9% suffered from an infection by *Clostridium difficile*.

Conclusion: Infections were the most frequent cause of death in older patients who died during acute hospital care. More than half had a terminal illness. During the final year of life, almost half of the patients had recurrent infections that were treated with antibiotic therapy.

Abstract # 399**AREA: COVID-19****Joint pain among the main symptoms of COVID-19**

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Objective: ¹Determine the frequency of COVID disease arthralgias in the population of two urban Basic Health Zones. (2) Analyze arthralgias that require evaluation by the trauma and rehabilitation service.

Design: Descriptive, cross study.

Setting: Two Basic Urban Health Zones.

Subjects: All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with arthralgias for every 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 interconsultations (IC) were made to a specialized hospital. 6% of these HF was a rehabilitation (88.5% with normal character of referral, 8.5% with preference and only 3% urgently). 12% were referred to trauma (92% with normal referral nature, 6.5% with preference and only 2.5% urgently). The most frequent pathologies consulted to rehabilitation and traumatology were due to low back pain, cervical pain, back pain and myalgia.

Conclusions: As a main conclusion, the number of CI performed by a team from primary care (PC) to specialized care is a reference of their correct functioning and their ability to resolve. The clinical evaluation of the COVID-19 patient with persistent arthralgic symptoms in PC has to follow similar principles to those of the usual clinical practice of arthritis symptoms in the field of PC (anamnesis, ruling out previous pathologies and symptom-oriented physical examination). Evidence-based clinical practice guidelines are necessary for the management of painful symptoms of COVID-19 in PC.

Abstract # 400**AREA: COVID-19****COVID-19 public health precautions amongst middle-aged and older adults in Europe and Western Asia**

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Background: Public health precautions against COVID-19 include reducing contacts, mask-wearing, social distancing, and increased hygiene measures. As the pandemic continues, it is important to understand their prevalence amongst middle-aged and older adults to better inform public health recommendations for this and future pandemics.

Methods: This study presents findings from 41,622 community-dwellers aged ≥ 50 years in 27 countries in Europe and Western Asia participating in the SHARE study (June–August 2020). A Protective

Behaviour Index (PBI) was created, summed from five self-reported criteria: reduced contacts (overall decreased frequency of meeting more than five people), habitual mask wearing (always/often), frequent social distancing (always/often), enhanced hygiene (increased handwashing or the use of hand sanitizers/disinfectants) and increased covering of coughs/sneezes. Countries were grouped by UN sub-region. Sampling weights were applied to generate representative estimates.

Results: The mean PBI score was 4.49 and the prevalence of its individual items were: 82% for frequent mask-wearing, 86% for reduced contacts, 90% for covering coughs/sneezes, 96% for increased hygiene and 96% for frequent social distancing. By sub-region, mean PBI scores were lowest in Northern Europe (3.72) followed by Western Asia (4.37), Western Europe (4.44), Eastern Europe (4.54) and Southern Europe (4.72) ($p < 0.001$). Older participants and males had lower PBI scores with statistically significant associations found for age (-0.01 per year) and male sex (-0.14) (p -values < 0.001).

Key conclusions: During the first year of the COVID-19 pandemic the frequency of self-reported protective behaviours was high, varying by European sub-region, age and sex. Further study is required to examine their effectiveness.

Abstract # 401**AREA: COVID-19****Impact of COVID-19 pandemic on mental health in patient treated in primary care**

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Objective: (1) Determine the frequency of psychiatric symptoms of COVID disease in the population of two urban Basic Health Zones. (2) Analyze psychiatric clinical pathologies that required evaluation by the hospital psychiatry service.

Design: Descriptive, cross study.

Setting: Two Primary care centres.

Subjects: All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with psychiatric symptoms per 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 interconsultations (IC) were made to hospital specialists. 7.13% of these CI went to psychiatry (90.2% with normal referral character, 9.8% with preference). Of the 37 patients referred to psychiatry with normal priority, the causes stand out, 13 cases due to anxiety, 8 due to mixed adjustment disorder (anxiety and depressed mood), 6 due to dysthymic disorder, 5 due to depressive disorder and one due to delusional disorder, alcohol dependence, hyperkinetic syndrome, epilepsy and loss of autonomy. Of the 4 preferentially referred cases, it was due to adaptation reaction, behavioral disturbance and two cases due to dysthymic disorder.

Conclusions: The clinical evaluation of the COVID-19 patient with persistent psychiatric symptoms in PC has to follow principles similar to those of the usual clinical practice of psychiatric symptoms in the field of PC (anamnesis, ruling out previous pathologies and symptom-oriented physical examination). Evidence-based clinical practice guidelines are necessary for the management of psychiatric symptoms of COVID-19 in PC.

Abstract # 402

AREA: COVID-19

Evaluation of the presence of otorhinolaryngological symptoms in covid cases treated in primary care

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Objective: (1) Determine the frequency of Otorhinolaryngological (ORL) symptoms of COVID disease in the population of two urban Basic Health Zones. (2) Analyze otolaryngological clinical pathologies that require evaluation by the hospital's otorhinolaryngology service.

Design: Descriptive, cross study.

Setting: Two primary care centres.

Subjects: All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with ORL symptoms per 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 interconsultations (IC) were made to hospital specialists. 7.48% of these HF went to otorhinolaryngology (90.69% with normal referral character, 6.9% with preference, and 0.17% with urgent character.) Of the 39 patients referred to otorhinolaryngology service with normal priority, the causes stand out: tinnitus (7), hearing loss (6), dysphonia (5), vertigo (4), impacted wax (2), otosclerosis (2), nasal polyp (2), epistaxis (2), preventive activities (2), sinusitis (2), otitis media (1), chronic pharyngitis (1), cough (1), acute upper respiratory infection (1) and fistula in the neck (1). Of the 3 preferentially referred cases, the causes were cavum neoplasia, tinnitus, and hearing loss. One case was referred urgently due to aphonia.

Conclusions: As a main conclusion, the number of IC performed by a team from primary care (to specialized care is a reference of their correct functioning and their ability to resolve.

Abstract # 403

AREA: COVID-19

Evaluation of the presence of otorhinolaryngological symptoms in covid cases treated in primary care

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¹Valladolid Este Primary Assistance Gerency, Valladolid, Spain

Objective: (1) Determine the frequency of Otorhinolaryngological (ORL) symptoms of COVID disease in the population of two urban Basic Health Zones. (2) Analyze otolaryngological clinical pathologies that require evaluation by the hospital's otorhinolaryngology service.

Design: Descriptive, cross study.

Setting: Two Primary care centres.

Subjects: All patients > 14 years of age with a diagnosis of Coronavirus disease and a positive test between 05/01/2020 and 01/31/2021.

Main measurements: Indicator used: number of patients with ORL symptoms per 100 patients seen in the usual consultation of the health center and according to priority and specialty.

Results: 2225 patients were included. 575 interconsultations (IC) were made to hospital specialists. 7.48% of these HF went to otorhinolaryngology (90.69% with normal referral character, 6.9% with preference, and 0.17% with urgent character.) Of the 39 patients referred to otorhinolaryngology service with normal priority, the causes stand out: tinnitus (7), hearing loss (6), dysphonia (5), vertigo (4), impacted wax (2), otosclerosis (2), nasal polyp (2), epistaxis (2), preventive activities (2), sinusitis (2), otitis media (1), chronic pharyngitis (1), cough (1), acute upper respiratory infection (1) and fistula in the neck (1). Of the 3 preferentially referred cases, the causes were cavum neoplasia, tinnitus, and hearing loss. One case was referred urgently due to aphonia.

Conclusions: As a main conclusion, the number of IC performed by a team from primary care (to specialized care is a reference of their correct functioning and their ability to resolve.

Abstract # 404

AREA: COVID-19

Frailty and mortality in older patients living in nursing homes hospitalized with COVID-19

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Introduction: Some guidelines, recommend frailty assessment on hospital admission of COVID-19 patients as a prognostic factor to guide decision making. This study aims to describe frailty and mortality of older inpatients with COVID-19 infection who were living in nursing homes.

Methods: A retrospective, single-center observational study was performed among patients from nursing homes > 65 years, admitted after liaison geriatrician evaluation in April 2020 with confirmed COVID-19. Demographics, baseline characteristics (Barthel, FAC, Charlson), dementia, polypharmacy, and delirium at admission were extracted from electronic medical records. Frailty was graded according to the Clinical Frailty Scale (CFS). Spearman r quantified the association of age, frailty, and other variables. Cox regression was used to identify the association between frailty and survival.

Results: 93 patients (59.1% women, median age 87.9 ± 6.1 years) were included. 9.7% were fit (CFS 1–3), 65.6% frail (CFS 4–6) and 24.7% disabled (CFS 7–9). The median hospital stay was 10 ± 7 days. 36.6% died during hospitalization and 9-month mortality was 50.5%. CFS score was associated with Barthel Index (r = 0.7, p < 0.01) and dementia (r = 0.4 p < 0.01), but not with age. Dementia was related to delirium at admission (r = 0.3 p < 0.01). Adjusted frailty was not associated with survival (HR 1.1; 95% CI 0.9–1.4, p = 0.1). Within 9 months, 60.9% of those who were disabled (CFS 7–9) versus 33.3% of the fit (CFS 1–3) patients died (p = 0.3).

Conclusion: Only 9.7% of COVID-19 inpatients from nursing homes were classified as fit according to the CFS. Frailty and dementia were associated. 9-month mortality was 50%, but not association with frailty was found.

Abstract # 405**AREA: COVID-19****The impact of home quarantine during COVID-19 lockdown on neurological hospitalizations, in-hospital mortality, and acute ischemic stroke management in older patients without COVID-19**Cemile Haki¹, Olgun Deniz²¹Neurology Clinic, Bursa City Hospital, Bursa, Turkey, ²Geriatric Medicine Clinic, Palliative Care Unit, Bursa City Hospital, Bursa, Turkey

Introduction: There are scarce published data on how social isolation affects neurological hospitalizations in the COVID-19 pandemic. This study aimed to investigate the impact of home quarantine in older non-COVID-19 patients who are hospitalized due to neurological disorders.

Methods: We consecutively enrolled 255 patients aged 65 years and over (median age: 75 years, female: 54%), including 180 (70%) patients in the pre-home quarantine period and 75 (30%) home quarantine period from January to May 2020 (10 weeks before and 10 weeks after the March 21, 2020, lockdown for older patients in Turkey) in a tertiary referral neurological center.

Results: In the home quarantine period, we documented a fall in the number of neurological admissions by 58.3%, but an increased need for intensive care in older patients. Patients in the home quarantine period were younger [73 (65–91) vs 76 (65–95), $p = 0.005$], had worse Glasgow Coma Scores (12.3 ± 3.6 vs 13.7 ± 2.5 , $p = 0.007$), and higher in-hospital mortality rate (21.3% vs. 6.7%, $p = 0.001$), had a lower prevalence of comorbidities such as diabetes mellitus, hypertension, and cardiovascular disease, and chronic neurologic disease, albeit had a higher prevalence of the acute cerebrovascular disease (hemorrhagic/ischemic stroke) (90.7% vs 78.9, $p = 0.025$). In this period, there was an increase in the proportion of the patients undergoing reperfusion therapy with borderline significance (20.3% vs. 10.1%, $p: 0.054$). Multivariate analysis revealed that low Glasgow Coma Scores (OR = 0.65; $p < 0.001$), hospitalization in the home quarantine period (OR = 4.22; $p = 0.009$), and aged 76 and over (OR = 4.23; $p = 0.015$) were independently associated with in-hospital mortality.

Conclusion: Our study indicated that during the COVID-19 home quarantine period, despite a significantly fewer number of patients admitted to the hospitalization, there was a higher percentage of those hospitalized needing intensive care and an overall worse prognosis.

Keywords: COVID 19, neurological admission, older patients, stroke, reperfusion therapy.

Abstract # 406**AREA: COVID-19****Cultural aspects of COVID-19 vaccine resistance in older populations**Athanasios Lamproy¹, Marianna Mantzorou¹, Theodoula Adamakidou¹, Georgia Fasoi¹, Marianna Drakopoulou¹, Paraskevi Apostolara¹¹Postgraduate Course in Community and Public Health Nursing, Nursing Department, University of West Attica, Greece

Introduction: Vaccines have been accepted as the biggest aid to humanity to manage the COVID-19 pandemic which broke out more than a year ago. However, reluctance and denial stand in the way of vaccination. This paper aims to explore the cultural factors that may

interfere with the COVID-19 vaccination decision among older adults.

Methods: Review and research papers were searched in the databases PubMed, Scopus and Google Scholar with key words “hesitancy”, “vaccination”, “COVID-19”, “resistance” “elderly” and “culture”.

Results: WHO has declared vaccination hesitancy as one of the ten strongest health threats in 2019. Literature review revealed that vaccination decision-making in older populations involves emotional, cultural, social, spiritual, cognitive as well as political factors. Beliefs about vaccines originate from individual rights and attitudes of public health as well as religious beliefs which cause mistrust between Western and Southern cultures. In some cultures, older people hesitate and reject the COVID-19 vaccines because they do not trust health systems as they do not respond to their needs. Moreover, in Asian cultures there is a reluctance between family members to advice elderly on vaccination decisions due to family hierarchy which hinders dissemination of public health messages to older people. Misinformation from social media due to social or political reasons may also lead to hesitation about COVID-19 vaccines among older persons.

Key conclusions: Development of effective strategies to address COVID-19 vaccine resistance in older populations requires a different approach which should consider the individual fears, values and priorities of older adults within a culture.

Abstract # 407**AREA: COVID-19****The transformation of hospital during COVID-19 s wave: a precious legacy to be treasured and enriched**Giulia Cono¹, Letizia Bazoli¹, Erika Tonoli¹, Silvia Singia¹, Flaminia Coccia¹, Giulia Cesaroni¹, Francesca Mazzeo¹, Renzo Rozzini¹¹Fondazione Poliambulanza

Introduction: COVID-19 pandemic caused changes that could affect the future of hospital care. We describe our experience in transforming a general hospital to a dedicated infectious disease one, according to an “intensity of care” model in order to protect frail patients.

Methods: Data were collected in Fondazione Poliambulanza Istituto Ospedaliero (Brescia, Lombardy, one of the Italian areas most affected by COVID), during the second COVID wave, between February 1 and April 30, 2021. 807 patients (mean age: 70.9 ± 14.4 years) with SARS-Cov-2 infection were evaluated. 368 patients (45.6%) are over 75 years of age. Clinical severity was assessed with COVID-19MRS, a clinical tool that predicts in-hospital mortality in patients with COVID-19. Functional, psychic, social status, and assistance needs were also assessed.

Results: Admitted patients were allocated in four macro areas with different skills, staff/patients ratio, and increasing intensity of care according their clinical and non-clinical characteristics upon admission. Age was the best predictor of setting allocation. 34.6% patients were discharged at home, 32.5% were transferred to another facility (mainly post acute care Covid units). 32.9% patients died.

Key conclusions: In order to be more effective in protecting frail patients, during the second Covid wave, our hospital has been forced to change its organization relying on clinical severity and assistance needs. COVID-19 pandemic has taught us that hospital organization can and must change; indeed, an organization according to intensity of treatment could be an appropriate solution that would satisfy new demands, mainly for elderly and complicated patient.

Abstract # 408**AREA: COVID-19****Anxiety symptoms among older people during the COVID-19 pandemic: prevalence and associated factors**

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Introduction: There are concerns that the COVID-19 pandemic could lead to a rise in mental health problems including anxiety amongst older people, especially those shielding alone during the pandemic. The aim of this study therefore is to examine the prevalence of anxiety symptoms during the COVID-19 pandemic amongst older people and clarify factors associated with higher burden of symptoms.

Methods: We analysed data from the COVID-19 study of The Irish Longitudinal Study on Ageing, conducted on over 3100 community dwelling people aged ≥ 60 years from July–November 2020. Anxiety symptoms were measured with the Generalised Anxiety Disorder-7 Questionnaire with a score ≥ 10 indicating moderate-severe anxiety. Linear regression models were used to assess the association of variables of interest with anxiety symptoms.

Results: Almost 9% of participants ($n = 3128$; mean age 71 years) had moderate-severe symptoms of anxiety. Factors independently associated with a higher burden of anxiety symptoms included female sex ($\beta = 0.60$ (0.33–0.87)); living alone ($\beta = 0.72$ (0.41–1.02)); ≥ 2 chronic diseases ($\beta = 0.85$ (0.41–1.30)); heart disease ($\beta = 0.95$ (0.45–1.46)) and reporting frequent loneliness ($\beta = 6.59$ (6.03–7.16)). Age ≥ 80 years ($\beta = -0.77$ (–1.16 to 0.37)) and tertiary level education ($\beta = -0.48$ (–0.86 to –0.10)) were associated with lower anxiety symptom burden.

Conclusion: Almost 1 in 10 of this population-representative sample of older people had moderate to severe anxiety symptoms during the COVID-19 pandemic. Strategies to address loneliness, which was particularly strongly associated with anxiety symptoms during the pandemic, should be a priority.

Abstract # 409**AREA: COVID-19****Consequences of older persons' physical and social isolation during the COVID-19 pandemic**

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Introduction: A pandemic is an uncontrollable and stressful event. Measures to limit the spread of COVID-19, such as curfew, mask use, lockdowns and stay at home restrictions, as well as the unprecedented number of deaths, inevitably affect older people's well-being and mental health. This review aims to present an overview of the effect of the implemented containment policies on older adults' mental health and well-being.

Methods: A review of the recent literature was conducted in PubMed, Scopus and Google scholar databases using the key words "mental health", "containment measures", "SARS-CoV-2", older adults, elderly, seniors, social isolation.

Results: The critical review of articles showed that the COVID-19 pandemic is associated with extremely significant levels of psychological distress, often requiring treatment. Physical distancing and social isolation in seniors enhance the feelings of disconnection from society, emotional distancing, loss of socialization and magnifies the feeling of loneliness, an often stigmatized situation. In addition, social isolation is a prognostic factor for poor mental health, increased vulnerability and a risk factor for physical and mental morbidity and premature mortality. Anxiety and depressive symptoms are expected to increase in older people, even in those without previous history of mental problems, as well as suicidality.

Key conclusions: Community health professionals should be routinely screening older adults for loneliness, social isolation and depression. Mitigating the effects of COVID-19 on older adults' mental health should be a national and global public health priority.

Abstract # 410**AREA: COVID-19****Crisis management in residential care facilities during the COVID-19 pandemic**

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Introduction: During successive waves of the COVID-19 epidemic, teams from residential care facilities for elder people were requested to adopt restrictive practices in order to prevent the spread of the virus. This study aims at retrospectively investigating human, structural and organizational factors that influenced crisis management of residential care facilities during the first wave.

Method: To carry out this study we adopted a qualitative method based on semi-structured interviews. Twenty-one directors of facilities located in Brittany were interviewed during summer 2020. The interviews were analyzed with Nvivo7 using a thematic analysis coding.

Results: The sanitary crisis has led to a context of great uncertainty that resulted in a feeling of chaos in nursing homes. This feeling was increased by the clinical and scientific ignorance of the disease, contradictory nature of information released by public authorities and difficulties in applying some of the governmental recommendations. Management strategies implemented by directors were partly based on external support (geriatric hotline, regional support network in connection with the hospital, internet information platform, etc.) and internal forces (human resources, skills and employee engagement...).

Discussion: Results suggest that the pandemic risk, although known, had not been anticipated in its management by directors of residential

care facilities and that the “unimaginable” nature of the COVID-19 pandemic could have contributed to the difficulties in managing it. Implemented managerial strategies mainly consisted in strengthening control of the situation and reducing uncertainty induced by the crisis. Interviews suggest that managers retrospectively engaged in resilience processes through rationalization and causal attribution mechanisms, which also contributed to take a step back.

Abstract # 411

AREA: COVID-19

COVID-19 in adults with dementia: clinical features and risk factors of mortality-a clinical cohort study on 125 patients

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Background: There is limited evidence on the characteristics and outcome of older adults with dementia hospitalised for novel coronavirus infection (COVID-19).

Method: We conducted a prospective study in 2 gerontologic COVID units in Paris, France, from March 14, 2020, to May 7, 2020. Patients with dementia hospitalised for confirmed COVID-19 infection were systematically enrolled. A binary logistic regression analysis was performed to identify factors associated with mortality at 21 days.

Results: We included 125 patients. Median age was 86 (IQR 82–90); 59.4% were female. Most common causes of dementia were Alzheimer's disease, mixed dementia and vascular dementia. 67.2% had ≥ 2 comorbidities; 40.2% lived in a long-term care facility. The most common symptoms at COVID-19 onset were confusion and delirium (82.4%), asthenia (76.8%) and fever (72.8%) before polypnea (51.2%) and desaturation (50.4%). Falls were frequent at the initial phase of the disease (35.2%). The fatality rate at 21 days was 22.4%. Chronic kidney disease and CRP at admission were independent factors of death. Persisting confusion, mood and behavioural disorders were observed in survivors (19.2%).

Conclusion: COVID-19 in demented individuals is associated with severe outcome in SARS-CoV-2 infection and is characterised by specific clinical features and complications, with confusion and delirium at the forefront. COVID-19 testing should be considered in front of any significant change from baseline.

Abstract # 412

AREA: COVID-19

Living with functional deterioration after SARS-COV-2 infection: a qualitative study in old patients' perspectives after admission to an Intensive Care Unit

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Introduction: The pandemic of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has been posing great threats to the world. Acute Respiratory Distress Syndrome is the main complication that could suppose the admission in an Intensive Care Unit (ICU), and secondarily, an acute functional deterioration that impact in patients' quality of life. The study of the views of these patients could raise awareness in the population.

Objective: To explore the experiences lived by old patients who suffered acute functional deterioration impairment after their admission to an ICU for a SARS-COV-2 infection, who were after admitted to a Functional Recovery Unit (FRU).

Methods: The design was a qualitative phenomenological study. Data were collected through in-depth interviews and researchers' field notes. A thematic analysis was performed following appropriate guidelines for qualitative research. Purposeful sampling of patients, both men and women over 65 years old, that attended a FRU after recovering from SARS-COV-2 infection in an ICU was performed. Accordingly, 19 patients participated in the study with a mean age of 79 years.

Results: Five main themes describing the significance of suffering emerged: (1) Experience of the pandemic and the suffering the causative infection. (2) Feeling of handicap after infection. (3) Living functional recovery in pandemic. (4) The before and after in ICU. (5) The uncertain future conditioned by the consequences of the infection.

Conclusions: Qualitative research offers insight into the way patients with functional deterioration experienced a severe SARS-COV-2 infection and it may be helpful in understand better the rawness of the disease.

Abstract # 413

AREA: COVID-19

Impact of COVID 19 on functional status in French oldest populations: COVID-OLD multicenter study

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Introduction: COVID 19 infection is a severe infectious disease in older populations inducing high mortality rates. However few studies explored prospectively the impact of COVID 19 in surviving patients. The aim of our study is to measure the rate of patients presenting a functional decline at 3 months and factors associated with.

Method: 60 French centers participated to this observational prospective study including patients aged 70 years and older, hospitalized for COVID 19 infection between 04/10/2020 and 10/12/19. Functional decline was defined by a loss of at least 0.5 on ADL Score (/6) or/and a loss of at least 1 on IADL score (/8). Socio-demographic, Covid severity, clinical presentation, specific and non specific treatments were collected. Univariate and multivariate analysis were performed.

Results: Out of 1083 patients in the initial cohort, 738 had a follow up and for 662 data were completed. Mean age 84 years old. 56% presented a functional decline at 3 month, 40% on ADLs et 38% for

IADLs. The mean loss were 1.1 point for ADLs and 1.6 points for IADLs. All items of ADL were equally affected. In univariate analysis, acute functional loss before hospitalisation, delirium, length of stay are predictive markers of functional decline at 3 month. Multivariate analysis will be presented.

Conclusion: A large part of surviving population exhibit a functional decline. It is not known which is related to comorbid condition, lack of rehabilitation or long Covid infection. The impact on quality of life and at financial level need to be measured.

Abstract # 414

AREA: COVID-19

COVID-19 in people over 70 years of age: in-hospital and 3-month mortality: COVID-old study a French national multicentre study on the 2 waves

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Introduction: As June, nearly 6 million cases of COVID-19 infection have been confirmed in France, and more than 110,000 patients have died, (> 90% in > 65 years). There are no specific data on late 3-month post-COVID-19 mortality in elderly patients. The objective of this study was to report the mid-term (3 months) mortality rate at national level in an elderly population aged 70 years and over with COVID-19 hospitalised in two successive waves.

Method: Prospective, observational, multicentre study (April 2020 to December 2020) in France. The primary endpoint was the mortality rate at M3. Secondary endpoints were the in-hospital mortality rate and factors associated with mortality. At present, only results of the univariate analysis are available.

Results: 60 centers participated. 3-month follow-up data on living and deceased status are available for 965 patients. There was an overall death rate of 24% 3 months after discharge. The in-hospital death rate was 13% (approximately the same in both waves). Post-hospital deaths at M3 amounted to 11%, after discharge. Many factors were associated with in-hospital mortality and at M3, a different statistical approach is underway to integrate the most relevant variables into a multivariate model taking into account organizational variables, regional variability and the 2 successive waves.

Conclusions: The immediate mortality rates are lower than those reported in the literature but an almost equivalent mortality occurred between discharge and follow-up at 3 months post COVID-19.

Abstract # 415

AREA: COVID-19

COVID-19, frailty, and long-term mortality in a large cohort of hospitalized and non-hospitalized older Italians

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Importance: Studies suggesting that frailty increases mortality in older patients with COVID-19 are limited, because they usually enrolled only hospitalized patients, considered short-term follow-up, assessed frailty retrospectively, and lacked COVID-negative comparators.

Objective: To examine the relationship between frailty and mortality in older patients with and without COVID-19, hospitalized and non-hospitalized.

Design: Concurrent cohort study design.

Setting: Analysis of administrative data of the healthcare authorities of Central Tuscany and the Istituto Superiore di Sanità (ISS), Italy.

Participants: Among subjects aged 75 + accessing the Emergency Departments (ED) during the pandemic, those hospitalized and diagnosed with COVID-19 (HC +) were compared to non-COVID-19 discharges (HC-). Among non-hospitalized ED visitors, those with (NHC +) and without (NHC-) COVID-19 were identified thanks to linkage with the ISS COVID-19 registry. Exposure: Pre-existing frailty, assessed with the Dynamic Silver Code (DSC). Main outcome: Mortality up to 1-year.

Results: Of 1745 HC + and 15,846 HC- participants, 48.4% and 33.9% died through the follow-up ($p < 0.001$). Mortality increased from 27.5 to 64.0% in HC + and from 19.9 to 51.1% in HC- across DSC classes I to IV, with HC + vs. HC- hazard ratios (HR) between 1.6 and 2.2. Out of 1039 NHC + and 18,722 NHC- participants, 18% and 8.7% died ($p < 0.001$). Mortality increased with frailty, from 14.2 to 46.7% in NHC + and from 2.9 to 26% in NHC- across DSC classes I to IV, while NHC + vs. NHC- HR decreased from 5.3 in class I to 2.0 in class IV. Survival curves separated abruptly in the first month in HC + vs. HC-, and progressively in NHC + vs. NHC-.

Conclusions and relevance: Mortality increases with frailty to a similar extent in hospitalized older patients with and without COVID-19. In non-hospitalized patients, the excess mortality associated with frailty is milder in subjects with COVID-19 than in those without. In non-hospitalized subjects, COVID-19 reduces survival even when background risk is low. These findings might challenge our approach to COVID-19 in older patients, suggesting closer attention also in those initially considered as non-critical.

Abstract # 416

AREA: COVID-19

Multidrug infection secondary resistance of postcovid status

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Old people and those with underlying medical comorbidities like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more susceptible to develop severe forms of COVID-19. Also, many patients developed complication post COVID19 not only due to the infection, but to associated treatment, hospitalization, invasive

diagnostic and therapeutic measures. We present the case of a 73-year-old female patient, who was previously known with sequelae of pulmonary tuberculosis and asthma, also with cardiovascular pathology (hypertension, ischemic heart disease), therapeutically controlled. She developed a SARS-CoV-2 infection in a moderate form, for which she needed continuous hospitalization and a complex treatment (intravenous antibiotics therapy, corticosteroids, anticoagulant, but also other supportive treatments, according to the protocol). Secondary to the deteriorated status of post-infection with Covid, but also of the complex and aggressive treatment, she develops in a short time dyspnea, cough, physical asthenia and fatigue. Pulmonary infection with *Pseudomonas aeruginosa* was confirmed and it is resistant to colistin. Evolution was with an initial downward trend, but, after and after intense support measures, including corticosteroid treatment and prolonged hospitalization, evolution was favorable. After a month, she needed a new hospitalization for a reinfection, but with *Moraxella Catarrhalis*, which was more difficult to respond under sensitive antibiotic treatment. The significant lung sequelae acquired after COVID 19 infection, the corticosteroid treatment followed, also the multiple intakes of antibiotics determined an increased risk of repeated infections with rare germs and to a more difficult response to an immune system.

Abstract # 417

AREA: COVID-19

Clostridium difficile infection during COVID-19 pandemic

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Introduction: *Clostridium difficile* infection (CDI) is an acute diarrhea due to an anaerobic bacteria transmitted by hands or environment. It represents 10–25% of post-antibiotics diarrhea and 95% of pseudomembranous colitis. Recurrences rate after first infection is 25% and mortality rate varies from 5 to 40%.

Methods: Case report.

Results: A 74-year-old female patient is admitted to geriatric rehabilitation unit (RU) after cardio-renal syndrome, several infections including nosocomial CDI and COVID-19, and probable Lewy body dementia. She has been infected with CD during COVID-19 infection, without prior antibiotic intake, treated in acute unit by Vancomycin during 10 days then Fidaxomicin during 10 days due to persistent diarrhea. A second CDI occurs in RU 15 days after Fidaxomicin intake, during PICC infection treated by Ceftriaxone. Repeated enzyme-linked immunosorbent assays remain negative. Sigmoidoscopy is not possible due to COVID-19 hygiene rules like abdominal CT-scan because of severe kidney failure. After 2 weeks of unexplained diarrhea, a positive assay leads to fecal microbiota transplantation after advice from infectious diseases specialists. Two weeks later, transplantation is done with good evolution within 3 days.

Key conclusions: This case report highlights CDI therapeutic strategy with possible early use of fecal microbiota transplantation in case of recurrence, despite problematic accessibility. Moreover CDI diagnostic difficulties exist especially during the COVID-19 pandemic that also promotes CDI by effects on intestinal microbiota and antibiotics or corticosteroids intake.

Abstract # 418

AREA: COVID-19

Is there an evidence on interventions to improve post-infectious olfactory dysfunction?

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Introduction: Epidemiological studies of olfactory impairment indicate a prevalence increasing with age, especially in older men [1]. Moreover, olfactory dysfunction is mostly caused by post upper respiratory tract infection [2] and it is especially becoming apparent as part of the current COVID-19 pandemic. Consequently, a large number of people infected with COVID-19 are affected by this condition [3]. Therefore, the aim of this paper is to identify evidence of interventions to improve olfactory performance among patients with post-infectious olfactory dysfunction.

Methods: The databases Pubmed, CINAHL, Embase and Cochrane Central Register of Controlled Trials were screened for relevant literature published between January 2010 and November 2020. Additional studies were considered by using reference tracking.

Results: Based on previously defined inclusion and exclusion criteria, 13 studies were analysed, comprising two types of interventions to improve olfactory function in post-infectious patients: on the one hand, olfactory training using odours to stimulate smell perception and on the other hand, olfactory pharmacologic therapy applying different kind of agents or a combination of both were applied. Studies analysing olfactory training interventions found a significant improvement in the TDI score (Transition Dyspnea Index) and/or its individual subscores (odor threshold (T), odor differentiation (D), odor identification (I)), whereas studies investigating the effect of olfactory therapies alone or in combination with olfactory training revealed varying results with only minor significant effects.

Key conclusions: The analysed interventions to improve olfactory performance among patients with post-infectious olfactory dysfunction show a promising but limited effect.

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Abstract # 419

AREA: COVID-19

Evaluation of the functionality of long-lived elderly during the COVID-19 pandemic

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Introduction: There are few studies on functional decline in the oldest old during the COVID-19 pandemic. The importance of monitoring this population is well known, particularly now with the need for social isolation. The objective of this study was to remotely assess functionality between 8 and 14 months after the onset of the Pandemic in oldest old without frailty.

Methods: All elderly people aged 80 years or more, from a healthy aging clinic at a public geriatric service in southeastern Brazil, were evaluated. They were not frail before the pandemic. Elderly people who had Coronavirus infection were excluded from the sample. The Functional Clinical Vulnerability Index-20 (IVCF-20) questionnaire, developed and validated for the Brazilian elderly population, was applied by telephone. The SPSS-19 software was used for statistical analysis.

Results: The study included 62 elderly people with a mean age of 88.7 ± 5 years, maximum 102 and 62.9% female. Functionality decline was observed in 14.5% (9) due to impairment of instrumental daily life activities. This was associated with walking difficulty ($p = 0.002$) and self-perceived unintentional weight loss ($p = 0.002$), with no association with impaired cognition and signs of depression.

Conclusion: Despite the high risk due to the advanced age of the sample, the functional decline was low. The remote application of the IVCF-20 proved to be satisfactory in indicate the probably determinant of functional decline and reinforcing the importance of self-perceived weight loss. The instrument can be incorporated into primary care for remote monitoring of the functionality of this population during the COVID-19 pandemic.

Abstract # 420

AREA: COVID-19

Delayed hypersensitivity reaction to iodinated contrast media with COVID-19

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Introduction: Hypersensitivity reaction to iodinated contrast medium (ICM) occurs in 0.05–0.1% of cases. It can appear immediately or from more than 1 h to several days after administration (delayed reactions). Risk factors are non-controlled COPD, beta blockers or proton pump inhibitor intake, fast ICM injection or viral infection. Most common symptoms are maculopapular rash in case of delayed reaction.

Methods: Case report.

Results: A 74-year-old female patient is admitted to geriatric rehabilitation unit (RU) after severe COVID-19 infection. She presents suddenly in RU maculopapular rash on the face, chest and arms. It occurs 30 days after COVID-19, 8 days after Lansoprazole intake, 2 days after CT-scan with ICM injection for suspected infectious complication after COVID-19. There are no clinical or biological

severity signs. No similar history exists. After advices from dermatologists and pharmacovigilance physicians, it is probably a cutaneous reaction to ICM or Lansoprazole, or COVID-19 infection. Good evolution is observed after cutaneous corticosteroid treatment during 7 days. A week later, a new CT-scan is performed for suspected pulmonary embolism with the same ICM, after advices from dermatologists and pharmacovigilance physicians. The patient presents the same cutaneous episode than the previous one, 2 days after the CT-scan. The diagnosis of delayed cutaneous hypersensitivity reaction to ICM is confirmed and ICM are contraindicated. Good evolution is observed after new cutaneous corticosteroid treatment.

Conclusion: COVID-19 infection due to complications leads to perform CT-scan with ICM with the risk of severe delayed hypersensitivity reaction whose diagnosis in elderly people is difficult.

Abstract # 421

AREA: COVID-19

Tolerance of COVID-19 vaccination in elderly subjects

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Introduction: The elderly were particularly concerned by the COVID-19 pandemic, with a mortality rate of 29.6% for hospitalized patients aged over 80 years. Vaccination of this population started in France in January 2021 with the Pfizer-BioNTech vaccine. The phase 3 study of this vaccine showed mild adverse events in young patients but the median age was 52 years and only 22% were over 65 years. The objective of our study was to evaluate the tolerance of vaccination with Pfizer-BioNTech vaccine in a real-life population of patients over 70 years of age.

Methods: All patients over 70 years of age vaccinated in the acute geriatric ward between January and May 2021 were included. Patients were included after review of contraindications and taking account of a previous COVID-19 infection. Collecting information and side effects were made before second injection as part of usual care.

Results: Between January and May 2021, 98 patients (mean age 83.9 ± 6 years old) received their first dose of vaccine. One patient died before his second dose of a hemorrhagic stroke at 13 days of the first dose. Mild to moderate adverse events were reported in 21% of cases (10% puncture site pain, 5% myalgia, 5% falls including one with a wrist fracture). In our cohort, no patient had a COVID infection between the two doses. The rehospitalisation rate at 1 month after the second dose was 1%.

Conclusion: In a population of subjects over 70 years of age, the Pfizer-BioNTech SARS-Cov2 mRNA vaccine seemed to be well tolerated.

Abstract # 422

AREA: COVID-19

REMPAR-EHPAD: analysis of the management of government recommendations in residential care facilities during the spring 2020 COVID episode

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During the first wave of the COVID-19 epidemic, in the spring of 2020, residential care facilities managers were confronted with governmental recommendations that were sometimes contradictory with their care practices, ethical and representations that care staff had of their job. This study aims to explore how these recommendations influenced crisis management in residential care facilities. To carry out this study, we adopted a qualitative method based on semi-structured interviews conducted during summer 2020. 21 managers of residential care facilities located in the west of France were interviewed for the purpose of this study. Qualitative data was coded with Nvivo7 software and analyzed using thematic analysis. While all the interviewed managers reported that they had followed the government's recommendations, they also described a wide variety of responses, ranging from strict and indiscriminate application of the recommendation to implementation of more flexible guidelines. The adoption of one or the other of these approaches was conditioned by the degree of uncertainty. The more drastic approaches led managers to abandon support principles of residents in favor of strong protection against the pandemic, thus making liberticidal decisions which they disapproved ethically. Our data indicate that the context of uncertainty associated with the COVID-19 outbreak period reinforced obedience to governmental recommendations, even when they conflicted with managers' values. These conflicts put them in an ethical dilemma position, with important consequences for the support offered. Our results indicate concerning parallels between statements made in this study and patterns identified by Milgram in his research on obedience to authority.

Abstract # 423

AREA: COVID-19

Risk factors for older patients with limited mobility with home medical care amid COVID-19 pandemic

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Introduction: Of particular interest is the analysis of risk factors for COVID-19 morbidity in patients with limited mobility with home medical care.

Materials and methods: 441 patients with home medical care were observed from March 2020 to March 2021. The age and sex of the patients and the outcomes of the infection (recovery or death) were assessed. Key areas for comprehensive geriatric assessment included physical health, functional, cognitive, and social status.

Results: 43 patients sick with COVID-19. No significant differences were found in gender. No significant differences in gender and age were found in the groups with and without COVID-19 patients. The same prevalence of cardiovascular diseases and respiratory diseases was noted. There was a trend towards greater prevalence of anemia (30% vs. 42%, $p = 0.164$) and kidney disease (33% vs. 37%, $p = 0.608$) in the infected group with no significant difference. The only significant difference observed was in patients who also had oncological diseases (the percent of oncological patients in the

COVID-19 group was 23% vs. 11% in patients who had no COVID-19 infection, $p = 0.028$).

Conclusions: The incidence of COVID-19 does not depend on comorbidity and geriatric status, only the presence of oncology leads to an increased risk of infection.

Abstract # 424

AREA: COVID-19

COVID-19 mortality rate among older patients with limited mobility with home medical care

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Introduction: Older people are at risk of severe course coronavirus. Of particular interest is the analysis mortality from COVID-19 in patients with limited mobility with home medical care.

Materials and methods: 441 patients with home medical care was observed from March 2020 to March 2021. The age and sex of the patients and the outcomes of the infection (recovery or death) were assessed. Mortality rates were calculated for the period from March 2020 to March 2021. Key areas for comprehensive geriatric assessment included physical health, functional, cognitive and social status.

Results: 43 patients fell ill with COVID-19. No significant differences were found in gender and age between the groups with or without COVID-19 patients. The overall mortality rate in patients with COVID-19 stood at 35% (15 out of the 43 patients) which is significantly more than in the group of non-diseased patients ($p = 0.005$). Deaths of COVID-19 patients with home medical care were not associated with worse somatic performance or lower geriatric status. Male gender was associated with a higher risk of death from COVID-19 in older age: 64% (11 came down with COVID-19 ill, 7 died) in older men vs. 16% in older women (32 fell down with covid, 5 died) ($p = 0.0047$).

Conclusions: The risk of death from COVID-19 associated with male gender in older patients with limited mobility with home medical care.

Abstract # 425

AREA: COVID-19

The value of astonishment as a pedagogical process

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In the spring of 2020, when the COVID-19 epidemic affected France, the government took measures concerning long-term care facilities, in particular by prohibiting visits from outsiders. Students in the first and second cycle of medical studies at the University of Rennes 1 were then asked to intervene in nursing homes for three missions: to participate in a mobile team of nasopharyngeal swabs, to reinforce the activity of the "hospital at home" service which intervened in nursing homes with COVID-19 positive cases, and to promote social link. The aim of our study was to analyse the experience of these students who,

outside of their traditional medical studies, intervened in long-term care facilities in the context of the COVID-19 epidemic. A qualitative study was conducted with the students by means of a comprehensive individual interview. Data analysis was performed by thematic grouping in order to bring out themes that come from the informants' experience. Eleven interviews were conducted between June 15 and August 31, 2020. The opportunity given to students to express themselves freely following their experience brought to light a new fact: the value of astonishment as a pedagogical process. Astonishment has a positive valence (surprise) and a negative valence (shock). The students expressed that they had been positively surprised, particularly in terms of relationships, but also shocked by certain situations. The astonishment, favoured by the active positioning of the students, caused a certain positive destabilisation, taking them beyond their initial representations. Through the shock that the negative valence of the astonishment may have represented, it is possible to glimpse the first steps of an ethical questioning, allowing a stabilisation in a new position acquired by this unique pedagogical experience. The students report consequences for them of this experience that allow us to think that it has a heuristic value for their future profession and of empirical ethics. The conclusions of this study show that beyond the epidemic context, astonishment during medical studies is to be promoted by physicians participating in university training in geriatrics.

Abstract # 426

AREA: COVID-19

Evaluation of quality of life and lifestyle changes in older adults during COVID-19 pandemic: a survey

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Introduction: Government restrictive measures applied to contrast the spreading of COVID-19 have affected the entire population worldwide. Older and vulnerable adults especially, have been strongly encouraged to self-isolate since March 2020. We aimed to evaluate the impact of the pandemic on the quality of life and lifestyle changes in older adults.

Methods: We conducted an anonymous survey on 504 adults aged ≥ 80 years, admitted to a COVID-19 Vaccination Centre in Rome, Italy. Trainees in Geriatric Medicine administered the questionnaires. Differences in proportions and means of covariates between subjects with and without lifestyle changes were assessed using T¹Test for continuous variables and Fisher's exact test for categorical variables.

Results: Mean age of participants was 83.2 ± 5.1 , 56% were females. Those who reported important lifestyle changes were significantly younger and less frail (Clinical Frailty Scale (CFS) 3.3 ± 1.3 vs 3.7 ± 1.3 , $p < 0.01$). Frequent interrupted activities were visits to friends and families (46.5%) and physical activities (45.8%), with consequent reducing mobility in those who had modified their lifestyle. Those who had experienced changes in lifestyle during the pandemic, were significantly more likely to report a worsened EuroQol-visual analogue scale than those who had not modified their habits (65% vs 35%, $p < 0.001$), with increased self-reported depression. The WHO Five Well-Being Index showed similar results.

Conclusion: The pandemic influenced the wellbeing of older adults, affecting both physical and psychological health and significantly impacting on the possibility of nurturing social and relational network.

Abstract # 427

AREA: COVID-19

Quality Improvement Project (QIP) on improving the use of the Clinical Frailty Scale (CFS) during the COVID-19 Pandemic to aid in establishing appropriate treatment escalation plans (TEPs)

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Introduction: Older people were disproportionately affected by the COVID-19 pandemic resulting in a surge in the demand for health-care resources. The aim of this QIP was to assess and improve the compliance of using the CFS in patients over the age of 65 with COVID-19 to aid in establishing appropriate TEPs during admission.

Method: Prospectively, clinical notes of 80 patients were reviewed to assess the compliance of documenting the CFS on admission. Multiple Plan-Do-Study-Act (PDSA) cycles were implemented. As the first intervention, a trust-wide email message was sent to all medical doctors encouraging to assess the CFS on all patients during admission. As the second intervention, an e-poster was designed and displayed as a screensaver on all trust computers.

Results: The initial baseline audit showed that only 42% of patients had the CFS documented during admission. Majority (55%) had a CFS above 5 and 93% of the patients had a Do Not Attempt Resuscitation (DNAR) order in place. Compliance in assessing CFS after both interventions was 65% and 68% respectively. In both cycles, all patients who had a CFS of 5 and above had a DNAR in place.

Conclusion: The compliance in assessing CFS progressively improved with each intervention. Although the CFS is a valuable tool in assisting TEPs, it should be treated as a spectrum that is independent of age, rather than a binary phenomenon. We hope to further improve the compliance by arranging teaching sessions for doctors in our hospital and thereby ensure appropriate TEPs are in place.

Abstract # 428

AREA: COVID-19

COVID-19 vaccination and homebound older people

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Introduction: Vulnerable older people with mobility problems are at greater risk for fatal outcomes from infections such as COVID-19. The purpose of the study is to identify potential barriers to vaccination of these people and ways to overcome them.

Methods: The authors carried out a bibliographic search using Medline database for scientific papers published over the last 2 years. Search terms such as COVID-19 vaccination, vulnerable, homebound, older people with mobility problems were used from the USNLM Institutes of Health list of MeSH (Medical Subject Headings).

Results: Data on COVID-19 vaccination access regarding homebound older people are scarce in the literature. Homebound individuals may have less access to vaccinations. Factors such as living alone, living in poverty, without computer and Internet access, and with reduced mobility impose serious barriers to vaccination in a primary care setting.

Key-conclusion: Strategies regarding planning and scheduling vaccine administration at residency as well as a registry of the older population who does not have access to health services need to be created in order to achieve equal access of the whole population to COVID-19 vaccination.

Abstract # 429

AREA: COVID-19

Personal experience of hospitalized geriatric patients and their caregivers during the SARS-COV 2 pandemic

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Introduction: The current situation of SARS-COV 2 pandemic supposes “a new form of hospitalization” that forces patients to be in preventive isolation, be attended with the use of personal protection equipment (PPE) and limitation of visits.

Objetives: To know the perception of patients or their caregivers about “the new form of hospitalization.” To determine the grade of satisfaction.

Methods: Descriptive, prospective study in a random sample of patients admitted without SARS-CoV2 between May 2020 and February 2021 to whom an opinion survey (or their caregivers if there is dementia) is carried out with a scale of 0–5 (0: no/minimum, 5: yes/maximum). Variables: age, sex, diagnoses, stay and death.

Results: Sample: 60 patients, 63.3% women, mean age 87 (SD 4.8). Surveys to patients: 35 (68.3%). Admission concern: 20% intermediate, 33.3% maximum. Feelings of loneliness: 26.7% no, 23.3% maximum. Difficulty in communicating: 40.7% no, 28.8% intermediate. Information clarity: 21.7% intermediate, 50% maximum. Fear of contagion: 26.7% no, 21.7% maximum. Fear of PPE: 46.7% no, 3.3% maximum. Mask discomfort: 48.3% no, 20% intermediate, 3.3% maximum. Limited visits disorder: 55% no. Length of stay: 29% long, 14% normal. Health care: intermediate: 33.3%, high: 38.3%. Satisfaction: intermediate: 31.7%, high: 45%.

Conclusions: The concern of hospital admission in times of pandemic is relevant, more in caregivers. Patients feels loneliness at isolation, but do not perceive difficulty in communicating with staff. Normal acceptance of PPE use. Patients understand the visit limitations. High perception of prolonged hospital stay. Adequate overall satisfaction during admission and with the health care staff.

Abstract # 430

AREA: COVID-19

Investigation of a COVID-19 outbreak and its successful containment in a long term care facility in Qatar

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Background: The objective of this study is to investigate the COVID-19 outbreak and its successful containment in a long-term care facility, Qatar.

Methods: A case interview was conducted among 24 COVID-19 positive patients inclusive of elderly, patient attenders and front-liners from 06 to 18th June 2020. Laboratory, radiological, and treatment findings were assessed from electronic records.

Results: The outbreak management team concluded that in spite of all the pre-existing preventive measures implemented at the start of the pandemic, there were still evidences of lapses in infection control practices such as breach of infection control protocols like improper use of personal protective equipment. Infection prevention and control team promptly reassessed and implemented more stringent infection control methods and practices that successfully contained the outbreak on July 1, 2020. Among the seven elderly patients average age was 76.28 years $\pm$ SD 25.5 and all were females. 57% of the patients were symptomatic. Most common comorbidities were Dementia (57%), Diabetes mellitus (43%), Coronary Artery Disease (43%), and Seizures (43%). Ground glass appearances in the lungs were found in 29% of the patients. Among the three deceased patients, Dementia and Coronary Artery Disease were the common comorbidities. Persistent elevation in blood glucose levels were observed among all patients during this period of infection.

Conclusion: Elderlies in long-term care facilities are more likely to contract COVID-19 thus, effective infection control measures, ongoing education and awareness, staff compliance monitoring, quick contact tracing, visitor policy revision, ongoing patient and caregivers monitoring are recommended for outbreak prevention and management.

Abstract # 431

AREA: COVID-19

Prognostic stratification in older patients affected by COVID-19: an European, multicenter, prospective cohort study

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Background: Prognosis is extremely important in taking appropriate clinical decisions in older people affected by COVID-19. Some recent works have proposed that the Multidimensional prognostic index (MPI) can be used for stratifying prognosis in COVID-19, but more literature is needed. Given this background, we aimed to evaluate whether MPI can predict in-hospital mortality and the admission to intensive care unit (ICU) in older inpatients hospitalized for COVID-19 infection, across several European centers.

Methods: This longitudinal, European study included older patients with COVID-19 across ten centers. MPI was calculated using eight different domains typical of comprehensive geriatric assessment and categorized in three groups (MPI 1 $\leq$ 0.33, MPI 2 0.34–0.66, MPI 3 $>$ 0.66). A multivariable Cox's regression analysis, adjusted for potential confounders, was used reporting the results as hazard ratios (HRs) with 95% confidence intervals (CIs).

Results: 416 inpatients hospitalized for SARS-CoV-2 infection were enrolled (mean age: 80.5 years, 58.2% females). Inpatients in the MPI 3 were subjected less frequently than those in the MPI 1 to non-invasive ventilation (NIV). In the multivariable analysis, people in MPI 3 experienced a higher risk of in hospital mortality (HR = 1.79, 95% CI 1.02–3.14), compared to MPI 1. Only six older patients were intubated, all in MPI-1 group. However, no association between MPI and ICU admission was found.

Conclusions: Frailty- as assessed by high MPI score—was associated with a significant higher risk of in-hospital mortality and lower use of NIV. Even if exploratory, our findings suggest that only people less frail were intubated. Our findings further strengths the importance of prognostic stratification, by using the MPI, in clinical decision making in older inpatients affected by COVID-19.

Abstract # 432

AREA: COVID-19

Vaccination campaign against COVID 19 in saint Quentin in France: survey on the motivations of the population of > 75 years old

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Introduction: During the first 3 months of the COVID pandemic nearly 125,000 seniors were affected and more than 22,600 died. 90% were over 60 years old and 60% over 80 years old, despite the measures taken, in particular the various lockdowns, the contaminations continued at varying rates without stopping, the arrival of the vaccine a year later appeared to be the best, if not the only, solution, to protect the population, but a great deal of reluctance was noted at the beginning of the vaccination campaign.

Methods: AUTOCOV: a multicenter prospective cohort study was set up thanks to the collaboration of the municipality, the hospital center and the Saint Quentin clinic. Surveys of 15 items containing questions on the motivations of the population over 75 years of age were distributed.

Results: We collected 640 questionnaires. 55.7% of our vaccinated population lives in the city, 87% is over 75 years old and 11.2% is over 80 years old. In 52.2% of cases, 63.7% of whom live in a couple and 93.6% have children. 50.4% of the total population (55.2% of women) opt for vaccination in order to be able to see their loved ones

again and 50.7% protect others. Relatives arrive as the first factor influencing the decision at 39.1% (51.4% in those who have children) before the attending physician (33.5%) and national and local communication (28.5% and 8.5% respectively). In 45.3% of cases the decision was made in the last 3 months. Proximity determined the choice of center in 71.9%. 80.5% of our population finds registration easy and 84.8% find local communication about registration possibilities clear. 61.4% is in favour of the non-compulsory nature of vaccination, on the other hand, 80.3% is in favour of a vaccination passport.

Conclusion: The preliminary study shows that the motivations of the population over 75 years are opposed to the idea of lock-down that cuts the social relations. The acceptance of vaccination is determined mainly by the desire to see loved ones again and to protect others.

Abstract # 433

AREA: COVID-19

Does COVID-19 pose a threat to the mental health of older adults?

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Introduction: Coronavirus 2019 (COVID-19) is a new type of disease and its rapid spread leads to viral pneumonia. The coronavirus disease (COVID-19) global pandemic has resulted in unprecedented measures not only in public health but also affects other mental and social factors. Thus, older adults had to apply strict measures that were imposed during the pandemic, as one of them was social distancing. However, this measure disconcerted older adults' mental health because they had to be transformed from active members of society into passively isolated individuals who had to keep away from their family members to protect themselves from the spread of the virus. The purpose of this report is to investigate the extent to which the restrictive measures imposed during the pandemic affected the mental health of older adults.

Methods: The authors carried out a literature search using PubMed and Scopus databases for scientific papers published over the last year.

Results: There is evidence that emergency measures affect the psychological condition of older adults, because of a reduced willingness to participate in the socialization process. As the person has to adapt to an unfamiliar environment with new stimuli away from his family members. However, the change in environmental and emotional factors aggravates the negative psychological state of these individuals. Emphasizes the weaknesses of their social integration in the various collective activities as a result to get feelings of loneliness. The psychological support centers still receive calls from seniors with suicidal tendencies because of the isolation that they feel. There are plenty of volunteers who wanted to help seniors such as shopping help. Notably, it proved volunteering helped little, as many of the seniors were used to living an active and responsible life.

Key conclusions: In particular, older adults need to adapt to the circumstances by considering the radical changes caused by the pandemic at the psychosocial level. Overall, further scientific research is needed to investigate the effects of the pandemic on the mental health of older adults, as most of them are not known yet.

Abstract # 434**AREA: COVID-19****A qualitative exploration of dementia-inclusive group-singing online during COVID-19**Sophie Lee¹, Desmond O'Neill², Hilary Moss¹¹UL, ²TCD

Introduction: There is increasing evidence of the social, physical and cognitive benefits of group-singing for people living with dementia and their family carers. However, COVID-19 necessitated the suspension of in-person group-singing globally. This study explores facilitators' experiences and perceptions of dementia-inclusive group-singing in Ireland during COVID-19. It investigates the feasibility, and accessibility, of online music programmes for people living with dementia and their family carers. It aims to contribute to the limited literature on online group-singing and music telehealth and provide practical advice and direction for music facilitators to support the health and well-being of these populations.

Method: This study adopted a qualitative methodological approach. Semi-structured interviews were conducted with facilitators of dementia-inclusive singing groups or choirs in Ireland (n = 12).

Results: Four main themes were generated inductively from the data using thematic analysis: accessibility of online delivery; online vs in-person delivery; importance of social connection; adaptability and resilience.

Key conclusions: This study provides a mixed picture of opportunities and challenges arising from online music programmes. Initial evidence indicates the ability of facilitators to successfully deliver online music programmes to a proportion of people living with dementia and their family carers, and the capacity of members of these populations to engage with them. The findings support the development of sustainable online groups and resources to increase the accessibility of group singing and support community-dwelling people with dementia living in rural and remote areas, or with health or mobility challenges. However, challenges of digital inclusion exist.

Abstract # 435**AREA: COVID-19****Investigating nurses' intention to accept COVID-19 vaccination - a cross-sectional study in five European countries**

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Introduction: Although, health professionals seemed to be the most trusted source of vaccine-related information for the patients, there is evidence showing a vaccine-hesitancy among healthcare providers. As for the healthcare workers' intention to vaccinate against COVID-19 there is evidence revealing a moderate to low level of acceptance, while researchers identify some sociodemographic characteristics (i.e. male gender and older age) as well as positive attitude towards a COVID-19 vaccine, fear of COVID-19, comorbidity, perceived risk of infection and contact with confirmed cases as predictors to accept COVID-19 vaccination. This study aimed to investigate in five European countries nurses' intention to accept COVID-19 vaccination.

Methods: A multicenter cross-sectional study was conducted during January 2021 in Albania, Cyprus, Greece, Spain and Kosovo. An online questionnaire was administered to the individuals. The Fear of COVID-19 Scale (FCV-19S) which has been developed to measure the fear against the coronavirus was used. The internal consistency for FCV-19S was excellent (Cronbach's alpha = 0.88). All tests of statistical significance were two-tailed, and p-values less than 0.05 were considered significant.

Results: Study population consisted of 1135 nurses. Mean age of the participants was 38.3 years, while most of them were females (84.7%) and married (53.1%). Key factors for willingness to get vaccinated were male gender (OR = 1.74, 95% CI 1.14–2.65, p < 0.001), living in a country with a high mortality rate in comparison to low mortality (OR = 2.92, 95% CI 1.70–5.01, p < 0.001), being not infected with COVID-19, having high level of knowledge about COVID-19 vaccines, having vaccinated for influenza the last 2 years (OR = 2.08, 95% CI 1.53–2.83, p < 0.001), having trust in government (OR = 2.03, 95% CI 1.44–2.85, p < 0.001) and in doctors regarding the information about the COVID-19 (OR = 1.78, 95% CI 1.27–2.47, p < 0.001) and having high level of fears about COVID-19 (OR = 1.04, 95% CI 1.01–1.06, p < 0.001).

Key conclusion: Vaccination of healthcare personnel is a crucial issue not only for their safety but also for patients. Healthcare acceptance to get vaccinated can work as a role model for general population. Policymakers and health authorities should work closely with nurses' associations to address these factors and to increase vaccination uptake rates.

Abstract # 436**AREA: COVID-19****Incentives in engaging in physical activity among older adults of 75 and over before and during the SARS-Cov 2 epidemic in France, 2021**

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Introduction: On 1 January 2012, France had a population of 67,060,703, of which 9.5% were aged 75 and over. They would represent 17.2% of the French population in 2060. Physical activity is defined as “any bodily movement produced by skeletal muscles that requires the energy expenditure”. Therefore it corresponds to “all movement including during leisure time, for transport to get to and from places, or as part of a person’s work”. Physical inactivity is supposed to cause around 10% of total mortality in Europe. The lack of physical activity is an exponential phenomenon with advancing age. In France, 38% of 70–75 years old adults claim that they do not engage in any physical activity or sport, compared with 24% of those aged 60–64. In order to fight against SARS-Cov2 epidemic, three national lockdowns have been implemented in France in 2020 and 2021, restraining everyday activities. We investigated incentives in engaging in physical activity among older adults of 75 and over before and during the SARS-Cov 2 epidemic in France.

Methods: We conducted a prospective qualitative study through individual semi-directed interviews. Inclusion criteria were: age ≥ 75 years old, living at own home or in a senior citizen residence. The inclusion period was February to June 2021. An interview guide was created, identifying relevant themes, based on the literature and the reflections of our research team. The themes identified were: presentation of the person, physical activity practice prior to the SARS-COV2 epidemic, practice during lockdown and between lockdowns, obstacles and levers to physical activity practice. The exploitation of the results is based on a deductive and inductive thematic analysis. An analysis grid was created on the motivations to engage in physical activity in 2020–2021 according to Ryan and Deci’s theory of self-determination (amotivation, intrinsic motivation and extrinsic motivation including external, introjected, identified and integrated regulation).

Results: As of 21/05/21, 19 participants were included (9 women, 10 men, mean age $81.4 (\pm 4.3)$ years), 17 of whom live at home and 2 in a senior residence. The first results show that the incentives of people aged 75 and over to be physically active (active mobility, sports) were modified during the epidemic, particularly during the lockdown but also after this period. The level of activity of people decreased. The dynamics of intrinsic and extrinsic motivations to engage in physical activity will be detailed. Potential obstacles and levers to physical activity in a context of restrained activities will be developed after a complete analysis of the results.

Conclusion: Incentives of older adults in engaging in physical activity (active mobility, sports) were modified during the SARS-COV2 epidemic. Obstacles and levers to physical activity may help clinicians to motivate their inpatients in engaging active mobility and sports.

Abstract # 437

AREA: COVID-19

Incentives of older adults in starting or stopping a prevention study during the SARS-Cov 2 epidemic in France, 2021

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Introduction: Older adults are under-represented in scientific studies. This leads to difficulties in recruiting and reducing the number of patients lost to follow-up. Up to 30% of older adults would refuse to

participate in a clinical study, compared to 5–10% of younger adults. The ACCORDS project propose a combinatory approach of connected functionalities for the collection of health data with multimodal aims. Its main objective is to develop one or more algorithms for the early detection of frailty of older people, thanks to the collection of clinical data, associated with paraclinical data obtained through the multimodal platform. This platform is composed of 5 devices: a weight scale, a tensiometer, a wrist-worn step counter, an activity tracker and a tablet to exchange data with the aforementioned sensors over internet. Volunteers are offered regular health monitoring with 10 home visits over a maximum of 2 years, during which clinical and paraclinical data from this set of connected objects are collected. We investigated incentives of included older adults in starting or stopping this prevention study during the SARS-Cov 2 epidemic, France, 2021.

Methods: We present part of the qualitative data from the ACCORDS study. Inclusion criteria of the ACCORDS cohort were: age ≥ 80 years, living at own home or in a senior citizen residence, assessed as “non-frail” or “pre-frail” at inclusion time. Verbatim analysis focuses on incentives to participate in and leave prevention research, during the SARS-Cov2 epidemic in 2020 and 2021, according to the theoretical framework of intrinsic and extrinsic motivations proposed by Deci and Ryan.

Results: As of 21/05/21, 34 volunteers were included (10 males, 24 females, mean age $85.6 (\pm 4.0)$ years), 21 of whom lived at home and 13 in senior citizen residence. According to Fried’s criteria, 20 volunteers were classified as “robust” and 14 as “pre-frail”. The first data concerning the intrinsic and extrinsic motivations to participate in the research concerned health status monitoring, altruism, and the influence of relatives in taking care of one’s own health. These data are probably modulated by the social gradient (high socio-cultural level for almost all participants) and maybe by the volunteers’ thymic state at the time of inclusion. All the participants’ responses will be detailed.

Conclusion: Incentives of older adults in engaging in a prevention research are not directly related to the main topic of the research, but can be linked to feeling of loneliness and social isolation. Knowledge of those motivations could help researchers to recruit volunteers in next studies.

Abstract # 438

AREA: COVID-19

A Pilot Home Care Project for homebound residents with dementia during COVID-19 pandemic*

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Background: During COVID-19 pandemic, people with severe dementia and their families suffer more difficulties since they are restricted at home and unable to deal with new circumstances that have emerged. In Greece there are no authority-organized home care agencies for people suffering from dementia.

Methods: In order to mitigate feelings of anxiety and depression for family caregivers of people with dementia, the Municipality of Heraklion in collaboration with the Heraklion Alzheimer Association NGO initiated a pilot supporting-at-home- 4-months project. Three nurses and one social worker offered, on a rotating base, daily 8-h

services and psychosocial support for 12 patients and correspondent family caregivers. Hygiene protection measures were in good agreement with COVID-19 pandemic's restriction protocols and practices. **Results:** In the beginning of the project, family caregivers rated very high (> 13 in 'Hospital Anxiety and Depression Scale'—HADS) while tested for anxiety and depression. During the implementation of the project, vital needs of the patients had been covered, and caregivers were significantly relieved according to their own feedback. Health professionals reported rare cases of distrust in reporting cases of COVID-19 infection among family members for fear of losing the care and need for extra specialties in the project.

Key conclusion: The project revealed the need to create organized home care public agencies for people suffering from dementia especially in quarantine periods. These agencies should also recruit staff of a broader spectrum such as physiotherapists, speech therapists and psychologists. * Funded by the Municipality of Heraklion in the framework of "COVID-19 Pandemic Restriction Actions".

Abstract # 439

AREA: COVID-19

The relationship between anemia and mortality in elderly COVID 19 patients

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Background: COVID 19 continues to affect the whole world with its different presentations and unenlightened aspects. Elderly patients are the group most at risk. Low hemoglobin levels contribute to hypoxia during COVID 19 infection and increase the risk of complications, especially in risky groups. There are many studies showing that anemia is associated with COVID 19 mortality. However, there is no study on anemia and its effects in geriatric patients, who are more susceptible to anemia and are more sensitive to COVID 19. In this study, we aimed to investigate the prevalence of anemia and its effect on mortality in geriatric COVID 19 patients.

Methodology: Data of 251 patients over the age of 65 who were followed up in the Internal Medicine services allocated for COVID 19 of our hospital between August and October 2020, were included in the study. Anemia was defined as a hemoglobin level of 13 mg/dl in men and below 12 mg/dl in women at the time of admission. Demographic and laboratory data of the patients and hemoglobin levels were compared.

Results: The mean age of 251 COVID-19 patients included in the study was 75.6 ± 7.6 years. 45.8% (n: 115) of the patients were female and 54.2% (n: 136) were male. 45.8. While 51.8% of the patients had anemia, the presence of anemia was found to be 67.9% in patients who died due to COVID 19. According to multivariate logistic regression analysis, advanced age (OR = 1.082; 95% CI 1.03–1.137; $p = 0.002$), presence of anemia (OR = 1.969; 95% CI 1.113–4.246; $p = 0.034$), presence of HT (OR = 5.763; 95% CI 1.713–19.389; $p = 0.005$) presence of dementia (OR = 3.614; 95% CI 1.128–11.578; $p = 0.031$) were determined as independent risk factors predicting mortality in patients with COVID-19.

Conclusion: Advance age, presence of anemia, hypertension and dementia has been found as Independent risk factors for mortality in COVID 19 infection in our study. In elderly COVID 19 patients hemoglobin levels at admission may be helpful in predicting mortality.

Keywords: COVID 19, Geriatric population, Anemia, Mortality.

Abstract # 440

AREA: COVID-19

COVID-19 in a long-term care facility – mortality rate: what have we observed?

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Introduction: The COVID-19 pandemic has affected older adults disproportionately, especially those living in long-term care facilities (LTCF), with reported mortality rate (MR) in a wide range from 10 to 70% in various reports. Despite the rigorous infection control measures SARS-CoV-2 had spread in many LTCF.

Methods: Cross-sectional, observational study of 96 patients in a long-term care facility, in an intrahospital outbreak of a COVID-19 infection, from October 30 to December 12, 2020. Inclusion criteria were: confirmed COVID-19 with PCR-rt test of a nas¹-pharyngeal swab and CIRS-G score 10–20. Demographic characteristics (age, gender) and some laboratory findings (c-reactive protein-CRP, lactate-dehydrogenase-LDH and neutrophil/lymphocyte ratio NLR), Geriatric Nutritional Risk Index (GNRI) in correlation with illness severity (mild, moderate, severe, critical) and the mortality rate were evaluated.

Results: 96 patients were enrolled, 68 females, 28 males, with mean age 79.72 ± 7.35 years. Illness severity and the data distribution were: mild illness in 32pts, 25 female, 7 male, LDH 151.34 ± 84.8 , CRP 8.76 ± 5.6 , NLR 2.61 ± 2.1 ; moderate in 24pts, 18 females, 6 males, LDH 231.34 ± 164.8 , CRP 23.6 ± 31.6 , NLR 2.4 ± 2.1 ; severe in 17, 10 females, 7 males, LDH 278.4 ± 168.8 , CRP 56.76 ± 39.6 , NLR 2.61 ± 2.1 ; critical illness/death in 23 pts, 12 females, 11 males, LDH 371.93 ± 361.2 $p < 0.00008$, CRP 103.76 ± 61.6 $p < 0.0003$, NLR 8.31 ± 4.8 $p < 0.00004$, GNRI $p = 0.25$. MR was 23.9%.

Key conclusions: MR was 3 times higher in males (OR 3.02, CI 1.13–8.06). Male gender, higher NLR, LDH and CRP were correlated with higher mortality. No statistically significant correlation was found with age and GNRI.

Abstract # 441

AREA: COVID-19

Protocol for telehealth evaluation and follow-up of patients with chronic heart failure during the COVID-19 pandemic

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Background: Because of the numerous cases of Coronavirus Disease 2019 (COVID-19) that occurred in Italy, on March 9, 2020 the Italian

government imposed a total lockdown and social isolation. After this decision, physicians were forced to review their outpatient activity, limiting ambulatory visits to exceptional cases to reduce interpersonal contact, especially in elderly and frail patients. Although randomized clinical trial present conflicting data about telemedicine in heart failure (HF), also driven by international society, we structured a telephone follow-up (FU), developing a standardized questionnaire to administrate to nearly 150 patients followed in our HF outpatient clinic.

Purpose: To structure a telephone FU, with a standardized 23 item questionnaire from whom we obtained the COVID-19-HFscore.

Methods: In accordance with current Italian privacy laws, the questionnaire was anonymised, and patients were identified by a numeric code, date of birth and gender. The questionnaire was designed for rapid administration during telephone interview, with a median call duration of 6 min, and was administered directly by physicians to patients and/or to their caregiver. It was built to reproduce our usual clinical evaluation.

Results: The questionnaire was designed to investigate seven domains: (1) social and functional condition; (2) mood; (3) adherence to pharmacological and non-pharmacological recommendations (blood pressure, heart rate, weight monitoring and fluid intake control); (4) clinical and hemodynamic status; (5) recording of laboratory tests; (6) current pharmacological treatment; (7) recent evaluation by family physician or need to contact emergency services followed or not by hospitalisation, and reasons for these medical contacts. General and pharmacological recommendations as well as the following telephone contact were finally recorded. To determine the timing of the next telephonic evaluation, we decided to weight questions regarding clinical and hemodynamic status, adherence to pharmacological and non-pharmacological recommendations, therapeutic changes and need for hospitalisation by scoring the answers (from 1 to 3) to build a score. The sum of individual scores represented the novel TeleHFCovid19-score, ranging from 0 to 29. Based on such score, three groups of patients were identified by arbitrary cut-off levels: the green (score < 4), the yellow (score 4–8) and the red (score ≥ 9) group, for which next telephonic evaluation was planned respectively after 4, 2 and 1 week respectively. Alternatively, the red group could receive recommendation for urgent hospital evaluation.

Conclusion: During this emergency situation this questionnaire could be a useful clinical tool to help physicians maintaining a regular FU of their patients and identifying patients at greatest risk of imminent instability, who may need urgent clinical evaluation. Furthermore, at the end of the pandemic, this instrument could also represent a useful resource in the management of low-risk HF patients.

Abstract # 442

AREA: COVID-19

The relationship between vitamin D and mortality in geriatric patients diagnosed with COVID 19

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Introduction: COVID 19 is a disease with a high mortality rate, especially in geriatric patients, which has caused more than 20 million infections and more than 700 thousand deaths all over the world. It is important to reveal the parameters that predict mortality in the disease, especially in geriatric patients. Vitamin D; It is a biomarker that has been shown to be effective in innate, adaptive immunity and many inflammatory diseases. Based on the role of vitamin D on immunity in patients with COVID 19, we conducted a study

investigating the effect of vitamin D on mortality in patients with a diagnosis of COVID 19 in the geriatric age group.

Methods: The study included 268 patients over the age of 65 who were followed up in the Internal Medicine COVID 19 Wards of in Ankara City Hospital between November 2020 and January 2021. The relationship between vitamin D and mortality in these patients was examined.

Results: In our study, a ROC curve with a 95% confidence interval was produced and the cut-off value of 22.15 vitamin D level was determined as a predictive factor in mortality in COVID 19 patients. According to multivariate logistic regression analysis, advanced age (OR = 1.059; 95% CI 1.014–1.107; p = 0.01), presence of dementia (OR = 3.506; 95% CI 1.267–9.706; p = 0.016), high maximum ferritin level (OR = 1.001; 95% CI = 1–1.001; p < 0.001), maximum IL-6 level (OR = 1.001; 95% CI = 1–1.003; p = 0.014), and vitamin D level < 22.15 units (OR = 4.634; 95% CI 1.645–13.05; p = 0.004) were determined as independent risk factors predicting mortality in COVID 19 patients. In addition, 29.1% of 196 patients with a vitamin D level of < 22.15 were died, while this rate was 8.3% in 72 patients with a vitamin D level of > 22.15 units. In the Spearman correlation test performed afterwards; There was a negative correlation between vitamin D level and age, and a positive correlation between vitamin D level and ferritin level. (r = - 0.148, p = 0.015 and r = 0.129, p = 0.034, respectively).

Conclusion: Studies have shown that low vitamin D levels are associated with COVID 19 sensitivity, severity and mortality. Geriatric population is more susceptible to hypovitaminosis due to lack of sun exposure, decreased cutaneous vitamin D production and natural nutritional deficiency, thus COVID 19 may cause more severe outcomes within this group. It has been found that geriatric patients with low vitamin D levels are more susceptible to COVID 19 than younger populations with low vitamin D levels. Different cut-of values has been determined in literature. In Akbar's study, serum 25-OH vitamin D cut-off value was determined as 20–30 and low vitamin D levels were found to be associated with more severe COVID 19 infection and 10 times more mortality in adult population. In our study, Vitamin D level < 22.15 units was found as an independent risk factor predicting mortality in COVID 19 patients. Vitamin D replacement can be an easy and effective way to reduce COVID 19 mortality, especially in the geriatric group. Treatment of vitamin D deficiency might play an essential role in reducing COVID 19 mortality, especially in the geriatric group. Determining and treatment of vitamin D deficiency in the elderly population is important in improving balance, functional mobility, neuromuscular function and quality of life but also might be effective in treatment and prevention of COVID 19 infection. Further studies are needed.

Keywords: COVID 19, mortality, vitamin D, elderly.

Abstract # 443

AREA: COVID-19

Descriptive study of the characteristics and factors associated with mortality among patients diagnosed with nosocomial COVID-19 in an acute geriatric unit during the second and third waves of the pandemic in barcelona

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Objectives: To describe the characteristics and factors associated with mortality among patients with nosocomial COVID-19 in an Acute Geriatric Unit (AGU).

Methods: Retrospective descriptive study of patients diagnosed with nosocomial COVID-19 during two hospital outbreaks (October 2020–March 2021) in the AGU of a University Hospital in Barcelona, Spain. The study variables were: demographic characteristics, previous and actual functional situation (Barthel Index (BI)), comorbidity (Charlson Index (CI)), frailty (VIG-Frail Index), geriatric syndromes, severity of the COVID-19 (CURB-65 scale), diffuse reticular–nodular opacities in Chest-X-ray, discharge destination (including mortality). Bivariate analyses were performed to investigate factors associated with mortality.

Results: 49 patients were included: mean age (SD) = 86.5 (5.6), 61.2% women, previous BI median (Q1; Q3) = 60 (35; 85), CI mean (SD) = 3 (1.6), 51% dementia. BI at admission median (Q1; Q3) = 10 (0; 37). VIG-Frail Index mean (SD) = 0.38 (0.12) (59.1% with middle/advanced frailty). Most common geriatric syndromes were: gait disorder (69.4%), delirium (65.3%), incontinence (65.3%), malnutrition (63.3%), and constipation (61.2%). 62.2% had CURB-65 ≥ 3 , 65.9% had diffuse reticular–nodular opacities in Chest-X-ray. At discharge: 26.5% returned home, 14.3% were admitted to intermediate care, 59.2% died. Factors associated with mortality ($p < 0.05$) were: male sex (78.9% vs 46.6%), CURB-65 ≥ 3 (89.2% vs 11.7%), anorexia (90.9% vs 33.3%), dysphagia (81.2% vs 48.4%), malnutrition (70.9% vs 38.8%), bronchoaspiration (100% vs 52.5%).

Key conclusions: Patients with nosocomial COVID-19 admitted in our AGU had frequently moderate frailty, moderate-severe COVID-19, and died frequently. Male sex, severity of COVID-19, and complications such as bronchoaspiration and certain geriatric syndromes might be associated with mortality in this population.

Abstract # 444

AREA: COVID-19

Descriptive study of COVID-19 outbreak in a monographic dementia residence free of physical subjections

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Introduction: COVID pandemic has caused great impact and nursing homes have suffered in a pronounced way due to the vulnerability of patients. The objective of this study was to know the characteristics of a COVID 19 outbreak in a monographic dementia nursing home with the particularity of being a center free of physical fasteners fixings.

Methods: Descriptive cross-sectional study during the month of December 2020 in which 78 residents who lived in the center during that period of time were followed up. Risk factors, number of infections and destination of the patients were collected. Ethical and clinical recommendations of SEGG are followed for decision-making.

Results: during the study period 44 people tested positive for SARS-COV2 (56.41% of residents). 31 of them had risk factors related to a poor prognosis in SARS-COV2 infections. 10 patients were hospitalized. 7 patients died (15.9% of those infected), 5 of the at the hospital. 12 of the cases presented delirium or another type of behavioral alteration.

Conclusions: The lethality observed has been lower than that collected in other centers “not free of restraints” and could be related to

non-physical restraint, since the center follows a model of care centered on the person and a line of prevention and management of psycho-behavioral symptoms of dementia avoiding physical restraints and therefore their side effects, and optimizing the use of psychotropic drugs. More studies are needed in restraint-free settings to corroborate this hypothesis.

Abstract # 445

AREA: COVID-19

Developing a GP referral pathway to a rapid access ambulatory care hub (ACH) for older people during COVID-19

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Introduction: Ambulatory care outpatient services for older people are described as a bridge between hospital and community services and facilitate access to geriatrician and multidisciplinary (MDT) expertise. In response to COVID 19, a new rapid access ambulatory care hub (ACH) with direct referral from GPs was established to better support GPs to manage older people at high risk of hospital admission in the community.

Aim: The project aimed to explore the experience of GPs whose patients were managed in the ACH and their views on integration with primary care.

Methods: We invited 20 GPs and six participated (30%) in telephone interviews. Thematic analysis was used to identify major and minor themes.

Results: GPs were vaguely aware of the new service and referral criteria, with three GPs having referred patients directly. All GPs highly valued access to the standard geriatrician outpatient clinics but long waiting lists were problematic. There were three major themes and eleven sub-themes. Attributes of ACH: Balance rapid access with overwhelming the service, MDT review, and age-attuned environment. Integration- ‘keeping people out of hospital a low bar’: GPs know the person best, Real-time communication, Falling through the cracks, GP involvement in care planning, Case-coordination Developing a GP referral pathway: Guidance versus prescriptive referral criteria, Aligning Information and communication technology (ICT), and multi-modal communication.

Conclusion: GPs have a vital role in supporting frail older adults at risk of hospital admission. While more collaboration and direct communication with GPs could improve patient safety, GP workload and lack of ICT are barriers.

Abstract # 446

AREA: Delirium

Improving recognition of delirium in critical care patients

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Introduction: Delirium is more prevalent in patients admitted to critical care, those over 65 years old and living with frailty. By increasing the recognition of delirium we can improve management of patients and therefore reduce associated morbidity. This Quality Improvement project aimed to improve delirium screening and

recognition on the critical care unit at The Royal Bolton Hospital (RBH).

Method: A retrospective analysis of patients aged ≥ 65 years or with a CFS ≥ 5 admitted to critical care at The Royal Bolton Hospital over a 2-week period for each PDSA cycle. Three cycles were undertaken. The initial intervention was a local teaching session for clinical staff on critical care. The second intervention was to display delirium information posters throughout critical care which encouraged recognition and screening of delirium.

Results: Prior to intervention 9% of this patient group were assessed for delirium on admission to critical care and 55% were re-assessed at some point during their admission. After the initial intervention these numbers significantly improved to 33% and 80% respectively. After the second intervention 8% were screened on admission and 69% were re-assessed. Missed opportunities to document delirium as a diagnosis remained similar throughout all cycles.

Conclusion: Delirium screening can be improved via regular educational sessions for clinical staff on critical care. Information posters do not appear to have as much impact. There is scope to improve documentation of delirium as a diagnosis to further aid in management and outcomes. We suggest a further PDSA cycle and intervention to address this.

Abstract # 447

AREA: Delirium

Poor outcomes in delirium: findings from an observational cohort of over 1700 unselected acute medicine patients and implications for management

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Introduction: Delirium is prevalent in older in-patients but there are few data from unselected cohorts. In a longitudinal prospective study, we determined the prevalence, and incidence of delirium and its associations with increased length of stay, increased care needs at discharge and mortality, after adjustment for confounders using multivariate logistic regression.

Method: Consecutive adult acute medical patients (six cycles of 2 months, 2010–2020) were screened for delirium daily using the confusion assessment method (CAM) and delirium diagnosis was made using the DSM-IV criteria. Clinical data were extracted from the record. Electronic mortality data were obtained censoring on 16/10/2020.

Results: Among 1743 patients (age median = 75 years, 48.8% male), delirium occurred in 414 (23.8%, 279 prevalent, 72 incident, and 63 both) with 379/414 (91.5%) cases in patients aged > 65 years. After adjustment for age and sex, delirium was associated (all $p < 0.001$) with dementia (OR = 3.53, 95% CI 2.56–4.87), preadmission dependency (2.60, 1.99–3.41) and markers of physical frailty including falls (2.29, 1.76–2.98), visual/hearing impairment (1.97, 1.43–2.71), urinary incontinence (3.98, 3.02–5.25), and pressure sore risk (3.57, 2.65–4.82) together with illness severity (1.43, 1.08–1.90, $p = 0.013$) but not comorbidity burden. After adjustment for all covariates, delirium remained associated with inpatient stay > 7 days (2.39, 1.63–3.51, $p < 0.001$), increased care needs at discharge (2.98, 1.91–4.68, $p < 0.001$) and death < 30 days (1.79, 1.03–3.12, $p = 0.04$).

Conclusion: Prevalent delirium is > 3 times more common than incident delirium, emphasizing the importance of developing effective delirium treatments. Identification of delirium should prompt early discharge planning for timely discharge and consideration of advanced care planning.

Abstract # 448

AREA: Delirium

Incidence of delirium in an acute geriatric community hospital: an exploratory analysis of an observational cohort study controlled with a meta-analysis of incidences from literature

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Introduction: Delirium in hospitalised older adults is associated with negative health outcomes. Admission to an alternative care setting may lower the incidence of delirium. The Acute Geriatric Community Hospital (AGCH) was recently opened in an intermediate care facility in the Netherlands. The AGCH uses a multi-component non-pharmacological intervention strategy to prevent delirium. The objective of this study was to describe the incidence of delirium in the AGCH and compare this incidence to the incidence in a hospital control group from literature.

Methods: We conducted a prospective cohort study of patients aged > 65 years with acute medical conditions admitted to the AGCH. Delirium assessment was performed using the Confusion Assessment Method (CAM) upon admission and on day 1, 2 and 3 or until delirium had resolved. Patients' charts were reviewed if CAM was missing. In a logistic mixed-effects model, the delirium incidence rate in AGCH was compared to pooled delirium incidence rates from six studies found in a high-quality review.

Results: 214 patients from the AGCH (mean age 81.9 years, 47% male, 12% with a history of dementia) were included in the analysis. Delirium developed in 8% (18/214) (95% CI [confidence interval] 5–13%) of patients during AGCH admission compared to 16% (95% CI 12–21%) in hospitals. Admission to the AGCH was associated with a decreased delirium incidence rate compared to the hospital control group (OR [odds ratio] = 0.49, 95% CI 0.24–0.98, p -value = 0.044).

Conclusions: The delirium incidence in the AGCH was relatively low compared to those incidences found in general hospitals.

Abstract # 449

AREA: Delirium

Domain specific cognitive function and delirium: a systematic review

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Introduction: Cognitive impairment is a risk factor for delirium, but the role of specific cognitive domain impairments is uncertain. We therefore undertook a systematic review to determine associations between cognitive domain deficits and delirium.

Methods: Studies were identified via electronic searches in EMBASE (1985-present) and MEDLINE (1985-present) databases using the following exploded MeSH terms and keywords: [delirium] AND [memory] OR [recall] OR [executive] OR [attention*]. Criteria for inclusion were adults aged > 18 years, cognitive function reported by cognitive domains or cognitive screening subtest scores, and ascertainment of delirium using validated methods.

Results: From 4237 titles, 23 articles were included with median of 100 subjects, range 16–998; age ranging from median (IQR) = 57 (43–65) years (intensive care cohort) to mean = 84.7 years (residential care population). Six studies used short screening tests and 17 used a neuropsychological battery. Fourteen studies were performed in elective surgery, with the remainder in acute hip fracture (n = 4), critical care (n = 3), acute medicine (n = 1) and residential care (n = 1). Overall, delirium was associated with executive dysfunction in 19 and recall deficit in 11 studies. Among 18 studies assessing cognition prior to delirium, 15 showed associations with executive dysfunction and 10 with recall and memory. In the five post-delirium studies, delirium/delirium duration was associated with executive dysfunction in four with the remaining study favouring recall deficit. **Conclusions:** Available data indicate that executive and recall deficits associate with delirium vulnerability. Future studies are required to determine whether evaluating domain specific cognitive impairment helps stratify delirium risk particularly in elective surgical patients.

Abstract # 450

AREA: Delirium

The association between sarcopenia and delirium: results from the nationwide multicentre Italian Delirium Day 2017

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Introduction: Delirium and sarcopenia are common, although underdiagnosed, geriatric syndromes. Several pathological mechanisms can link delirium and sarcopenia, but few studies have investigated their association. We aimed to investigate (1) the association between delirium and sarcopenia and (2) the possible role of sarcopenia in finding cases with delirium.

Methods: The analyses were conducted employing the cross-sectional “Delirium Day” initiative, on patient 65 years and older admitted to acute hospital medical wards, emergency departments, rehabilitation wards, nursing homes and hospices in Italy in 2017.

Delirium was diagnosed as a 4 + score at the 4-AT scale. Sarcopenia was operationally defined as calf circumference ≤ 34 cm in males and ≤ 33 cm in females. Logistic regression models were used to investigate the association between sarcopenia and delirium. The discriminative ability of sarcopenia was evaluated using non-parametric ROC analyses.

Results: A sample of 1675 patients was analyzed. In total, 73.6% of participants had sarcopenia and 24.1% exhibited delirium. Sarcopenia and delirium showed an independent association (OR—95% CI 1.50–1.09, 2.08). In the subsample of patients without a diagnosis of dementia, the inclusion of calf circumference in a model based on age and sex significantly improved its discriminative accuracy (Area Under the Curve [AUC] 0.69 vs 0.57, $p < 0.001$).

Discussion and conclusion: Sarcopenia is independently associated with delirium. In patients without a previous diagnosis of dementia, calf circumference may help to better identify those who develop delirium.

Abstract # 451

AREA: Delirium

Development and validation of a delirium risk assessment tool in older patients admitted to the Emergency Department Observation Unit

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Background: Delirium is frequent though undetected in older patients admitted to Emergency Department (ED).

Aims: To develop and validate a delirium risk assessment tool for older persons admitted to the ED Observation Unit (OU).

Methods: We used data from two samples of 65 + year-old patients, one admitted to the ED of Brescia Hospital (n = 257) and one to the ED of Desio Hospital (n = 107), Italy. Data from Brescia were used as training sample, those collected in Desio as testing one. Delirium was assessed using the 4AT and patients' characteristic were retrieved from medical charts. Variables found to be associated with delirium in the training sample were tested for the creation of a delirium risk assessment tool. The resulting tool's performances were assessed in the testing subsample.

Results: Of all possible scores tested, the combination with the highest discriminative ability in the training sample included: age ≥ 75 years, dementia diagnosis, chronic use of neuroleptics, and hearing impairment. The delirium score exhibited an AUC of 0.874 and 0.893 in the training and testing samples, respectively. For a 1-point increase in the score, the odds of delirium increased more than twice in both samples.

Discussion: We propose a delirium risk assessing tool that includes variables that can be easily collected at ED admission and that can be calculated rapidly.

Conclusions: A risk assessment tool could help improving delirium detection in older persons referring to ED.

Abstract # 452**AREA: Delirium****A Quality improvement Project to improve the use of the confusion assessment methodology in diagnosing delirium on an older person's ward**

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Introduction: Despite delirium's high disease burden, it remains under-recognised and under-reported. At our trust, patients have a daily confusion assessment method (CAM) outcome documented, primarily by nursing staff, on a bespoke entry in-order to identify delirium. Our project aimed to increase the percentage of patients being correctly identified with delirium using CAM to 100% on the three ward Older Person's unit (OPU).

Methods: Over 5 months, three PDSA cycles were undertaken: Nurse-in-charge leading a discussion of CAM outcomes on board rounds, including delirium as a nursing 'Big 4' topic and asking medical teams to share responsibility for completing the CAM. Data was collected by comparing: CAM outcome, nursing note and ward round entries for one 28 bedded OPU ward on a randomly selected day after each PDSA cycle.

Results: Baseline data identified that 23% (5/22) of patients were correctly diagnosed with delirium in clinical entries however 0% were CAM positive. During the final PDSA cycle, 28% (7/25) were diagnosed in clinical entries but 0% of patients were CAM positive. Medical staff did not engage in recording CAM outcomes.

Conclusion: This demonstrates that nurse led delirium screening using CAM on an OPU ward was inaccurate, and medical teams preferred to diagnose patients in clinical entries. Questionnaires distributed after the last cycle identify that staff feel they'd benefit from further training; this will inform further changes. Further cycles will include ward-based simulation training, displaying CAM outcomes and facilitating multidisciplinary working by updating medical recording infrastructure.

Abstract # 453**AREA: Delirium****Delirium – a clinical orphan in elderly health care a national educational drive in Qatar calls for time for its ownership**

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Introduction: Delirium—an unrecognized medical emergency leading to morbidity and Mortality in Elderly remains an observation both known and ignored in elderly healthcare. Poor Recognition-Poor Detection -Lack of ownership when detected, makes Delirium the Clinical Orphan Crippling the Elderly Healthcare across the globe. Delirium care in Elderly in Qatar—Current Context: According to our recent clinical delirium is poorly recognized across Qatar's Elderly care facilities (< 10% diagnosed, reference delirium audit 2018). It was associated with high risk of mortality with the data showing 25%, expired within a years' time. Interventions: (1) 90 Minutes-Think Delirium- Focused Case Based Workshop For Frontline Healthcare Staff (2) Invited International Delirium Expert Didactic Lecture Across Qatar's Healthcare Facilities (3) Bedside Delirium Training To Nursing Floors (4) Delirium Train The Trainer System For Qatar

Healthcare Established (5) Delirium Public Education Video, Spot It-Prevent It Posters, And Leaflets Developed (7) Qatar Signed Up For HELP As An Institution To Hospital Elder Life Program (HELP) For Prevention Of Delirium(8) Initiated Works On Standardizing Delirium Care Across All Major Intensive Care Units Across Qatar's Healthcare (9) Initiated Works For Qatar—UK DELPHIC.

Results: This National educational drive through 55 Educational Events and activities across the state of Qatar through Qatar's Healthcare and community facilities, training 3840 health care staff and raising awareness in 4500 people in the community.

Conclusions: Our Delirium—National education drive took the clinical ownership for this century old clinical orphan -enhancing for a safer elderly healthcare for Qatar.

Abstract # 454**AREA: Delirium****Risk factors for delirium and effective intervention components to prevent delirium associated with a change of location and room in older patients: a systematic search and review**

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Background: Transfers pose a risk for delirium development. To date, there has been no systematic review of risk factors for delirium or interventions to prevent delirium associated with a change of location and room. The aim was to identify risk factors and effective intervention components for delirium prevention in connection with a change of location and room for patients aged 65 years and older within the project "TRANsport and DELir in older people" (TRADE). **Methods:** A systematic search in MEDLINE via PubMed, CINAHL, Embase, Cochrane Library and PsycINFO (including hand searching, free web searching, citation tracking) was conducted. Abstract screening, data extraction and critical appraisal (using JBI's Critical Appraisal Tools) were done by two independent reviewers.

Results: In total, 13,555 articles were identified. After removing duplicates 9102 titles and abstracts and 172 full texts were screened. Finally eight studies were included. The following results could be found: (1) an increased number of room changes per patient days can be identified as a risk factor, (2) the involvement of family/relatives, the education and information for patients, relatives and staff, the use of tailored patient-level interventions and multiple interventions could have a positive effect on reducing or preventing delirium. The quality of the evidence is moderate to low.

Conclusion: Despite the scarcity of relevant studies one risk factor and some relevant intervention components for delirium prevention during transfers were found which will be considered for the development of the intervention within the TRADE project. Further high quality research in this area is needed.

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Abstract # 455

AREA: Delirium

Alert, attentive and orientated? 4AT delirium screen compliance in a tertiary hospital

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Introduction: Delirium is an acute change in cognitive function that is likely to be reversible or preventable [1]. It affects over one third of hospitalised medical patients over the age of 70 [2] and adversely impacts hospital costs and length of stay [3]. 4AT is a bedside tool for delirium assessment with a pooled sensitivity and specificity of 88% [4].

Methods: 30 patients over the age of 65 from a care for the elderly ward were identified. Chart review was performed to assess route of admission, whether 4AT scores were performed on admission and by day 5, and to assess if common delirium precipitants (pain, infection and constipation) were identified. The data were audited against the Health Service Executive (HSE) guidelines for early identification and initial management of delirium in the emergency department.

Results: Of the patients selected, 80% of those were admitted via the Geriatric Emergency Multidisciplinary Service and the remainder via the Emergency Department. 77% of patients had a 4AT score calculated on admission, with only 18% repeated by day 5 of stay. Three main precipitant factors for delirium were identified: pain, infection and constipation. 70% of cases addressed pain prevention or treatment, 10% addressed constipation and 27% either considered or treated infection.

Key conclusions: 4AT was performed on admission in the majority (80%) of patients. Repeat evaluation using 4AT had been performed in fewer than 18% of cases. Further staff education and training to improve compliance and patient outcomes in the setting of delirium is required.

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Abstract # 456

AREA: Delirium

Use of the Trail Making Test-a for the detection of delirium

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Introduction: The Trail Making Test A (TMT-A) is a neuropsychological assessment that consists of 25 circled numbers that the participant has to connect in numerical sequence. As inattention is a key feature in the diagnosis of delirium we hypothesised that participants with delirium would require more time to complete the test than normal controls.

Methods: There were 52 inpatient participants recruited, age 65 and above. Delirium was assessed using the Delirium Rating Scale-Revised 1998 (DRS-R98) and DSM IV was used to confirm delirium diagnosis. The time taken to complete the TMT-A was recorded. If not completed after 3 min the test was discontinued and the maximum number reached was recorded.

Results: In the delirium group 72% (18) did not complete the Trail test within 3 min. This compares to 22% (6) of the control group ($p < 0.001$). DRS-R98 severity score was correlated with both the time taken to complete the test ($r = 0.73$, $p < 0.001$) and the maximum number reached ($r = -0.82$, $p < 0.001$). When the maximum number reached in 3 min was analysed the inability to reach number 19 was found to have a sensitivity of 92.3%, specificity of 87.1%, positive predictive value of 75% and negative predictive value of 96.4% for the diagnosis of delirium.

Conclusions: The TMT-A is a sensitive and specific test for the diagnosis of delirium in older in-patients, with the time taken to complete and the number reached being highly correlated to DRS-R98 severity score.

Abstract # 457

AREA: Delirium

Delirium in a Norwegian Stroke-population

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Background: Delirium is a common complication in hospitalized patients, especially among older and severely ill patients. A stroke is a severe condition, it leads to acute brain damage, and is associated with an increased risk of cognitive impairment. Still, the prevalence and impact of delirium are scarcely investigated in stroke populations. Hence, we aimed to assess delirium in a Norwegian stroke-population.

Method: All patients admitted to the stroke unit at Bærum Hospital, Norway, from March-October 2020, with a confirmed stroke diagnosis during the hospital stay, were invited to participate. Delirium screening was performed using 4AT at day 1 and if a patient's condition changed. If positive screening, delirium diagnosis was validated by a geriatrician.

Results: In all, 62 patients with confirmed stroke were enrolled, mean age was 73.3, and 92% had ischemic etiology. Median NIHSS at admission was two (range 15), in which 62% was classified as minor stroke (NIHSS 0–5). A total of 47 patients had a 4AT score of 0, and only two had a score of ≥ 4 and confirmed delirium the first day after admission. Additional two developed delirium during the stay. Two of the four patients with delirium had a minor stroke, in which one had preexisting cognitive impairment, and the other one suffered from pneumonia. Mean hospital stay was 10.3 days for patients with delirium compared to 6.2 days without delirium. Patients with delirium were in need of care after discharge.

Conclusion: Delirium was rare in a population with minor stroke without preexisting cognitive impairment.

Abstract # 458

AREA: Delirium

Delirium in geriatric surgical patients

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Introduction: Preoperative evaluation in geriatric patients is necessary to optimize care before surgery and to identify potential risk of adverse events. Among these delirium is the most common and serious postoperative complications. Aim of this study is to describe potential association between patient's characteristics and incidence of delirium in older patients undergoing surgery.

Methods: 429 over 70 candidates to cancer surgical procedures were preoperatively evaluated according to an ad hoc geriatric assessment. Post operative delirium, as assessed by 4At, a test for delirium and cognitive impairment, was the main outcome of this study.

Results: 375 patients underwent surgery (87.4%): mean age was 80.3 ± 4.8, MMSE: 25.6 ± 4.9, GDS 2.1 ± 2.5, IADL 1.2 ± 2.1 and BADL lost functions 0.6 ± 0.2. 37.5% had an inadequate consumption of alcohol (F > 50 g/die; M > 75 g/die); 51.7% more than moderate impairment of vision and 17% of hearing. After surgery delirium was observed in 79 patients (21.1%); most of them have a diagnosis of colon cancer.

Key conclusions: Geriatric conditions are frequently associated with adverse surgical outcomes. Based on our observations we found that patients with colon cancer are those more likely to develop delirium after surgery. Although some risk factors for delirium cannot be changed, others are potentially modifiable and should be optimized, when possible, before and after surgical procedures.

Abstract # 459

AREA: Delirium

Association between frailty and post-operative delirium in acute hip fractures 65 and above

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Introduction: Post-operative delirium is common in elderly hip fracture patients. Although frailty is one of the factors linked to adverse outcomes, including post-operative delirium in hip fracture patients, the effect of gender in this role is less clear.

Aims and objectives: 1. Is frailty associated with increased risk of post-operative delirium in elderly patients with acute hip fracture? 2. Does gender influence this association?

Methods: A retrospective, cross-sectional analysis was carried out on acute hip fracture patients aged 65 and above admitted to a district general hospital over the course of 1 year—January to December 2019. Anonymized data was manually extracted from electronic records of the patients. Patients with incomplete data were excluded from analysis. SPSS 27 software was used for statistical analysis. Rockwood Clinical Frailty Scale (CFS) was used to measure frailty in these patients. The 4-point screening tool for alertness, cognition,

attention and acute fluctuation in mental status (4-AT) delirium screening tool used in hip fracture patients in the United Kingdom (UK) was used to screen for post-operative delirium. Descriptive statistics were used to assess baseline characteristics of the patients and spearman correlation co-efficient and regression analyses were used to determine and measure correlation.

Results: 310 patients were analysed—227 females and 83 males. Mean overall age, mean age of the male and female patients were 82.2 years ± 8.48, 81 years ± 7.97 and 82.7 years ± 8.63 respectively. There was statistically significant positive correlation between frailty and post-operative delirium overall and in the female patients but not the males ($r = 0.281$; $p < 0.001$; $r = 0.321$; $p < 0.001$; $r = 0.222$; $p < 0.054$ respectively).

Conclusions: Frailty is associated with increased risk of post-operative delirium in female but not male acute hip fracture patients. These findings may need further exploration especially with regard to risk stratification and measures designed to reduce post-operative delirium in hip fractures.

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Abstract # 460

AREA: Delirium

Atrophy and white matter disease on brain imaging and associations with delirium: A systematic review

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Introduction: Brain imaging is frequently performed as part of routine care for older people and may represent an under-used resource. This systematic review aimed to ascertain associations between brain imaging variables (white matter changes (WMC) and atrophy) and delirium.

Methods: Studies were identified via electronic searches in EMBASE and MEDLINE databases (1985—present) using the following exploded MeSH terms and keywords: [delirium] AND [“central nervous system white matter” OR “white matter disease” OR “cerebral small vessel disease” OR “white matter hyperintensit*” OR “white matter integrity” OR “white matter diffusion” OR “diffusion MRI” OR “atrophy”]. Included studies had participants > 18 years who underwent delirium screening where structural brain imaging findings of WMC or atrophy were reported.

Results: Initial search yielded 1314 titles from which 19 were included, comprising 14 studies (MRI = 11, CT = 3). Sample sizes were generally small ($n = 16$ –200, median = 88) with median age range 50–79 years. Brain imaging was performed before delirium occurred (elective surgical patients, $n = 6$), during admission complicated by delirium (acute medicine cohorts, $n = 4$), or after delirium (post-operative or intensive care cohorts, $n = 4$). WMC were associated with delirium in 5/6 pre-delirium, 1/3 intra-admission (not examined in 1), and 3/4 post-delirium imaging studies. Only 1 pre-

delirium, 3 intra-admission, and 3 post-delirium imaging studies found associations with atrophy.

Conclusions: Brain imaging abnormalities are associated with delirium with WMC more often reported than atrophy. Further studies are required to establish whether information from routinely acquired brain imaging may aid in delirium risk stratification over and above other known predictors.

Abstract # 461

AREA: Delirium

Preventive isolation due to SARS-COV2 and delirium in hospitalized geriatric patients

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Introduction: Delirium is a geriatric syndrome that affects a high percentage of hospitalized patients, being a predictor of poor prognosis and high morbidity and mortality. Given the SARS-COV2 pandemic situation, all admitted patients remain in preventive isolation, which may lead to an increase in the prevalence of delirium.

Objetives: Prevalence of delirium in isolation zone and its characteristics. To determine other risk factors associated with delirium.

Methods: Descriptive, retrospective study of 117 patients who suffered delirium between November and February 2021. Variables: age, sex, functional status, comorbidity, CoV2 infection, precipitating events of delirium, death, use of neuroleptics, characteristics of delirium.

Results: Sample: 400 patients, 117 delirium (29.2%), 62.1% female, mean age: 89 (SD 5.28), Barthel index < 20: 44.3%. Zones: 47.3% isolation, 49.2% both, 3.5% clean Neuroleptics: 43.9% prior, 44% no use, 12.1% de novo upon discharge Delirium on admission: 20% Time of day: 3.4% daytime, 39.7% nighttime, 56.9% permanent. Comorbidity: 26.7% COV2, 61.1% Infection, 75.9% dementia, 20.9% malnutrition, 22.4% dehydration, 50% chronic pain, 55.2% constipation, 17.2% acute urine retention (AUR), 30.2% hearing loss, 21.6% visual deficit, 19.9% deceased Containment: 19% Acute COVID: 64.5% containment, 61.3% constipation, 64.5% permanent delirium, 71% deceased.

Conclusions: High prevalence of delirium in geriatric patients with functional impairment, predominantly in those with infection, advanced dementia and chronic pain. High frequency of delirium on admission, predominantly permanent and nocturnal. Loneliness in isolation is considered a risk factor for delirium. Greater need for the use of containment and permanent delirium in COVID patients. Constipation, hearing loss, visual impairment, and AUR are also predisposing risk factors.

Abstract # 462

AREA: Delirium

Prevention and management of delirium in a surgical ward: an improvement project in a UK Single Centre Surgical Unit

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Introduction: Delirium is highly prevalent in older surgical patients. It is associated with increased mortality, longer hospitalisation, functional decline and therefore higher health care costs. The NICE guideline for the diagnosis, prevention and management of delirium recommends several interventions targeted at modifiable risk factors to reduce risk of delirium. However, the local management of delirium remains a challenge on surgical wards. The aim of this clinical audit is to evaluate local practice in the management of delirium on surgical wards.

Methods: Retrospective data collection was undertaken of a convenience sample of patients admitted to surgical wards at Whipps Cross Hospital between February and July 2020. Local adherence to the recommended NICE guidelines was evaluated in the 7 days post diagnosis of delirium for each patient. Quantitative analysis of discrete data with graphical representation was undertaken, with 80% percent adherence to standards considered acceptable.

Results: Data was collected for 52 patients. Only 3 of the 11 NICE recommendations achieved the expected adherence. Results were presented in an interdisciplinary focus group. The subsequent discussions were translated to a set of local interventions to be introduced on the surgical ward.

Conclusions: There is large room for improvement to compliance with guidelines. Using an interdisciplinary and multifocal approach, the authors aim to improve adherence in the second cycle of the audit.

Abstract # 463

AREA: Delirium

Use of psychoactive drugs and delirium in patients 65 + years. A quality study from a general hospital

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Introduction: In a general hospital where the majority of patients are older, detection and non-pharmacological management of delirium are quality-of-care elements. During the last decade, measures for expanding knowledge and improvement of delirium care have been introduced in our hospital. This study evaluates detection of delirium and the use of psychoactive drugs during this period.

Methods: A quality study with patient administrative data from 2011 to 2020 and use of psychoactive drugs from 2013 to 2020. Data included number of admissions (total and patients 65 + years) in medical wards, surgical wards and post-operative and intensive care unit, number of admissions with delirium ICD-10 diagnoses (F05.*) and length of stay (LOS). Provision of psychoactive drugs (haloperidol, olanzapine, quetiapine and oxazepam) as Defined Daily Doses per 100 hospital days was obtained from the hospital pharmacy.

Results: Number of admissions for older patients (65 + years) increased from 5967 to 7837, and delirium diagnoses increased from 2.0 to 5.0% in 2011–2020. During the same period LOS decreased from mean 11.5–6.0 days. In total DDDs haloperidol use decreased from 2013 to 2020, while olanzapine and quetiapine increased from 2013 to 2016 and then decreased. Oxazepam-use was slightly increased at the medical wards. **Conclusions:** Detection of delirium (registration of diagnoses) was lower and not satisfactory compared to results from systematic studies. The use of psychoactive drugs, particularly antipsychotics, shows a slight decrease. Further quality improvement is needed to reach international recommendations.

Abstract # 464**AREA: Delirium****Scatolia and coprophagia as unpleasant rare manifestations of postoperative acute confusional state**Atef Michael¹, Sophie Wallace¹, David Westacott¹¹Russells Hall Hospital, Dudley, UK

Introduction: A 78 years old male was hospitalised following an accidental fall that resulted in intra-capsular fracture of his right neck of femur that was surgically repaired with hemiarthroplasty. His past medical history included hypertension, benign prostate hyperplasia and ileostomy for ulcerative colitis. He had no previous memory or mental health issues. He used to drink about 8 units weekly. On the first postoperative evening, he became pyrexial and confused and was treated with antibiotics for urinary tract infection. On the 4th postoperative day he was speaking inappropriately with regard to culture and religion and expressed racist views. On the 5th postoperative day he had AMT of 4/4 but he was agitated and had visual and auditory hallucination. He was prescribed lorazepam, however remained confused, aggressive with erratic behaviour. On the 10th postoperative day he pulled off the stoma bag, proceeded to fling contents around room, rubbed this into his hair, around his mouth and may have consumed some. CT head showed no significant abnormalities, and stool and urine cultures were negative. Quetiapine was started and the next day cognition improved and he was oriented for time, day, year and place. However confusion fluctuated. On the 16th postoperative day he was more settled, with occasional delusional ideas but had insight into previous events and apologised. By the 18th postoperative day delirium resolved. He was discharged on Quetiapine 12.5 mg twice daily with a plan to reduce and then stop.

Discussion: Scatolia is the act of fecal smearing and coprophagia is the act of eating one's own feces. They are rarely reported symptoms and there is little published literature on these behaviors in adults. There are some studies that examine the prevalence and predisposing factors of scatolia and coprophagia in children with Autistic Spectrum Disorder and developmental delay. In adults, scatolia may occur in patients with a history of schizophrenia, bipolar disorders, obsessive-compulsive disorders, anxiety and depression. The etiology, pathogenesis and treatment of coprophagia are not well established. Some researchers classified coprophagia, as an unusual form of pica. Coprophagia has been exhibited in patients with dementia, schizophrenia and in patients with diffuse brain injuries. It has also been described in patients with developmental delay, steroid psychosis, seizures and frontal lobe tumors. In dementia patients a study has shown correlation between scatolia and lower cognitive function tests scores, along with a more severe negative affect. Coprophagia could also be due to structural brain damage. The Klüver-Bucy syndrome, in humans, results from bilateral temporal lobe dysfunction. It is characterised by hyperorality and inappropriate sexual behaviour. It has been observed in Alzheimer's disease, Pick's disease, head trauma and following herpes encephalitis. There are many documented cases in which the hyperorality in the Klüver-Bucy syndrome extends to coprophagia. In all cases the Klüver-Bucy syndrome co-exists with aphasia, amnesia or dementia. Carbamazepine may be an effective agent in the treatment of the behavioural disorder in this syndrome. Scatolia and coprophagia have been seen in patients with obsessive-compulsive disorders. The behaviour improved after patients commenced specific therapy. The use of Selective Serotonin Reuptake Inhibitors (SSRIs) may also be effective at reducing the frequency of these behaviours, particularly when the behaviour is present on a background of depression or anxiety.

Abstract # 465**AREA: Delirium****A positive 4AT delirium assessment tool score on hospital admission is linked to mortality, length of stay and home time: a study of 82,770 emergency hospital admissions in Edinburgh And Salfor**Temi Ibitoye¹, Atul Anand¹, Michael Cheng², Alasdair M.J. MacLulich¹, Emma R.L.C. Vardy³¹University of Edinburgh, UK, ²Salford Royal NHS Foundation Trust, UK, ³Salford Royal NHS Foundation Trust, UK & University of Manchester, UK

Introduction: Delirium is linked with poor outcomes but studies using large-scale routine data are scarce. The 4AT is a brief, well-validated tool for detecting delirium. We performed a two-centre study (Edinburgh and Salford) of Electronic Health Record (EHR) 4AT scores in relation to 30-day inpatient mortality, length of stay (LOS), and time at home ('home time') in the year following index admission.

Methods: The study period was between April 2016 (Edinburgh)/September 2017 (Salford) and April 2020 (both centres). We analysed EHR-derived 4AT scores, recorded within 24 h of admission, and outcomes data from 82,770 emergency hospital admissions in patients aged ≥ 65 .

Results: 4AT scores suggestive of delirium (≥ 4) were present in 25% of patients in Salford, and 18% in Edinburgh. After adjustment for age and sex, 30-day inpatient mortality in patients with 4AT ≥ 4 was 5.5-fold greater than the 4AT 0 group in Edinburgh (aOR 5.53, 95% confidence interval [CI] 4.99–6.13) and 3.4-fold greater in Salford (aOR 3.39, 95% CI 2.98–3.87). LOS was more than double in patients with any abnormal 4AT score compared to the 4AT 0 group, and patients with 4AT ≥ 4 had lower median 'home time' at 1 year.

Conclusions: This large-scale study using routine clinical data confirms the relationships between delirium and poor outcomes previously reported in smaller studies. The results demonstrate the feasibility and value of using the 4AT to identify delirium as a strong marker of adverse outcomes and will be helpful in guiding policy development around patient safety.

Abstract # 466**AREA: Delirium****Prognostic signatures of delirium and laboratory values for older critically ill inpatients**Nick Nolting¹, Melanie Hochleitner¹, Lena Pickert¹, Ingrid Becker², Anna Meyer¹, Thomas Benzing³, Matthias Kochanek⁴, Maria Cristina Polidori³

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Background: Prognosis in advanced age is influenced by factors associated with multidimensional frailty, but in urgent settings the comprehensive approach is usually considered unfeasible. Aim of the study was to evaluate the Comprehensive Geriatric Assessment (CGA)-based multidimensional prognosis and to investigate its relationship to geriatric syndromes (GS), resources (GR) and laboratory profiles.

Patients and methods: 116 hospitalized patients older than 65 years in intermediate or intensive care units underwent a CGA-based Multidimensional Prognostic Index (MPI) calculation. Patients were subdivided in low (MPI-1, score 0–0.33), moderate (MPI-2, score 0.34–0.66), and severe (MPI-3, score 0.67–1)-risk of mortality at 1 month and 1 year. Ten geriatric resources (GR), 17 geriatric syndromes (GS), quality of life using the EQ-5D-5L and laboratory values were collected.

Results: 35% and 56% of the patient collective were allocated to MPI-2 and MPI-3 classes, respectively. A total of 34 (29.3%) patients were diagnosed with delirium upon admission to the IMC or ICU. Delirium was significantly associated with higher MPI scores, worse quality of life and increased mortality at 3 months. Independent of delirium presence, lab values of procalcitonin ($p = 0.039$), Quick ($p = 0.034$), bilirubin ($p = 0.049$), creatinine ($p = 0.067$) and urea ($p = 0.049$) were associated to mortality and were able to increase the predictive power of the MPI. Further statistical analyses are ongoing at the time of the abstract submission.

Conclusion: Older critically ill patients admitted to the IMC or ICU represent a highly vulnerable group with high MPI scores, a significant prevalence of delirium and a lab signature likely enabling a more comprehensive, accurate risk stratification in critical medicine in advanced age.

Abstract # 467

AREA: Delirium

Screening of cardiac surgery patients - Polish validation 4AT tool

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Introduction: Delirium is a phenomenon which affects patients with various disorders and representing various age groups. Screening instruments make it possible to diagnose the condition at an early stage and to prevent its development. AimThe aim of the present study was to examine the reliability and validity of the Polish version of the 4AT (Pol4-AT) for use by nurses working in intensive care units.

Methods: The patients were selected at random (in sequence any patient returning from a surgery and staying in hospital for 6 days). The conditions for entering the study included the subjects' informed consent and age > 18 years. The poster presents validation of the 4AT instrument, i.e. a two-minute test used to identify delirium. A cross-sectional observational study among a convenience sample in the region of South Poland. The study was reported in accordance with the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) checklist.

Results: The current findings show that the 4AT scale can effectively be used in Poland, not only in geriatric patients but also at surgical wards and at ICUs. The study showed Cronbach's alpha amounting to 0.843.

Conclusions and implications: There is currently no validation tool in Poland that can be used in the diagnosis and screening of delirium.

The 4AT tool is the first scale do screening delirium which have been translated and validated into Polish.

Keywords: Delirium; 4AT Scale; Cardiac surgery; Validation.

Abstract # 468

AREA: Delirium

A complex intervention to promote prevention of delirium in older adults by targeting caregiver's participation during and after hospital discharge – study protocol of the TRANsport and DELirium in older people (TRADE) project

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Introduction: Among potentially modifiable risk factors for delirium in older adults, transfers between wards, hospitals and other facilities have a low level of evidence. TRADE (TRANsport and DELirium in older people) aims to i) develop a complex intervention targeting caregiver's participation during patient's transfer within and discharge from the hospital and ii) evaluate the feasibility, acceptance and potential impact of the intervention on delirium incidence.

Methods: The study is designed according to the UK Medical Research Council guidelines for development and evaluation of complex interventions and comprises the first two steps, development and feasibility/piloting. The development includes (i) a multicenter

observational prospective cohort study to assess delirium incidence and cognitive decline associated with transfer and discharge, (ii) a systematic review, (iii) stakeholder focus group interviews and (iv) an expert workshop. Based on this information, an intervention to improve caregiver's participation in discharge and transport was developed. The intervention is currently being tested for feasibility and acceptance using a stepped wedge design, accompanied by a process evaluation. Primary endpoints are delirium incidence and cognitive function. Secondary endpoints include prevalence of caregiver companionship, functional decline and cost effectiveness. Data will be collected before discharge as well as after 3, 7 and 90 days. **Expected results and conclusions:** TRADE will help to evaluate transfer and discharge as possible risk factors for delirium. In addition, TRADE evaluates the impact and modifiability of caregiver's participation during patient's transfer or discharge on delirium incidence and cognitive decline, providing the foundation for a confirmatory implementation study.

Abstract # 469

AREA: Delirium

A therapeutic vibrating insole device for postural stability in older people with type 2 diabetes. a randomized control study (SENSOLE, part II)

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Introduction: Frail older people with diabetes often present with or develop walking impairments, in part due to lower-limb sensory-motor neuropathy. Several studies suggest a possible improvement of balance control using somatosensory stimulation. We undertook a randomized control trial whose aim was to observe whether 1-month daily use of this device improves walking speed as measured in the 10 m fast walking speed test standardized on body size at month-1 (M1) (FWS). Secondary outcomes were the differences between intervention (VS) and control (C) in the 10 m normal walking speed test, the length step, the SPPB, the TUG, and posturographic measures.

Methods: The intervention consisted in home 22-min daily vibrating sequences with noise intensity set at 90% of the tactile threshold for each foot. In C group the noise was set at 0. Compliance was retrieved from the device.

Results: Among 56 subjects 27 were in the VS group and 29 in the C group; they were frail for 35, prefrail for 15 and non-frail for 6. Bilateral neuropathy was present in 17 subjects. More than half of sessions were done in 16 subjects in VS group and in 20 subjects in C group. At M1 there were no discernable differences in FWS according group (VS: 0.96 (0.53) cm s⁻¹.cm⁻¹, C: 0.94 (0.47) cm s⁻¹.cm⁻¹) and in other outcomes, irrespective to the presence of bilateral neuropathy.

Conclusion: In older frail, prefrail or non-frail subjects with diabetes changes in measures of walking speed and related assessments were not observed with this vibrating insole 1-month intervention. Larger studies with different stimulation protocol are required to test this hypothesis more fully.

Abstract # 470

AREA: Diabetes

Foot care knowledge amongst Maltese individuals with diabetes: trends and determinants

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Background: Diabetes mellitus (DM) is one of the emergent global health emergencies of the twenty-first century. In 2019, The International Diabetes Federation estimated that 463 million people had DM and this number was predicted to reach 578 million by 2030, and 700 million by 2045. Between 2014 and 2016, the prevalence of individuals with Type 2 DM aged between 25 and 64 years in Malta was found to be 10.39% (95% CI 9.47–11.38) (Cuschieri, Vassallo, Calleja, Pace, & Mamo, 2016). DM not only lessens the quality of life and life expectancy but also leads to several microvascular and macrovascular complications, including those affecting the lower limb (LL). The burden of DM-associated complications worldwide is a chief healthcare problem. Patient self-management is crucial to effectively manage DM and prevent its complications, including those of the LL. Some of the risk factors can be minimised if individuals have satisfactory knowledge of foot-care (Chiwanga & Njelekela, 2015). International studies have shown inequalities in foot-care knowledge across the globe. Various potential determinants have been identified, with cultural issues being amongst those factors found to possible influence foot care. Although small scale studies on foot-care were conducted in Malta, these failed to effectively address determinants of foot-care knowledge. Hence, this study was aimed to investigate the trends and determinants of foot-care knowledge amongst individuals with Type 2 DM living in Malta.

Methods: A cross-sectional telephone-based quantitative study was conducted between April 2019 and January 2020. The survey tool investigated socio-demographic characteristics and foot-care knowledge of the participants. Clinical data was collected via the participant's medical history record. Questionnaires were tested for validity and reliability. A pilot study was also conducted. 400 participants were conveniently recruited from 6 podiatry clinics across Malta. Data collected was first weighted to enhance representativeness and then analyzed using univariate and multivariate logistic regression analysis.

Results: 384 individuals with Type 2 DM were interviewed, giving a response rate of 96%. After weighting, data analysis was performed on 376 participants. Participants were found to have good foot-care knowledge (mean score: 12.80 CI 12.61, 13.00; total possible score: 16). Satisfactory knowledge was identified regarding LL complications, foot hygiene and drawbacks of barefoot walking and flip-flop use. Lack of knowledge was mainly reported about daily soaking of feet. Age, gender, history of ulceration and/or amputation and previous foot care education were found to determine foot-care knowledge.

Conclusion: Findings of this study have shed light on the prevalence and determinants of foot care. The latter seem to be shaped by individuals' psychological responses to their condition, by socio-cultural factors and current approaches to health service delivery. Recommendations were developed accordingly, and included amongst other, the development of a screening algorithm which will help guide the delivery of individualized foot care education during podiatry consultations.

Abstract # 471**AREA: Diabetes****Falls, hospitalizations and poor self-perception in elderly with diabetes and frailty: results from SABE Colombia Study**

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Introduction: Diabetes and frailty, together, have been related to adverse events such as increased risk of hypoglycemia, functional decline, disability, hospital admissions and worsening of quality of life. We estimated the prevalence of diabetes and frailty and their association with hospitalization, poor self-perception of health, recurrent falls and fear of falling.

Methods: Data came from the “Salud, Bienestar y Envejecimiento” (SABE) Colombia Study 2015, a cross-sectional study of 23,694 community-dwelling adults aged 60 years and older living in rural or urban areas, a representative sample from the total population. Frailty was defined using the frailty phenotype criteria adjusted to variables evaluated in this study. Diabetes prevalence was considered by self-report.

Results: From 3873 elderly analyzed, 16.2% had diabetes, were more likely to be woman, younger age (≤ 69 years), lived in urban area and had lower economic ingress. Geriatric syndromes, chronic illnesses, hospitalization during last year and poor self-perception of health were also significantly associated with diabetes. The prevalence of older adults having diabetes and frailty was 22.4% and when adjusted by potentially confounders factors in a logistic regression model, diabetes and frailty were significantly associated with last year hospitalization, poor self-perception of health, recurrent falls and fear of falling, associations that were higher than association with diabetes and frailty alone.

Conclusions: One in every four elderly evaluated with diabetes, had frailty. This study highlights the importance of prevention, identification and treatment of frailty, to prevent geriatric syndromes and look for better health perception and quality of life.

Abstract # 472**AREA: Diabetes****Diabetes-specific nutrition care resulting in improved outcomes for colombian older adults with malnutrition risk: results of a quality improvement program**

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Rationale: Diabetes puts significant clinical and economic demands on healthcare systems globally. Similarly, disease-associated malnutrition is associated with adverse outcomes resulting in high healthcare costs. Diabetes-specific nutrition care however is effective in alleviating the burden of diabetes and malnutrition by improving patient's health. We assessed the effectiveness of a nutrition-focused

quality improvement program (QIP) on outcomes of Colombian older community-dwelling adults with diabetes.

Methods: QIP patients included at-risk/malnourished per the Mini Nutritional Assessment-Short Form (MNA-SF) receiving care at the outpatient clinical service of Hospital Universitario San Ignacio in Bogotá, Colombia between September 2019-July 2020. Patients were followed for up to 12 weeks and received a 60-day supply of diabetes-specific oral nutritional supplement (ONS; Glucerna, Abbott, USA) along with nutrition and exercise education.

Results: Of 618 QIP patients, 114 (18.4%) were patients with diabetes. Patients were mainly older adults (74.7 ± 8.52 years), female (71%), with $3.4 (\pm 1.5)$ comorbid conditions. Significant improvements in nutritional status (MNA-SF scores: 9.2 vs. 11.7) and calf circumference (30.9 vs. 32.8 cm) were observed (p -values < 0.001). Healthcare utilization (hospitalizations, emergency department and outpatient visits) significantly decreased over the 90-days period (2.99 vs. 1.92 visits, $p < 0.001$). Maintenance of a healthy body mass index, functionality, and overall health status were also observed.

Conclusion: Nutrition-focused care in outpatient clinics for at-risk/malnourished older Colombian adults with diabetes is associated with improved nutritional outcomes and reduced healthcare resource use. These results highlight the importance of comprehensive nutrition care with diabetes-specific ONS to alleviate the clinical and economic burden of diabetes and malnutrition.

Abstract # 473**AREA: Diabetes****Application of the dipeptide bioregulator L-Glu-L-Trp in the treatment of complications of diabetes mellitus “diabetic foot”**

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The problem of treating complications of diabetes continues to be an acute problem in modern medicine. One of the serious complications of diabetes mellitus is the “diabetic foot” syndrome. With this complication, a complex of anatomical and functional changes is observed, leading to the development of tissue hypoxia, and as a result to its infection. The main mechanism for the development of tissue ischemia in diabetes mellitus is the activation of HIF1a (a specific regulatory protein—hypoxia-induced factor) factor. A group of scientists at the St. Petersburg Institute of Bioregulation and Gerontology has identified a new property of the medicinal thymus dipeptide (L-Glu-L-Trp), which helps to reduce tissue hypoxia. The aim of our work was to study the effect of topical application of dipeptide in the treatment of trophic disorders in patients with diabetic foot. The study involved 29 patients with insulin-dependent diabetes mellitus. The patients were divided into two groups: the main group—with the use of the drug dipeptide L-Glu-L-Trp, and the control group—without the use of the dipeptide. Trophic wounds with involvement of skin, subcutaneous fat, muscle tissue, without bone damage were revealed in all patients during the examination. The assessment of the effect of dipeptide L-Glu-L-Trp on the clinical course of diabetic foot, as well as its effect on the level of tissue oxygenation (according to the level of concentration of HIF-1a protein in human blood plasma) was evaluated twice—at the beginning of the study and the next day after the end of observation—on 21 days. According to the results of the study under the influence of the dipeptide L-Glu-L-Trp, a significant decrease in the concentration of HIF-1a protein in the blood plasma in patients of the main group was revealed by 30% compared to the control. The obtained data indicate that under the action of the dipeptide L-Glu-L-Trp, due to the

improvement of tissue oxygenation, there was an improvement in trophic processes in them, which was expressed in an improvement in the healing ability of the affected tissue. The obtained data indicate the prospects of studying a medicinal dipeptide for topical use of this drug, for the treatment of complications of diabetes mellitus—diabetic foot.

References:

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Abstract # 474

AREA: Diabetes

Experimental use of topical insulin in the cure of three foot ulcers

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The main pathogenic mechanisms involved in the development of skin ulcers are: microangiopathy, premature aging of fibroblasts, immune-mediated processes, changes structural and functional cells of the cell basement membrane. The healing process of the ulcers is a complex mechanism that involves components of the extracellular matrix, resident cells (keratinocytes, fibroblasts, endothelial cells, cells nerve mediators), lipid mediators (prostaglandins, leukotrienes, platelet aggregation factor) and proteins (cytokines, chemokines, growth factors, receptors, proteases and their inhibitors) Tissue repair consists of 3 phases: * Inflammatory: macrophages and neutrophils accumulate in the wound bed to engulf microorganisms and remove cellular debris. They secrete cytokines (IL-1, IL-6), and growth factors (TGFbeta), responsible for cell movement and infiltration, and tumor necrosis factor (TNF alpha) * Proliferative: it is characterized by angiogenesis (regulated by vascular endothelial growth factor—VEGF), production of collagen by fibroblasts and intense cell migration, mainly keratinocytes that promote re-epithelialization. n. Endothelial cells in normal and healthy capillaries at the wound margins secrete collagenase and activate plasminogen, which allow the migration of endothelial cells in the direction of the wound and proliferation of granulation tissue. * Remodeling: responsible for the repair and contraction of the wound. The granulation tissue is replaced by dense connective tissue and cellular reorganization of the epidermis. Insulin is an anabolic hormone with important cellular metabolic and mitogenic effects, mediated through the insulin receptor (IR). May induce faster wound closure in virtue of the regulation of glucose metabolism and inflammatory cytokines. Collagen is produced by fibroblasts present in the matrix, where there is evidence that insulin also induces their synthesis. Insulin also stimulates mitogenesis activating protein kinase (MAPK) and stimulates the growth and differentiation of different cell types and interferes with the proliferation, migration and secretion of keratinocytes, endothelial cells and fibroblasts; functioning as a growth hormone. In our experience of treating three ulcers by applying it directly on the ulcer tissue during a period of approximately 1 month we have observed in two of them an accelerated and satisfactory healing process.

Abstract # 475

AREA: Diabetes

Risk factors associated with emergency service revisits in frailty diabetic patients who consult for hypoglycemia

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Introduction: Emergency department (ED) visits due to hypoglycaemia are frequent in elderly patients. The main objective of the study is to evaluate the risk factors associated to ED re-visits at 90 days in elderly patients who visited ED with an episode of hypoglycaemia.

Methods: A retrospective observational study was designed, including elderly diabetic patients (> 65 years) attended in a fragility area of an ED for an episode of hypoglycaemia. To evaluate the risk factors associated to ED re-visits at 90 days a multivariate analysis with logistic regression was performed, including those variables related to comorbidity and antidiabetic treatment with a p-value < 0.2 in a previous univariate analysis.

Results: 106 patients were included. %HbA1c value was available in 87 (82.1%) patients. Ten (11.5%) patients presented a value of HbA1c ≤ 5.5%. Antidiabetic treatment was changed to 63 (59.4%) patients at discharge. Thirty-eight (36.1%) patients re-visited the ED at 90 days, 9 for glycaemic alterations. The risk factors associated to 90 days ED re-visit were: being man (OR = 3.62 (IC 95% 1.24–10.51)), treatment modified at discharge (OR = 0.31 (0.11–0.91)) and to present a HbA1c value ≤ 5.5% (OR = 5.33 (1.16–14.51)).

Key conclusions: Fragile patients with diabetes who visit ED for hypoglycaemia present, in high frequency, HbA1c values lower than those recommended, being associated to an increase of ED re-visit risk at 90 days.

Abstract # 476

AREA: Diabetes

The importance of HbA1c in diabetes mellitus control in Kastelli Health Center patients

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Purpose: Reporting blood glucose and HbA1c levels of patients examined in Kastelli Health Center, Crete from January to December 2017.

Theory: Diabetes mellitus is a disorder caused by glucose concentration increase. Diabetes type 1 is the main cause of diabetes in children, while type 2 is more common in adults. DM has a chronic course, can cause serious complications such as cardiovascular disease, chronic renal failure and retinal lesions, and its prevention is of particular importance for public health. HbA1c is the chemical bond of glucose and haemoglobin and represents glucose levels during the last 120 days.

Material-methods: Glucose and HbA1c levels of diabetic patients examined in our laboratory during the year 2017 were reported. Patients were categorized in 3 groups according to diabetes control. The biochemical analyzer used for the examination was MENARINI TARGA BT 2000.

Results: In total 792 patients were examined, of which 213 (26.9%) diabetic patients. Out of 213, 91 were male (42.7%), 122 female (57.3%) and 135 patients (63.4%) were > 55 years old. 112 patients of group A (Glu: 110–185 mg/dl, HbA1c: 6.0–7.0%) have sufficiently controlled glucose levels (52.6%), 61 patients of group B (Glu: 160–210 mg/dl, HbA1c: 7.0–8.0%) have a fair control (28.6%) while 40 patients of group C (Glu: > 185 mg/dl, HbA1c: > 8.0%) have no glucose control.

Discussion: HbA1c is the examination of choice for diabetes regulation control. Since diabetes mellitus is a common disease in our area (26.9%), the regular examination is necessary for the prevention of its serious complications.

Abstract # 477

AREA: Diabetes

Glycemic control in frail elderly patients in relation to baseline functional status

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Introduction: Type 2 diabetes mellitus (DM2) in the elderly represents a major clinical and public health challenge. Population aging is driving new comprehensive evaluation systems and new areas of care in the emergency department (ED). Comprehensive care protocols are leading to a progressive increase in the prevalence of DM2 due to early diagnosis. Currently, it is recommended to adjust glycemic according to the patient's condition (cognitive, comorbidities) but these targets are not defined in the literature.

Objective: The goal of studies is to evaluate in frail elderly patients with a history of DM2 the glycemic control prior to consultation to the ED in relation to functional capacity, cognitive and comorbidities.

Methods: This was an observational, retrospective and descriptive of admitted frailty patients attending in ED for 1 year.

Results: Fifty-nine patients were included with age mean 82 years. The characteristics of the study are: 61% the patient have a Barthel index less than 60 points (severe dependence) and 8% with a Barthel index less than 20 (total dependence), 67.8% have a Pfeiffer index higher than 5 point (moderate cognitive impairment) and 28.8% with a Pfeiffer index higher than 8 (severe cognitive impairment) and the 44% the patient have a chalsen index higher than 5 and 28% with chalsen index higher than 7. After analyzing the sample, 43 patients (73%) had HbA1C < 7.5. If we analyze the result according to the scales we found that with HbA1C < 7.5: 70% of patients with Barthel < 60, 77% with Pfeiffer > 8 and 77% of patients with Charlson > 5.

Discussion: The glycemic control assessed with HbA1c prior to consultation with the ED is not consistent with the comprehensive geriatric assessment. Excessively strict controls are observed in the majority of patients without any relation to the patient's baseline status. This leads to an increased risk of acute complications secondary to hypoglycemic treatment. It is necessary to create consensus documents that adapt the management of glycemia to the integral geriatric assessment both in and out of hospital, allowing more lax controls in certain types of patients.

Abstract # 478

AREA: Diabetes

Hypoglycemic treatment in the frail elderly patient

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Introduction: One of the most frequent pathologies in our environment is diabetes mellitus type 2 (DM) with a prevalence of 13.8% in the general population. This rate increases to 20% in those over 65 years of age and 30% in those over 75 years of age. Scientific societies have created consensus on the treatment of DM and the most suitable pharmacological combinations for this type of patient.

Objective: The goals of studies is to evaluate in frail elderly patients with a history of DM pharmacological treatment before admission to the emergency department.

Methods: This was an observational, retrospective and descriptive of admitted frailty patients attending in ED for 1 year.

Results: Fifty-nine patients were included in study with Bathel 56.3, Pfeifer 6.2, Cchalsen 4.3. Antidiabetic treatment was: 47 patients (79%) with metformine, 19 patients (30%) with sulfonlureas, 36 patients (63%) with dpp-4 inhividor, 9 patients (15) with basal insulin, 5 patients (8%) with repaglidin and 4 patient (5%) with pioglitazone. Thirty-six patients (61%) are treated in biotherapy. Sixteen patients with a history of renal failure treated with metformin.

Discussion: In the frail elderly, the guidelines recommend metformin as the treatment of choice, followed in second place by ddp4 inhividor as observed in the study. The use of sulfonylureas should be avoided due to the high risk of hypoglycemia (30% of patients in the study). It is necessary to create guidelines for the management of DM within the comprehensive geriatric assessment. Establish more specific protocols that relate the patient's baseline status to hypoglycemic treatment. In this way, looser controls would be achieved in certain types of elderly people.

Abstract # 479

AREA: Diabetes

Characteristics of diabetic patients in the frail elderly population

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¹Characteristics of Diabetic Patients in the Frail Elderly Population

Introduction: One of the most frequent pathologies in our environment is diabetes mellitus type 2 (DM) with a prevalence of 13.8% in the general population. This rate increases to 20% in those over 65 years of age and 26% in frail elderly. Frail elderly people, apart from diabetes mellitus, have other equally important pathologies. It is important the integral geriatric evaluation of this population subgroup.

Objective: The goals of studies are to evaluate what other pathologies frail elderly patients with a history of DM present.

Methods: This was an observational, retrospective and descriptive of admitted frailty patients attending in hospital for 1 year.

Results: Fifty-nine patients were included in study. The average functionals capacities are Bathel 56.3 points, Pfeifer 6.2 points,

Chalson 4.3 points. The pathologies associated with patients with DM are 45 (76%) patients with arterial hypertension, 39 (66%) patients with Renal insufficiency, 36 (61%) patients with Dyslipidemia, 31 (52%) patients with Myocardopathy, 12 (20%) patients with Pneumopathy and 6 (10%) with any cancer. Five patients have 1 diseases associated with DM, sixteen patients have 2 diseases associated, twenty-three patients have 3 diseases associated and fourteen patients have 4 or more diseases associated.

Discussion: Frail elderly patients with a history of DM are a population subgroup with greater comorbidities than the rest of the patient. It is very important to know the adjunctive pathologies in patients with DM. The hypoglycemic treatment of choice must be related to the functional status of the patient and his pathologies. That is why in the frail elderly patient it is important to have a comprehensive geriatric assessment in order to optimize an individualized treatment for each patient following the guidelines.

Abstract # 480

AREA: Diabetes

Hypoglycemic treatment in the frail elderly patient

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Introduction: One of the most frequent pathologies in our environment is diabetes mellitus type 2 (DM) with a prevalence of 13.8% in the general population. This rate increases to 20% in those over 65 years of age and 30% in those over 75 years of age. Scientific societies have created consensus on the treatment of DM and the most suitable pharmacological combinations for this type of patient.

Objective: The goals of studies is to evaluate in frail elderly patients with a history of DM pharmacological treatment before admission to the emergency department.

Methods: This was an observational, retrospective and descriptive of admitted frailty patients attending in ED for 1 year.

Results: Fifty-nine patients were included in study with Bathel 56.3, Pfeiffer 6.2, Ccholson 4.3. Antidiabetic treatment was: 47 patients (79%) with metformine, 19 patients (30%) with sulfonlureas, 36 patients (63%) with dpp-4 inhibitor, 9 patients (15) with basal insulin, 5 patients (8%) with repaglinid and 4 patient (5%) with pioglitazone. Thirty-six patients (61%) are treated in bioterapy. Sixteen patients with a history of renal failure treated with metformin.

Discussion: In the frail elderly, the guidelines recommend metformin as the treatment of choice, followed in second place by ddp4 inhibitor as observed in the study. The use of sulfonlureas should be avoided due to the high risk of hypoglycemia (30% of patients in the study). It is necessary to create guidelines for the management of DM within the comprehensive geriatric assessment. Establish more specific protocols that relate the patient's baseline status to hypoglycemic treatment. In this way, looser controls would be achieved in certain types of elderly people.

Abstract # 481

AREA: Diabetes

Diabetes and osteoporosis

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Introduction: Considered to be a bone disease, osteoporosis can be defined as low bone mass consisting of reduced bone fragility and increased risk of fracture [1–6]. Osteoporosis can be considered as a major problem due to its associated fractures. Even though in terms of the list of diabetes complications, osteoporosis is not regularly found, patients with diabetes may have an increased risk of developing osteoporosis [5–10].

Material and method: We included in the study a number of 147 patients with age between 41 and 70 years, dividing them into two groups: a group of 78 patients with osteoporosis and diabetes and a group of 69 patients with osteoporosis and without diabetes. In both groups of patients, glycemic index and body mass index were assessed. In the case of patients with diabetes the glycemic index value taken in the morning on different days was between 129 and 136 mg/dl.

Results: The glycemic index was significantly higher in the group of diabetic patients compared to the group without diabetes. In terms of body mass index the value of the group without diabetes ($29.02 \pm 3.04 \text{ kg/m}^2$) was lower compared to the group with diabetes ($32.84 \pm 3.48 \text{ kg/m}^2$). An increased glycemic index can stimulate osteogenesis, which can be considered a protective factor in the development of osteoporosis.

Conclusions: The present study demonstrates the importance of diabetes as a factor in reducing bone mass and it is possible to control this factor adequately in the prevention of osteoporosis.

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Abstract # 482

AREA: ECGI - Early Career Geriatricians

State of the art while managing diabetes in older adults: eight case studies with focus on SGLT-2 inhibitors and metformin

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Introduction: Sodium-glucose co-transporter-2 (SGLT-2) inhibitors have been recently introduced for type 2 diabetes treatment with significant cardiovascular, renal benefits. Yet, they have frequently been refrained in older adults. Metformin is regarded the first-line diabetes therapy in all ages; still it is associated with weight loss and frailty in older adults. We aimed to outline our experience with three oldest-old patients with high cardiovascular risk managed with SGLT-2 inhibitors and five patients with anorexia/weight loss managed by metformin cessation.

Methods: We outlined demographics, comorbidities, geriatric syndromes, functional status, and diabetes duration, and presented the changes in frailty by noting preintervention and post-intervention frailty scores. We outlined benefits and side-effects related to SGLT-2 inhibitors, and the deprescription reasons and represcription practices of metformin therapy. We gave details on baseline and current diabetes treatment, overall medication regimen and current status of the patients.

Results: Among the case studies with SGLT-2 inhibitors, two patients were frail and reversed to pre-frailty status after SGLT-2 intervention while the third patient was and remained robust. All patients had clinical improvements with better blood pressure and glucose control. Among the case studies treated with metformin, all were frail before the cessation of metformin. Four reversed to pre-frailty and one became robust after intervention.

Conclusions: The findings of our case studies suggest considering SGLT-2 inhibitors in patients with accompanying heart failure/high cardiovascular risk factors and cessation of metformin in those with malnutrition/malnutrition risk. These approaches have potential to

improve frailty and inappropriate medication use in diabetic older adults.

Abstract # 483

AREA: ECGI - Early Career Geriatricians

Associations of obesity, subjectively evaluated probable sarcopenia and their combinations with mortality in nursing home residents

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Introduction: There are studies on associations of obesity and mortality in nursing home (NH) residents, but the presence of concomitant sarcopenia has been examined in none of them. In this study, we aimed to examine associations of obesity alone, probable sarcopenia alone, and their combination (sarcopenic obesity, SO) with mortality in NH residents.

Methods: We designed a retrospective longitudinal follow-up study. Age, sex, nutritional status, functionality, number of chronic diseases, and regular drugs were noted. Obesity was assessed by the body fat percentage method estimated by bioimpedance analysis and probable sarcopenia by subjective evaluation of grip strength. We assessed the mortality outcome after a 46 months follow-up period. We evaluated the survival with the Kaplan–Meier method and performed a multivariate analysis using Cox regression.

Results: We included 214 participants; mortality occurred in 37.4%. In multivariate analysis adjusted by age, sex, undernutrition, number of chronic diseases and regular drugs, functional scores; having non-sarcopenic non-obese or sarcopenia alone or SO phenotypes were significantly associated with higher mortality risk when compared with the “obesity alone” phenotype (HR = 2.6, 95% CI 1.2–5.5, $p = 0.01$; HR = 2.6, 95% CI 1.2–5.9, $p = 0.02$; HR = 3.0, 95% CI 1.2–7.7, $p = 0.02$).

Conclusions: Obesity was associated with lower mortality risk when not accompanied with concomitant sarcopenia (obesity alone phenotype). Obesity with concomitant sarcopenia (SO) was associated with mortality risk similar to non-sarcopenic nonobese or sarcopenia alone phenotypes and higher than that of the obesity alone phenotype. According to these findings, in NH residents, obesity should be evaluated simultaneously with sarcopenia.

Abstract # 484

AREA: ECGI - Early Career Geriatricians

Insomnia and related factors in elderly patients

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Objective: Insomnia is common in elderly patients. It is associated with many factors such as medical, psychiatric diseases, and sociodemographic characteristics. The number of studies evaluating insomnia and related risk factors in the elderly in Turkey is limited. In

our study, we aimed to evaluate the frequency of insomnia and its relationship with some geriatric syndromes and used drugs.

Materials and methods: Medical reports of 230 patients who presented to our outpatient clinic were randomly selected, retrospectively analysed and the association of sleep problems with age, gender, marital status, education status, place of residence, falls, comorbid diseases, polypharmacy, urinary incontinence, medicines used was evaluated.

Results: Totally 230 patients included to this retrospective study. Mean age was 75.47 and 55% of patients was female. The prevalence of insomnia was 42.7%. Statistically significant relationship between insomnia existence and older age was female sex, having bone fracture in previous year, depression, high medication number, high Yesavage and low Mini Nutritional Assessment scores. There was not any relationship between beta blocker, memantin and donepezil usage and insomnia existence.

Conclusion: Insomnia is an issue that needs to be carefully considered in daily practice due to its high prevalence and significantly affecting the quality of life. In order to reduce the insomnia problem, first of all, every patient should be questioned in terms of insomnia regardless of the reason and modifiable risk factors should be determined and eliminated. Public should be educated that insomnia is not a normal condition in the elderly.

Abstract # 485

AREA: ECGI - Early Career Geriatricians

The sex difference in physical functioning: How do risk factors contribute?

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Introduction: This study explores whether sex differences in the sensitivity (strength of the association) and/or in the exposure to risk factors (prevalence) contributes to the sex difference in physical functioning, with women reporting more limitations.

Methods: Data of the Doetinchem Cohort Study was used (n = 5971, initial ages 26–70 years), with follow-up measurements every 5 years (up to 20). Physical functioning (subscale SF-36, range: 0–100) and a number of socio-demographic, lifestyle and health-related risk factors were assessed. Mixed-model multivariable analysis was used to investigate sex differences in sensitivity (interaction term with sex) and in exposure (change of the sex difference when adjusting) to risk factors.

Results: The physical functioning score among women was 6.75 (95% CL 5.65, 7.85, age-adjusted) points lower than among men. In general, men and women had similar risk factors, but pain was more strongly associated with physical functioning (higher sensitivity), and also more prevalent among women (higher exposure). The higher exposure to low educational level and not having a paid job also contributed to the lower physical functioning score among women. In contrast, smoking, mental health problems and a low educational level were more strongly associated with a lower physical functioning score among men and lower physical activity and higher BMI were more prevalent.

Key conclusions: Few risk factors seem to contribute the more reported limitations in physical functioning among women aged 26–90 years. Our findings provide no indications for reducing this sex difference by promoting a healthy lifestyle but stress the importance of sex differences in pain, work and education.

Abstract # 486

AREA: ECGI - Early Career Geriatricians

The sex difference in gait speed among older adults: How do sociodemographic, lifestyle, social and health factors contribute?

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Introduction: This study explores whether a sex difference in sensitivity to (strength of the association) and/or in exposure to (prevalence) determinants of gait speed contributes to the observed lower gait speed among women compared to men.

Methods: Data from the Longitudinal Aging Study Amsterdam (LASA) were used. In total 2407 men and women aged 55–81 years were included, with baseline measurements in 1992/2002 and follow-up measurements every 3–4 years for 15/25 years. Multivariable mixed model analysis was used to investigate sex differences in sensitivity (interaction term with sex) and in exposure to (change of the sex difference when adjusted) for socio-demographic, lifestyle, social and health determinants of gait speed.

Results: On average, women had a 0.054 m/s (95% CI 0.076–0.033, adjusted for height and age) lower mean gait speed compared to men. Higher BMI and lower physical activity were more strongly associated with lower gait speed in women compared to men (i.e. higher sensitivity). Lower educational level, living alone and having more chronic diseases, pain and depressive symptoms among women compared to men also contributed to observed lower gait speed in women (i.e. higher exposure).

Key conclusions: Both a higher sensitivity and higher exposure to determinants of gait speed among women compared to men contributes to the observed lower gait speed among women aged 55 years and older. The identified (modifiable) contributing factors should be taking into account when developing prevention and/or treatment strategies aimed to enhance healthy physical aging. This might require a sex-specific approach in both research and clinical practice.

Abstract # 487

AREA: ECGI - Early Career Geriatricians

Blood pressure variability and asymptomatic end-organ damage in Parkinson's disease patients – case control study

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Introduction: The cardiovascular risk of Parkinson's Disease (PD) patients is uncertain. Blood pressure variability (BPV) has been associated with cardiovascular and mortality outcomes. We aimed to evaluate blood pressure variability, as a marker of cardiovascular risk, in patients with PD and matched community controls.

Methods: Cross-sectional case-control study was performed. All subjects included in the analysis were clinically evaluated and performed a 24 h ambulatory blood pressure monitoring. BPV was

assessed using standard deviations (SDs) of the systolic blood pressure and diastolic blood pressure for each period—24 h, daytime, and night-time. First and third tertile of 24 h SD were compared regarding asymptomatic end-organ damage, such as common carotid intima media thickness (CIMT), presence of extra- and intracranial plaques, left ventricular hypertrophy, microalbuminuria, and increased pulse pressure (> 60 mmHg).

Results: The study included 204 participants, 102 in each group. Daytime BPV was significantly higher in PD patients, but 24 h and night-time were non-significantly increased. PD patients in the highest tertile of 24 h systolic BPV have higher CIMT, more frequently extracranial plaques, and increased pulse pressure.

Conclusion: Our exploratory study suggests that PD patients may present an increased cardiovascular risk, based on higher blood pressure variability. However, further studies are needed to confirm this hypothesis and magnitude of effect.

Abstract # 488

AREA: ECGI - Early Career Geriatricians

What features of frailty are most prevalent in older people living with HIV? A review of a new clinical service in the United Kingdom

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Introduction: The advancements in the care of people with living with HIV (PLWH) means by 2030 more than 70% will be over fifty necessitating Geriatricians to become more familiar with HIV care. We established a monthly multi-disciplinary clinic to manage frailty syndromes in PLWH attending our hospital. Patients were identified from frailty scoring (Fried Criteria) at their annual reviews or referred in by their regular physician or specialist nurse. Appointments comprised of three thirty minute joint reviews consisting of: HIV/ Geriatric medicine specialists, occupational/physiotherapists, and dedicated HIV nurse/specialist pharmacist. PHQ9, GAD7, WHO QOL questionnaires were completed prior. A care plan was formed to support the patient via their regular HIV clinician, onward referral, and primary care physician when permitted.

Methods: The records of all thirty-five patients attending the inaugural nine sessions were reviewed.

Results: Median age 67 (range 51–91). 77% male (22% female), 54.3% White (Black 28.6%, Other 17.2%). Median Fried score 4 (n = 30 range 0–5). Eighteen issues linked to frailty were identified. The five most common were: low mood (45.7%) [PHQ9 n = 31, mean 10, range 0–24], memory problems (31.4%) [MoCA, n = 7, mean 20, range 14–27], falls risk (31.4%), urinary symptoms (25.7%) and pain (22.9%). Other issues included bowel symptoms, weight loss and loneliness.

Key conclusions: PLWH develop frailty earlier with a high incidence of affective and cognitive symptoms. Due to our experience in frailty and multimorbidity it is likely Geriatricians will be asked to contribute to the care of PLWH across Europe, meaning the time for upskilling is now.

Abstract # 489

AREA: ECGI - Early Career Geriatricians

Older adult prescribing simulation: a teaching evaluation

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Background: The British Geriatrics Society recommend that all medical students be able to describe concepts of safe prescribing in older adults, whilst the General Medical Council in the UK state graduates must be able to recognise the risk of over prescribing. The aim of this project was to explore students' perceptions of their ability to prescribe for older adults safely, determine if simulation can improve confidence in prescribing for the older adult and when this should be provided in the undergraduate curriculum.

Methods: Senior medical students (n = 21) participated in an older adult prescribing simulation session facilitated by junior doctors and pharmacists. The sessions focussed on polypharmacy, medicines reconciliation, Parkinson's disease (PD) medication and medications associated with falls.

Results: Following the session 100% (n = 21) of students felt they had good knowledge of PD medications, the adverse effects of incorrect administration of these medications, awareness of polypharmacy and confident they could complete a medicines reconciliation for a patient. 100% (n = 21) were aware of medications that could contribute to falls, whilst the majority also felt confident in deciding what medications were necessary for a patient (n = 20). All students responded that the session was useful and done at the correct stage of their training (n = 21).

Discussion: Students find older adult prescribing simulation useful in undergraduate training and can improve confidence in prescribing for the older adult. Further work to determine if improved confidence in older adult prescribing after simulation is sustained would be of benefit, and also if this correlates with improved clinical performance.

Abstract # 490

AREA: ECGI - Early Career Geriatricians

Global Leadership Initiative on Malnutrition (GLIM) criteria predict mortality in an 9-year follow up cohort of institutionalised older persons

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Background and aims: In 2019, new malnutrition criteria were proposed by the Global Leadership Initiative on Malnutrition (GLIM). These criteria were applied in a population of nursing home residents to investigate the correlation of these GLIM-criteria with mortality in a specific cohort.

Methods: In October 2007, a longitudinal cohort follow-up was started in 52 nursing homes in Belgium. In this cohort, following data relevant to this study were procured at that time: anthropometric measurements (weight and length), body composition through bio-electrical impedance analysis (BIA), nutritional status through the Mini-Nutritional Assessment—Short Form questionnaire. Within 1 year after inclusion changes in some parameters were measured. Mortality of the cohort was followed up for 11 years.

Results: Data on all items of the GLIM-criteria was present in 321 residents. Mean age of this group was 84.3 ± 7.3 years. During

follow-up, 314 residents died. Mean follow-up time was 1654 ± 1019 days. Regarding the phenotypic criteria of the GLIM, 15 residents (4.7%) had a relevant weight loss, 32 residents (10.0%) had a low body mass index (BMI) and 80 residents (25.0%) had a reduced muscle mass. Regarding the etiological criteria of the GLIM, 35 residents (10.9%) had a relevant loss of appetite. No residents were positive for the inflammation criterion, as only residents without acute inflammation or unstable chronic comorbidities were included in the study population. In total, 15 residents (4.7%) were positive in at least 1 criterion in both categories of the GLIM criteria. Cox-regression was used for survival analysis. Variables used were amount of phenotypic criteria, amount of etiological criteria, final GLIM score (positive or negative), age at inclusion of study, body mass index and gender. Of these criteria, 4 remained significant: amount of phenotypic criteria (HR 1.39, 95% CI 1.11–1.75), final GLIM score (HR 1.98, 95% CI 1.11–3.53), age at inclusion of study (HR 1.10, 95% CI 1.10–1.10) and BMI (HR 1.03, 95% CI 1.01–1.06). Of these, final GLIM score was a better predictor of mortality than each of the other variables. Kaplan–Meier analysis was used to plot a survival curve ($p = 0.002$).

Conclusions: In this population of institutionalised older people, the GLIM-criteria have a significant relation with mortality, regardless of age.

Abstract # 491

AREA: ECGI - Early Career Geriatricians

Higher Veterans Aging Cohort Study (VACS) 2.0 Index Score Predicts functional decline among older adults living with HIV

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Introduction: Living with HIV has been proposed as a risk factor for the early development of functional decline. Composite marker tools like the Veterans Aging Cohort Study (VACS) Index, which includes HIV-associated and non-HIV-related markers of disease may better reflect multi-organ system injury and potentially predict functional outcomes. Therefore, the objective of this work is to determine whether higher VACS 2.0 Index scores predict functional decline among older adults living with HIV (OALWH).

Methods: Longitudinal study including 131 adults aged 50 or older who underwent a comprehensive geriatric assessment at baseline and follow-up, at least a year apart. Functional status was determined by the gait speed (seconds for a 4-m distance). Linear regression models were constructed to determine the relationship between VACS 2.0 index at baseline with gait speed at follow-up adjusted for potential confounders.

Results: Mean age was 59.0 years (range 50–84) and 81.7% of the participants were male. At baseline, the mean VACS 2.0 index score was 54.5 (SD 16.4). After adjusting for diverse confounders, linear regression models found that higher baseline VACS 2.0 index scores were associated with greater decline of gait-speed at follow-up. The gait speed at follow-up was 0.194 s slower by each increase in five points of the VACS 2.0 index ($p = 0.033$).

Conclusions: These results suggest that the VACS 2.0 Index work as predictor of functional decline and might serve as an easy tool to

identify OALWH who might need additional resources or interventions to prevent it.

Abstract # 492

AREA: ECGI - Early Career Geriatricians

Possibilities of applying cardiopulmonary exercise testing to predict perioperative risks in older patients with lung and esophageal cancer

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Introduction: Preoperative cardiopulmonary exercise testing (CPET) may provide more information about the body state of elderly patients with a range of comorbidities. Oxygen uptake ($\dot{V}O_2$) on anaerobic threshold (AT) and on the peak of exercise ($\dot{V}O_{2peak}$), and ventilatory equivalent for carbon dioxide ($\dot{V}E/\dot{V}CO_2$) are traditionally used for risk stratification. The purpose of our study was to explore other variables that can provide more information for risk stratification in elderly.

Methods: Our study included 118 patients aged from 60 to 90, with lung or esophageal cancer undergoing elective surgery between 2014 and 2020 at Pavlov First Saint-Petersburg State Medical University. All patients underwent CPET before surgery. According to the perioperative morbidity and mortality, we identified 3 groups: without side effects (57%), having complications (35%), with fatal outcome (8%).

Results: All groups showed similar ranges of $\dot{V}O_{2peak}$, $\dot{V}O_2$ on AT. The third group had higher ranges of $\dot{V}E/\dot{V}CO_2$. Significant differences were received on variables during 3-min recovery period. Patients with postoperative morbidity and mortality showed more rapid increasing of ventilatory equivalents for oxygen and carbon dioxide, and a decrease in oxygen saturation on the 2 min of the recovery period. Patients with fatal outcome had significantly higher ranges of carbon dioxide excess.

Key conclusions: The received data may be used for personalized risk stratification for aged patients with cancer. Further research with larger cohort of people is needed to refine the obtained results.

Abstract # 493

AREA: ECGI - Early Career Geriatricians

Reflexion about restraint of geriatric patient during the covid pandemic

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Introduction: During the COVID-19 pandemic, we were faced with the difficult management of patients with dementia or psychiatric disorders. The need for isolation unfortunately exacerbated psychiatric decompensation and confusion, and this sometimes necessitated the use of restraint.

Methods: Case report of a bipolar elderly patient hospitalized for COVID-19. Similar ethical issues found in the literature were analysed. The highly transmissible nature of SARS-CoV-2 has created new tensions between individual rights and the rights of society.

Results: The case involved a 75-year-old bipolar patient treated with Lithium. She was mute, aggressive and refused care (hygiene, pills, oxygen); her clinical condition worsened in terms of respiratory function. We had to immobilize her chemically (Olanzapine 10 mg per day) and physically (wrist restraints and abdominal belt) in order to treat her. She was quickly transferred to the ICU. Bipolar patients suffer more than others from changes in their daily lives. This can lead to poor coping strategies such as avoidance, rumination, major anxiety. [1, 2] In addition, Covid itself is a risk factor for mood disorders [3].

Conclusion: In Covid Units restraints have unfortunately been more frequent due to the obligation of isolation and administration of vital care such as oxygen. The ethical aspect of restraint in this type of patient is an important issue, balance between necessary curative treatment and real will of the patient [4].

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Abstract # 494

AREA: ECGI - Early Career Geriatricians

Individual factors such as age, BMI and genetic factors underlie temperature in sickness and in health: a multi-cohort study

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Introduction: Ageing affects immune function, resulting in aberrant fever response to infection. We assess effects of biological variables including age on basal temperature and temperature in response to

COVID-19 infection, proposing an updated temperature threshold for older adults.

Methods: Participants: (a) 1089 unaffected adult TwinsUK volunteers; (b) London COVID-19 + : 520 adults with emergency admission; (c) Birmingham COVID-19 + : 757 adults with emergency admission; (d) Community-based COVID-19 + : 3972 adults reporting a positive test using the COVID Symptom Study mobile application. Analysis: heritability assessed using saturated and univariate ACE models; linear mixed-effect and multivariable linear regression analysing associations between temperature, age, sex and BMI; multivariable logistic regression analysing associations between fever ($\geq 37.8^\circ\text{C}$) and age; receiver operating characteristic (ROC) analysis to identify threshold for adults ≥ 65 years with equivalent sensitivity to a temperature $< 37.8^\circ\text{C}$ in adults < 65 years.

Results: Amongst unaffected volunteers, older age ($p < 0.001$) and lower BMI ($p = 0.001$) associated with lower temperature. Basal temperature showed a heritability of 47% (95% Confidence Interval 18–57%). In COVID-19 + participants, increasing age associated with lower temperatures in cohorts (c) and (d) ($p < 0.001$). For each additional year of age, participants were 1% less likely to demonstrate a fever temperature $> 37.8^\circ\text{C}$ (OR 0.99; $p < 0.001$). Combining healthy and COVID-19 + participants, a temperature of 37.4°C in adults ≥ 65 years had similar sensitivity and specificity to 37.8°C in adults < 65 years for discriminating COVID-19 positivity.

Conclusions: Ageing affects temperature in health and acute infection. Significant heritability indicates biological factors contribute to temperature regulation. Our observations suggest a lower threshold (37.4°C) should be considered for assessing fever in older adults.

Abstract # 495

AREA: ECGI - Early Career Geriatricians

Case of a 91-year-old patient with keratoacanthoma

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Introduction: Keratoacanthoma is a rapidly growing skin tumor that develops from hair follicles on skin that has undergone significant exposure to UV radiation or has been weakened by previous surgery or laser treatment. Its incidence is not well known because it is often misdiagnosed as squamous cell carcinoma, cases not reported by specialists or few epidemiological studies. According to David D. Weedon et al. the incidence is 9.92% of cases in patients over 80 years old and 13.9% in patients over 90 years old.

Observation: Case report: A 91-year-old patient with a history of multiple myeloma and a long history of UV exposure presented with a single nodule on the forearm and numerous similar lesions on the hands [Photo 1–2–3]. The patient had undergone surgical removal of a keratoacanthoma 2 years previously, which had developed into a squamous cell carcinoma.

Discussion: Transformation into squamous cell carcinoma is much more frequent in the elderly and in areas exposed to UV radiation, as shown in the study by Sanchez Yus et al. with a transformation rate of more than 25%. The result obtained by combining surgery with intra-lesional injection is superior, both aesthetically and functionally, to that obtained by intra-lesional injection alone.

Conclusion: In view of the literature, surgical excision remains the gold standard given the higher potential for malignant transformation in the elderly. On the other hand, conservative treatment will target lesions that are technically inaccessible to surgery.

Abstract # 496**AREA: ECGI - Early Career Geriatricians****The social, medical, emotional, and spiritual impact of confinement due to COVID-19 in older people. a cross-sectional study**

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Introduction: Mexico is one of the countries most impacted by the COVID-19 pandemic. The objective of this study is to investigate if the degree of confinement for COVID-19 has an impact on social, medical, emotional, and spiritual aspects in older people.

Methods: We conducted a cross-sectional study with community-dwelling older adults ≥ 60 years old from September to October 2020 in Nuevo Leon, Mexico. We applied a telephone survey, documenting demographic data, experiences with COVID-19 and telehealth, Diaz-Veiga Social Resources Inventory, Charlson Comorbidity Index (CCI), the Physical Activity Scale for the Elderly (PASE), Patient Health Questionnaire-9 (PHQ-9), Duke University Religion Index (DUREL). Participants were divided into two groups according to their degree of confinement: confined and non-confined group.

Results: Of 247 participants, 20.6% conformed the non-confined group and 79.4% in the confined group. Mean age was 71.9 ± 8.2 years. Females (59%, $p = 0.01$) are more confined and those living alone (10.5%, $p = 0.001$) were less confined. Non-confined group consulted in less proportion (80.4%, $p < 0.001$). Confined participants were more satisfied with telehealth consultation (87.2%, $p < 0.001$). Our population did not show a significant difference in depression scores. Daily Non-organizational religious activities (NORA) were used to cope with confinement (67%, $p = 0.04$).

Key conclusions: Confinement had an impact on social, medical and spiritual aspect in older people. Our study showed community-dwelling older adults adapting to new healthcare access, remaining resilient, autonomous, and fulfilling spiritual needs in spite of confinement.

Abstract # 497**AREA: ECGI - Early Career Geriatricians****Determinants of a sense of insecurity among home-dwelling older people**

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Introduction: Studies on global sense of insecurity are scarce. We aim to find out how a global sense of insecurity among home-dwelling older people aged 75 + associates with their health, functional status, social circumstances and perceptions of societal treatment of older people.

Methods: In the Helsinki Aging Study a random sample of 2917 home-dwellers aged 75 and older received a postal questionnaire in 2019 inquiring about their health, wellbeing and experiences in life. The response rate was 74%. Related to a global sense of insecurity

they were asked: ‘Do you find your life to be secure or insecure at this moment?’ (very secure/moderately secure vs. moderately insecure/very insecure).

Results: Seven percent of respondents felt insecure in their lives. In a stepwise logistic regression analysis, loneliness, living alone and perceived poor societal treatment of older people predicted insecurity, while having good self-rated health (SRH), having children who were living, and meeting friends at least weekly predicted security.

Key conclusions: Our findings highlight the importance of recognizing and combating loneliness and societal ageism in reducing insecurity among older people.

Abstract # 498**AREA: ECGI - Early Career Geriatricians****Time trends in musculoskeletal pain and analgesic treatment among home-dwelling older adults in Finland**

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Introduction: Pain has been shown to be undertreated in the older population. At the same time, the increased opioid use is of concern in the Western world.

Methods: This study analyzes temporal trends in pain management among home-dwelling older people using cross-sectional cohort data that spans two decades. The Helsinki Aging Study recruited independent, random samples aged 75, 80, 85, 90 and 95 in 1999, 2009 and 2019. In total, 5707 home-dwelling people participated in the questionnaire survey. Participants reported their medical diagnoses, regular prescription medications, and the presence of back pain or joint pain within the last 2 weeks (never, sometimes, or daily). We examined analgesic use in people reporting intermittent or daily musculoskeletal pain and in people not reporting pain in 1999, 2009 and 2019.

Results: Of participants, 57–61% reported intermittent or daily musculoskeletal pain. The percentage of people taking a daily analgesic increased from 9 to 16% between 1999 and 2019. The use of nonsteroidal anti-inflammatory drugs (NSAIDs) decreased from 5 to 3%, while the use of paracetamol increased from 2 to 11%. Of participants, 3% took daily opioids in 2019. Of those reporting daily musculoskeletal pain, 20%, 35% and 32% took regular pain medication in 1999, 2009 and 2019, respectively.

Key conclusions: Pain remains undertreated in the older population, although the use of regular prescribed analgesics has increased from 1999. The use of NSAIDs diminished, while the use of paracetamol increased. Daily opioid use remained modest between 1999 and 2019.

Abstract # 499**AREA: ECGI - Early Career Geriatricians****Prevalence and characteristics of patients admitted in an acute geriatric ward with previous diagnosis of heart failure**

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Introduction: Heart failure is one the most prevalent disease in older people. The objective of this study was to describe the prevalence and main characteristics of elderly patients admitted to an Acute Geriatric Ward (AGW) with previous diagnosis of heart failure (HF).

Methods: Descriptive study of patients over 80 years of age admitted to an AGW (september 2018– september 2019) with previous diagnosis of heart failure with 1-year follow-up. Variables: demographic, clinical, Transthoracic echocardiogram (TTE), functional (Barthel index (BI), Functional Ambulation Classification (FAC)), cognitive (global deterioration scale (GDS)), comorbidity (Charlson's index (CHI)), nutritional status (MNA-SF), frailty status (Frail-VIG index) and mortality.

Results: 191 had previous diagnosis of HF (40.64% of total admissions). The main cause of admission was acute heart failure (38.9%). The 63.87% was female. Age 88 (85–92) years old, BI < 90: 75.90%. FAC 0: 16.23%, Charlson ≥ 3 : 65.54%. Polypharmacy 94.24%. Frail-VIG > 0.55: 24.6%. GDS ≥ 4 27.0%. MNA-SF ≤ 7 : 25.46%. Etiology of HF: Hypertensive heart disease (HHD) 60.73%, coronary artery disease, 5.24%, Valvular heart disease 7.85%, mixed etiology 24.08%, unknown 2.09%. The 43.98% of patients had recent TTE, of them ejection fraction < 40: 11.9%, 40–49: 8.3%, ≥ 50 : 79.76%. Therapy: Diuretics 76.96% (Loop diuretics 61.22%, Thiazides 4.08%, Spironolactone 3.40%, mixed treatments 25.85%). ACE-inhibitors/ARBs: 39.79%. Betablockers: 38.22%, Ivabradine 0.52%, Digoxine 10.47%. Calcium channel blockers 14.14%, Statins 23.65%. In-hospital mortality 13.6% and 1-year mortality 48.9%.

Conclusion: The prevalence of HF was high in our sample, with high rate of frailty, comorbidity, polypharmacy and high 1-year mortality. The most common etiology was HHD with preserved ejection fraction.

Abstract # 500

AREA: ECGI - Early Career Geriatricians

Multimorbidity patterns in nursing home residents with dementia

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Introduction: Dementia is a common condition in nursing homes (NH) residents. The identification of dementia comorbidities is instrumental to define groups of persons with dementia that differ in terms of health trajectories and resources consumption. We aimed to identify multimorbidity patterns and their associated clinical, behavioural and functional phenotypes in NH residents with dementia.

Methods: We analysed data on 2563 NH residents with dementia in Italy, collected using the interRAI long-term care facility (LTCF) instrument. Standard Principal Component Analysis (PCA) procedure was used to identify multimorbidity patterns. Linear regression analysis used to ascertain correlates of expression of the different multimorbidity patterns.

Results: Three different multimorbidity components were identified in residents with dementia: 1. Heart diseases; 2. Vascular, respiratory

and sensory impairment; 3. Psychiatric diseases. Older age and a higher number of diseases significantly related to an increased expression of the first two components, while younger patients displayed an increased expression of the third one. Hospital admissions significantly associated with an increased expression of first component (Coefficient 0.028; 95% Confidence Intervals (CI) 0.003–0.05). Depressive symptoms (Coefficient 0.130, 95% CI 0.10–0.17) and delirium episodes (Coefficient 0.130, CI 0.10–0.17) were significantly associated with an increased expression of third component, while displayed a lower expression of the first one.

Conclusion: We identified different multimorbidity patterns within NH residents with dementia that differ in term of clinical and functional profiles. The prompt recognition of specific health needs triggered by different multimorbidity patterns may help improve the prognosis of these individuals.

Abstract # 501

AREA: ECGI - Early Career Geriatricians

Muscle ultrasound as imaging domain of frailty

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Background and aims: Frailty is a geriatric syndrome, a clinical state of vulnerability for developing dependency and/or death. Due to its multidimensional nature, Comprehensive Geriatric Assessment (CGA) constitutes the best strategy to evaluate frailty in older patients. Accumulation of deficits model synthesizes the global assessment of geriatric domains in the Frailty Index (FI) score. Muscle Ultrasound (MUS) has been employed to evaluate muscle mass wasting as tool to assess sarcopenia in the elderly. The present study aims to evaluate the association between CGA-based FI and MUS measures in a population of hospitalized elderly.

Methods: Patients aged ≥ 65 years underwent CGA for evaluation of the geriatric domains: health and functional status, psycho-cognition, nutritional status, socio-environmental condition. Following standard procedure, a CGA-based FI was elaborated, taking into account 38 multidimensional items. Muscle thicknesses (MT) of rectus femoris plus vastus intermedius was measured through MUS axial cross-section. Multivariate regression analysis was employed to determine factors associated with FI.

Results: The study population consisted of 115 elderly patients, 76 males (66.1%), with mean age of 75.57 ± 7.07 years and mean FI of 0.35 ± 0.18 . Average MT of rectus femoris plus vastus intermedius was 29.98 ± 8.44 mm. At multivariate regression analysis, FI resulted significantly and independently associated with age and MT.

Conclusion: MT of rectus femoris plus vastus intermedius, measured through MUS, resulted to be significantly related to FI in a population of hospitalized elderly patients. In the assessment of frailty, MUS may constitute an additional “imaging” CGA domain.

Abstract # 502

AREA: ECGI - Early Career Geriatricians

Infectious disease, elderly migrant and the law, a glimpse of international cooperation

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Introduction: International migrations present a growing trend, up to 271 million people in 2019, of whom 25.9 million were refugees and asylum seekers. Elderly account for an increasing share, particularly exposed to infectious disease. We describe the spectrum of infectious disease in recently arrived older migrants seeking for care in France.

Methods: French law recognizes sick foreign citizens a specific right for Health, delivering them a full residence permit for health reason, as long as they require care due to a seriously altered state of health. We conducted a retrospective cohort study, including all applicants to this process, aged 60 and over, presenting at least one diagnosed infectious disease, from January 2017 to December 2019.

Results: Two thousand and thirty-six international older migrants were included. The median age was 65.5 years old; 1346 (66.1%) international migrants were women. The regions of origin were Africa (79.2%)—more than half came from middle Africa and western Africa, Americas (9.6%), Asia (8.1%) and Europe (3%). The most prevalent infectious diseases were chronic hepatitis (50.3%) including hepatitis B and hepatitis C, HIV infection (40.2%), HIV related infections (6.8%) and tuberculosis (4.4%). The most common underlying medical conditions were heart (37.5%), endocrine (25.1%), malignancy (11%) diseases. Roughly a third (30.4%) of our study population had no underlying condition among those mentioned above.

Key conclusions: Besides already known risk factors for infections (immunosenescence, anatomical factors, frailty, polyopathy, loss of autonomy), older migrants present specific vulnerability to infectious diseases, owing to individual, environmental and policy level factors.

Abstract # 503

AREA: ECGI - Early Career Geriatricians

Efficacy of COVID-19 virtual clinic in a Dublin specialist geriatric clinic

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Introduction: During the COVID-19 pandemic, our Specialist Geriatric Clinic (SGC) switched to a virtual clinic (VC) format to reduce face to face (F2F) contact. We evaluated the efficacy of this format.

Methods: Data was collected from September to November 2020, including age, primary diagnosis and comorbidity. We recorded clinic follow-up, hospital admission and new admissions to residential care or death over a 6-month period and communication with the patient, patient's family or General Practitioner (GP).

Results: 174 patients, mean age 83 years, were contacted over the 3-month period. 67 (38.5%) were attending for dementia management, 3 (1.7%) following stroke, 46 (26.4%) with frailty, 44 (25.3%) with falls, and 14 (8.1%) with Parkinson's Disease (PD). 74.1% of the patients had 5 or more co-morbidities. The patient gave a complete history 52.3% of the time. Collateral history was taken for 63.2% of

consultations. 11 GPs contacted the service with a clinical concern. 18 family members contacted for clarification following VC consultation. 26 (14.9%) were brought in for an urgent F2F following initial VC interaction, 103 (59.1%) were scheduled for routine follow-up and 45 (25.9%) were discharged. 19 patients were admitted to residential care and 10 patients passed away within the 6-month of VC. **Conclusion:** Given the complex patient population attending our service, VCs resulted in each consultation requiring multiple calls to ensure care plans were appropriately communicated and many patients subsequently needed an in-person assessment. Although a safe alternative during the pandemic, we found the VC less effective for our population base.

Abstract # 504

AREA: ECGI - Early Career Geriatricians

Family centered delirium prevention and treatment during the COVID-19 pandemic – presentation of the FACE Delirium Study

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Introduction: Delirium is common in elderly patients admitted to hospitals with associated negative outcomes such as higher mortality, higher rate of discharge in nursing homes and higher rate of future dementia. Involvement of family members recently became part of delirium prevention with positive effects on incidence and severity of delirium. Isolation measures due to COVID-19 pandemic and closures of hospitals for visitors make these measures almost impossible.

Methods: The FACE Delirium Study (Family CEntered Delirium Prevention and Treatment) investigates the feasibility of family centered delirium prevention and treatment during the COVID-19 pandemic. We educated the family members in delirium prevention and treatment measures. The family members were instructed to conduct daily video calls with the patients for the course of the hospital stay. Primary outcome is the successful completion of video calls during > 80% of days in our treatment. Secondary outcomes are duration of video calls, family satisfaction with video calls and staff satisfaction with video calls. We also screened for dementia, delirium and activities of daily live at admission and discharge by using standard geriatric assessment plus confusion assessment method. We calculated a total number of 38 patients needed under the assumption that > 40% of family members would participate successfully. Inclusion criteria were: age > 70 years, family members available. Exclusion criteria were: impairment of cognition, vision or hearing with a severity not compatible with video calls.

Results and conclusion: Patient recruitment successfully stopped after 9 weeks in May 2021, data collection will be completed in June 2021. Results will be presented at EUGMS.

Abstract # 505

AREA: ECGI - Early Career Geriatricians

What is the impact of age and frailty on the immune response in COVID-19 illness ?

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Introduction: Whilst age and frailty are independently associated with mortality in COVID-19 illness, the underlying immunological mechanisms explaining this remain unexplored.

Methods: We recruited older (aged 65 + ; n = 33) and younger (aged 20–50; n = 43) participants with acute COVID-19 illness for clinical assessment and detailed immunophenotyping for T-cell, neutrophil, monocyte and inflammatory markers using flow cytometry. Wilcoxon rank-sum, chi-square tests and linear regression were used to examine the impact of age and frailty (Clinical Frailty Score 3–9) on the immune response in COVID-19 illness. Results were compared to age-matched pre-pandemic controls (n = 40).

Results: COVID-19 illness was associated with a marked pro-inflammatory response (CRP, IL-6, IL-2R), lymphopenia and emergency myelopoiesis (non-classical/intermediate monocytes, immature neutrophils) in both age groups (all $p < 0.001$). In comparison to younger participants (35.7 ± 8.6 years), older adults (76.7 ± 7.8 years) had a more marked reduction in naïve CD4, CD8 cells and a more marked expansion of activated CD4 + , CD8 + and effector CD8 + T-cells that was independent of illness severity (all $p < 0.001$). Older adults had a reduced number of CD10 + neutrophils/non-classical monocytes and greater CRP, IL-6 and IL-2R ($p < 0.05$), although results were attenuated on adjusting for COVID-19 severity. Frailty was not associated with any difference in immune cell population or inflammatory response.

Key conclusions: Greater age (but not frailty) was associated with reduced naïve T-cells and a more marked expansion of activated/effector T-cells in COVID-19 illness. These findings have important implications for understanding impact of age on anti-viral and pro-inflammatory immune responses.

Abstract # 506

AREA: ECGI - Early Career Geriatricians

Exploring the diabetes-dementia link: in vitro blood responsiveness to amyloid beta (A β -42) and cognitive function in midlife type-2 diabetes

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Background: Midlife Type 2 Diabetes Mellitus (T2DM) is associated with an increased risk of cognitive impairment and dementia in later life. Amyloid Beta (A β -42), the putative pathogenic protein in Alzheimer Dementia (AD), is a potent activator of the innate immune system, and in particular is known to activate the NLRP3 inflammasome.

Methods: We examined if midlife T2DM was associated with altered immune responses to A β -42. We recruited a cohort of middle-aged adults (median age: 53 years; 54% female) with uncomplicated T2DM (n = 39) and matched Healthy Controls (HCs) (n = 20) free from objective cognitive impairment for comprehensive neuropsychological assessment and analysed in vitro PBMC responsiveness to A β -42.

Results: In both groups, A β -42 induced a strong pro-inflammatory response (production of IL-1 β and IL-6). This response did not differ in T2DM and HCs and was unrelated to baseline expression of pro-inflammatory (IL1B/IL6) or NLRP3 inflammasome (NLRP3/ASC/CASP1) genes. Whilst individuals with T2DM demonstrated significantly poorer performance on delayed recall and executive function tasks, we observed no relationship between PBMC responsiveness to A β -42 or other inflammatory stimuli and neuropsychological performance in either T2DM or HCs.

Conclusions: Our results suggest that in vitro pro-inflammatory responses to A β -42 do not predict cognitive function in midlife T2DM. Further longitudinal studies are warranted to examine the longitudinal relationships between immune responses and cognitive function in midlife T2DM to select out those who may be at greatest risk and may benefit from potential preventative interventions.

Abstract # 507

AREA: ECGI - Early Career Geriatricians

The presence of sarcopenia at baseline can independently predict recurrent events in stroke and TIA patients

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Introduction: Although recognition of sarcopenia has been rising for years, it is only recently that its cardiovascular risk has become evident. Sarcopenia is often described as a consequence of stroke, but its association with incident stroke has not been investigated. This study looked at whether the presence of baseline sarcopenia in stroke/TIA patients could predict recurrent events in older adults.

Method: The Arterial Stiffness In lacunar Stroke and Transient ischaemic attack (ASIST) study recruited 96 patients with TIA/lacunar stroke. Of these, 82 patients (mean age 71.2 ± 10.8 years) also had measurements of body composition via bioimpedance analysis (TANITA BC-418), used to assess sarcopenia. Skeletal Mass Index (SMI) was calculated and level of sarcopenia determined according to Janssen and Davison. Patients were followed up over 5 years for recurrent events.

Results: 18 patients had recurrent events during follow up. On binary logistic regression, SMI ($p = 0.034$, Exp (B) = 0.414) and the presence of diabetes ($p = 0.002$, Exp (B) = 0.107) were the only independent predictors of recurrent events when corrected for age, sex and cardiovascular risk factors. The presence of severe sarcopenia was a significant predictor of recurrent events ($p = 0.044$). There was a significant association between the presence of sarcopenia and recurrent events on Chi square based on Davison ($p = 0.02$) and Janssen ($p = 0.034$) definitions.

Conclusions: The presence of sarcopenia at baseline in stroke and TIA patients increases the likelihood of suffering a recurrent event, independent of other cardiovascular risk factors.

Abstract # 508

AREA: ECGI - Early Career Geriatricians

Personalized approach for thyroid function assessment in older adults

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Introduction: Symptoms are lacking for thyroid dysfunction in older age, and biochemical testing is essential. Older adults have lower variation in thyroid function. Thus, personal reference intervals (RI's) may be valuable in older adults.

Methods: Twelve monthly blood samples were drawn from 19 thyroid disease-free participants aged 66–100 (13/6 women/men). We measured TSH, TT4, and TT3 in the 228 samples and compared to results from 16 middle-aged men. We calculated personal RI's from the total variance around individual means. We compared personal RI's using t-tests.

Results: Total variances around the setpoints were narrower among older/younger adults (TSH: 38.8%/52.0%; TT4 11.6%/22.0%; TT3: 14.4%/27.3%). The widths of personal RI's were similar between age-groups with a slight trend towards narrower RI's for older adults (mean difference 0.15 mIU/liter [95% CI – 0.22–0.51, $P = 0.42$]). The personal RI's for TSH were narrower than the population RI (older/younger 32.8%/36.8% [95% CI 25.6–40.0/29.1–44.5]). The widths of personal RI's for peripheral hormones were narrower in older than younger adults (TT4: mean difference 26.8 nmol/liter [95% CI 22.4–31.2, $P < 0.0001$]; TT3: mean difference 0.51 nmol/liter [95% CI 0.41–0.92, $P < 0.0001$]). The personal RI's for peripheral hormones were markedly narrower among older adults than younger adults compared to the population (TT4: 25.7%/59.2% [95% CI 24.2–27.2/54.7–64.6]; TT3: 39.6%/65.7% [95% CI 27.6–31.5/59.0–72.4]).

Key conclusions: Personalized reference intervals for thyroid function tests are narrower in older adults than in the population especially for peripheral hormones. The implications of narrower personal reference intervals for T4 and T3 when assessing differences in thyroid tests in older adults should be evaluated further.

Abstract # 509

AREA: ECGI - Early Career Geriatricians

Sleep disorder, cognitive control & social cognition in Mild Cognitive Impairment: a narrative review

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Introduction: With population aging and the increased prevalence of dementia worldwide, there is great interest in the study of sleep in the elderly and in patients with degenerative dementia in general and the most common subtypes (MCI) in particular. Plenty of biological, behavioral, social and environmental factors may contribute to the onset of cognitive decline. Sleep disturbances are common in the elderly and in persons with cognitive decline. Although the biological sleep criteria seem to be associated with cognitive changes in older adults, it is unclear whether sleep and its parameters affect cognition in later life.

Methods: A recent increase in studies suggests at least a correlation between changes in sleep and cognitive control in MCI patients. However, in our effort to form a comprehensive view, we conducted narrative review of recent studies that have investigated the relationships between sleep, cognitive control and social cognition parameters in MCI patients.

Results: These reviews suggest that multiple sleep parameters differ in how elderly people with MCI diagnosis benefit or burden. Specific sleep parameters examined in these studies have identified more consistent results and are likely to be associated with the deterioration of cognitive functions, but most results were not clear and documented. Several biological mechanisms appear to underlie the association between sleep and cognition.

Conclusions: Taken together, these results suggest that sleep disruptions are evident years before diagnosis of MCI and dementia, which may have implications for early detection of dementia and/or therapeutic management of sleep complaints in MCI patients.

Abstract # 510

AREA: ECGI - Early Career Geriatricians

Comparison of the management of acute heart failure in older patients between cardiology and geriatrics departments - a multicentric prospective study-

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Background: An increasing number of older patients admitted for acute heart failure (AHF) are treated in geriatric units, but their characteristics and prognosis are poorly understood. This study aimed to determine the profile, management and prognosis of patients hospitalized for AHF in geriatric units, and to compare them with patients hospitalized for AHF in cardiology.

Methods: We included prospectively patients aged at least 75 old, admitted for AHF in geriatric and cardiology units, between April 2019 and January 2020. We collected their demographic, clinical and biological characteristics. Management intra-hospital, Heart failure treatment, we followed them for 1 year.

Résultats: 180 patients collected, they were 88 ± 6 years old, 168 (94%) patients had a history of AHF, 149 (83%) patients had a Heart Failure Ejection Fraction (HFEF) preserved. Patients in the geriatric units were more older, had more chronic renal failure, and more dementia. During the stay, they had lower albuminemia and had less cardiac-ultrasound performed. they received lower doses of diuretics and under use of diuretics intravenous, infections and falls were higher. There was no difference in HFEF between the 2 cohorts. At discharge, geriatric patients had less RAASi (Renin Angiotensin Aldosterone System inhibitors), less betablockers, the length of stay was longer. No difference was observed in mortality and readmissions for AHF between patients discharging from 2 units at 1 year.

Conclusion: In this study, although the profile and the intra-hospital management of the patients were different, there was no difference in mortality and rehospitalizations for AHF after 1 year of follow-up between the patients treated in geriatrics and cardiology.

Abstract # 511**AREA: ECGI - Early Career Geriatricians****Association between treatment with a beta-blocker/renin angiotensin aldosterone system inhibitor and 1-year mortality or rehospitalization for AHF in elderly patients with heart failure - a prospective multicentric study-**

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Background: Heart failure (HF) is a serious pathology after 80 years. Despite the recommendations, an underuse of the drugs recommended for HF is observed in the older patients. The objective of this study was to investigate an association between treatment of HF with a betablocker and a Renin Angiotensin Aldosterone System inhibitor (RAASI) (T*) in older patients after hospitalization for acute heart failure (AHF) and mortality or rehospitalization at 1 year.

Methods: We conducted a prospective cohort in geriatrics and cardiology units between February 2020 and February 2021. All patients admitted for AHF, aged at least 75 years old were included and followed for 1 year. Treatments were collected on admission and discharge along with demographic characteristics and medical history. Univariate and multivariate Cox models were performed to investigate the association. A subgroup analysis of patients with preserved ejection fraction HF (HFpEF) was also performed.

Results: 180 patients were included with a mean age of 88 years, 48% (n = 82) had dementia. 83% (n = 149) had a HFpEF and 26% (n = 44) were receiving a T* treatment. Patients who did not receive T* treatment were older, and were more often admitted in geriatric units. They were more frequently presented a renal failure during hospitalization. The T*treatment was significantly associated with less readmissions for AHF or deaths at 1 year. This association was even stronger in patients with HFpEF.

Conclusion: This study shows that medical treatment with a RAASI and a beta blocker is associated with a more favorable prognosis at 1 year in elderly patients, especially those with HFpEF.

Abstract # 512**AREA: ECGI - Early Career Geriatricians****Complete data collection with monthly sampling throughout a year in up to 100-year-olds enabled the assessment of variation in thyroid function tests in older adults**

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Introduction: Complete data collection is challenging in older individuals. Furthermore, heterogeneity in ageing and acute illness may influence variation in thyroid function tests and impede interpretation of biochemical results.

Methods: We included 19 older adults with no history of thyroid disease for monthly sampling throughout a year. We measured thyrotropin (TSH), total thyroxine (TT4), total triiodothyronine (TT3), and thyroid peroxidase antibodies (TPO-Ab) in serum. We recorded acute illness and exposure to iodized contrast.

Results: Participants were 13/6 women/men aged 66–100 years (median 76; interquartile range: 70–83 years). Sampling was

complete for all participants with either hospital or home visits. No missing data caused a total of 228 samples despite national lockdown during COVID19 pandemic with four participants having a 2-month intermission before the final sample collection. Intraindividual coefficients of variation were 19.0% for TSH, 5.5% for TT4, and 6.9% for TT3. Intraindividual variation was similar between community dwellers (n = 15) and nursing home residents (n = 4), and independent of sex and TPO-Ab (> 30 IU/L, n = 7). Four participants had an acute event: one with stroke; one with pelvic fracture; one with lime disease; and one received iodized contrast and had recurrent urinary tract infections, which did not affect thyroid function tests or variation. Finally, tests of thyroid function were similar before and after COVID19 lockdown.

Key conclusions: Complete data collection for a full year was feasible in up to 100-year-old through appointment flexibility and survey location. The variation in thyroid function tests was low and unaltered with acute events in old age.

Abstract # 513**AREA: ECGI - Early Career Geriatricians****Treating patients with Parkinson's disease (PwP) with difficulty swallowing oral anti-parkinson drugs at the end of life**

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Introduction: In Parkinson's Disease, dysphagia is a common and serious problem, especially in advanced disease. Severe swallowing problems can make it impossible to take oral anti-parkinson drugs, which can lead to aggravation of symptoms and even to a neuroleptic malignant-like syndrome. We performed a literature study to review the different therapeutic options for PwP with swallowing problems at the end of life.

Method: A database search (Pubmed) was performed and we hand-searched the reference lists of relevant publications. Studies about deep brain stimulation and methods using a percutaneous endoscopic gastrostomy tube were excluded because we limited our study to options applicable in the end of life stage.

Results: We found three case studies about the use of subcutaneous drugs: apomorphine [1], scopolamine [2] and diphenhydramine [3]. The use of rotigotine transdermal was described in one retrospective observational study [4] and mentioned in two case studies [5–6]. The aforementioned options were also noted in publications based on expert opinion. Other treatment options that were stated, mainly from expert opinion, are delivering carbidopa/levodopa rectally or through a nasogastric tube, or using oral dissolving drugs.

Key conclusions: There appears to be a gap in evidence on how to deal with PwP in terminal care when dysphagia prevents taking anti-parkinson drugs orally. The current literature on this subject describes several therapeutic choices that bypass the oral route. It consists of expert opinion publications, a retrospective observational study and very few case studies. More research is needed to build an evidence-based guideline.

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Abstract # 514

AREA: ECGI - Early Career Geriatricians

Experiences of early career geriatricians during the COVID-19 pandemic

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Introduction and methods: The COVID-19 pandemic brought an unprecedented challenge on healthcare workers, including geriatricians. In this work, we aimed to evaluate the experience of early-career geriatricians (trainees or consultants up to 10 years) using an online survey during January to April 2021.

Results: We obtained a total of 834 responses. Most of the respondents were female (n = 633, 76%) and residents in geriatric medicine (n = 395; 47%) or consultants (n = 327; 39%). Median age interval was 30–34 years. Half of the respondents (n = 420) worked in a university hospital. The overall majority of respondents (n = 755; 91%) have been directly involved in the care for COVID-19 patients. On a scale from 1 (not at all) to 5 (very strongly), respondents reported a moderate (median of 3) level of anxiety and work overload. Nearly 60% of respondents stated their daily routine has “strongly” or even “very strongly” changed. The respondents had good access to diagnosis and treatment policies as well as to personal protective equipment (median of 4 for all). Looking at the personal impact, majority (66%) experienced a strong or very strong restriction on their private life (median of 4). Residents in geriatric medicine reported a moderate disruption on training and research aspects (median of 3 for both).

Key conclusions: Many early-career geriatricians were at the forefront of the care of older adults with COVID-19. This provoked a disruption in their private lives and change of work routine but also evoked moderate levels of anxiety and work overload.

Abstract # 515

AREA: ECGI - Early Career Geriatricians

Does cognitive decline play a role in a geriatric day hospital?

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Introduction: Geriatric Day Hospitals (GDH) are outpatient services providing specialized and interdisciplinary care to community-dwelling older patients. In this study, we aimed to describe the influence of cognitive decline in the functional recovery of an elderly population.

Methods: Prospective cohort study: we recorded demographics, activities of daily living (Barthel Index, BI), Pfeiffer's test, sarcopenia (SARC-F grip strength), and frailty (SPPB), prior to admission and after discharge. Participants were included from September 2019 to September 2020.

Results: 194 patients were admitted to our GDH. Only 85 (33 men, 52 women) completed their assigned therapeutic program. Mean age was 84 years old with a standard deviation (SD) of 5.8. Mean BI on admission was 48.35 ± SD 19.83, and 71.71 ± SD 21.30 at discharge. Errors on Pfeiffer test went from 3.23 ± SD 2.5 at admission to 2.77 ± SD 2.5 at discharge (T-test p = 0.001). We analyzed IB according to cognitive status (Pfeiffer < 4 vs Pfeiffer > 4). The Pfeiffer < 4 group had an admission mean score of 53, and 77 on discharge, being statistically significant with a T-test (p = 0.000). In the Pfeiffer > 4 group, IB was 42 point on admission and 64 on discharge (T-test p = 0.000). There was an inverse correlation between IB at discharge and Pfeiffer Test prior to admission (CC = -4.00; p = 0.000). While SPPB and SARC-F scores improved in both cognitive groups, grip strength only seemed to improve in the Pfeiffer < 4 group.

Key conclusions: Despite being an indicator of bad functional prognosis, patients with cognitive decline still benefit from a stay in a GDH.

Abstract # 516

AREA: ECGI - Early Career Geriatricians

Reaching the hard to reach: a protocol for enrolling individuals with Parkinsonism who lack capacity to consent in the PRIME-UK Cross-sectional Study

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Introduction: Many people with parkinsonism (PwP) develop cognitive impairment (CI) as the condition progresses, contributing to clinical complexity and increasing care needs. Such individuals are less likely to be recruited into research, thereby providing an overly optimistic clinical picture. This study aims to describe the healthcare needs of a broad range of PwP. We have developed a method to include individuals with CI and dementia, who are typically excluded.

Methods: PwP will be sent a study invitation pack and non-responders will be followed up by telephone. If a patient lacks capacity to consent, a personal consultee will be sought to advise on the patient's wishes and to sign a consultee declaration, if appropriate. They will then provide information about the PwP by completing a “representative” questionnaire so that they are not excluded. This booklet has been designed for people with CI and includes assessment of nutritional risk, wellbeing, neuropsychiatric symptoms etc. using questionnaires validated for proxy completion where possible.

Results: We will compare our results of various health outcomes with and without inclusion of the representative data to show the degree of selection bias that occurs if efforts are not made to be inclusive of all PwP.

Conclusions: Existing cohorts have generally focused on patients with idiopathic Parkinson's Disease and typically exclude individuals with severe comorbid illness or CI precluding consent. Recruiting PwP who are additionally living with frailty, multimorbidity and CI will allow us to describe a more representative population and address this area of unmet need.

Abstract # 517

AREA: ECGI - Early Career Geriatricians

Association between autonomic dysfunction and delirium-a systematic review and meta-analysis

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Introduction: Delirium is common in hospitalised older adults but the pathophysiology is not clearly established. We propose that it may be related to autonomic dysfunction and carried out a systematic review to identify evidence to support this hypothesis.

Methods: A literature search was conducted using applicable search terms. Case-control studies, with a delirium and control group that reported measures of autonomic function were considered. A difference in autonomic function measures between cases and controls was the outcome of interest. Quality of included studies was evaluated using The Critical Appraisal Skills Programme Case Control Study checklist.

Results: Five studies were included in narrative synthesis and four in the meta-analysis. There were 240 participants, 114 with delirium and 126 controls without delirium. Inconsistent methods of autonomic testing between studies were evident. Meta-analysis results were contradictory with heart rate variability (HRV) measured by SDNN (an overall measure of variability) being higher in the delirium group ($Z = 2.95$, $p = 0.003$). Other measures of overall autonomic function did not replicate this finding. High frequency normalised units (HFnu), a measure of parasympathetic activity, was significantly higher in the delirium group ($Z = 3.64$, $p < 0.001$). Other measurements of parasympathetic function did not demonstrate this difference.

Conclusion: Between group differences in autonomic function were detected but results across various measures were conflicting. Differences in measuring techniques were evident and may limit the interpretation of results. Standardised measurement techniques should be utilised in future research.

Abstract # 518

AREA: ECGI - Early Career Geriatricians

3 year follow-up of sedative prescribing for responsive behaviours in nursing home residents, an Irish study

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Introduction: Sedative medications are commonly prescribed for older adults; these include neuroleptics, benzodiazepines, opioids, 'z' drugs and trazadone. The prevalence of sedative drug prescriptions is increasing (1). Nursing home residents are three times more likely to be prescribed benzodiazepines (2). Regular medication review and education have been shown to reduce rates of sedative use in nursing homes (3). We previously demonstrated a significant reduction in prescription of these target medications at an Irish nursing home with specific focus, within scheduled medication reviews, on reduction or discontinuation of the target drugs in combination with education on management of Behavioural and Psychological symptoms (BPSD). This audit examines the prescribing patterns 3 years on from the initial audit.

Methods: Point prevalence study of sedative prescriptions and BPSD of all 95 nursing home residents on 6/5/21. Comparison with data from two previous audits in the same unit. All data was anonymised. Data analysed with SPSS statistical software.

Results: Sustained significant drop in quetiapine use from 30% of residents to 14% post-intervention in 2018 and 3-year follow-up ($p = 0.06$). Borderline significant reduction in overall neuroleptics (from 39 to 25%, $p = 0.06$). Significant rise in 'z' drug prescription (from 8 to 17%, $p = 0.03$). BPSD reported in 33%, compared to 49% pre-intervention.

Conclusion: Regularly scheduled medication reviews can effectively rationalise sedative prescription rates in nursing home residents. Increasing 'z' drug prescription likely represents the appropriate replacement of neuroleptics. Reduced BPSD may be due to reporting bias of staff since regular education has been introduced or changing cohort of residents.

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Abstract # 519

AREA: ECGI - Early Career Geriatricians

Improving the discharge summary at a local rehabilitation hospital by creating an electronic discharge summary template

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Introduction: Older adults admitted at a Maltese rehabilitation hospital often have complex medical problems. A comprehensive geriatric assessment (CGA) is needed to achieve maximum rehabilitation potential. It is important to ensure good communication of patient information to the community setting and between different hospitals. It was noted that some discharge letters lack uniformity and documentation. The aim of this study is to design an Electronic Discharge Summary Template (EDST) that will guide doctors on what to write in the discharge letter.

Methods: Permission was sought from the local research/ethics committee. It will be conducted between March 2021 and January 2022, and divided into 4 phases. 1st phase: face to face semi-structured interviews with consultant geriatricians to get feedback on the important points to include in a discharge note. 2nd phase: production

of the preliminary version of the EDST through expert consultation (3 consultant geriatricians, 3 geriatric medicine trainees, 2 general practitioners, 3 pharmacists, 2 nurses and 4 allied health professionals). 3rd phase: 100 discharge letters will be audited against the created EDST standard. 4th phase: the EDST will be officially incorporated into the Electronic Case Summary. After 6 months a re-audit will be done to assess the efficacy of the EDST.

Results and conclusions: Currently we are in the 2nd phase. From the 1st phase it was noted that consultant geriatricians deem the discharge summary to be a good source of communication between doctors and the information included should target the CGA. They agree that a EDST might help doctors to include all the necessary information.

Abstract # 520

AREA: ECGI - Early Career Geriatricians

Case report; anorexia nervosa complicated by refeeding syndrome

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Our patient was a 65-year-old lady, who had recently been admitted to a long-term care facility. Her past medical history included mild cognitive impairment, depression and alcohol dependence. During her stay she was noted to refuse solid foods, limiting her oral intake to minimal quantities of liquids. She was armchair bound and semi-dependent in activities of daily living. Anorexia nervosa was later diagnosed as the patient was restricting her food intake causing significant weight loss and nutritional deficiency. Managing this lady involved an interdisciplinary team including the clinical nutritional nurse. A nasogastric tube was inserted with the patient's consent so that a feeding regime could be initiated. However, shortly after feeding started, bloods showed severe hypokalaemia of 2.06 mmol/L (range; 3.5–5.1), hypomagnesaemia of 0.59 mmol/L (range; 0.65–1.05), and hypophosphatemia of 0.5 mmol/L (range; 0.87–1.45). An urgent electrocardiogram showed new onset ventricular bigeminy. The patient was asymptomatic with an unremarkable examination. In view of her blood tests, she was started on immediate electrolyte replacement as per local guidelines. She was started on intravenous potassium replacement as well as oral magnesium replacement. A stat dose intravenous phosphate infusion followed by oral replacement was also given. Regular electrocardiograms were also taken in order to monitor for any further arrhythmias. Repeat bloods 2 days after the electrolyte replacement showed normalisation of abovementioned electrolytes. Serial electrocardiograms were in normal sinus rhythm. She was slowly weaned off from electrolyte replacement and kept on the feeding regime through the nasogastric tube.

Abstract # 521

AREA: ECGI - Early Career Geriatricians

Sex differences in the association between physical fitness in middle age, and long-term risk of hip fractures

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Introduction: Hip fractures carry devastating consequences for patients and a huge economic burden for the society. Physical activity is an important modifiable risk factor for bone health throughout life. A higher level of physical activity contributes to a lower resting heart rate (RHR). Sex differences in the relationship between RHR and hip fractures have not been well studied.

Methods: Data on RHR from a large-scale, national health-screening program was linked to a hip fracture database (NorHip), which contains all hip fractures treated in Norwegian hospitals from 1994 through 2019. After two minutes of rest, RHR was measured three times. Mean values of the two last readings was used in this study. We calculated adjusted hazard ratios (HR) for risk of hip fracture by RHR categories (below 70 beats per minute (bpm), 70–79 bpm and above 80 bpm) in COX proportional hazard models.

Results: In total, 374 443 persons (48% men) aged 40–45 years were included. With up to 34 years of follow-up (mean 24.8 years), 5615 persons sustained a hip fracture. Men with a RHR above 80 bpm had increased risk (HR 1.41, 95% CI 1.27–1.56) for hip fracture compared to individuals with a RHR below 70 bpm. The corresponding figure in women was HR 1.22 (95% CI 1.11–1.33).

Key conclusions: A lower RHR at age 40, among men and women, was associated with a reduced long-term risk of hip fractures later in life. The benefit of physical activity on hip fracture risk may be larger in men than in women.

Abstract # 522

AREA: ECGI - Early Career Geriatricians

Variability of short-term hemodynamic responses to isometric exercise among older adults

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Introduction: Isometric exercise is known to elicit an increase in systolic blood pressure (SBP) in young healthy individuals. Previous studies revealed this response to differ in older individuals for certain hemodynamic parameters which are mainly related to arterial stiffness [1]. It is not completely clear which factors contribute to the variability of this response. We aimed to investigate the determinants of the variability of hemodynamic responses to isometric exercise among older adults.

Method: A total of 58 patients aged 60 years and older were included and their demographic and clinical characteristics were recorded. Providing 5 min of resting, baseline hemodynamic measurement was performed with Mobil-o-Graph device. A second measurement was taken following a 30 s of resting period after a maximum voluntary contraction with the dominant hand for 30 s using a handgrip dynamometer.

Results: Baseline SBP, pulse pressure and pulse wave velocity were correlated with age ($r = 0.284$, $r = 0.291$ and $r = 0.906$, respectively, all $p < 0.001$). Higher baseline SBP was associated with a decrease of SBP after isometric exercise (143 mmHg vs 130 mmHg, $p = 0.009$). Previous cardiovascular disease (CVD) was more prevalent among the participants with a SBP-increase after isometric challenge (68% vs 26%, $p = 0.001$). The change in peripheral vascular resistance (PVR) elicited by isometric exercise was significantly greater in patients with CVD ($p = 0.014$).

Conclusions: Hemodynamic responses to isometric exercise were highly variable among the participants. The presence of CVD was associated with an increase in PVR and SBP following isometric challenge.

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Abstract # 523

AREA: ECGI - Early Career Geriatricians

Frailty factors before and after hospitalisation due to COVID-19

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Introduction: Older patients are at risk of functional decline and loss of independence following COVID-19. Less is known about the impact of COVID-19 on frailty in the long term. We aimed to study factors associated with frailty among older patients, before and 6 months following hospitalisation due to COVID-19.

Methods: In this cohort study, we invited patients aged ≥ 60 years who were admitted to four general hospitals in South-Eastern Norway due to COVID-19, from March 1 up until July 1, 2020, to attend a 6-month follow-up. Self-reported frailty factors defined as exhaustion, weight loss exceeding 4.5 kg during the last year, and low physical activity levels (< 2 –4 h weekly) before and after 6 months were collected.

Results: Of 171 persons alive 180 days after hospital admission, 100 (58%) attended the 6-month follow-up. Mean age was 74.3 (range 60–96, SD 8.5) years and 44 (44%) were women. Sixty-eight participants (68%) had no frailty factors before hospitalisation, while 28 (28%) reported one or two factors, with low physical activity most commonly reported (14, 14%). After 6 months, 36 participants (36%) reported at least one frailty factor, most commonly exhaustion (26/36). Six (6%) gained two or more frailty factors. At 6 months, the prevalence of exhaustion had increased from 14 to 39%, weight loss from 10 to 23%, and low activity levels from 16 to 24%.

Key conclusions: Factors associated with frailty increased 6 months following hospitalisation due to COVID-19. Our results support awareness of frailty among older COVID-19 survivors.

Abstract # 524

AREA: ECGI - Early Career Geriatricians

The Geriatrician and the Breast Unit: “Oncopacity” of patients over 70 with breast cancer

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Introduction: Breast cancer is the most common form of cancer in women and the treatment requires the organized contribution of various specialists, specifically for the elderly cancer patient. The goal of our study is to analyze the geriatric characteristics of patients over the age of seventy diagnosed with breast cancer undergoing different medical/surgical treatments.

Methods: We collected data on patients treated by the Breast Unit of the Poliambulanza Foundation Hospital of Brescia between September 2020 and April 2021. The sample is made up of 78 patients, aged > 70 years, diagnosed with breast cancer.

Results: The average age is 75.8 ± 4.2 years (19.2% of age > 80) with MMSE: 28.2 ± 2.1 , GDS: 2.5 ± 2.0 , IADL 1.2 ± 1.8 and BADL 0.4 ± 1.0 lost functions. The TUG test is 11.3 ± 3.1 s, the SPPB is 9.8 ± 2.6 and the Handgrip Test is 19.0 ± 5.5 kg. The BMI is 25.3 ± 4.7 kg/m². The Fried Frailty Index highlighted an average score of 1.3 ± 1.4 . Patients were divided into three groups based on their general status: robust (61.5%), pre-frail (23.1%) and frail (15.4%). Of the sample, 97.4% underwent surgery, 78.2% started hormone therapy, 89.7% radiotherapy and 10.3% chemotherapy.

Key conclusions: The data indicate the presence of pre-frailty and frailty variables otherwise not considered in a conventional care pathway. The follow-up is underway at 6 months and 1 year from the first visit together with the data analysis to evaluate which aspects is most sensitive to oncological treatments.

Abstract # 525

AREA: ECGI - Early Career Geriatricians

Long COVID-19 in older patients: clinical features and possible interventions

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Introduction: Persistence of COVID-19 symptoms is a common long-term complication of COVID-19. We aimed to determine the prevalence of persistent symptoms among older COVID-19 survivors and identify most frequent symptom patterns.

Methods: We analysed data on 165 patients aged ≥ 65 years, admitted to the multidisciplinary Post-COVID-19 Day Hospital between April 2020 and March 2021. Fisher’s Exact Test and T-Test used to assess differences between subjects with and without persistent symptoms. Cox proportional hazard models used to ascertain associations between clinical characteristics and persistent COVID-19 related symptoms.

Results: Mean age was 73.1 ± 6.2 years, 39% were females. On admission, 84.5% of patients reported at least one persistent symptom. Long haulers displayed a higher prevalence of chronic

obstructive pulmonary disease (33% vs. 3%; $p = 0.05$) and reported a greater number of symptoms during the acute phase of the disease (5.3 ± 3.0 vs. 3.3 ± 2.0 ; $p < 0.001$). Almost 1/3 of patients reported 1–2 symptoms; nearly half had ≥ 3 , with a higher prevalence in women than in men (54.1% vs. 42.6%; $p = 0.01$). Most frequent symptoms: fatigue (53.1%), dyspnoea (51.5%), joint pain (22.2%), myalgia (19.4%), and cough (16.7%). Those who had experienced fatigue during the acute phase were more likely to report persisting symptoms. With increasing time from the acute phase, participants showed a reduction in the number of persisting symptoms.

Conclusion: This study provides an introductory frame of COVID-19 long-term complications in older adults and underlines the need of implementing follow-up programs, improving the management of persisting COVID-19 related health issues.

Abstract # 526

AREA: ECGI - Early Career Geriatricians

MTHFR gene and Alzheimer's disease. a systematic review and clinical case

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Introduction: Methylenetetrahydrofolate reductase (MTHFR) is a gene involved in folate metabolism which may contribute to the risk of Alzheimer disease [1].

Objective: Describe the association between MTHFR gene mutation, the consequent augmented levels of plasma homocysteine and susceptibility to late-onset Alzheimer's disease (LOAD). Know the most common homozygous polymorphism C677T and relate this transition as a risk factor for the development of the disease, independent of the presence of apolipoprotein E4 (APOE4).

Materials and methods: A systematic review was performed using PRISMA recommendations and each of the possible studies was chosen through a search the databases PubMed and EBSCO. This resulted in 220 posts related to the topic and 19 scientific studies were chosen for inclusion. A clinical case is attached.

Results: the analyzed articles show that this issue has several perspectives. Most studies describe the association between the MTHFR gene mutation and elevated plasma homocysteine [2–5], especially the homozygous variant C677T (6), and it is a risk factor for developing neurocognitive and psychiatric disorders. Several studies showed the importance of measuring levels of vitamin B12 and folic acid, that generally are reduced, as well the recommendation to genotype MTHFR C677T in people with probable LOAD [4].

Conclusions: The present investigation suggests that MTHFR gene could be a risk factor for the development of LOAD independent of APOE4, and look for this genetic variation could be considered as part of the screening for LOAD [1]. More research needs to be done with different populations, larger sample size, and comparison with other genes.

Keywords: Alzheimer's disease; homocysteine; methylenetetrahydrofolate reductase; MTHFR C677T, APOE4

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Abstract # 527

AREA: ECGI - Early Career Geriatricians

A particular case of delirium

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Introduction: This case highlights a case of delirium whereby the patient had exhibited increasing confusion, deterioration in activities of daily living (ADLs) and developed a rash.

Case description: Ms P is a 75 year old with a history of pacemaker insertion, ischaemic heart disease and breast cancer resident at Saint Vincent de Paul Residence. She had been started on colchicine for acute gout. A few weeks later she was started on allopurinol and colchicine stopped. She was noted to be lethargic and confused, not recalling where she was, and was too weak to get out of bed. She complained of a dry cough. Examination was unremarkable. A full septic screen including a COVID-19 swab test was taken in view of hypoactive delirium with no obvious cause. She was started on intravenous Co-Amoxiclav and allopurinol was stopped. Blood tests showed eosinophilia. Blood and urine cultures were negative. COVID-19 swab test was negative. Two days later she developed diffuse erythematous rash all over the body. Co-Amoxiclav was stopped and changed to levofloxacin. However the patient remained confused. The rash slowly subsided over a week and her cognition slowly returned to baseline and the multidisciplinary team helped her achieve her previous level of independence.

Discussion: Delirium is a common occurrence in older adults and might be complex to resolve. In this case, the patient might have had an allergic reaction to Co-Amoxiclav, or possibly confusion was secondary to allopurinol in drug reaction with eosinophilia and systemic symptoms (DRESS).

Key points: Management of delirium can be complex. Deprescribing and team approach is useful.

Abstract # 528**AREA: ECGI - Early Career Geriatricians****Is self-reported health from middle-aged and elderly credible? A validation study comparing Danish SHARE-data with National Health Register Data**Jens Mose¹, Kasper Hoffmann Jensen¹¹Medical Student, Department of Geriatric Medicine, Odense University Hospital, University of Southern Denmark, Faculty of Health Science

Background: Self-reported information on diseases and medicine use is widely used in epidemiological research although the validity varies. We aimed at investigating the validity of self-reported diseases and medicine use from Danish participants in the Survey of Health, Ageing and Retirement in Europe (SHARE).

Methods: Self-reported health data was linked at the individual level with the National Patient Registry (NPR) and the Danish National Prescription Registry (DNPR) (N = 5572). Agreement was assessed by Kappa-value, sensitivity, specificity, positive and negative predictive values.

Results: The agreement for any self-reported disease was moderate ($\kappa = 0.43$) and good ($\kappa = 0.68$) for any self-reported use of medicine. Gender and educational level did not affect the agreement, while higher age (80 + years) lowered the agreement substantially for self-reported medicine use. Self-reported use of medicine varied in agreement depending on the medication type ($\kappa = 0.33$ – 0.90) lowest for painkillers, highest for diabetes. Similarly, the agreement for self-reported diseases varied with type of disease ($\kappa = 0.23$ – 0.67), lowest for cholesterol-related diseases, highest for diabetes. When comparing self-reported diseases to both records from NPR and DNPR, the agreement increased substantially for diabetes ($\kappa = 0.82$) and high bloodcholesterol ($\kappa = 0.71$).

Conclusion: The agreement of self-reported Danish SHARE-data on disease and medicine use varies with different diseases and medicine, but is especially a good epidemiological tool for most medicine. It is trustworthy for diseases leading to hospitalisation, having clear diagnostic criteria, or having a major impact on everyday life.

Abstract # 529**AREA: ECGI - Early Career Geriatricians****Pain management in the care of older adults admitted under an orthopaedic service with acute fracture**Emily Killeen¹, Kate Doyle¹, Ronan O'Toole¹, Thomas Doran¹, Denis Collins¹, Linda Brewer¹¹Beaumont Hospital, Dublin

Introduction: Many studies report under-treatment of pain in older patients post fracture, particularly in those with cognitive impairment. Effective pain management optimises engagement in rehabilitation and earlier discharge from acute care. We aimed to assess pain management in older patients acutely post fracture.

Methods: We included patients aged > 65 years with an acute fracture admitted under orthopaedics. Data included fracture type, pain status, cognitive status, and prescribed analgesia; analysed using excel.

Results: 40 patients were included, median age 82 years (65–93 years) and 70% were female. 80% had > 5 comorbidities and 75% had > 5 medications pre-admission. 53% had cognitive impairment, ranging from mild impairment to severe dementia. Two-thirds (73%)

had hip fracture. Most (85%) underwent surgical intervention. Almost all patients (95%) were on regular paracetamol, only 3 (8%) were on regular opioids. 3 (7.5%) were on non-steroidal anti-inflammatory drugs. Many (43%) reported pain at the time of data collection, only 5 (13%) of patients had analgesics changed within the preceding 24 h. Pain impacted on function in 20% and mobility in 28% of patients. Two patients were unable to verbalise their pain however no visual assessment or pain scales were utilised. In notes, pain assessment was best documented by nurses (100%) followed by doctors (60%) and allied health professionals (40%).

Conclusions: Findings show that many frail older in-patients with acute fracture were undertreated for pain with suboptimal focus placed on assessment and analgesia review. Consequently we have developed a clear pain policy on our orthopaedic ward to effectively guide pain assessment and management.

Abstract # 530**AREA: ECGI - Early Career Geriatricians****Relation of endothelial vascular function measured by EndoPAT® in elderly to arterial stiffness**Lucile Admant¹, Carlos Labat², Menel Mejri³, Sylvie Gautier³, Anna Kearney-Schwartz¹, Christine Perret-Guillaume¹, Athanase Benetos¹, Laure Joly¹

¹Department of Geriatrics, University Hospital of Nancy, Nancy, France, ²Inserm, UMR_S 1116, University of Lorraine, Nancy, France, ³Department of Geriatrics (MARCAGE.FR) and Memory Clinique (CMRR), University Hospital of Nancy, Nancy, France

Introduction: Endothelial dysfunction and arterial stiffness are closely associated with cardiovascular risk factors and arterial aging with their respective mechanisms: remodelling microcirculation and alteration of large trunks elasticity. Some suggests a relationship between endothelial evaluation by Peripheral Arterial Tonometry (PAT) and stiffness parameters. Principal aims of our study were to assess the feasibility of PAT measurement and to establish the relationship between endothelial function and arterial stiffness in elderly.

Methods: This is a cross-sectional retrospective study. 148 participants coming to a geriatric day-hospital for a cardiovascular check-up were selected during a period of 20 months. Endothelial function was measured by EndoPAT 2000®. The Napierian logarithm of the Reactive Hyperaemia Index (LnRHI) was calculated. Measure's quality was assessed for each participant. Arterial stiffness was evaluated with Aortic Pulse Wave Velocity (AoPWV). We performed anthropometric, hemodynamic, frailty evaluations.

Results: 43 patients with poor LnRHI signal quality were excluded. 105 patients, mean age 81.9 ± 7.2 years, 46.7% women were analysed. Signal quality was significantly poorer when patients were more frail ($P = 0.03$) and dependant ($P = 0.003$). Patients with an endothelial dysfunction ($\text{LnRHI} \leq 0.51$) showed significant higher values of AoPWV ($P = 0.04$). They had more cardiovascular diseases ($P = 0.05$). A positive correlation of LnRHI was shown with hippocampal atrophy ($P = 0.012$).

Key conclusions: This significant relation between endothelial dysfunction and level of AoPWV in elderly patients comfort that increased arterial stiffness may impair the endothelium's function. Further investigations are needed to evaluate clinical and predictive value of PAT in routine cardiovascular examinations in older patients, with their frailty level's taken into account.

Abstract # 531

AREA: ECGI - Early Career Geriatricians

Safeguarding vulnerable adults – a survey to establish understanding amongst hospital staff and training needs

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Introduction: In Ireland, the revised Health Service Executive (HSE) Adult Safeguarding Policy was drafted in 2019 for the safeguarding of adults at risk of abuse. Safeguarding refers to the protection of health and wellbeing and enabling life free from harm and abuse. Forms of abuse include physical, financial, psychological, sexual, neglect, institutional or discriminatory. Factors increasing risk of abuse include reduced cognitive, intellectual or physical capacity and level of dependency. A Safeguarding Committee was founded in Beaumont Hospital in 2021 in preparation for the implementation of the HSE Adult Safeguarding Policy in the acute hospital setting. The survey aimed to establish awareness and understanding of safeguarding amongst hospital staff and identify training needs.

Methods: 10-question survey of 96 hospital staff between 19/05/21 and 15/6/21. Doctors, nurses, healthcare assistants, porters, allied health professionals and psychologists were included.

Results: 97% response rate. 82 (88%) staff were familiar with the term safeguarding however 59% were unfamiliar with the draft HSE 2019 policy. 56% had experience with a case of suspected abuse. The most common types were financial, physical and neglect. The least common was sexual (n = 2). 53% felt 'somewhat confident' recognising possible abuse or neglect, with 9% 'extremely confident' 70% felt 'somewhat' or 'not so confident' that they would know what steps to take next; 57% rated similar confidence in reporting a case of suspected abuse.—Medical social workers, Speech and Language therapists and nurses were most confident with assessment and management of cases of suspected abuse. Doctors were the least confident. Main reasons for lack of confidence for all staff were lack of training, lack of experience with cases of abuse and unclear reporting process (n = 41, 43.43 respectively). 22 staff also reported unclear personal responsibility as a contributing factor. 86% of staff would like more training—the most popular options were online and in-person training.

Conclusion: There are gaps in knowledge and confidence amongst staff for cases of suspected abuse. This will guide future training in the hospital in line with the HSE Adult Safeguarding policy.

Abstract # 532

AREA: ECGI - Early Career Geriatricians

Impact of a dedicated vertebral fracture pathway in the acute setting

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Introduction: Vertebral compression fractures (VCFs) are associated with considerable morbidity and variable care acutely. Following an audit confirming these facts in our hospital, in collaboration with emergency medicine (ED), physiotherapy, neurosurgical, orthopaedic, radiology and medical staff, we devised a dedicated pathway for

management of acute VCFs. Its aim was to address mobilisation, pain and osteoporosis. Our Fracture Liaison Service nurse assisted in its implementation. We conducted a re-audit to evaluate pathway impact. **Methods:** Retrospective review of consecutive patients aged 50 + years presenting to ED with a new VCF on x-ray between October 2020 and March 2021. Medical records and radiology reports were assessed. Results were compared to pre-pathway audit in 2018, of similar methodology.

Results: n = 64 patients were included (vs. n = 64 in phase 1 pre-pathway audit). Mean age 78 years (range 50–97 years). Similar to baseline, 51% were admitted; the majority under a medical speciality. More were referred for vertebroplasty (14% vs. 11% pre) or prescribed a spinal brace (20% vs. 19% pre). For those admitted, median length of stay reduced from 36 to 14 days (range 3–376). Similar rates of pressure ulcer (13%) and chest sepsis (20%) for inpatients pre and post pathway. 30-day ED re-attendance rates for non-admitted was 26% vs. 44% pre-pathway. Osteoporosis treatment rates were 63% vs < 50% pre-pathway.

Conclusions: A dedicated care pathway for management of acute VCFs has potential to improve many aspects of care, in particular osteoporosis treatment. There remains high morbidity associated with these fractures however and research on optimal care is required.

Abstract # 533

AREA: ECGI - Early Career Geriatricians

Goals of treatment decisions in an inpatient geriatric population: a clinical audit

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Introduction: Inappropriate escalation of care has the potential to deny a dignified, natural death. However, decision making in this area is often challenging. To assist clinicians a guideline was introduced in our hospital, comprising a composite score of the Sequential Organ Failure (SOFA) score, Chronic Illness Score (CIS) and Clinical Frailty Scale (CFS). Patients were categorised as either "Red", "Yellow" or "Blue", signifying patients who were appropriate for full escalation of care including cardiopulmonary resuscitation (CPR), intermediate, or ward level treatment respectively. This guidance was intended to be used in conjunction with clinical judgement and patient preference. Our audit aimed to assess the frequency and appropriateness of resuscitation discussions in our geriatric inpatient population, following its implementation.

Method: A retrospective review of inpatients ≥ 65 years admitted to two medical wards was conducted. The SOFA, CIS and CFS were generated. CPR decisions/documentation was recorded.

Results: 29 patients were included, with mean age 81.5 years (SD: 6.18). Mean CFS, CIS and SOFA scores were 5.7, 3 and 1.2 respectively. Of 22 patients who met "Blue" criteria, 7 had their goals of treatment discussed, with a resultant "Do Not Attempt CPR" (DNACPR) documented in all 7 cases. Of the remaining 15 patients, 5 had a CFS ≥ 7.

Conclusion: This audit highlights that many frail patients and their families are not given the opportunity to discuss their wishes regarding resuscitation and end of life treatment. We plan to implement further staff education and introduce a Treatment Escalation Plan form as part of the standard admission profile to address this.

Abstract # 534**AREA: ECGI - Early Career Geriatricians****Case report; digoxin toxicity**Doriella Camilleri¹, Rebecca Ceci Bonello¹, Anthony Fiorini¹¹St. Vincent de Paul Long Term Facility, Malta**Introduction:** This case reveals the different aspects of labels such as “deterioration in general condition”.**Case description:** An 87 year old frail lady with multiple co-morbidities who had recurrent admissions to the acute hospital. She was bed bound for the past 2 months. She complained of dizziness for which she had been prescribed prochlorperazine. On review, she was nauseous and had episodes of vomiting. Her parameters were stable except for episodes of hypoglycaemia. Examination was unremarkable except for an ejection systolic murmur on auscultation of the precordium. An electrocardiogram (ECG) showed rate controlled atrial fibrillation (AF). Her treatment was reviewed and it was found that she was taking digoxin 0.0625 mg twice daily. Urgent blood tests revealed a digoxin level 2 (reference range 0.6–1.2 ng/ml). Digoxin was reduced to daily. Prochlorperazine was stopped. The patient showed marked improvement on reducing digoxin. The patient's symptoms resolved. Repeat ECG showed rate controlled AF and digoxin levels normalised. She was reviewed by the interdisciplinary team and was able to transfer to a chair.**Discussion:** This case focuses on the positive outcomes of deprescribing the in the elderly. The term ‘deprescribing’ defines a complex process whereby inappropriate medications are safely and effectively stopped. A five-step cycle has been developed to ensure deprescribing is performed in a patient-centred process. This includes gaining a medical history, identifying potentially inappropriate medications, planning withdrawal of treatment, monitoring, and documentation.**Key points:** Deprescribing was the key to resolving the patient's “deterioration in general condition” Holistic approach is necessary.**Abstract # 535****AREA: ECGI - Early Career Geriatricians****Cardiovascular risk factors and their relationship with neurodegenerative and vascular biomarkers in patients with cognitive disorders**Irina Bulubas¹, Athanase Benetos¹, Carlos Labat², Laure Joly¹, Christine Perret-Guillaume¹, Anna Kearney-Schwartz³¹Université de Lorraine, Faculté de Médecine de Nancy, 9, avenue de la Forêt de Haye, 54505 Vandoeuvre-Les-Nancy, France, ²INSERM U1116, Université de Lorraine, Nancy, France, ³CHRU de Nancy, Service de Gériatrie, 5, rue du Morvan, 54500 Vandoeuvre-Les-Nancy, France**Background:** Alzheimer's disease (AD) is worsened by the presence of vascular risk factors. Since the cardiovascular disease has established treatment options and the cardiovascular risk factors are modifiable, focusing on the association between vascular disease and AD may provide pathways to prevent or delay AD in elderly.**Objective:** To investigate the interactions between cardiovascular risk factors and biomarkers of cerebrovascular and Alzheimer's diseases.**Methods:** This is a retrospective study of 100 patient's cohort who underwent a lumbar puncture for diagnostic purpose in the University Hospital Memory Clinic in Nancy, France in 2018–2019. All

demographic, clinical, laboratory and cardiovascular risk factors data were collected. The vascular impact was estimated by MRI measurements of the white matter hyperintensities (WMH), structural lesions such as microbleeds, lacunae and infarcts. Alzheimer disease (AD) was described by cerebrospinal fluid (CSF) biomarkers and hippocampal volume on MRI.

Results: The CSF biomarkers were changed in 79% AD patients with a negative correlation between age and Aβ42 ($p < 0.05$), while in cerebrovascular pathology, more WMH were present ($p < 0.001$). Hippocampal volume was smaller in patients with coronary disease ($p < 0.05$) and cerebral infarcts were more common in patients with stroke ($p < 0.01$). There was no association between CSF biomarker values and vascular abnormalities. A positive correlation between hippocampal atrophy and WMH ($p < 0.05$) was observed. There was a lower t-Tau level in CSF in the hypertension group, which may reflect a beneficial effect of antihypertensive drugs against AD-associated neuropathology. No significant association was found between BMI and laboratory or clinical diagnosis of AD, but the patients with lower BMI had higher t-Tau and p-Tau values (r , $p < 0.05$ and r , $p < 0.05$ respectively).**Conclusion:** Our data suggests that different vascular risk factors have different impact on vascular and Alzheimer's diseases.**Abstract # 536****AREA: ECGI - Early Career Geriatricians****Wakeup call: to how much nighttime noise are we exposing our elderly hospitalized patients?**Inês Marques Macedo¹, Mariana Alves¹, Catarina Távora¹, Nayive Gómez¹, João Freitas Silva¹, Glória Nunes da Silva¹, Teresa Fonseca¹¹Serviço de Medicina III-B, Hospital Pulido Valente, Centro Hospitalar Lisboa Norte, Lisboa, Portugal**Introduction:** The World Health Organization (WHO) recommends that the noise levels in hospital wards should not exceed an average of 30 dB and a maximum of 40 dB at nighttime.**Objectives:** The present study aims to quantify nighttime noise and evaluate sleep quality among hospitalized patients.**Material and methods:** Exploratory, observational, and cross-sectional study, assessing noise quantification in an acute care unit using a smartphone (Apple iOs). Data was gathered on median and maximum noise values. Patients answered sleep quality questionnaires—the Richards-Campbell Sleep Questionnaire (RCSQ) and Pittsburgh Sleep Quality Index (PSQI).**Results:** In ten-night periods the recorded median nighttime noise was 56.3 dB (IQR 53.5–59.8), reaching a maximum of 99.15 dB (IQR 93.9–102.8). The 17 patients included presented a median age of 74 years old. Ten (in 17) patients did not use sedative drugs before admission, but during hospitalization only three patients were not given sedative drugs. The most frequent sedative drugs used were benzodiazepines. Median RCSQ was 30 (IQR 5–48), ranging from 0 to 66. Nighttime noise median score was 5 (in 10). The main sources of noise were equipment, staff, and roommates. Half of the patients report poor sleep quality according to PSQI (median 6.5; IQR 5–12.8).**Conclusions:** This study shows that nighttime noise may be quite superior to the values recommended by the WHO. Hospitalization increased the use of sedative drugs. However, noise quantification may be useful for raising awareness among healthcare professionals, thus leading to the development of noise reduction protocols and minimize sedative prescriptions.

Abstract # 537**AREA: ECGI - Early Career Geriatricians****Atypical presentation of breast cancer in a pluripathologic patient**Jorge Artero¹, Blanca Garmendia², Maria Alejandra Valencia²¹Dr, ²Dra

Woman, 84 years old, with past medical history of hypertension, Chronic Kidney Disease, Parkinson Disease, osteoporosis and secondary hyperparathyroidism. On October '20 right acetabulum multisegmental fracture with conservative management, and moderate secondary functional impairment. Baseline: Barthel Index 50/100, mild cognitive impairment; CFS 6. Medications: amilorida/HCT, atenolol, rasagiline, levodopa/carbidopa, denosumab, calcium, vitamin D, oral iron and paracetamol. Referred on January '21 from Primary Care to Home geriatric management for CGA, poor pain control and persistent functional decline. Furthermore she has multiple geriatrics syndromes, symptomatic hypotension, dysphagia, hyporexia and confusion. Due to progressive deterioration of the patient's general condition, she was taken to the emergency department where severe hyperkalaemia and multifactorial hypercalcaemia, AKI and anaemia were observed; she was admitted for further investigation, finding in a Bone scintigraphy, TAC BODY and PET/TC were performed, detecting bone lesions compatible with tumour infiltration due to possible multiple myeloma and an unknown mammary nodule. Suspecting non-secretory myeloma (normal protein electrophoresis of the urine, Normal serum immunofixation and normal free light chain ratio), a consultation with haematology was made; at the same time a breast ultrasound was performed (BI-RADS 4b), BAG (infiltrating ductal breast carcinoma) and conservative management was decided (letrozol) due to the baseline situation (IB 25/100; CFS 7). Due to the absence of Monoclonal gammopathy and, after finding breast cancer (most likely origin of lytic lesions), haematological pathology was ruled out. This case shows the importance of multidisciplinary management of elderly patients, given the high prevalence of geriatric syndromes as an atypical presentation of other pathologies that require continuity of care for optimal evolution and quality of life, highlighting the role of geriatrics as a transversal speciality.

Abstract # 538**AREA: ECGI - Early Career Geriatricians****Clinical characteristics of cellulitis and the use of compression therapy**Mia Nielsen¹, Mette Midttun¹, Suzanne Lunding²¹Medical department, Geriatrics, Herlev Hospital, Denmark, ²Medical department, Herlev Hospital, Denmark

Introduction: Cellulitis (erysipelas) is a common infection among older patients. Compression therapy is often recommended in order to reduce acute edema and pain. A recent randomized study suggests that compression therapy leads to a lower incidence of recurrent cellulitis in lower extremities among patients with chronic lymphedema.

Aim: To describe clinical characteristics of patients with cellulitis.

Methods: A retrospective descriptive study reviewing medical records and medicine registrations during 1 year at two in-patient wards, in patients > 18 years old with cellulitis.

Results: 104 patients were hospitalized with cellulitis, 13 patients were excluded. Median age 75 years (33–103 years). Median admission time 5 days (from 1–24 days). Median antibiotic treatment 11 days (from 4 to 56 days). 45% were currently or formerly smokers, and 40% were overweight. 48% had preexisting chronic edema of the affected area. In 90% the infection was in the lower extremities. 19% were readmitted within 6 months. 51% had a new antibiotic treatment prescribed after discharge. 66% received compression therapy. Compression therapy had no clear effect on the rate of readmission or repeated antibiotics.

Conclusion: Cellulitis frequently affect older patients, especially smokers, those with overweight and chronic lymphedema. 2/3 of the patients received compression therapy. The lack of reduction in readmission rate and repeated antibiotics might reflect, that the patients who were treated with compression therapy had more severe edema and comorbidity. Focus on use of compression therapy, together with health preventive interventions may have positive impact on the relapse rate.

Abstract # 539**AREA: ECGI - Early Career Geriatricians****Associations of Prognostic Nutritional Index and Systemic Inflammation Index with in-hospital mortality in geriatric and adult COVID-19 inpatients**Sibel Cavdar¹, Sumru Savas¹, Sezai Tasbakan², Abdullah Sayiner², Ozen Kacmaz Basoglu², Pervin Korkmaz Ekren², Fehmi Akcicek¹¹Geriatrics Section, Internal Medicine Department, Medical Faculty, Ege University, Izmir, Turkey, ²Chest Disease Department, Medical Faculty, Ege University, Izmir, Turkey

Introduction: The prognostic nutritional index (PNI) and systemic immune inflammation index (SII) have been used as simple risk-stratification predictors for COVID-19 severity and mortality in general population. The relationship between SII and mortality in older COVID-19 patients has been studied, but not with PNI. So we aimed to investigate the associations of PNI and SII with in-hospital mortality in geriatric and adult COVID-19 patients.

Methods: A total of 407 patients hospitalized with COVID-19 diagnosis from March 2020 to December 2020 were included retrospectively. PNI and SII were calculated from laboratory data obtained within first 48 h after admission. Patients were evaluated according to age groups ($\geq 65 < 90$ years). Receiver operating characteristics curve was drawn to evaluate the predictive value of PNI and SII in both groups.

Results: There were 197 (82 female, 115 male) patients in the geriatric group (%48.4) and 210 (87 female, 123 male) patients in the adult group (%51.5). Area under curve (AUC) of PNI and SII in adult group was 1–0.294 (95% CI (1–0.417)–(1–0.172)) ($P = 0.003$) and 0.697 (95% CI 0.567–0.827) ($P < 0.005$) respectively. AUC of PNI and SII in geriatric group was 1–0.485 (95% (1–0.573)–(1–0.396)) ($P = 0.739$) and 0.500 (95% CI 0.411–0.590) ($P = 0.993$).

Conclusion: Predictability of mortality for PNI and SII varies according to age groups in COVID-19 patients. The association of PNI and SII with mortality in adult COVID-19 patients seem to be moderate and weak where this association does not exist in geriatric patients. A novel predictive model for geriatric COVID-19 patients will be discussed.

Abstract # 540**AREA: ECGI - Early Career Geriatricians****Prognostic factors in a geriatric population hospitalized with COVID-19**

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Introduction: The novel coronavirus SARS-COV-2 was the cause of the 2020 pandemic. Despite its high transmission rate, mortality is not homogenous.

Objective: To determine prognostic factors from a cohort of patients with SARS-COV-2 infection admitted to a tertiary hospital focused on geriatrics.

Methods: We conducted a retrospective observational study with all patients admitted to our hospital from March 2020 to April 2021 (excluding the Intensive Care Unit). We studied age, gender, and duration of hospitalization during peaks of infection/waves, use of hydroxicloroquine, Lopinavir/ritonavir, remdesivir, tocilizumab, antibiotics and corticoids.

Results: 414 patients were registered (225 women and 189 men). The median age was 83 years-old. The median hospital stay was 13.5 days. When studied by age groups, mortality and duration of hospitalization increased: 4.5% and 8 days (18 and 69 years-old), 7.1%, and 9.5 days (70–79), 31.3% and 11 days (80–89), 37.1%, and 14.5 days (90–99) and 66% and 16 days in patients over 100. The duration of hospitalization among age groups was different and statistically different (ANOVA, $p = 0.008$), a similar result to mortality (chi square $p = 0.000$). There was no statistical difference in mortality or survival when comparing gender and peaks of infection/waves. There were no differences in survival in patients treated with Lopinavir/ritonavir (24), hydroxicloroquine (42), tocilizumab (19), remdesivir (13), antibiotherapy (214) and corticoids (199).

Conclusions: Age increases the risk of mortality and duration of hospitalization in a SARS-COV-2 infection. We couldn't find evidence that the drugs used improved survival.

Abstract # 541**AREA: ECGI - Early Career Geriatricians****Associations of Prognostic Nutritional Index and Systemic Inflammation Index with in-hospital mortality in geriatric and adult COVID-19 inpatients**

Sibel Cavdar¹, Sumru Savas¹, Sezai Tasbakan², Abdullah Sayiner², Ozen Basoglu Kacmaz², Pervin Ekren Korkmaz², Fehmi Akcicek¹

¹Geriatrics Section, Internal Medicine Department, Medical Faculty, Ege University, Izmir, Turkey, ²Chest Disease Department, Medical Faculty, Ege University, Izmir, Turkey

Introduction: The prognostic nutritional index (PNI) and systemic immune inflammation index (SII) have been used as simple risk-stratification predictors for COVID-19 severity and mortality in general population. The relationship between SII and mortality in older COVID-19 patients has been studied, but not with PNI. So we aimed to investigate the associations of PNI and SII with in-hospital mortality in geriatric and adult COVID-19 patients.

Methods: A total of 407 patients hospitalized with COVID-19 diagnosis from March 2020 to December 2020 were included retrospectively. PNI and SII were calculated from laboratory data obtained

within first 48 h after admission. Patients were evaluated according to age groups ($\geq 65 < \text{years}$). Receiver operating characteristics curve was drawn to evaluate the predictive value of PNI and SII in both groups.

Results: There were 197 (82 female, 115 male) patients in the geriatric group (%48.4) and 210 (87 female, 123 male) patients in the adult group (%51.5). Area under curve (AUC) of PNI and SII in adult group was 1–0.294 (95% CI (1–0.417)– (1–0.172)) ($P = 0.003$) and 0.697 (95% CI 0.567–0.827) ($P < 0.005$) respectively. AUC of PNI and SII in geriatric group was 1–0.485 (95% (1–0.573)– (1–0.396)) ($P = 0.739$) and 0.500 (95% CI 0.411–0.590) ($P = 0.993$).

Conclusion: Predictability of mortality for PNI and SII varies according to age groups in COVID-19 patients. The association of PNI and SII with mortality in adult COVID-19 patients seem to be moderate and weak where this association does not exist in geriatric patients. A novel predictive model for geriatric COVID-19 patients will be discussed.

Abstract # 542**AREA: ECGI - Early Career Geriatricians****Realism but optimism: a young geriatrician experience in COVID-19 geriatric rehabilitation**

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Introduction: The COVID-19 pandemic infection has particularly affected older adults around the world. Patients developed many geriatric syndromes including sarcopenia, frailty, multi morbidity, pressure ulcers, cognitive impairments, and severe functional deterioration. The need for geriatric rehabilitation has never been more important, but nevertheless even more challenging. This retrospective observational study aims to describe clinical outcomes in a small cohort of patients who were admitted for rehabilitation post COVID-19 infection in a geriatric rehabilitation center.

Methods: Patient clinical and demographic data were collected. Pre and post-COVID-19 infection patient functional, cognitive status and clinical frailty scale, were collected to quantify the extent of physical-functional- cognitive decline and the effect of geriatric rehabilitation on recovery and overall condition upon discharge.

Results: 30 COVID-19 patients were included in the study. All patients deteriorated in their functional status and needed inpatient rehabilitation. Multi morbidity, lower functional status at baseline, background or acquired cognitive impairment post COVID-19 and longer ICU stay were significantly associated with poorer outcome of rehabilitation. Significant cognitive impairment was noted in roughly 50% of patients (attention, short term memory and executive function). Unique resting symmetrical tremor in both hands was noted in about 15% of patients. Longer period of rehabilitation was required, and slower pace of recovery was observed. Most patients recovered to a better functional status and about 80% were able to return to their residency.

Conclusions: COVID-19 is associated with major functional and cognitive decline in geriatric patients. Geriatric rehabilitation significantly changed the clinical outcome of recovered COVID-19 survivors.

Abstract # 543

AREA: ECGI - Early Career Geriatricians

Comprehensive geriatric assessment in “de novo” hematologic neoplasia

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Introduction: Comprehensive geriatric assessment (CGA) in the presence of neoplasia (either solid or haematologic) is mandatory, can be done by family physicians and might help the decision algorithm. **Case report:** An autonomous retired engineer, 83 years old, married, living in his own home with his wife (nuclear family, phase VIII Duvall life cycle, middle- high class) with poly -comorbidities and -pharmacy, namely hypertension, atrial fibrillation, hypercholesterolemia, benign prostate hypertrophy, diabetes (HbA1c 6.8%), obesity (IMC 33), sleep apnea (CIPAP), gonarthrosis and vertigo, medicated with dutasteride/tamsulosin, edoxaban, metformin/pioglitazone, betahistine, statin, perindopril/indapamide, verapamil, propranolol. Though asymptomatic, he presented with elevated hepatocolestatic parameters in routine blood tests GGT 1109; FA 241; AST 124; ALT 111 U/L without thrombocytopenia or high INR, total bilirubin was 1.70 mg/dl, that was non responsive to statin suspension. Concerning liver evaluation, autoimmunity, viral serologies, ceruloplasmin, ferritin and alfa fetoprotein were negative, an abdominal ultrasound and CT scan showed only hepatic steatosis and colonoscopy showed diverticulosis excluding primary sclerosing cholangitis. The full study included ESR 51 mm/h, phospho calcium kidney and immunofixation and bone marrow biopsy, diagnosing monoclonal gammopathy IgG, Kappa light chains with bence jones protein. At this point the CGA was performed: Lawton Brody –5 (independent), PRISMA 7—3 (frailty risk), Holden –5 (independent gait), MNA –12 (adequate nutritional status), MNSE – > 27 (without cognitive impairment), also Clinical frailty score-3 (Managing Well). Vaccination scheme was completed. After referral to Haematology he started ursodeoxycholic acid and hydroxycarbamide. At 1-month follow up liver enzymes values improved.

Discussion: Attending elderly patients with chronic diseases is a challenging task and can lead to overuse of medical care. The CGA is a key tool in geriatric care, and can be performed by family physicians, particularly in “de novo”neoplasms. In this case no needs were detected in the multidimensional evaluation either social, nutritional or physiotherapy. MGUS affects 5% of the patients above 70 years old and is more common in men. Patients need to be monitored because there is a risk of progression, especially for multiple myeloma. Hepatic involvement is a rare form of presentation.

Abstract # 544

AREA: ECGI - Early Career Geriatricians

The antineutrophil cytoplasmic antibody (ANCA)-associated vasculitides in elderly patients

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¹Resident, ²Doctor, ³Professor

Introduction: ANCA vasculitis present particularities in the elderly population which can make diagnosis difficult and management complex. The aim of our work is to describe the clinical Patterns and

the treatment of systemic ANCA vasculitis diagnosed in elderly patients in our department.

Tools and méthodes: Descriptive study of the files of four patients hospitalized in our internal medicine department between 2010 and 2020 in whom the diagnosis of systemic ANCA vasculitis was retained.

Results: Four patients were diagnosed with antineutrophil cytoplasmic antibody (ANCA)-associated vasculitides. Three cases of granulomatosis with polyangiitis and one case of eosinophilic granulomatosis with polyangiitis. Diagnosed within 1 month and 1 year. The circumstances of discovery were varied, respiratory, unilateral oculomotor paralysis and deterioration of general condition, a less typical revelation by testicular swelling with histological discovery of vasculitis. The eosinophilic granulomatosis was revealed by acute renal failure. Severe organ damage were found such as pulmonary embolism and peripheral neuropathy. All patients received corticosteroid therapy in association to cyclophosphamide followed by azathioprine for the patient with pulmonary embolism and to Immunoglobulin therapy for the patient with peripheral neuropathy.

Conclusion: The number of systemic ANCA vasculitis appears to be low in elderly subjects with different revelation circumstances. The treatments recommended in the general have been offered to our patients with good results.

Abstract # 545

AREA: Education and training

Mr Bs covid frailty journey - an online educational programme for a multidisciplinary audience

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Introduction: Our understanding of COVID and its impact on older frail patients has rapidly evolved over the last year. Awareness of how COVID manifests in this cohort of patients is essential to ensure optimal recognition and management. To reflect this, we adapted our established multidisciplinary programme of frailty education based on a fictitious patient for an online audience.

Methods: During the COVID pandemic the team created Mr B's COVID Frailty Journey, a series of four national webinars hosted by the UK Acute Frailty Network and broadcast in July 2020. Mr B's journey was linked by following his story from first presentation with COVID delirium through treatment escalation planning, rehabilitation and long COVID to end of life care. In Autumn 2020, the team presented two sessions digitally via Zoom to Internal Medical Trainees (IMT) in London incorporating other online tools (e.g. Kahoot) to ensure audience engagement.

Results: Over 1000 people have listened to the webinars; 360 people attended in July 2020, with a further 352 accessing the recordings. There were 509 participants at the IMT training sessions. Feedback was overwhelmingly positive. 96.9% of IMT trainees would recommend these sessions. Comments included “really interactive and engaging”, “very up to date COVID information”, “really nice narrative tying everything together”.

Conclusions: Taking a patient on a clinical journey is a powerful method for clinical teaching. Adapting to an online audience has been a successful tool for frailty in COVID multidisciplinary education. It engages the audience and ensures clinically relevant and stimulating subject matter throughout.

Abstract # 546**AREA: Education and training****What do internal medicine trainees in london think about geriatric medicine as a mandatory training requirement in internal medicine training**

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Introduction: Internal Medicine Training (IMT) is a newly designed program replacing Core Medical Training (CMT). Introduced in August 2019, IMT forms the first stage of specialty training for most doctors training in physician specialties. Geriatrics is now a mandatory placement in IMT. These changes were implemented due to the need for broadly trained registrars to manage multi-morbid patients from an ever-growing aging population.

Method: A 10-question survey was sent to all London IMT trainees through the trainee database from October 2020 to November 2020. Using a Likert scale, IMT trainees were asked to rate their confidence in core geriatric skills including making advanced care decisions, do not resuscitate orders (DNAR), delirium management, appropriateness of investigation, de-prescribing, and palliation before their IMT geriatric placement.

Results: 178 trainees responded (31% response rate). 90% (160) responders felt that geriatric training was a useful component of the IMT program, with 72% (128) ranking geriatrics at least 4/5 on usefulness. Trainees, before commencing their placements, demonstrated a clear positive skew towards confidence and independence of essential skills such as DNAR discussions, advanced care planning, mental capacity assessments and management of delirium. However, this confidence was less prominent in de-prescribing and initiating palliation.

Conclusion: In general, Geriatrics is a welcomed compulsory component of IMT by current London trainees. Although there was established confidence in some core geriatric skills such as initiating DNAR discussions, this study identifies key areas for trainers to implement formal training. These include deprescribing and improving confidence in addressing and initiation of palliation.

Abstract # 547**AREA: Education and training****Trainees' attitudes towards geriatric medicine becoming a compulsory component of internal medicine training (IMT) in the United Kingdom (UK): a qualitative study**

Nazia Imambaccus (NI)¹, Deborah Bertfield (DB)¹, Clifford Lisk (CL)¹

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Introduction: As the population ages, it is imperative for physician training programmes to incorporate training in Geriatric Medicine. This will ensure Medical Registrars have the skills to manage complex older, frail patients living with multiple co-morbidities. In 2019, Internal Medicine Training (IMT) replaced Core Medical Training. Internal Medicine Trainees (IMTs) in the UK now have a mandatory geriatrics placement as part of their training programme.

Methods: This study describes qualitative feedback from all IMT London trainees about their attitudes towards this change.

Results: 178 London trainees responded (31% response rate) to a 10-question online survey. Feedback was largely positive with comments such as; "Seems to be the way forward; we are all geriatricians, regardless of the specialty", "I think all doctors need a thorough understanding of geriatric medicine whatever specialty they end up in...", "An important aspect of all medical specialties—progressively more comorbid population", "Support its inclusion as a compulsory component". However, the views of a small number of trainees were less supportive. One trainee commented, "I had a Geriatrics job in both Foundation year 1 and 2 and so another post in IMT takes away a valuable opportunity to learn about something different."

Conclusion: In general, trainees value Geriatric Medicine as a core component of IMT. This study highlights the concerns from some trainees, particularly those with previous Geriatric Medicine experience. It highlights the importance for Trainers to explore trainees' previous experience and adapt personal development plans to include aspects of Geriatric Medicine that require additional experience.

Abstract # 548**AREA: Education and training****Improving maintenance IV fluid prescribing amongst elderly care inpatients**

Elizabeth Peterknecht¹, Olushola Odusanya¹, Shefali Arya¹

¹Sandwell and West Birmingham NHS Trust

Introduction: Appropriate intravenous (IV) fluid prescription is essential in the management of elderly care patients, due to age-related hormonal changes and their effects on appetite and electrolyte and water homeostasis [1]. Importantly, one in five hospitalised patients experiences increased morbidity and/or mortality due to inappropriate fluid management [2].

Methods: This quality improvement project assessed adherence to NICE CG174 [3], evaluating maintenance IV fluid prescribing amongst elderly care patients at a UK District General Hospital. Two PDSA cycles have been completed to date, with data gathered retrospectively over a 7-day period using electronic health records. Cycle 1 occurred in September 2020 and cycle 2 occurred in March 2021. Of note, departmental teaching was delivered between the two cycles.

Results: Cycle 1: 19 encounters showed that 0.9% sodium chloride (82.14%) was the most frequently prescribed fluid with 0% receiving dextrose-saline (NICE recommended). Patients received 265% more sodium, 86% less potassium and 100% less glucose, than needed. Cycle 2: 22 encounters showed that 0.9% sodium chloride was prescribed in 41.9% of cases with dextrose-saline prescribed in 25.8% of cases. Patients received 67% more sodium, 93% less potassium and 57% less glucose than needed.

Key conclusions: Cycle 1 revealed poor compliance with NICE CG174, increasing the risk of iatrogenic sequelae. Following departmental teaching, cycle 2 demonstrated increased compliance. Our final interventions include junior doctor fluid prescribing teaching, dissemination of a maintenance fluids algorithm, liaising with pharmacy to procure more dextrose-saline and performing our 3rd cycle in August 2021.

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Abstract # 549

AREA: Education and training

Shifting medical students' attitudes towards medication adherence

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Purpose: Polypharmacy and medication adherence are core topics in geriatric medicine. This descriptive study investigates medical students' self-reported medication adherence and attitudes towards polypharmacy.

Methods: Through a real-life experiential technique, medical students were assigned a medication list containing different chocolates as medication proxy. Minimal instructions were given regarding the medication intake. A digital report system was used to harvest daily individual self-reported medication adherence. On day 4 open-ended questions regarding self-reflection, experiences and changes in attitudes were provided.

Results: In total, 49 medical students participated. Mean daily medication adherence was 34%. Only two students (4%) reported adherence to the medication list all 4 days. A total of 29 students (59%) spontaneously reported changed attitude towards polypharmacy. Furthermore, 35 students (71%) emphasized the need for clear communication, 13 (27%) the importance of medication review, 18 (37%) the need for medication assistance, 16 (33%) the importance of patient education and 29 (59%) for feasible medication lists.

Conclusion: Medical students reported low medication adherence when placed in a real-life polypharmacy simulation. A change in attitudes towards polypharmacy and medication adherence was reported. Concise and consistent suggestions for improved prescribing emerged. The low-cost, feasible simulation was well suited for teaching difficulties in tackling polypharmacy.

Abstract # 550

AREA: Education and training

Geriatrics teaching program for nurses: role of ultrasound

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Introduction: The geriatrics teaching program for nurses consists of numerous cognitive, practical and relational educational objectives. For the complete management of the frail elderly patient with numerous associated and often disabling diseases, the nurse must acquire not only theoretical knowledge but also practical and relational skills. The aim of the work is to highlight the role of the ultrasound examination performed by the nurse in facilitating the nursing management of some care problems of the frail elderly.

Materials and methods: The teachers of the geriatrics course for nurses have selected some didactic topics for which it is useful to acquire ultrasound skills. The ultrasound course for nurses was carried out by inserting some ultrasound lessons in the theoretical lessons. The clinical situations of the elderly for which the role of ultrasound was illustrated to the nurses are the following: 1. Increase in the volume of the abdomen of the elderly patient: the nurse must learn to recognize the presence of ascites with ultrasound. 2. Dyspnea of the elderly: the nurse must learn to perform thoracic ultrasound for triage in the emergency room to identify the wet lung of heart failure and acute pulmonary edema and the dry lung of chronic obstructive bronchitis; the nurse must be able to identify the ultrasound findings of the pneumothorax. 3. Acute urinary retention in the elderly: the nurse must learn to identify excessive distension of the bladder with ultrasound and be able to identify prostate hypertrophy, the presence of clots or bladder obstacles that make it difficult to place the bladder catheter, must calculate the volume of the bladder, must choose the catheter of the appropriate type and caliber to perform the positioning of the catheter safely and efficiently with the ultrasound guide; the nurse must follow the path of the bladder catheter with ultrasound guidance and verify correct positioning. 4. Positioning of needles in peripheral veins in elderly patients with invisible veins and suspected thrombosis: the nurse must identify with ultrasound guidance the veins to be cannulated more easily, avoiding veins with thrombosis, frequent in the elderly patient. 5. Position of PICC and MIDLINE needles: the nurse must learn to cannulate the central veins of the elderly patient proceeding from the peripheral venous vessels using the ultrasound guide and must verify correct positioning with ultrasound. 6. Positioning of the nasogastric tube: the nurse in the elderly patient with difficulty in feeding must insert the nasogastric tube with ultrasound guidance and must verify the correct positioning in the stomach. 7. Verification of cardiac arrest: the nurse must know how to use ultrasound in emergency to check for the presence of cardiac activity.

Results: The nurses of the Geriatrics course also learned the basic knowledge of the use of ultrasound in the frail elderly patient with dyspnea, acute heart failure, suspected pulmonary edema, acute retention of urine and bladder globe, anuria, oliguria, hematuria, prostatic hypertrophy, suspected thrombosis of peripheral veins, enlarged abdomen and suspected ascites, difficulty in cannulating peripheral and central veins, difficulty in positioning the nasogastric tube, difficulty to place the bladder catheter. The nurses subsequently carried out a practical training in the geriatrics ward with practical lesions of nursing ultrasound performed in the presence of elderly patients with acute and chronic diseases that required positioning of nasogastric tube, bladder catheter, cannulation of peripheral and central veins.

Discussion and conclusions: The nursing ultrasound of the elderly is very useful both in the emergency room for triage and for the execution of emergency procedures that can be performed with the assistance of ultrasound and in the geriatric ward to carry out the procedures that nurse learns to perform routines and they can be performed more quickly with greater safety and efficiency and with little trauma for the frail elderly patient. In conclusion, short courses in theory and practical nursing ultrasound are required to be carried out preferably in the emergency room and in the geriatrics department to allow the nurse to perform some essential procedures in the elderly patient with high effectiveness and efficiency and with greater safety for the frail patients.

Abstract # 551**AREA: Education and training****The development and preliminary evaluation of an interdisciplinary training aiming the optimal management of BPSDs on staff distress in nursing homes: a pilot study**

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Introduction: Behavioural and psychological symptoms of dementia (BPSDs) are a group of disruptive need-driven behaviours in dementia residents. Most staff don't feel equipped to adequately assess and intervene with this clientele.

Objectives: (1) development of an interdisciplinary training on the optimal management of BPSDs, (2) evaluation of the intervention's feasibility and acceptability, and (3) evaluation of the methodology to assess its effects on staff in nursing homes (NH).

Methods: Mixed two-phase approach based on the CReDECI II recommendations. Phase 1: Intervention development contains two steps. (1) Scoping review to identify the best training intervention recommendations for BPSD management. (2) 2 focused discussion groups of 6–8 participants (panel of experts and staff) to identify the training needs regarding the management of BPSDs, the intervention parameters, and the indicators and tools to measure the effects of the intervention on staff, resulting in the proposed training. Phase 2: Evaluation of the intervention's feasibility and acceptability using 2–3 consecutive convenience samples of 8–10 CIUSSS de l'Estrie-CHUS (Quebec, Canada) NH caregivers receiving the training. These will allow the evaluation of the training's acceptability and feasibility, the identification of the barriers and facilitators of its deployment, and the collection of suggestions for its improvement. Valid and reliable questionnaires administered pre/post-training will estimate the impacts on staff distress.

Anticipated results and conclusions: Creation of a valid interdisciplinary training for NH staff working with dementia residents. This training should enable them to manage BPSDs more effectively and prove itself beneficial to staff and residents.

Abstract # 552**AREA: Education and training****A new European curriculum on active aging and health: CT4Silvercaregivers project**

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Introduction: The European project “Certified Training for Silver Caregivers (CT4SILVERCAREGIVERS)” –aims to create a new

curriculum on active aging and health, within the European Qualifications Framework, to train formal and informal caregivers in the profile of social health care for institutionalized and in-home dependent people.

Methods: Seven partners (Zamora Provincial Council and University of Almería, Spain; AFGE, France; Dafni, Greece; Rural Hub, Ireland; TREBAG, Hungary; IPCB, Portugal) share the common objective of promoting the employability of the Silver caregivers by developing skills or updating their training in rural areas.

Results: After our double perspective starting analysis (elderly's care needs and caregivers' training needs) the following proposal has been made for the development of an adequate educational curriculum: The aging process. Conceptualization and foundation of Active and Healthy aging. Identification of good practices and educational methodologies referred to the elderly. Social skills and associative networks of older people. Technology for the elderly. Promoting active life among older people: social entrepreneurship. Healthy environments in the framework of the silver economy. How to deal with a context of crisis and disasters.

Key conclusions: CT4SILVERCAREGIVERS wishes to develop a performance-based, dual training methodology to promote the silver economy and the social entrepreneur spirit embedded in VET programs for community services in Europe, to implement a new qualification competence in active and healthy aging. Raise awareness about the importance of establishing sustainable and social inclusive silver economy systems that could promote global citizenship, solidarity and empower local communities.

Abstract # 553**AREA: Education and training****Developing country portraits of gender for cross-national gender analyses of health systems**

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Introduction: Cross-national comparisons of health systems may shed light on the influence of gender (socio-cultural attributes) on health care delivery. As gender is socially constructed, it is mutable, varying across countries and cultures. Gender has been shown to influence prescriber-patient relations, including prescribing decisions and polypharmacy. To enable cross-national comparisons of health systems through a gender lens to explore polypharmacy in older adults, we developed four steps to create country-specific ‘gender portraits.’

Methods: Guided by the Jhpiego Gender Analysis Framework [1], we identified common data sources and collected gender-relevant information on institutions, laws and policies; access to assets; practices and participation; and beliefs and attitudes for Canada, Ireland, Israel and Italy. Next, we developed and applied gender analysis questions, focused on polypharmacy in older adults, to each country's health

system. Summary templates to highlight gender-relevant findings were created. Data were compared across countries.

Results: Country portraits of gender were completed for the four participating countries. The portraits highlight gender inequities within the health system that may influence prescribing practices and polypharmacy in older adults.

Conclusion: Our four-step approach for developing country gender portraits is a novel contribution to health systems research, facilitating cross-national gender analyses of health systems. The steps are: (I) Determine a gender analysis framework (II) Consider institutionalized gender (III) Develop and apply gender analysis questions of the health system (IV) Integrate, analyze, and compare cross-national data. The four steps were developed as part of the project, “Identifying Key Prescribing CASCADEs in the Elderly: A Transnational Initiative on Drug Safety” [2].

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2. Sternberg, S.A, Petrovic, M, Onder, G. et al. Identifying key prescribing cascades in older people (iKASCADE): a transnational initiative on drug safety through a sex and gender lens—rationale and design. *Eur Geriatr Med* (2021). <https://doi.org/10.1007/s41999-021-00480-w>

Abstract # 554

AREA: Education and training

Developing a roadmap for cross-national sex and gender analyses of health systems: a focus on polypharmacy in older adults

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Introduction: Cross-national comparisons of health systems may shed light on the influence of sex (biological characteristics) and gender (socio-cultural attributes) on health care delivery. As practical guidance on how to implement this has been lacking, we developed a five-step roadmap for cross-national comparisons of health systems employing a sex and gender lens focusing on polypharmacy in older adults.

Methods: We identified prescription medication data for adults aged 65 + from Canada, Ireland, Israel and Italy stratified by sex and setting of care. A literature overview of gender analysis frameworks was conducted, and the Jhpiego Gender Analysis Framework [1] was selected to explore gender influences. Structured by the framework, a portrait of gender equality, including questions specific to gender inequities in the health system, was completed for each country. Summary templates were created to highlight findings and facilitate comparisons of the cross-national medication and gender analyses data.

Results: We developed a five-step roadmap to facilitate cross-national sex and gender analyses of health systems to explore

polypharmacy in older adults: (1) Identify comparable, sex-disaggregated data (2) Determine a gender analysis framework (3) Explore gender context through country portraits of gender equality (4) Further understanding through gender analysis questions of the health system ⁵ Integrate, analyze, and compare cross-national data.

Conclusion: Our five-step roadmap is a novel contribution to health systems research and will be implemented in the cross-national sex and gender analysis for the project, “Identifying Key Prescribing CASCADEs in the Elderly: A Transnational Initiative on Drug Safety” [2].

References:

1. Jhpiego. Gender analysis toolkit for health systems, Gender analysis framework (2016). [Available from: <https://gender.jhpiego.org/analysistoolkit/>]
2. Sternberg, S.A, Petrovic, M, Onder, G. et al. Identifying key prescribing cascades in older people (iKASCADE): a transnational initiative on drug safety through a sex and gender lens—rationale and design. *Eur Geriatr Med* (2021). <https://doi.org/10.1007/s41999-021-00480-w>

Abstract # 555

AREA: Education and training

Impact of an education program on knowledge and approaches to dementia in a large acute hospital

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Introduction: Education programs may improve knowledge, attitudes and confidence among hospital staff caring for those with dementia. However, few studies have assessed the effect of such programs on dementia knowledge and attitudes in the acute hospital setting.

Methods: We surveyed a wide range of staff (healthcare and non-healthcare) in our acute hospital before and after the introduction of a dementia education program. The program comprised education modules and lectures open to all staff over an approximate 24 months. Questionnaires were administered at baseline and after 2 years. Attitudes to dementia in the domains of Hope and Person-centredness were assessed using the Approaches to Dementia Questionnaire (ADQ) and knowledge was evaluated using a self-rated scale.

Results: 1182 were surveyed at baseline and 908 after 2 years; 62% participated in the education program. Mean improvement in scores were: Hope: 30% ($P < 0.001$), Person-centredness: 8.4% ($P < 0.001$) and self-rated knowledge: 45.1% ($P < 0.001$). There were significant differences in the improvement in all three measures between staff groups ($P < 0.001$) but all were independently predicted by the education program ($P < 0.001$). Hope was significantly correlated with knowledge after but not before study intervention ($r^2 = 0.41$, $P < 0.001$). The majority (82.7%) of participants expressed a desire for further dementia education.

Conclusion: A dementia education program in a large acute hospital was associated with improvement in self rated knowledge and attitudes towards dementia, most notably hope, which also appeared to be related to new knowledge acquired. This may translate into improved quality of care for patients in hospital with dementia.

Abstract # 556**AREA: Education and training****Orthogeriatrics junior doctor virtual clinics**Jenni Mair¹, Hannah Hassani¹, Thusari DeSilva¹, Anne-Jayne Brien¹¹Guy's and St Thomas' NHS Foundation Trust

Introduction: During the COVID-19 pandemic, virtual clinics were adopted by many specialities in preference to face-to-face clinics. Foundation Year One doctors (FY1) traditionally have limited exposure to virtual clinics. Key Performance Indicator (KPI) for National Hip Fracture Database (NHFD) is to undertake a 120 day follow up. We decided to use that as an opportunity to expose and train FY1 doctors on Ortho-geriatrics how to undertake virtual telephone clinic.

Method: Learning objectives were formed using General Medical Council (GMC) guidance for virtual consultations. Clinic proforma was created to include all the relevant information required for NHFD and to ensure appropriate follow up had occurred or was organised. Qualitative data was collected from FY1s undertaking the virtual clinic using the Kirkpatrick model.

Results: Reaction: apprehension about conducting telephone clinics without direct senior supervision. Lacked confidence assessing and advising patients remotely. Learning: effective communication over telephone with patients/carers. Appropriately identified the individual and obtained consent. Made clinical decisions with consideration of the GMC ethical guidance for remote consultations. Behaviour: identified issues to be addressed and signposted patients to the most appropriate service. Refined a structured style of questioning in order to complete a standardised clinic letter.

Results: Gained experience conducting telephone clinics as junior doctors. Managed patient concerns, medical problems, and arranged follow up of patients with long term conditions.

Key conclusions: Enabled junior doctors to effectively conduct virtual clinic consultations and develop transferrable skills for their future careers including; focused questioning, signposting patients to appropriate services and writing clinic letters.

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Abstract # 557**AREA: Education and training****VIVES-LiveLab Community Service Learning with undergraduate healthcare students to support elderly in primary care**Claeys Tony¹, Baekelandt Goedele¹, Goemaere Lies¹¹Vives, Centre of expertise for care innovation

Introduction: In the field of education, innovative approaches are being sought to educate welfare and health care students in primary care. A possible approach is to enter primary care through community service learning and allow students to transfer their academic baggage to real-life contexts.

Methods: As part of the VIVES-LiveLab, 116 interprofessional student teams (ITT) were created within 9 cities and communities in West Flanders, Belgium. A total of 537 students from 6 programmes

took part in the LiveLab between 2019 and 2021. During 5 home visits, the interprofessional student teams consulted with the elderly person at home and identified needs for support. ITT used the International Classification of Functioning, Disability and Health (ICF) of the WHO as a framework to communicate with the elderly on interventions.

Results: A total of 98 elderly people were consulted at home and students identified 446 individual needs for support. Of the interventions offered, 291 were accepted by the elderly. Looking at the ICF scheme, 162 interventions (55.9%) for the elderly living at home were related to activities and the participation level of the elderly and 88 (30.3%) interventions are linked to the support of external factors. To support the functions and anatomical characteristics of the older person, 39 interventions (13.4%) were offered and 1 intervention (0.3%) was targeted to personal factors.

Conclusion: It is clear that community service learning through LiveLabs enables ITT to detect and address support for elderly in primary care and promote ageing well in place.

Abstract # 558**AREA: Education and training****Don't call me elderly: a review of medical journals' use of ageist nomenclature**Elizabeth Murphy¹, Aoife Fallon¹, Tim Dukelow¹, Desmond O'Neill¹¹Tallaght University Hospital

Introduction: Older people do not want to be called 'elderly' (1). The UN Committee on Economic, Social and Cultural Rights of Older Persons agreed that the term 'older persons' is preferred over 'elderly', 'seniors' and 'the aged' (2). Medical literature may lag behind this trend, continuing to refer to older adults by nomenclature that they find stigmatising.

Methods: All articles published by Age and Ageing and European Geriatric Medicine from January 2018 to December 2020 were reviewed. Articles were searched for the use of the words 'elderly', 'senior', and 'the aged' (hereafter called 'stigmatising language') as well as 'older' ('preferred language'). Pre-existing studies, scores and clinical tools (eg PolSenior, Fit For The Aged) that already contained these words were excluded.

Results: 383 articles were published in EGM and 511 in Age and Ageing. In EGM, 80 articles (20.8%) used stigmatising language. In Age and Ageing 90 (17.6%) used stigmatising language. 'Older' was used much more frequently, occurring in 354 articles (92.4%) in EGM and 503 (98.4%) articles in Age and Ageing. In both journals, stigmatising language was used with less frequency in 2020 when compared to 2018.

Conclusions: While progress has been made in reframing the language used in journal articles compared to previous studies (3, 4), more can be done to ensure our compliance with addressing older adults by their preferred terminology.

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3. Trucil D, Lundebjerg N, Busso D. When It Comes to Older Adults, Language Matters and Is Changing: American Geriatric Society Update on Reframing Aging Style Changes. Journal of the American Geriatric Society, Vol 68 Issue 5 <https://doi.org/0.1111/jgs.16848>
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American Geriatric Society, Vol 56 Issue 10 <https://doi.org/0.1111/j.1532-5415.2008.01913.x>

Abstract # 559

AREA: Education and training

Frailty in situ simulation

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Introduction: Knowledge of frailty and its associated presentations varies significantly among hospital staff and requires a multi-disciplinary approach. We created an inter-professional in-situ simulation programme to improve recognition and management of frailty and its common adverse events. The programme objectives align with recommendations from the British Geriatric Society's "Frailty Hub" and Royal College of Physicians' "Acute Care Toolkit" for frailty.

Method: Thirteen, one-hour simulated frailty-based scenarios were delivered in-situ on an elderly-care ward at St. Thomas' Hospital. A facilitated debrief followed each simulation discussing technical skills and human factors highlighted by the scenario. Quantitative data was collected through pre and post-session questionnaires and qualitative collected through the latter. Questionnaires used Human Factors Skills for Healthcare Instrument (HuFSHI) and frailty-based questions.

Results: 51 participants attended the sessions (nursing, medical and allied health professional). Participants (100%) found the sessions useful. Participant confidence in 11/12 sections of the HuFSHI and 9/9 frailty-based questions demonstrated improvement comparing pre and post data sets. The qualitative data showed common learning themes of teamwork (41%), communication (37%), delegation (14%) and technical learning for managing frail patients (27%). Participants (32%) enjoyed learning together as a multi-disciplinary team with a valuable "opportunity to reflect" and "debrief."

Conclusion: The programme has been successfully implemented. Participants felt the simulated scenarios were realistic and enjoyed the sessions. It has improved staff knowledge of technical and human factors skills when managing frail patients. We are now formulating a multi-disciplinary faculty and disseminating the programme to all elderly-care wards, having secured a departmental manikin.

Abstract # 560

AREA: Education and training

Optipharm: an innovative gamified learning application to enhance skills development on drug prescription optimization in older adults

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Introduction: Age-related changes in pharmacokinetics, pharmacodynamics, function and cognition modify the pharmacologic management in older adults, who are particularly vulnerable to adverse drug reactions (ADRs). Comprehensive geriatric assessment (CGA) has proved effective in optimizing prescriptions by facilitating discontinuation of unnecessary or inappropriate medications.

Simulation-based medical education can be a platform that provides a safe environment and effective means to resolve practical dilemmas and enhance research and critical thinking skills development. In this scenario, gamification of drug optimization learning could be an innovative and challenging teaching-learning strategy, which motivates students to maximize their knowledge acquisition.

Objective: To present a digital learning solution based on gamification technologies and simulation-based medical education to enhance skills development on drug prescription optimization in older adults.

Methods: The interactive application presented in SCORM format and supported in a Moodle platform will allow students and professionals to participate in gamified simulation and discussion of clinical cases. This tool will help students gain a better understanding of polypharmacy and will raise awareness of the problems associated with inappropriate management of drugs in older adults. It can also provide opportunities for risk-free clinical decision-making, practice with prescription support tools, and swift feedback.

Key conclusions: Gamified tools can contribute to reinforce practical learning skills in students and professionals in a motivating and fun way and bring them closer to a more realist and dynamic simulation of what they might find in routine clinical practice.

Abstract # 561

AREA: Education and training

Learning needs in healthy and active ageing and age-friendly society concepts: a scoping review

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Introduction: The demographic in Europe is steadily ageing [1]. Healthy and active ageing (HAA) and age-friendly society frameworks define and attempt to address the challenges of an ageing society. To inform a new online EU-based master's programme in active ageing, a scoping literature review attempted to identify potential students' learning needs related to these frameworks.

Methods: Four electronic databases (PubMed, EBSCO (Academic Search Complete), Scopus, and ASSIA) were systematically searched, supported by a grey literature search. Any study methodology was eligible for inclusion. Reviewers independently screened 587 titles and abstracts, and subsequently 86 full texts. Ultimately, 32 studies were included, and underwent independent data extraction and reconciliation. Resulting data were subject to content analysis and narrative synthesis.

Results: Just 15.6% of studies employed a student survey to determine learning needs. The majority of studies reported on programme objectives or learning outcomes (50%) or curriculum/content (84.4%). Topics of major focus are intergenerational learning (37.5%), age-related design (28.1%), health (21.9%), attitudes towards ageing (6.3%), and collaborative learning (6.3%). Within intergenerational learning, there was a strong focus on health and changing attitudes. Many (71.9%) studies included stakeholder or

author-deduced programme evaluations; only 56.3% employed a structured research design.

Key conclusions: This review highlights the limited investigation into student learning needs in the area of HAA and age-friendly society, with limited evaluation of educational programmes on or including these themes. Current literature predominantly describes educator-presumed learning needs, and post-programme (low quality) evaluations; future research should elucidate student- and other stakeholder-determined learning needs.

References:

1. World Health Organization. World Report on Ageing and Health. World Health Organization; 2015

Abstract # 562

AREA: Education and training

Student learning needs in healthy and active ageing: a multi-national survey of potential students, academics and key stakeholders

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Introduction: Healthy and active ageing (HAA) and age-friendly society frameworks may help address the challenges of an ageing European society. This study aimed to identify related learning needs, as perceived by multiple stakeholders, to inform an online multi-country master's programme.

Methods: An anonymous online survey collected data from senior undergraduates and recent graduates across disparate courses; future employers; relevant academics; and other key stakeholders (e.g. advocacy groups, policy makers, and 'expert' older people serving on relevant committees). Using a Likert scale, participants indicated the importance of 14 broad topics, identified from a literature search and informal consultation with academics and older people. Participants ranked potential content within each topic, and suggested other key topics. Descriptive data from the first wave of surveys are presented.

Results: Across five initially participating countries (Ireland, Portugal, Greece, Austria, Slovenia), there were 473 completed surveys. Academics, potential students, and other stakeholders were evenly balanced; potential employers were difficult to reach. Within the presented topics, psychological aspects of ageing, health promotion, and social inclusion were deemed important by > 90% of respondents. In descending order, the workplace/retirement, human rights, physiology and social aspects of ageing, physical environment, technology, and older people in education, were next-ranked. Policy, climate action, and interprofessional skills were less well-rated

(< 70%). Participants suggested including sexual health, oral health, blue zones as an example, and the value of spoken history.

Key conclusions: This early data highlights stakeholders' priorities for future education on healthy and active ageing, adding to the published literature in this area.

Abstract # 563

AREA: Education and training

The Greek e-library of gerontology and geriatrics: coverage and usage

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Background: Despite Greece's ageing population, Gerontology and Geriatrics are not yet recognized, although postgraduate programmes are now available. However, research on topics related to ageing are being undertaken by clinicians and through funded projects. The articles, reports and advice arising from these was not collected anywhere and HAGG supported the proposal, by a team of members, to proceed with such a project.

Aim: To create an e-library to gather scientific material and evidence-based information regarding ageing making it publicly available to all interested.

Method: The project was funded by TIMA Foundation and the e-library was completed and opened on the 1st October 2017. The e-library was developed by a research team in collaboration with a webpage expert using a classification system and a key-word search capacity. Quality control of entries was applied, and intellectual rights were secured according to existing rules.

Results: The library includes articles in Greek and English by Greek researchers or about Greek older people on a wide range of topics, though the majority relate to health and disease. Until early June 2021 1362 entries have been uploaded with 63,484 users visiting the e-library and viewing 169,382 pages. Older people represent a small percentage of users (> 65 = 10.03%) of users, women are the majority (65.23%), originate from Greece (89.06%) and find it mainly through search engines (85.25%).

Conclusion: The first Greek e-library (<http://www.gerolib.gr>) of gerontology and geriatrics, running for almost 4 years, is a useful resource for policy makers, the public and researchers.

Abstract # 564

AREA: Education and training

Acceptance of the "Hamburg Home Visit For Older Citizens" in 4716 older people in 15 months

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Introduction: Preventive home visits for seniors are heterogeneous considering target groups and aims. Effectiveness has not been shown. Nonspecific positive impulses are described in the development of communal structures. The city of Hamburg promoted the pilot-project "The Hamburg home visit for older citizens" in two districts to provide information, to identify need of help and to initiate

contact for support if wanted. The visit is voluntary, offered to all persons on their 80th birthday and performed by visitors (background healthcare/social work) but do not include a comprehensive geriatric assessment (CGA).

Methods: Development and execution are described in detail [1] including data safety concept, provision of addresses, birthday letter, information to be provided (e.g. mobility/falls, nutrition, loneliness), recruitment and training of the visitors, guideline how to perform and communicate during the visit, documentation, quarterly reports.

Results: 59 visitors were recruited. From 09/2018 to 12/2019 4716 (100%) persons were contacted, of whom 1636 (35%) were visited. Relevant topics were health-situation (51%), mobility (43%), housing (42%) and social contacts (41%). Need of support was documented in 399/1636 visits.

Key conclusions: The acceptance-rate was 10% higher as had been expected. As CGA is not included, it must be checked in the further project development, whether it is necessary to refer to appropriate medical clarification in case of noticeable findings during the visits, e.g. geriatric outpatient clinics. Due to acceptance-rate of 35% the “Hamburg home visit” is now offered to all 15,000 Hamburg citizens/year with 80th birthday in all Hamburg districts.

References:

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Abstract # 565

AREA: Education and training

Developing a culturally competent LGBT + Language in health and social care professionals: IENE9

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Introduction: Ideally, a health and social care professional will be considered competent once they acquire a foundation in issues associated with LGBT + individuals, as well as a basic understanding of appropriate vocabulary, reconcile personal beliefs with their professional role, and create an inclusive healthcare environment.

Methods: The European project “Developing a culturally competent and compassionate LGBT + curriculum in health and social care education: IENE9” aims to highlight the importance of developing a curricula including specific training on key terminology, stigma and discrimination, sexuality and sexual concerns, communication, specific health issues and health disparities. The partners from seven countries (UK, Spain, Italy, Cyprus, Romania, Denmark and Germany) will create a Massive Open Online Course (MOOC). The participants of this MOOC will be engaged in a learning process through reflection, knowledge acquisition and practical activities.

Results: The objectives in this issue will be to: reflect on their practice regarding use of language with the LGBT + community; understand the need of using inclusive language; deal with new codes in the language, reflect on the importance of body language; give appropriate explanations to patients about their process and needs; being sensitive about the way they request information from users/patients, using inclusive and respectful language; allow the user/patient to use the words that express best their own identity;

remember the need of using politeness strategies when making requests.

Key conclusions: Participants can learn some practical examples for a better communication with users/patients and identify strategies to show confidence in their own practice when communicating with LGBT + users.

Abstract # 566

AREA: Education and training

Clinician inter-rater reliability for assessing hand motor function in Parkinson’s disease

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Introduction: People with Parkinson’s disease (PD) may be seen by different clinicians at different visits. This may affect the clinical impression of disease progression, or treatment response. We therefore tested the inter-rater reliability for hand motor function assessment in a group of ‘expert’ clinicians seeing people with PD at specialised clinics.

Methods: People with PD performed six hand movements from the Movement Disorder Society’s Unified Parkinson’s Disease Rating Scale (MDS-UPDRS), following highly standardised instructions, on two occasions, while two cameras simultaneously recorded from the front and side. Eight clinicians (two geriatricians, two neurologists, one specialist nurse, and two senior geriatric registrars) watched the anonymised videos. Using MDS-UPDRS guidance, they provided severity ratings for each hand for each movement, using a 100 mm visual analogue scale (VAS). The intraclass correlation coefficient (ICC) was calculated.

Results: Twenty people with PD participated, aged 55–81, and Hoehn and Yahr stage 1–3, generating 240 discrete hand movements. There was best agreement for resting tremor severity, with ICC 0.61–0.66, and less so for postural and kinetic tremor (ICC 0.14–0.58 and 0.28–0.45, respectively). Bradykinesia ratings had poor agreement: finger tapping 0.29–0.39; hand opening/closing 0.32–0.41; wrist pronation/supination 0.23–0.46.

Key conclusions: Experienced clinicians varied significantly in their estimations of hand motor function. This variance could be partly due to viewing a pre-recorded video and using a VAS rather than categorical options, and the paucity of severe hand dysfunction in the participants. However, results emphasize the potential for technology (e.g. wireless monitoring devices) to improve and standardise clinical assessment in PD.

Abstract # 567

AREA: Education and training

Perceptions of frailty in the emergency department: an educational initiative to improve frailty awareness among ED staff

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Introduction: 5–10% of all emergency department [ED] attendees are frail, older adults [1]. Despite this, frailty awareness remains under recognised among ED staff [2]. The European Curriculum of Geriatric Emergency Medicine [ECGEM] 2016 recommends

competency in locally acceptable methods of identifying frail older adults [3]. The ED environment presents unique barriers to achieving this goal.

Method: ED staff in nine acute, tertiary referral Irish hospitals were recruited to the project. An electronic survey was distributed to study sites over 2 weeks in April 2021. Five themes were explored regarding personal understanding of frailty, identification of frailty in ED, frailty assessment tools used, barriers to frailty screening in ED and perceived educational improvements required in each ED. The project design was further discussed in development sessions with ED clinicians responsible for departmental teaching.

Result: 250 ED staff across nursing, medical, allied health and management grades responded to the survey. 51% of ED staff surveyed use the term frailty but are unsure of its clinical definition. 47% of respondents were unable to identify a frailty screening tool. One third of ED staff had not received training in frailty identification. Barriers to frailty screening in ED included time pressures, lack of training & staff shortages. A frailty educational package was created, including poster infographics, short education videos, Frailty Fundamentals learning sessions and virtual reality frailty simulation training.

Conclusion: ED staff knowledge of frailty syndromes and frailty screening tools was limited. Inclusive, tailored frailty educational strategies were created to address these knowledge gaps through collaboration with ED educators.

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Abstract # 568

AREA: Education and training

Improving person-centered dietetic care by involving patients/family in plan of care at EnayaSpecialized Care Centre

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¹HMC

Introduction: Enaya Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility to residents who have multiple comorbidities. A person-centered care is a practice of caring the residents and their families and It also involves partnership of healthcare professionals includes listening to, informing and involving the patients' in their care; providing care that is respectful of and responsive to, individual patient preferences, needs and values, and ensuring that resident values guide all clinical decisions.

Methods: A multidisciplinary team was formed to conduct a quality Improvement project to improve fluid management using "Plan-Do-Study-Act (PDSA) quality improvement methodology". All stakeholders were involved and interventions were carried out in three steps. First step was to Dietitians interviewed all patients using the appropriate languages and discussed plan of care with patient/Family (1st PDSA), Second step was to Patient/Family Engagement in Dietetics and Nutrition Care from admission to Discharge (2nd PDSA) and Final step was patient/Family satisfaction survey questionnaire was developed to evaluate the nutrition counselling and services provided by the Department of Nutrition and Dietetics (3rd PDSA).

Results: Following culture change strategy intervention showed there was a noticeable family/Caregiver satisfaction improved from 30 to 75% and subsequently increased to 96%, which was beyond the set target of 90%.

Conclusion: Build a positive communication between patients/family it is not easy. Patients strongly desire individualized nutrition care and greater involvement in care, Family and caregivers feel more involved in the care, hence increasing overall satisfaction.

Abstract # 569

AREA: Education and training

Psychometric properties of the Evidence-Based Practice Competences Questionnaire for Professionals

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Introduction: Evidence-based practice (EBP) has been widely adopted by health care facilitators and contains the connection between research evidences and clinical practice. The development of instruments for measuring the competence of evidence-based practice for nursing staff is of high importance as it can provide information regarding skills, attitude, knowledge and utilization towards to EBP. The purpose of this study was to translate and validate the Evidence-based Practice Competence Questionnaire Professional (EBP-COQ Prof) in the Greek version and test it among the nursing staff of the Greek public hospitals.

Methods: The sample of the present study consisted of 407 nurses from eleven NHS hospitals. The sample was collected from September 2020 to February 2021. A Cross-sectional, psychometric, validation study was conducted. IBM SPSS STATISTIC 26.0 software were used for statistical analysis, while a $p < 0.05$ was set the level significance. The psychometric measurements that were performed and Cronbach's alpha coefficient was assessed. Confirmatory Factor Analysis (CFA) was also applied to confirm the questionnaire structure as proposed from the developer. CFA was assessed using Jamovi 1.6.23.

Results: The EBP-COQ Prof questionnaire was translated and validated. The internal consistency was very high and Cronbach's alpha coefficient was equal to 0.942. CFA analysis confirmed the four factors (Attitude, Knowledge, Skills and Utilization toward to EBP) developer's design. Estimated association between items on each scale showed strong relationship ($r > 0.300$, $p < 0.001$) and the fit indices were $\chi^2 (554) = 2784$, $p < 0.001$ and RMSEA reports a mediocre fitting 0.0992 (90%CI 0.0956–0.103). An KMO (Kaiser-Meier-Olkin) coefficient with a 0.927 value and a Barlett's test of sphericity ($\chi^2 = 9775.2$, $df = 595$, $p < 0.001$) support the use PCA on the 35-items questionnaire.

Key conclusion: The Greek version of EBP-COQ Prof is a valid tool which investigates the competence of the nursing staff toward to EBP. It provides information about attitude, knowledge, skills and

utilization in EBP approach and can be useful for an effective implementation in EBP to the daily clinical practice.

Abstract # 570

AREA: Education and training

Developing computing evaluation system of multi-modal communication skill of physicians in geriatric medicine by video analysis and eye-tracker with artificial intelligence

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Introduction: Despite the increasing numbers of patients with dementia in hospital settings, there are few educational opportunities for physicians to learn clinical communication skills. We have developed multi-modal communication skill evaluation system for physicians by computing analysis of video and eye-tracker.

Methods: A cross-sectional study. Physicians working in acute care hospital enrolled in the study. Each participant performed a physical examination on a simulated patient in bed. The participants' eye movements were recorded by eye-tracker. Their clinical performances were recorded by the first-person cameras of participants and the simulated patients, and third-person cameras. The videos were evaluated by computing analysis with artificial intelligence in the elements of communication; eye contact, verbal communication and touch interaction, and compared with the experts; instructors of the multimodal comprehensive care methodology Humanitude.

Results: 13 physicians enrolled in the study. The mean duration of physical examination was 177.6 s. Although all participants stated that they were looking at the patients well in their daily practice, the average time ratio of eye contact of participants was 1.7% during the physical examination, while experts was 10.8% ($p < 0.05$). 8 participants had 0 eye contact. The average time ratio of multimodal communication, which was defined as applying simultaneous communication skills during the physical examination, was 17.4% in participants and 72.6% in experts ($p < 0.05$).

Conclusions: Both duration of eye contact and amount of multimodal communication were significantly low in participants compared to the skilled experts. The educational intervention study for multi-modal communication skill training for physicians is to be followed.

Abstract # 571

AREA: Education and training

Developing guidelines on conversations about cardio-pulmonary resuscitation with older patients upon hospital admission: results from a survey of health professionals

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Background: Shared, informed decision-making is the cornerstone of patient-physician communication on life-sustaining therapies such as cardio-pulmonary resuscitation (CPR). Our objective was to establish comprehensive recommendations for physicians in our hospital regarding code status conversations.

Methods: We developed statements based on a rapid review of guidelines about CPR discussions between physicians and older

adults at hospital admission. These were submitted for evaluation to a panel of experienced healthcare professionals.

Results: Guidelines collected in 53 articles were sorted, summarized and reformulated so as to obtain 11 statements evaluated by a panel of 39 experts. Overall agreement with the statements was high (85%). Recommendations that had the greatest approval rate and were considered most important concerned physicians clarifying patients' understanding of their medical state and prognosis at the start of the discussion, approaching CPR in the context of goals of care, and striving to clarify the patient's values, purposes, preferences and expectations. Disagreement mostly concerned the need to discuss CPR with all patients. In our presentation, we discuss the feedback for each guideline and their implication.

Conclusions: The statements were considered adapted and responsive to the ethical pre-requisites of the older patient-physician CPR discussion at hospital admission. Our set of approved recommendations advocate a model of informed, shared decision making that reflect both the medical indication and patients' life plans. These recommendations will serve as basis for devising a training for resident physicians, and will be adapted for other health professionals.

Abstract # 572

AREA: Education and training

The Research Regatta Method: bringing diverse stakeholders together to co-create actionable strategies for improving population health at National and International Scales

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Introduction: How can diverse stakeholders in national and international health ecosystems—e.g. aging care ecosystems and pharmaceutical services ecosystems—more efficiently collaborate to develop actionable strategies for improving health and wellbeing of populations served? How can new collaboration tools and technologies be used to enable such collaboration? The aim was to explore lessons learned from a pilot implementation of a new collaborative planning methodology—the “Research Regatta” method—used in 2020 and 2021 to bring together hundreds of leaders, experts and researchers from across the US to co-create actionable strategies for optimizing medication and vaccine delivery for US populations. Implications for geriatrics and pharmaceutical care in the EU will be discussed.

Methods: Panel discussants from the US and Poland will present the research regatta methodology, share lessons learned from US pilot implementations, and discuss implications for geriatric and pharmaceutical care in the EU.

Results: The first implementations of the Research Regatta method in the US have led to actionable recommendations in national medications management infrastructure in areas of practice, policy, funding, technology and research. The methodology is implementable using low-cost off-the-shelf technologies supported by academic leaders. However, more work is needed to standardize the methodologies and technologies.

Key conclusions: The Research Regatta method offers a new tool for national and international collaborative planning and coordination. More will be learned as additional regattas are conducted.

Abstract # 573**AREA: Education and training****A consensus on the priorities of developing specialized geriatric services and training opportunities in a country with weak geriatric background**

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Introduction: In countries where Geriatric Medicine (GM) is emerging, especially in limited-resource settings, policymakers rely on suggestions from geriatric experts in order to implement

specialized geriatric services and training. We aimed to produce an expert consensus on proposed actions to develop GM in Greece.

Methods: A mixed-methods study was conducted involving thirteen Greek geriatricians and allied professionals with professional experience from 6 countries. Preliminary nominal suggestions (n = 8) were synthesized into a topic guide and processed in a subsequent focus group of 11 panelists. The resultant main points were submitted to a Delphi round where the 11 experts ranked each proposal on two 5-point likert scales (from 1 = "not at all" to 5 = "very much"), according to two criteria: importance/priority and feasibility.

Results: Geriatric services ranking high in priority were the outpatient clinic (4.9/5), day clinic (4.5/5), domiciliary care (4.5/5), and inpatient consultation mobile units (4.4/5), while those deemed more feasible were the outpatient clinic, inpatient mobile unit and telemedicine services (all 3.8/5). Despite its importance (4.2/5), the inauguration of geriatric-labeled beds was deemed less feasible (2.8/5). GM training options were evaluated as almost equally important and feasible in the combined score (4.3–4.5/5), except for the recognition of GM as stand-alone specialty and the mandatory GM rotation of other specialty trainees (feasibility 3.4/5 and 3.2/5 respectively), due to the shortage of specialized centers for training validation.

Key conclusions: Priority and feasibility-based collective decisions, derived from a structured methodology, is an appropriate method for geriatricians to prioritize suggestions aiming to advance GM to policymakers.

Abstract # 574**AREA: Education and training****Outlook on frailty: attitudes and practices of health care professionals attending a postgraduate course on geriatric syndromes**

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Introduction: The study's purpose was to assess the knowledge and practices regarding frailty of health care professionals (HCP) attending the University of Athens' Medical School postgraduate MSc program on aging and geriatric syndromes.

Methods: Attitudes, knowledge, and practices regarding frailty were assessed by optional self-administered anonymous questionnaires (using Likert-type scales and multiple-choice answers) immediately before, and 1 month after a seminar on frailty.

Results: Among 26 seminar participants, 21 completed the pre-seminar questionnaire (16 physicians and 5 allied HCPs; 71.4% women; mean age 38.9 years). Competence on frailty and other specificities of older patient care acquired during previous education was rated low (2.5 and 2.2/5 respectively) and familiarization with frailty moderate (3.1/5). Self-perception of knowledge and skills to detect and manage frailty was moderate (2.7/5), and low (2.4/5), respectively. Usage of frailty detection and management tools was far from systematic (2.7 and 2.3/5 respectively), despite low endorsement of fatalistic attitudes towards frailty prevention and management (1.4/5) and low perception of uselessness (1.2/5) and unfeasibility (2.1/5)

of systematic screening. The post-seminar questionnaires revealed a marked increase in familiarity with the frailty concept and self-perceived knowledge and skills to detect and manage it (4.4/5, 3.9/5, 3.7/5 respectively), although the small responsive rate (8/21) precludes statistical analysis and limits data interpretation. Main perceived barriers in detecting/managing frailty were the lack of: specialized knowledge/training (90%), global knowledge of the person (57%), time (52%) and infrastructure (24%).

Conclusion: Familiarization with frailty and clinical application of screening and management tools, were relatively low even in HCPs attending post-graduate geriatrics-related studies.

Abstract # 575

AREA: Education and training

A proposed methodology for consensus-based translations of geriatric terminology

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Introduction: The field of geriatrics and aging biology is progressing rapidly, with multiple novel terms coined on top of a pressing need for consensus-based translations of English geriatric terminology, in order to familiarize physicians and the public in various countries with basic geriatric concepts. We aimed to develop and assess a methodology for translation of key geriatric terms from English into Greek.

Methods: A panel of 17 experts were invited to suggest English terms they considered central to geriatrics, for which there was no established translation into Greek. Nine experts responded, and formed the focus group. In the preparatory stage, each member provided a separate translation, yielding a maximum of 9 alternative translations for each term. On the first Delphi round, the group reviewed and discussed all suggestions per term in consultation with a scientific editor; if there was no unanimity, suggestions were ranked according to number of members supporting them, and the term moved to a second Delphi round, for members to vote for or against the most popular option for each term. Translations gathering > 75% of the vote were adopted.

Results: Among thirty-one terms processed, 20 unanimous translations were reached on Delphi I. Delphi II yielded 9 additional translations, the most controversial being “comprehensive geriatric assessment”, “mild cognitive impairment”, and “senescence”. The group was unable to reach a consensus for two terms (geroscience, inflammaging).

Conclusion: Delphi-based methodology can be applied by geriatric focus groups in order to provide consensus-based translations of key English terms in Geriatrics.

Abstract # 576

AREA: Education and training

Internet-telephone consultation service for older persons

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During the COVID-19 pandemic, for patients with multiple comorbidities, access to regular medical care was limited. In response to these circumstances, the Internet-Telephone Consultation Service (itCS) was created. Its role is to encompass consultations given to seniors by student teams under the supervision of academic teachers from Poznan University of Medical Sciences. Older people (or their caregivers) register at an advertised phone number; at this point, the preferred type of connection is determined (remote communication with video calls, instant messaging service or plain telephone). Each consultation consists of at least two subsequent conversations. During the first one, an interview is performed. Afterwards, the students work on a solution to the problem reported by the older person and discuss it with academic teachers. During the second call, the created recommendation is communicated to the older person. Further meetings are set up if necessary for monitoring. The possibility of visual contact, thanks to video connections, gives seniors an additional sense of security. Initially, within the service, medical and pharmacy

students answered questions about medicines used by seniors and also clarified their doubts about the treatment of chronic diseases. Later on, the service was expanded to include the students of occupational therapy, who perform interviews that define individual abilities, limitations and barriers in the functioning of older adults and prepare recommendations in this area. Currently, we are working on a solution that will allow us to transfer the itCS experience to the post-pandemic times.

Abstract # 577

AREA: Education and training

Connection collaborative care: multiprofessional telemonitoring in the teaching of geriatrics and gerontology

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Introduction: The effective implementation of resolute and embracing care lines requires multidisciplinary teams that are able to respond to the health needs of frail older adults. Social distancing during the COVID-19 pandemic amplified the challenges of caring for a rapidly aging population. Collaborative Care Connection is a university extension project with interprofessional and collaborative educational practices developed in a Brazilian state capital with 94 older adults and their families assisted in a Geriatrics outpatient clinic.

Objectives: To optimize the performance of future healthcare teams caring for the older adults and improve the experience of care focused on frail patients and their caregivers.

Methodology: Recognition of functional decline risk, vulnerability and frailty through the application of validated scales, incorporation of collaborative and interdisciplinary telemonitoring. Project structured in five axes covering the main teaching skills of Geriatrics and Gerontology.

Preliminary results: telemonitoring of the elderly, of which 48.7% were at functional decline risk and 38.4% were classified as frail. The project was carried out by students of Medicine, Physiotherapy, Nursing and two Geriatrics professors, with the development of guidelines for medication reconciliation plan, prevention of falls and delirium and encouragement of physical activity and safe social practices. Based on the patients and family members demands, educational materials were also created and disseminated in the academic community.

Conclusions: Despite the high percentage of older adults with multimorbidities, dementia syndromes, impairment of intrinsic capacity, telemonitoring is an adequate and effective tool, allowing students to expand their understanding of vulnerability, frailty and individual preferences (patients and caregivers) at the same time to the improvement of professional and civic education to assist vulnerable older adults patients living in the community.

Abstract # 578

AREA: Ethics and end-of-life care

Prevalence and determinants of unfavorable healthcare utilization trajectories among people living with dementia in their last year of life: a Nationwide Cohort Study using administrative data

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Introduction: End-of-life (EOL) with Alzheimer's Disease or Related Syndromes (ADRS) is characterized by burdensome symptoms that may lead to unfavorable EOL healthcare utilization trajectories (HUTs). We aimed to identify unfavorable HUTs and their individual and contextual determinants.

Methods: Nationwide cohort study of incident ADRS cases identified in 2012, who died before 12/31/2017, using administrative data. We used multidimensional clustering of last year of life HUTs, experts' assessment to qualify unfavorable HUTs and multilevel models to identify their determinants.

Results: 62,243 subjects had died before 12/31/2017. 29,881 (46.8%) faced unfavorable HUTs: 55.2% of community-dwelling and 31.8% of nursing-home subjects. For both settings, individual factors were associated with unfavorable HUTs: e.g. cancer (aOR = 2.28; 95% CI [2.12–2.46]) or early resuscitation use (aOR = 4.68; 95% CI [3.89–5.62]). Contextual factors and deprivation were significant for community-dwelling subjects.

Discussion: Unfavorable EOL HUTs were frequent, especially among community-dwelling subjects. The role of contextual factors entails policy implications.

Abstract # 579

AREA: Ethics and end-of-life care

Ethics of rooming-in with COVID-19 patients: mitigating loneliness at the end of life

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During the COVID-19 pandemic we sought ways to continue our policy of rooming in, both for dying patients and for patients with a delirium. This was especially important in patients with COVID-19, as a significant proportion of these patients is affected by delirium. During the first wave, rooming in was abandoned based on three arguments: to protect family members against infection, to economize on personal protective equipment and to help minimize the transmission of the virus. Societal interests were thus prioritized over personal interests of the patient and family. The first argument is paternalistic and ignores the autonomy of family members to decide for themselves if they are willing to take the risk of becoming infected. As family members were willing to stay in the same room with the patient for the duration of the admission, personal protective equipment was in most cases not needed. The third argument is the

only valid one: while staying in the room with a COVID-19 positive patient, it is possible a family member would contract the disease, with the possibility of transmitting it to others. However, with appropriate hygienic measures such as social distancing and self-quarantine at home, this risk can be minimized. In conclusion: the arguments advocating rooming in outweigh the arguments against it, even during a pandemic.

Abstract # 580

AREA: Ethics and end-of-life care

Older adult with advanced chronic kidney disease. conservative treatment and survival

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Introduction: Increased life expectancy has become a real challenge in renal replacement therapy decision. There is a great heterogeneity in the approach to advanced chronic kidney disease (ACKD) and it is often center in chronological rather than biological age.

Objective: to analyze survival, mortality and geriatrics characteristics of patients who died in nephrologist consultation with ACKD under conservative renal treatment.

Material and methods: analytical descriptive observational study carried out in nephrology consultations in Lanzarote from January 2017 to March 2021. Older than 66 years old and glomerular filtration rate less or than 15 ml/min/1.73 m² were included.

Results: We analyze 41 patients. 50% were women with mean age 82.84 ± 7.11. Survival 644.53 ± 626.13 days. 32 patients died during this period. Patients who died shown more dependence (severe dependence 83.3%: p .000), more frailty (moderate frailty 85.2%: p .000) and better social support (83.3%: p .282) compared with non exitus. We found more hypertension (79.5%: p .326), diabetes (83.9%: p .113), dyslipidemia (79.3%: p .762), peripheral vascular disease (83.3%: p .599), heart failure (89.5%: p .100) and chronic ischemic heart disease (83.3%: p .470). Main causes of mortality were respiratory infection (25%), heart failure (12.5%), multifactorial (9.8%), cancer (9.4%) and renal (7.3%).

Conclusions: Conservative treatment is a frequent choice in older adults with ACKD. Frailty and functional decline were strong associated with death. Cardiovascular and infectious disease were main cause of mortality.

Abstract # 581

AREA: Ethics and end-of-life care

Embolic strokes

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87 years old woman submitted by Domiciliary Hospitalization with persistent acute confusional syndrome after a urinary tract infection.

Her medical history includes mild cognitive impairment, diabetes, hypertension, dyslipidemia and chronic kidney condition. On the other hand, her family refers an important loss of functionality since a fall 2 months ago, with a right proximal humerus fracture and pelvic fracture. Barthel 98 points before this incident. She has been able to use her left arm since, but has lost standing and walking. One day, she starts with difficulties to move her left arm and also dysmetria. An urgent CT scan is performed, without findings of acute cerebral pathology. She is finally hospitalized with the diagnosis of an acute confusional syndrome secondary to a urinary tract infection. After treating the infection and without any changes on her neurological condition, a second opinion to Geriatrics is fulfilled. Anti-dementia medication is suspended, for causing more likely confusion and sedation, without causing any improvement on the patient's condition. Incidentally, her liver function tests are increased during the hospital admission, consequently requesting an abdominal ecography with liver metastasis as a result. Full body CT scan: the primary tumor remains unknown. Therefore, we request a cerebral MRI scan which shows numerous embolic strokes. Cardiac origin is ruled out. Under these circumstances of end of life situation, in conjunction with the family the decision of not tracing the primary tumor is made. The patient is in charge of palliative care and moved to a nursing home.

Abstract # 582

AREA: Ethics and end-of-life care

When nothing goes right.

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Man aged 88 with medical history of arterial hypertension, atrial fibrillation, chronic kidney disease EIIb, benign prostate hypertrophy in treatment with Acenocoumarol, Furosemide, Doxazosin, Lecardipine, Tamsulosin, Dutasteride is brought into emergency room because according to relatives the patient is somnolent and dysarthric since this morning. He lives in an apartment with his wife. Uses a cane. Barthel 100. During his stay, he performed a seizure that ended spontaneously developing right hemiparesis and positive Babinsky in postictal phase, treated with levetiracetam and was left in observation. The patient started to complain about strong pain and upper limbs disability, so a CT scan was asked showing bilateral humerus fracture, deciding surgery by traumatologist. Awaiting the procedure, the patient presented desaturation episodes, tachypnea, oliguria and low level of consciousness. Levetiracetam was switched to Phenytoin, diuresis was forced with Furosemide, slowly improving mental status. However, upper limbs hematoma was that large that hemoglobin levels were down to 7 points, without a remarkable improvement after red cell transfusion. Despite the fluid overload of transfusion and high doses of diuretics the patient stilled in oliguria. All this led to a worsening of general condition, with diaphoresis and oxygen desaturation despite oxygen therapy via Ventimask. As the hours went by, he presented an important abdominal distention with metallic sound secondary to fecal impaction leading to the application of two enemas which were partially effective and rectal tube placement. In the absence of improvement and end of life situation slowly approaching comfort care measures were provided.

Abstract # 583**AREA: Ethics and end-of-life care****Mummification with alcohol and topical lidocaine, a palliative care treatment for vascular ulcers in the elderly**Priscila Matovelle¹¹ 1. Geriatrics Department, San Juan de Dios Hospital, Zaragoza, Spain; 2. Geriatrics Department, Zaragoza University, Zaragoza, Spain;

Introduction: Mummification is a technique which use resides in controlling the pain as a palliative measure, avoiding the risk of superinfection and provide greater comfort with respect to patient care in the last days of life. The goal of the mummification is to limit the injury, avoid humidity and infection through dry cures with povidone iodine 10% or 1% chlorhexidine.

Case report: We present a patient of 99-year-old, referred from a nursing home due to a necrotic ulcer on the left heel of 2 weeks of evolution. Medical history: Alzheimer's disease GDS 7. Baseline functional situation: Barthel index 20/100. Physical examination: in the left lower limb there was a necrotic plaque on left heel, with decreased severe pedio arterial pulses, purple coloration and coldness in the rest of the limb. Evolution: The patient was assessed by Vascular Surgery, surgical treatment was ruled out and medical management was decided. Due to the intense pain that presented; despite paracetamol 1 g every 6 h, metamizole if necessary and morphic chloride 2.5 mg every 6 h prescribed and with progressive rescues, it was decided to start local treatment in the left heel with a mixture of lidocaine 5% (6 ampoules) + 70° alcohol (600 cc) applied daily in a band. At 24 h, improvement in referred pain was evidenced due to minor complaints and improvement in the facial pain scale. The patient died 72 h after admission with adequate management of symptom control.

Abstract # 584**AREA: Ethics and end-of-life care****The role of frailty of older adults in their family caregivers' well being**Ioannis Vrettos¹, Panagiota Voukelatou¹, Andreas Kyvetos¹, Stefani Panayiotou¹, Andreas Kalliakmanis¹, Konstantinos Makrilakis², Petros P. Sfrikakis³, Dimitris Niakas⁴

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Introduction: In the presence of impaired functional capacity of an elder adult, often a family member takes the responsibility for his care. Aim of this study was to assess the impact of elderlies' frailty on HRQL and on Anxiety, Depression and Burden of their family caregivers.

Methods: 133 admitted elderly patients (49.6% women), median age 83 years-old, were categorized using Clinical Frailty Scale (CFS). CFS was estimated for the premorbid patients' status. Their

caregivers' anxiety, depression and burden were assessed using Hospital Anxiety and Depression Scale (HADS) and Zarit Burden Interview (ZBI) respectively. Caregivers' HRQL was assessed using SF12. The differences of frailty according to HADS and ZBI scores were assessed by one-way ANOVA. The relation between CFS and SF12 was evaluated using Pearson's correlation coefficient.

Results: In highest anxiety levels of caregivers the mean elderlies' CFS scores were higher [5.12 ± 2.29 in normal, 6.04 ± 2.22 in borderline cases, 6.50 ± 1.64 in anxiety cases ($M \pm 1SD$), ($F(2130) = 5.996$, $p = 0.003$)] and so for depression levels [4.81 ± 2.24 in normal, 6.12 ± 1.92 in borderline cases, 6.59 ± 1.79 in depression cases ($M \pm 1SD$), ($F(2130) = 10.932$, $p \leq 0.001$)] and ZBI levels [4.00 ± 2.42 in no burden, 5.71 ± 2.17 in mild burden, 6.41 ± 1.58 in median burden, 7.08 ± 0.76 in severe burden ($M \pm 1SD$), ($F(3129) = 10.639$, $p \leq 0.001$)]. Considering HRQL there was a weak negative correlation between CFS and Physical Component Summary ($rs = -0.212$, $p = 0.015$) and a median negative correlation between CFS and Mental Component Summary of the caregiver ($rs = -0.373$, $p \leq 0.001$).

Conclusions: Frailty is associated with several aspects of caregivers' life. Activities focused on the support of family caregivers are needed.

Abstract # 585**AREA: Ethics and end-of-life care****Barriers to and enablers of deprescribing in older patients at the end of life in hospice care: a qualitative study using the theoretical domains framework**Tahani Alwidian¹, Noleen McCorry², Clare White³, Max Watson⁴, Tracey McConnell⁵, Carole Parsons¹

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Introduction: Deprescribing is a potential solution to optimise prescribing for older patients at the end of life (EOL) who often receive medicines with questionable clinical benefit [1]. This study aimed to investigate healthcare professionals' (HCPs) determinants of deprescribing in older patients at the EOL in hospice care and identify key theoretical domains [2] that acted as barriers to and enablers of deprescribing.

Methods: Nominated sampling was used to recruit HCPs experienced in treating older people with limited life expectancy and who had a decision-making role about patients' medications in hospice care in Northern Ireland. Qualitative semi-structured interviews were conducted using Theoretical Domains Framework (TDF)-based topic guides until data saturation was achieved. Data were recorded, transcribed verbatim, and analysed inductively using thematic analysis. Themes were mapped to the TDF enabling prioritisation of domains for future intervention development.

Results: 20 participants were interviewed (9 doctors, 9 nurses, 2 pharmacists). Four TDF domains represented key barriers to deprescribing. These included: lack of formal documentation of deprescribing outcomes ('Behavioural regulation'), challenges in communication with patients and families ('Skills'), lack of availability of deprescribing tools in routine practice ('Environmental context/resources') and patient and caregiver perception of medication ('Social influence'). Access to information such as medication indication and patient prognosis was identified as a key enabler ('Environmental context/resources'). Perceived risks versus benefits of

deprescribing was identified as a key barrier and enabler ('Beliefs about consequences').

Conclusions: HCPs recognised the need for patient-centred, pre-emptive deprescribing. Monitoring and documentation of deprescribing outcomes should be incorporated into routine practice.

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Abstract # 586

AREA: Ethics and end-of-life care

Probable sarcopenia and malnutrition in older patients hospitalized with COVID-19

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Objective: To determine the prevalence of probable sarcopenia and malnutrition upon hospital admission in older patients hospitalized with COVID-19.

Methods: prospective observational study of patients 60 years of age or older admitted with COVID-19 and cared by a geriatrician in a university hospital between October and December 2020. Sociodemographic variables, clinical, analytical parameters, length of stay and mortality, both in hospital and after 6 months of admission, were collected. Those patients who could not perform the measurement of the handgrip strength were excluded.

Results: 44 patients (mean age 82.3 years, 50% women) were included. 81.8% had probable sarcopenia upon hospitalization according to EWGSOP2 criteria (average grip strength in males 21.0 ± 9.8 kg and in women 9.7 ± 5.1 kg) and 40.2% had clinical malnutrition according to GLIM criteria (average MNA-SF 8.8 and medium calf circumference upon hospitalization 32.7 cm). Probable sarcopenia on admission was associated with hypertension ($p = 0.04$) and diabetes ($p = 0.04$). Hospital mortality was 11.4% and mortality after 6 months was 27.3%. All patients who died during hospitalization ($n = 5$) had low muscle strength upon admission. 13.9% of patients with probable sarcopenia died during admission, while none of the patients without probable sarcopenia died ($p = 0.56$). Among those with malnutrition, hospital mortality was 11.1%, with no difference compared with well-nourished patients (11.5%) ($p = 0.96$).

Conclusion: Older COVID-19 patients admitted to the hospital had a high rate of probable sarcopenia and almost half were malnourished. Sarcopenia was associated with increased mortality.

Abstract # 587

AREA: Ethics and end-of-life care

Lets talk about resus

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Introduction: Discussing preferences around cardiopulmonary resuscitation (CPR) is recommended to patients who wish to discuss this, or where there is foreseeable risk of life-threatening clinical deterioration. Our team felt that we discussed this routinely for our inpatients but wished to investigate how we did this, when we did this, why decisions were made and who led these discussions.

Methods: We retrospectively reviewed the electronic patient notes of 118 patients recently discharged from the elderly department between February and November 2020 and recorded demographic details, comorbidities and outcomes of discussions regarding resuscitation.

Results: 100/118 patients had a form documenting preferences. Of these 100 patients, 97% had a DNACPR recommendation, 2 had a "for resuscitation" recommendation and one was undecided. 69% of patients had their preferences recorded during the current admission. 43% of discussions were led by a tier 1/2 doctor. 21% of discussions were led by a tier 3 doctor. 23% of discussions were led by a consultant. It was unclear who had led the discussion 13% of the time. 29/97 patients had a DNACPR due to their wishes. 16 patients had a DNACPR based on clinical grounds that it would not succeed. 33 patients had a DNACPR on the grounds that burden outweighed risks and they had capacity. In 19 patients the reason for DNACPR was not clearly documented. There were 6 discussions where there was distress or disagreement—all of the discussions resulted in DNACPR recommendation 1 patient had a DNACPR reversed during their admission and none afterwards.

Conclusion: Systematically discussing preferences around resuscitation is feasible and rarely results in distress. The majority of patients have a recommendation for DNACPR and discussions are led by "junior" doctors.

Abstract # 588

AREA: Ethics and end-of-life care

Outcomes of patients over 65 years old identifiable during hospital admission as likely to be in the last twelve months of life

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Introduction: The Gold Standards Framework Proactive Identification Guidance (GSF PIG) and Supportive and Palliative Care Indicators Tool (SPICT) provide guidance for identifying patients in the last 12 months of life. Simple, overlapping indicators from these guidelines may help us to identify these patients during hospital admissions.

Method: The medical notes of patients aged 65 years and older admitted to a 'Complex Care' ward at Royal Bolton Hospital during October 2020 were reviewed. Criteria used for patients likely to be in the last 12 months of life were: Nursing home resident. Clinical Frailty Score (CFS) 7 or more. CFS 6 AND three or more admissions over 6 months. Resuscitation status and advanced care planning (ACP) discussions were identified. Over 6 months re-admissions to hospital and deaths were reviewed.

Results: 35/164 patients were identified as likely to be in the last year of life. 94% of these had a do not attempt resuscitation (DNAR) document in situ, 29% had some form of ACP; 40% fast-track discharges and 40% advised the general practitioner to complete an ACP. Over the subsequent 6 months these 35 patients had 28 hospital admissions with a total of 196 admission days, and 37% died.

Conclusions: This study has shown that we are missing opportunities to identify patients in the last year of life, start ACP discussions and provide information relating to this, which could reduce the number

of potentially distressing admissions to Hospital. Twelve-month data will be reviewed in October 2021.

Abstract # 589

AREA: Ethics and end-of-life care

Ageism and collateral damage among geriatric patients during COVID-19 pandemic

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Introduction: We present a female 89-years-old patient (hypertension, diabetes, osteoporosis, falls and depressive disorder) who is admitted in acute-geriatric unit in may of 2021 with the suspicion of new bleeding of right temporal intracranial hematoma diagnosed 3 months earlier. Geriatric assessment: Barthel Index 20/100, non cognitive impairment, Global Deterioration Scale 6, institutionalized. Polypharmacy.

Methods: The patient has received telephone follow-up of her evolution. A brain CT scan without contrast was performed after a month and the hematoma had diminished and the patient was discharged. The patient was referred to emergency from his residence 3 months after, with symptoms consisting of somnolence, disorientation, dysarthria, left hemiparesis and deviation of the oral commissure. It was necessary to perform a CT with intravenous contrast that was rejected at diagnosis due to chronic kidney disease to reach a certain diagnosis. A multiform glioblastoma with mass effect and deviation of the midline was evidenced. The patient received treatment with systemic corticosteroids and prophylactic antiepileptics, with clinical improvement.

Results: Once the patient was established, she was discharged to her usual residence. End-of-life care was planned to avoid unnecessary pathogenesis and hospitalizations.

Key conclusion: During the pandemic, geriatric patients have suffered the effect of ageism more than ever, leaving aside their correct approach and management.

Abstract # 590

AREA: Ethics and end-of-life care

Protection of the rights of patients with cognitive disorders by the Greek Law

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Background: Older people comprise one fourth of the whole adult population in Greece. Despite this percentage and the associated incidence of dementia at this age there is not a Mental Capacity Act in the country.

Aim: The aim of the study was to detect the existence of a legal framework for the protection of the older individual with dementia and his rights in Greece.

Method: We reviewed the Greek law using the terms a) right of residence, b) personal security, c) family protection, d) right for a dignified and independent life.

Results: The patient's dignity forms the cornerstone upon which the law maker is called upon to construct a framework of safeguards by which anyone may be empowered legally, before they develop symptoms of dementia to: a) grant a special power of attorney to trusted persons, in order that those may act as the patient's deputy b) to empower such deputy to draw funds from their bank account, c) to make provision in order that the deputy may receive some reward for the patient's care, and d) to be offered some control over their own death, by being allowed to determine the dignified manner of their choice. The time at which a patient with dementia may be placed under complete or partial judicial care (with the appointment of a deputy by the courts) is best determined in legislation with the use of sound medical criteria.

Conclusion: Despite the absence of a special legislation for older people with dementia, Greek law provides the prerequisites for a proper management of people with dementia.

Abstract # 591

AREA: Ethics and end-of-life care

When your heart breaks down: a case study of a caregiver with Takotsubo syndrome

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Introduction: There is a well-known correlation between caregivers' burden and a higher risk of cardiovascular disease. However, little is known about cardiovascular breakdown after the death of a loved one with dementia. We would like to present a case of a woman with Takotsubo Cardiomyopathy (TTC) that she developed after the loss of her mother.

Case study: A 61-year-old Caucasian woman with a history of hypertension in the second hour of chest pain was admitted to the cardiology department. Her symptoms appeared just after witnessing her mother's death. Being an only child, the woman was her mother's main caregiver and helped her in daily activities for the last few years. Her parent suffered from Alzheimer's disease. An ECG revealed ST-segment elevation in II, III, AVF, and precordial leads from V4 to V6. Elevated values of troponin serum levels were found. Cardiac catheterization did not show obstructive coronary lesions. The echocardiography however suggested the TTC: akinesis in the mid- and apical segments with a presence of a small amount of fluid in the pericardium. The patient developed a cardiogenic shock with the accumulation of the fluid in the pericardium. Sudden cardiac arrest in the PEA was diagnosed and a successful resuscitation with a pericardiocentesis was performed.

Conclusions: TTC is cardiomyopathy with unknown pathophysiology, observed especially in women aged 60 and older, its symptoms appear after acute stress. Geriatricians in cooperation with psychologists should pay more attention to the caregiver's mental health during and after the end-of-life period of those they care for.

Abstract # 592

AREA: Ethics and end-of-life care

What factors are associated with advanced care planning in community-dwelling older people? Data from TILDA

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Introduction: Advance Care Planning (ACP) involves expressing wishes regarding your future medical care and/or preferences about your end-of-life in the event of serious illness. The aim of this study was to clarify the proportion of community-dwelling older people who engage in ACP and what factors are independently associated with ACP.

Methods: Participants aged ≥ 60 years ($n = 4831$, mean age 71 years) at Wave 4 of the Irish Longitudinal Study on Ageing were asked: Have you made your wishes/preferences known about the kind of care that you would like to receive in the event of serious illness? If yes, they were asked if this had been documented informally (family/carers or medical professionals) or formally (by written advanced care plan). Logistic regression models assessed the association of covariates of interest with ACP.

Results: One quarter of the study sample (1153/4831) had an ACP. Only 10% (119/1153) had ACP documented in writing, while only 2% (27/1153) had discussed ACP with a healthcare professional. Age ≥ 80 years (OR 1.63 (1.31–2.02)), female sex (OR 1.58 (1.37–1.83)), higher educational attainment (OR 1.42 (1.18–1.71)), poorer self-rated health (OR 1.58 (1.04–2.39) and lower levels of religiosity (OR 1.50 (1.03–2.19) were independently associated with ACP.

Key conclusions: While ACP may have benefits in extending autonomy and facilitating decision-making, only 1 in 4 of this population-representative sample of older people had engaged in ACP, with only 1 in 50 having their ACP documented in writing. Further work is therefore required to educate the public and healthcare professionals regarding the benefits of ACP.

Abstract # 593

AREA: Falls and fractures

Analgesia provision in femoral neck and fragility fracture patients

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Introduction: Throughout the UK, over 70,000 patients present with fractured neck of femurs (#NOF) every year. Often occurring due to fragility fractures in elderly patients with multiple co-morbidities, #NOFs are associated with significant morbidity and mortality, and are the single largest reason for admission to an orthopaedic ward. The establishment of dedicated orthogeriatric departments have helped optimally manage #NOF patients, however with many patients waiting over 24 h for definitive operative management or

orthogeriatric assessment, prompt and effective analgesia prescribing is essential for optimal patient care. We aimed to identify where delays in providing analgesia to #NOF patients lay in order to improve patient care, with recommendations for improvement made at departmental meetings prior to re-audit.

Methods: Retrospective analysis of the hospital records of patients presenting with #NOF, distal femoral fractures and peri-prosthetic between 1st September 2020 and 31st October 2020, assessing for time of presentation, #NOF confirmation, analgesia prescription and analgesia administration. By time of audit presentation, two further cycles will be completed with targeted improvements made between each cycle.

Results: 65 eligible patients were identified in the initial cycle. #NOF patients waited a mean 6 h from admission for oral analgesia administration, with 12% receiving no pre-operative analgesia at all. Half (52%) received fascia iliaca block. 83% were prescribed PRN morphine, however less than 10% anti-emetics. These findings were highlighted locally at orthopaedic and emergency department meetings in January/February 2021, with plan to re-audit with two further cycles after recommendations later in 2021.

Conclusions: Many #NOF patients are not receiving adequate analgesia before orthogeriatric assessment, decreasing the quality of patient care. Additionally, inadequate pain control can increase risk of or exacerbate delirium which can be distressing for patients and result in long term sequelae. Targeted improvements based on these initial findings were disseminated through hospital departments to optimise patient care prior to re-audit.

Abstract # 594

AREA: Falls and fractures

Treatment and complications of astragalus fractures in diabetic patient

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A 68-year-old man was admitted with a diagnosis of pseudoarthrosis of the internal malleolus and an intra-articular talar screw of the right ankle. He underwent surgery, with extraction of the mediolateral talus screw and removal of the cannulated screw from the internal malleolus, drilling of bone margins, provision of an autologous tricortical bone graft of the iliac crest and hook plate osteosynthesis. During admission, an endocrinologist was consulted due to decompensation of his diabetes mellitus, presenting hyperglycemia. The evolution from the point of view of trauma has been satisfactory, for which he is discharged. Principal diagnostic: nonunion of the medial malleolus and the mediolateral right intraarticular talar screw. Other diagnoses Type 2 diabetes mellitus treatment medications: paracetamol 1 g/8 h orally. Add metamizol 575 mg/8 h by mouth alternatively if needed due to pain. Omeprazol 20 mg/24 h orally on an empty stomach. Edoxaban 60 mg/24 h orally, walking with the help of crutches without support of the affected limb. Member raised at rest. Abundant local ice. Home observation. Recommendations: Southern pedic plaster splint. You should maintain your previous home antidiabetic treatment and your diabetes management by a family doctor who will consider the introduction of GLP-1 treatment. Surveillance of surgical wounds by nursing. Check after 15 days in the hospital with a previous control X-ray. Comprehensive geriatric evaluation: design an individualized preventive, therapeutic and rehabilitative action plan

for the surgical process while continuing to control diabetes, in order to achieve the highest degree of independence or the best quality of life for the elderly.

Abstract # 595

AREA: Falls and fractures

Excessive daytime sleepiness is associated with an increased frequency of falls and sarcopenia

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Background: This cross-sectional study aimed to examine associations between excessive daytime sleepiness (EDS) with falls and falls related conditions in older adults.

Methods: To assess EDS, the Epworth Sleepiness Scale was used, with a score of $\geq 11/24$ points indicating EDS. Number of falls and fall history (at least one) in the last year were recorded. Timed Up and Go test (TUG) was used to assess fall risk. Sarcopenia was defined by SARC-F tool. A grip strength score of the dominant hand, measured with a hand-grip dynamometer, less than 16 kg in females and 27 kg in males was accepted as dynapenia. Frailty status was defined by five dimensions including shrinking, exhaustion, low levels of activity, weakness, and slowness with those scoring positive on ≥ 3 dimensions being categorized as frail. The relationship between EDS with outcomes including fall, number of falls, falls risk, dynapenia, sarcopenia and frailty was investigated.

Results: Of the 575 outpatients (mean age 78.7 ± 7.5 years, female: 70.4%), the prevalence of EDS was 19.8%. In the multivariable model adjusted for age, sex, living status, marital status, polypharmacy, osteoarthritis, Parkinson disease, depression and dementia; EDS was significantly associated with the number of falls last year (IRR = 1.94, 95% CI 1.42–2.65) and sarcopenia (OR = 2.41, 95% CI 1.41–4.12). EDS was not significantly associated with TUG based fall risk, frailty and dynapenia.

Conclusions: EDS was observed in approximately one in every five older adults. EDS should be evaluated as part of geriatric assessment. Moreover, older patients with EDS should be further assessed for falls and sarcopenia.

Abstract # 596

AREA: Falls and fractures

Candidate genetic variants and antidepressant-related fall risk

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Background: Antidepressant use has been associated with increased fall risk. Antidepressant-related adverse drug reactions (falls) depend partly on genetic variation. We hypothesized that candidate genetic polymorphisms are associated with fall risk in antidepressant users.

Methods: The association between antidepressant use and falls was cross-sectionally investigated in Dutch older adults by logistic regression analyses. In case of significant interaction term of antidepressant use and candidate polymorphism, the association between variant genotype and fall risk, compared to non-variant carriers, was assessed within antidepressant users. Secondly, a look-up of the candidate genes was performed in existing genome-wide association study on drug-related falls in antidepressant users within UK Biobank. In users, genetic associations for our candidate polymorphisms for fall history were investigated.

Results: In antidepressant users, for rs28371725 (CYP2D6*41) fall risk was decreased in TC/variant allele carriers (OR = 0.45, 95% CI 0.26–0.80). Concerning rs1057910 (CYP2C9*3), risk was increased in CA/variant allele carriers (OR = 1.95, 95% CI 1.17–3.27). Regarding, rs1045642 (ABCB1), risk was increased in AG/variant allele carriers (OR = 1.69, 95% CI 1.07–2.69). Concerning ABCB1-haplotype (rs1045642/rs1128503), risk was increased in AAAA/variant allele carriers (OR = 1.86, 95% CI 1.05–3.29). In UK Biobank, in users T/variant-allele of rs28371725 was associated with increased fall risk (OR = 1.06, 95% CI 1.01–1.12). G/non-variant-allele of rs4244285 (CY2C19*2) was associated with decreased risk (OR = 0.96, 95% CI 0.92–1.00).

Conclusion: This is the first study showing genetic variants modifying antidepressant-related fall risk, and pharmacogenetics might have value in antidepressant (de)prescribing in falls prevention. However, the results were not always consistent across the studies and should be validated with a prospective design.

Abstract # 597**AREA: Falls and fractures****Prevalence of sarcopenia and its effect on geriatric status in elderly patients with falls**Natalia Khovasova¹, Anton Naumov¹¹Department of aging diseases of Pirogov Russian National Research Medical University, Russian Clinical and Research Center of Gerontology**Aim:** To assess the effect of sarcopenia on the geriatric status of patients over 60 years with falls.**Methods:** In the research have been included 310 geriatric patients at the age of 76.48 ± 7.24 years (245 women, 79%) with one or more falls during the year. A comprehensive geriatric assessment was performed, sarcopenia was diagnosed according to an algorithm developed by EWGSOP.**Results:** Among 310 patients with falls, sarcopenia was detected in 131 (42.3%) patients. Patients with sarcopenia were more likely to fall at home (55%). The number of falls (2.4 ± 1.9) and the risk of repeated falls (98.5%) on the self-reported risk of falls were higher than in patients without sarcopenia (2.02 ± 1.1 and 79.8% respectively) ($p < 0.05$). The walking speed was significantly lower in patients with falls and sarcopenia (0.32 ± 0.24 m/s) than in patients with falls without sarcopenia (0.82 ± 0.2 m/s). The time for performing the TUG-test was longer: 13.1 ± 9.9 s against 9.1 ± 4.4 s. In patients with falls and sarcopenia, the following geriatric syndromes were diagnosed more often than in patients with falls without sarcopenia: frailty (43.5% and 29.2%), depression (51.9% and 19.1%), cognitive impairment (23.6% and 13.5%), sleep disorders (22.1% and 4.5%), orthostatic hypotension (16% and 6.7%), vitamin D deficiency (67.2% and 21.3%), equilibrium disorders (73.3% and 42.7%) ($p < 0.05$).**Conclusion:** In the presence of sarcopenia, the functional status worsens, the frequency and risk of repeated falls increases, and the main geriatric syndromes are more often diagnosed.**Abstract # 598****AREA: Falls and fractures****Glucosamine sulphate: an umbrella review of health outcomes**Nicola Veronese¹, Jacopo Demurtas², Lee Smith³, Jean-Yves Reginster⁴, Olivier Bruyère⁵, Charlotte Beaudart⁵, Germain Honvo⁴, Stefania Maggi⁶¹University of Palermo, ²University of Reggio-Emilia/Modena,³Anglia Ruskin University, ⁴University of Liege, ⁵University of Liegi,⁶Consiglio Nazionale delle Ricerche**Background and aims:** Glucosamine sulphate (GS) can be used as background therapy in people affected by knee osteoarthritis (OA). Knowledge regarding the efficacy and safety of GS is of importance since its use worldwide is increasing. Therefore, the present study aimed to map and grade the diverse health outcomes associated with GS using an umbrella review approach.**Methods:** Medline, Cinahl and Embase databases were searched until 1 April 2020. An umbrella review of systematic reviews and meta-analyses of randomized controlled trials (RCTs) was carried out. The evidence from the RCTs was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) tool.**Results:** From 140 articles returned, 11 systematic reviews, for a total of 21 outcomes (37 RCTs; 3949 participants; almost all using 1500 mg/day), were included. No systematic reviews/meta-analyses of observational studies were included. Regarding the findings of the meta-analyses, 9/17 outcomes were statistically significant, indicating that GS is more effective than placebo. A high certainty of evidence, as assessed by GRADE, supported the use of GS (versus placebo) in improving the Lequesne Index, joint space width change, joint space width change after 3 years of follow up, joint space narrowing and OA progression. No difference in terms of adverse effects was found between GS and placebo. In systematic reviews, GS was associated with a better glucose profile and a better physical function performance than placebo.**Conclusion:** GS, when used as a prescription drug (i.e. crystalline glucosamine sulphate) at 1500 mg daily dosage, can positively affect the cartilage structure, reduce pain, improve function and glucose metabolism in people with knee OA, without having a greater incidence of adverse effects than placebo.**Abstract # 599****AREA: Falls and fractures****Mapping the multicausality and relationship of orthostatic hypotension and falls in older adults through group model building**Liping Wang¹, Anouschka Pronk¹, Eveline van Poelgeest¹, Jeroen Uleman², Jurgen Claassen², Marjolein Klop², Carel Meskers³, Stephen Payne⁴, Marijke Trappenburg⁵, Sofie Jansen¹, Vincent Odekerken⁶, Robert Briggs⁷, Freek de Lange⁸, Alfons G. Hoekstra⁹, Nathalie van der Velde¹¹Department of Internal Medicine, Section of Geriatric Medicine, Amsterdam Public Health Research Institute, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands, ²Department of Geriatric Medicine, Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center, Nijmegen, The Netherlands, ³Department of Rehabilitation Medicine, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, ⁴Department of Engineering Science, Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom, ⁵Department of Internal Medicine and Geriatrics, Amsterdam UMC, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, ⁶Department of Neurology, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands, ⁷Department of Medical Gerontology, Trinity College Dublin, Dublin, Ireland, ⁸Department of Cardiology and Cardiothoracic Surgery, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands, ⁹Computational Science Lab, Informatics Institute, University of Amsterdam, Amsterdam, The Netherlands**Introduction:** Orthostatic hypotension (OH) is regarded as a potential risk factor for falls in older adults, which has a multicausal etiology. Up to recently, literature on the association between OH and falls is inconclusive, and the main focus of earlier studies is a mere association, while studies comprehensively addressing the complex interactions and feedback mechanisms of OH and falls as a whole are scarce.**Methods:** Systems thinking was applied to gain insight into the complex mechanisms between OH and falls, using the causal loop diagram (CLD) to map out known (hypothesized) causal mechanisms. Group model building (GMB) was introduced, which is a participatory approach of experts in the process of developing a CLD and computational models. Seven online GMB sessions have been held with experts from the fields of falls prevention, OH, geriatrics,

rehabilitation, cardiology, neurology and computational modeling. Network analysis will be used to interpret the CLD and identify the importance of variables and links.

Results: Up until now, the draft of CLD has graphically mirrored the knowledge of fifteen experts from multiple domains, which was supported by scientific literature. Thirty-four variables and 75 connections were proposed and agreed in the CLD with four categories: brain, cardiovascular, physical health, and external factors. Outcomes of the ensuing network analysis will be presented at the conference.

Key conclusions: By gathering more knowledge on the underlying causes and mechanisms between OH and falls, novel, better performing and adaptable diagnostic measures and interventions can be identified, resulting in improved and personalized falls assessment.

Abstract # 600

AREA: Falls and fractures

Effect of an osteoporotic fracture prevention program on fracture incidence in routine care. A cluster-randomized trial

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Background: The osteoporotic fracture prevention program in rural areas (OFRA) is a health care fund driven program for older people in randomly selected districts in Germany. The components of the program were falls prevention classes, examination of bone health by a DXA scan, and a consultation about ‘safety in the living environment’.

Methods: This cluster-randomized trial took place in 186 administrative districts in five federal states. We included (a) all community-living women and men aged 70- < 85 years with prior fragility fractures and (b) all community-living women aged 75- < 80 years. The analysis used routine data collected by a health insurance company. The primary endpoint was all fragility fractures combined. Fracture types, mortality, and nursing home admission were additional endpoints. Follow-up time was 12 months.

Results: 9408 individuals were approached and participated in one of the program components, 27,318 individuals served as controls. The mean age was 78.7 years. Of those approached to participate, nearly 30% joined the exercise classes. DXA-measurement was reimbursed for 13.6% and 51.8% received advice about measures to increase ‘safety in the living environment’. The incidence of fragility fractures did not differ between the intervention and the control group (HR 0.94; 95% CI 0.80–1.11). However, hip fractures, the most frequent fracture type, were reduced in the intervention group (HR 0.76; 95% CI 0.59–0.99). Mortality and nursing home admission did not differ between the intervention and the control group.

Conclusion: Hip fractures but not the primary endpoint of all fragility fractures combined were reduced by the program.

Abstract # 601

AREA: Falls and fractures

Fracture and fall risk in patients with type 2 diabetes: a literature review

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Introduction: Loss of muscle mass (sarcopenia) is frequently observed in patients with type 2 diabetes mellitus (T2DM) [1]. T2D patients have been reported to have reduced muscle strength and function [2]. Studies have shown that sarcopenia is a risk factor for falls and fractures in the healthy population [3] but the association of T2D with the risk of fractures and falls remains unclear. We conducted a literature review to assess the consistency and strength of associations of T2D and related conditions with fracture and fall risk.

Methods: PubMed was searched through 2021 for English articles using keywords corresponding to T2D and the outcomes of interest (eg. “falls”, “fracture risk”, “Diabetes Mellitus type 2”, “sarcopenia”) using different combinations. A qualitative synthesis of results was performed.

Results: T2D related conditions, namely neuropathy, retinopathy, cardiovascular complications, obesity, were associated with decreased bone strength and function, and consequently with increased fall and fracture risk [4, 5, 6, 7]. Further, patients diagnosed with T2D seemed to develop sarcopenia and have a higher risk for fracture and falls compared to non-diabetic patients, even when bone mineral density (BMD) was at normal levels [8].

Conclusion: Patients with T2DM are at increased risk for bone fractures and falls. Future research should focus on the interplay of bone fragility, fall risk and sarcopenia in this high-risk population.

Abstract # 602

AREA: Falls and fractures

An audit assessing potentially inappropriate prescribing in the elderly with a history of falls or fractures

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Background and aim: Benzodiazepines and non-benzodiazepine hypnotics (Z-drugs) are considered potentially inappropriate prescriptions in elderly patients due to increased risk of falls in older adults. This audit assessed the use of these drugs in elderly patients with a history of falls or fractures at Karin Grech Rehabilitation Hospital (KGH), Malta.

Methodology: Institutional permission to perform the audit was granted. A retrospective analysis of patients discharged from KGH between 1st January to 31st December 2019, assessed for medications (on admission and discharge) and history of falls or fractures in the preceding 10 years, using Electronic Case Summary software. iSOFT Clinical Manager software was used to obtain imaging reports of past fractures. Statistical analysis was performed. Standard used: The American Geriatrics Society 2019 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults strongly recommend Benzodiazepines and Z-drugs should be avoided in older adults with a history of falls or fractures.

Results: 988 patients were analyzed. 40 patients with incomplete medication lists were excluded from further analysis. 948 patients

were finally included. 155 patients (16%) were on benzodiazepines or Z-drugs on admission, while 190 patients (19%) were on benzodiazepines or Z-drugs on discharge, hence showing there was a significant increase in the number of patients discharged on benzodiazepines and/or Z-drugs when compared to admission, by 3%. (p-value of 0.017 and 97.5% confidence interval). 62 patients were started these drugs from nil. In the patients discharged on these drugs, 55% did not have a documented psychiatric history (of those which did, the commonest was depression, followed by anxiety and dementia) and none of the patients had a documented history of insomnia. In the patients discharged on these drugs, 66% had a history of falls, 55% a history of fractures (62% of which occurred in 2019), with 6.5% of patients having sustained a new fracture 6 months from discharge.

Discussion: This audit highlights the potential misprescription of benzodiazepines and Z-drugs in elderly patients at KGH. A statistically significant increase in number of patients were discharged on benzodiazepines and/or Z-drugs, when compared to admission. A significant proportion already had a documented history of falls or fractures. Apart from an increased risk of falls and fractures, hypnotics also result in: dependence; withdrawals; cognitive impairment; and increased all-cause mortality. Key messages for recommendations: encourage discontinuation; patient education regarding hypnotics; slow tapering protocols; continuity of care (GP liaison); alternative management approaches for insomnia & geriatric anxiety disorders; improved documentation of diagnosis or reason for prescription.

Abstract # 603

AREA: Falls and fractures

Strategies to implement multifactorial fall prevention interventions in community-dwelling older persons: a systematic review

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Introduction: Approximately 24–40% of the community-dwelling older persons fall annually, of which 21–45% recurrently [1–3]. Guidelines recommend multifactorial fall prevention interventions [4, 5]. These kind of interventions are difficult to implement into practice [6, 7]. This systematic review aims to give an overview of implementation strategies for multifactorial fall prevention interventions in community-dwelling older persons.

Methods: A search in five databases was performed until 18 May 2020: MEDLINE, CINAHL, EMBASE, Web of Science and Cochrane Library. Two reviewers independently performed the selection process. If there was disagreement, a third reviewer was involved. A protocol following the PRISMA Statement has been registered in PROSPERO [8]. A narrative synthesis is currently

performed and the implementation strategies will be described following the Proctor et al.'s (2013) recommendations and the Expert Recommendations for Implementing Change [9, 10].

Results: Preliminary results: 20 articles (15 studies) met the inclusion criteria. Twelve articles scored high and 8 articles moderate quality. The majority of the articles (n = 18) described implementation strategies on multiple levels of the context. Five articles reported on a multifaceted community-based program using a small group learning environment, 2 articles described a nurse-led multifactorial intervention, 5 articles reported on a large multi-strategic intervention (e.g. awareness, education, policy), 2 articles described the use of the Chronic Disease Management Plan and 6 articles used other programs. More details will be available at EuGMS 2021.

Key conclusions: This review contributes to the knowledge of effective implementation of multifactorial fall prevention interventions in the community setting.

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Abstract # 604

AREA: Falls and fractures

The effect of obesity on the risk of vertebral fractures

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Introduction: Higher body mass index (BMI) is associated with greater bone mineral density (BMD) and lower prevalence of osteoporosis. However, increasing BMI has been linked to a greater risk of

vertebral fracture. We aimed to explore the effects of BMI on vertebral fracture risk in patients attending our bone health clinic.

Methods: Patients aged over 60 years were identified from our clinic database. Vertebral fracture was based on self-report, X-ray diagnosis or DEXA vertebral fracture assessment (VFA). The risk of vertebral fracture was explored in multinomial regression models. BMI categories included obese (> 30), overweight ($25\text{--}30$), normal weight ($18.5\text{--}25$) and underweight (< 18.5).

Results: 2875 patients, mean age 73.8–8.3 years, 73.0% female and 34.2% had a vertebral fracture. Those who were obese versus normal weight were more likely to have a vertebral fracture (OR 1.52, CI 1.22–1.90, $P < 0.0002$) independent of age, gender and spine BMD. A similar risk was identified when comparing obese to overweight (OR 1.58, CI 1.26–2.00, $P < 0.001$) or underweight (OR 1.70, CI 1.11–2.60, $P = 0.014$). However, there was no difference in fracture risk in the BMI range 18.5–30. Vertebral fracture risk was also independently predicted by male gender (OR 1.66, CI 1.34–2.10, $P < 0.001$).

Conclusion: Obesity was associated with a 52% increased risk of vertebral fractures independent of spine BMD. Biomechanical models show increased loading forces on the spine with obesity which may account for this. Abdominal obesity (not reflected well by BMI and more common in males) may also be an important factor.

Abstract # 605

AREA: Falls and fractures

Validation and update of prediction models for falls and recurrent falls in geriatric outpatients

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Introduction: Use of fall prevention strategies requires early detection of high-risk patients. In the EuGMS E-Congress 2020, we presented our prediction models for any fall and recurrent falls in community-dwelling older adults, which were developed based on the ADFICE_IT harmonized cohort dataset. In the present study, we validated and updated the models for use in geriatric outpatients.

Methods: Prediction models for any fall and recurrent falls (≥ 2 falls) were validated in a cohort of geriatric outpatients from the University Medical Center Utrecht ($n = 545$). Patients were recruited during their visit to the geriatric clinics at the hospital (general day clinic, memory clinic, and falls clinic). Falls were measured using a questionnaire at 12 months after baseline. The prediction models were validated in terms of discrimination and calibration. We considered updating the intercept and slope values of the models for this population.

Results: In total, 241 (40.6%) patients endured at least one fall and 147 (25.3%) endured two or more falls. C-statistics were 0.69 (95% CI 0.64–0.74) for the model for any fall and 0.72 (0.67–0.77) for the model for recurrent falls. The model for predicting any fall showed

good calibration after the intercept was updated. The model for recurrent falls required no update and showed good calibration.

Conclusions: An adapted version of the prediction model for any falls will be implemented and tested in our clinical decision support system for communicating medication-related fall risk to patients.

Abstract # 606

AREA: Falls and fractures

Do antidepressant blood concentrations modify the association between antidepressant use and fall risk in older adults?

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Background: Antidepressants are well-established fall-risk-increasing drugs (FRIDs) and therefore falls should be considered an important adverse drug reaction of antidepressants. Currently, there are no aids to determine which users are at highest risk for falls. Our objective was to explore whether antidepressant blood concentrations modify antidepressant-related falls in older adults.

Methods: For this nested case-control study, the multicenter B-PROOF study ($N = 2919$; concerning community-dwelling older adults > 65 years), was used. Antidepressant users were identified and selected based on pharmacy dispensing records and self-reported data. Fall incidents were recorded prospectively using fall calendars. Blood concentrations at baseline and at 2 year follow-up as well as change over time (delta), were analyzed both continuously and categorized. Cox proportional hazard models for baseline plasma concentrations and logistic regression models for follow up & delta plasma concentrations were applied to determine the association between antidepressant blood concentration and (time to first) falls, and adjusted for potential confounders.

Results: In total 93 Selective Serotonin Reuptake Inhibitor (SSRI) and 41 Tricyclic Antidepressant (TCA) users were identified. There was no association between baseline SSRI blood concentrations and falls within users. Baseline TCA blood concentrations were associated with fall risk (HR 2.50, 95% CI 1.07–5.87) when categorically comparing concentrations.

Conclusion: Our results suggest that TCA plasma concentrations may be associated with increased fall risk in older TCA users. Our findings have to be replicated in a cohort with a bigger sample size, but our data are a first sign that antidepressant plasma concentration measurements has the potential to guide clinical decision making in falls prevention.

Abstract # 607**AREA: Falls and fractures****Assessing healthcare professionals fall risk screening and assessment needs: a first step to the development of a tailored multifactorial fall risk assessment tool**

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Introduction: Falls among older adults continue to be a growing public health problem. To better support different healthcare professional (HP) groups in the provision of fall preventive care, their heterogeneous perceptions, needs, and preferences toward fall risk screening and assessment tools need to be understood. This study conducted a theoretically grounded needs assessment of primary care based HPs concerning their use of a multifactorial fall risk assessment tool (i.e., 'de Valanalyse').

Methods: An online questionnaire was distributed to general nurse practitioners and physical therapists (N = 60). Guided by the user-centered design framework, participants were first asked about tool-related limitations, contexts of use, and intuitive processes. This was further expanded with an assessment of the Integrative Model (IM) to identify relevant theoretical constructs of behavior change (i.e., the beliefs, barriers, attitudes, perceptions, and behavioral intention to implement the tool into routine care). Lastly, participants were asked about their needs and preferences for successful implementation.

Results: Data collection is currently ongoing and the results will be presented at the conference.

Key conclusions: The results of this study will be used to develop 'de Valanalyse 2.0'—a multifactorial fall risk assessment tool aimed to support primary care based HPs. The functionality and design will be informed by relevant theoretical constructs of the IM that drive behavior change and tailored to the heterogeneous needs and preferences of each HP group.

Abstract # 608**AREA: Falls and fractures****Should dementia be a barrier to access bedded rehabilitation following surgery for neck of femur (NOF) fracture? A review of clinical practice in a district general hospital in United Kingdom**

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Introduction: A third of NOF fracture patients have some degree of cognitive impairment. Lack of geriatric rehabilitation is correlated with poorer outcomes. Those receiving rehabilitation are less likely to be confined to a wheelchair or be bedridden at 1-year, thus not

requiring institutional care. In a survey of 194 women (mean age, 83 years), 80% reported they would prefer death rather than a NOF fracture leading to institutionalisation.

Method: 335 NOF fracture patients including 87 with dementia received inpatient rehabilitation post-surgery between Jan 2016 and May 2019. Length of stay (LOS), readmissions to acute hospital from rehabilitation (direct readmissions), hospital readmissions within 6 months of discharge, discharge to usual residence (excluding direct readmission) and mortality at 6 months were measured.

Results: Variables Dementia No Dementia Statistical significance Total (n) 87 248 LOS—acute (days) 12.8 12.0 P = 0.395 LOS—rehabilitation (days) 30.3 26.6 P = 0.144 Direct readmissions (n) 19 (21.8%) 39 (15.7%) OR 1.50 (95% CI 0.81–2.76) Readmission within 6 months (n) 40 (52.6%) 76 (30.6%) OR 1.93 (95% CI 1.17–3.18). Discharge to usual residence (n) 61 (70.1%) 188 (75.8%) OR 0.75 (95% CI 0.43–1.29). Mortality within 6 months (n) 2 (2.30%) 12 (4.84%) OR 0.46 (95% CI 0.10–2.11)

Conclusion: NOF fracture patients with dementia having inpatient rehabilitation had no significant increase in their LOS, immediate readmissions or mortality within 6 months except re-admissions within 6 months. Importantly there was no significant difference in patients returning to their usual residence, indicating no increased need for institutional care for dementia patients with its negative impact to patients and the health economy.

Abstract # 609**AREA: Falls and fractures****Anaemia is associated with an increased risk of fractures, a meta-analysis and systematic review**

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Background: Anaemia and osteoporotic fractures are major health problems among elderly patients worldwide. We aimed to investigate the association between anaemia and fracture risk.

Methods: A comprehensive literature search was performed in four medical databases. We included articles that were published from inception to 18 February, 2021. Odds ratios (ORs), hazard ratios (HRs) with 95% confidence intervals (CIs), and original raw incidences from studies comparing fracture rates in anaemic versus non-anaemic patients were extracted and pooled with the random-effects model. I^2 test was used to assess heterogeneity. Risk of bias assessment was performed using the Quality of Prognostic Studies (QUIPS) tool. PROSPERO: CRD42021241109.

Results: A total of 13 studies were identified, 8 of them were included in the quantitative synthesis. Anaemia was found to be a risk factor for fracture compared to non-anaemia. Anaemia increased hip fracture risk both in older men (HR = 1.71; CI 1.46–2.00, $p < 0.001$, $I^2 = 83.2\%$) and women (HR = 1.31; CI 1.13–1.52, $p < 0.001$), but the fracture risk was more increased among men. There was also an increased chance of hip fracture in the anaemic elderly population, including both men and women (OR = 1.64; CI 1.35–2.01, $p < 0.001$, $I^2 = 61.1\%$). Anaemia was also associated with increased vertebral (HR = 1.21; CI 1.04–1.40, $p = 0.012$) and all-type (HR = 1.49; CI 1.19–1.86, $p < 0.001$) fracture risk in older men.

Key conclusion: Our results suggest that there is a significant relationship between anaemia and fracture risk in the elderly. This association is stronger among older men than women and differs in the different types of fractures.

Abstract # 610

AREA: Falls and fractures

Dementia, in-hospital delirium and antibiotic use as predictors of mortality the year following a hip fracture in Danish geriatric patients

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Introduction: Mortality after hip fractures is high and has not changed a lot over the last three decades. The aim of this study was to identify predictors associated with mortality the year following a hip fracture.

Methods: All patients with age over 65 years, who underwent surgery for a hip fracture at Bispebjerg Hospital, Copenhagen in 2018 were included. Our endpoint was mortality at follow-up in July 2019. The associations between the predictors of interest and mortality were analysed with Pearson chi-squared test for dichotomous variables and Mann–Whitney U test for continuous variables.

Results: 299 patients (73% women) were included in this study. 88 (29%) patients had died at follow-up. Patients who had died at follow-up were older (85.6 years vs 81.0 years, $p < 0.001$), a higher proportion had been diagnosed with dementia prior to admission (42% vs 10%, $p < 0.001$), had been delirious (27% vs 10%, $p < 0.001$) or treated with antibiotics (21% vs 8%, $p = 0.003$) during admission. We did not find significant associations between mortality and ASA-classification, comorbidity, pre-hospital delay, time from admission to surgery or length of hospital stay.

Key conclusions: Age, dementia prior to admission, in-hospital delirium and antibiotics use were associated with mortality the year following a hip fracture. Such predictors may help the clinician comment on the prognosis of the hip fracture patient and establish a highly patient-centred treatment-plan. Our findings need to be examined further in studies with more complex analyses and larger data sets.

Abstract # 611

AREA: Falls and fractures

Does the stage of chronic kidney disease influence the clinical characteristics and prognosis of older patients with hip fracture? A case-control study

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Aim: To assess the clinical characteristics, complications and mortality in older patients with hip fracture according to the stage of chronic kidney disease (CKD).

Methods: Case-control study (1:2). Cases: patients > 70 years with advanced CKD (glomerular filtration rate (GFR) MDRD-4 < 30 ml/min), admitted with a hip fracture to an Orthogeriatrics Unit over 2 years. Controls: hip fracture patients matched for age and gender with moderate CKD (30–60 ml/min) admitted in the same period, randomly selected. Sociodemographic variables, comorbidities, in-hospital complications and survival data were collected.

Results: 99 participants (33 cases, 66 controls), mean age 88.9 ± 4.3 years, 73% women. The most frequent fracture was peritrochanteric (54.5%), mean time until surgery 5 ± 4 days, with no differences between groups. Patients with advanced CKD had a higher anesthetic risk (ASA 3.2 vs 2.8; $p = 0.001$) and higher prevalence of preoperative anemia (87.9% vs 69.7%; $p = 0.047$). Erythropoietin was more commonly used in patients with advanced CKD (15.2% vs 1.5%, $p = 0.015$), without significant differences in transfusion rates (75.8% vs 57.6% $p = 0.083$) or intravenous iron (13.6% vs 6.1%; $p = 0.327$). Prescription of antiresorptives was lower in cases (25.9% vs 54.4%, $p = 0.019$). We found no differences on in-hospital mortality (18.2% vs 13.6%, $p = 0.6$) or 1 year mortality (37% vs 21.1%, $p = 0.1$). There were no surgical wound infections.

Conclusion: Advanced CKD increases the anesthetic risk in older patients with hip fracture. Patients with advanced CKD have a higher frequency of preoperative anemia and the use of erythropoietin. However, advanced CKD did not influence short or long term mortality.

Abstract # 612

AREA: Falls and fractures

Epidemiology of pelvic and acetabular fractures in the United States from 2007–2014

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Introduction: Incidence of pelvic and acetabular fracture is increasing in Europe. The purpose of this study is to examine trends of pelvic and acetabular fractures incidence in the US over the period 2007–2014.

Methods: Population-based observational study using the Nationwide Emergency Department Sample (NEDS). All patients seen in the ED and diagnosed with pelvic/acetabular fracture from 2007 to 2014 were included. Primary outcome was age-adjusted incidence of both fractures per 100,000 persons/years. Secondary outcomes were incidence stratified by age and sex and change of patient- and hospital-related characteristics by the end of the period. Test for linear trends were used to find differences by sex and age groups over time.

Results: Age-adjusted incidence of pelvic fracture was 198 fractures/100,000/year (323 in women and 114 in men), and of acetabular fracture was 40 fractures/100,000/year (36 in women and 51 in men). A small increase in the age-adjusted incidence of pelvic fracture in men was the only significant trend ($p = 0.03$). Over time, mean age of patients increased, as well as their comorbidity and associated fragility fractures, and they were more often sent home or to nursing facilities.

Key conclusions: When considering all patients coming to the ED, not only those admitted, adjusted incidence of pelvic and acetabular fracture is much higher than what has been described before. Besides, contrarily to the global increase seen in other countries, incidence of pelvic and acetabular fractures dropped in the US from 2007 to 2014 and only a small increase in incidence of pelvic fracture in men was identified.

Abstract # 613

AREA: Falls and fractures

Preoperative carbohydrate loading and clinical outcomes after trauma surgery in elderly patients: a randomized controlled study

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Introduction: The effect of preoperative carbohydrate treatments in the geriatric population and analyzing age-related outcomes remains unknown. We seek to compare the effect of a preoperative complex carbohydrate drink with the practice of fasting after midnight, in surgical geriatric patients with lower extremity fractures.

Methods: This randomized, controlled study allocated patients ≥ 70 years with lower extremity fractures either to the Don't Starve group (DSG) – receiving the drink – or to the Control group (CG) –fasting. Main composite outcome: any of the following perisurgical complications: delirium, infections, and pressure ulcers. Secondary outcomes: preoperative anxiety, hunger/thirst and mouth dryness, electrolyte imbalance, aspiration, nausea, patients' satisfaction, length of stay, mortality, and functional recovery.

Results: Fifty patients (81 ± 8 years, 68% female) were randomized either to the DSG ($n = 22$) or to the CG ($n = 28$). There were no statistically significant differences between groups regarding the main composite outcome (13.6% in DSG versus 21.4% in CG, $p = 0.48$) or the secondary outcomes except satisfaction – 90.9% of patients in the DSG compared to 57.1% in the CG would prefer to receive a specialized drink before surgery ($p = 0.03$). There was a lower but no significant rate of delirium in the DSG compared to the CG (13.6% versus 25.9%, $p = 0.71$).

Key conclusions: The use of a specialized complex carbohydrate drink before surgery did not significantly decrease postoperative complications in a population of geriatric patients with lower extremity fractures, although it did improve patients' satisfaction. Their ability to decrease the delirium rate, an independent risk factor, should be tested in future studies.

Abstract # 614

AREA: Falls and fractures

Factors associated with in-hospital mortality in very elderly patients admitted for traumatic intracranial hemorrhage

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Introduction: Traumatic intracranial hemorrhage (TIH) generates a high burden of morbi-mortality.

Objective: To analyze in-hospital mortality related factors in very elderly patients with TIH.

Methods: Observational study of patients aged > 80 years admitted to the acute geriatric unit with a TIH treated conservatively between December 2016 and April 2021. Demographic, clinical, functional, cognitive and neuroimaging variables were included. We performed univariate and multivariate analysis (potential confounders were included too).

Results: We included 132 patients (mean age 87.32 ± 4.26 , 59.8% women) of whom 25 (18.9%) died during hospitalization. Statistically significant factors associated with higher in-hospital mortality were: male gender (OR 3.36, 95% CI 1.36–8.34), not receiving dexamethasone treatment (OR 5.27, 95% CI 1.17–26.68), have intraventricular hemorrhage (OR 3.69, 95% CI 1.31–10.36), have a lower score on Glasgow coma scale (GCS) (12.7 vs 14.4), in FAC scale (0 vs 0.7) and Barthel index at admission (0.2 vs 19.4), higher score in the Pfeiffer questionnaire (8.3 vs 5.3) at admission, greater functional decline (68.2 vs 54.5), and greater number of hemorrhagic lesions (2.3 vs 1). In the logistic regression model: being male, having a lower score on the GCS and in Barthel index at admission, lower values in platelet count, being on previous anticoagulant treatment and not receiving dexamethasone treatment, were associated with higher in-hospital mortality. The area under the ROC curve was 0.954 (95% CI 0.917–0.991).

Conclusion: In patients aged > 80 years admitted by TIH, mortality is high during hospitalization. Among the associated factors with in-hospital mortality, there are none potentially modifiable.

Abstract # 615

AREA: Falls and fractures

Lower muscle mass is a risk factor for falls in non-frail older adults

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Introduction: Sarcopenia is a common geriatric syndrome in community-dwelling older adults, and well-known risk factor of falls. In this study we aimed to evaluate sarcopenia with muscle ultrasonography (US) in non-frail older adults with and without fall history.

Methods: Sixty-nine older patient who were non-frail according to clinical frailty scale were included into the study. Participants were categorized as fallers and non-fallers. Comprehensive geriatric assessment, handgrip strength (HGS) measurement and muscle US to

lower extremity muscles (Gastrocnemius-GC- and rectus femoris-RF-, and RF cross-sectional area) and core muscles (rectus abdominis-RA-, external oblique-EO-, internal oblique-IO- and transversus abdominis-TA-) were performed. The mean thicknesses of these muscles and handgrip strength were compared by student-t test.

Results: The mean $\pm$ SD age of fallers was 75.38 ± 6.38 , non-fallers were 73.68 ± 5.64 . Female ratio was higher in fallers group (76.2% vs 47.9%, $p < 0.05$). No statistically significant difference was found regarding geriatric syndromes. The mean $\pm$ SD HGS was 25.54 ± 8.12 kg and 20.64 ± 6.60 kg in non-fallers and fallers, respectively ($p < 0.05$). The mean thickness of GC, RF, and TA were 12.74 ± 3.54 , 11.29 ± 2.89 , and 3.85 ± 1.45 cm in fallers, significantly thinner than non-fallers. RF cross-sectional area was also smaller in fallers than in non-fallers (4.68 ± 1.98 vs 6.10 ± 2.23). Between fallers and non-fallers, there were significant differences in thickness of GC, RF, RFCSA and TA muscles, and HGS. HGS was significantly correlated with thickness of these muscles.

Conclusion: There is well-known relationship between lower extremity-core muscles and balance. In non-frail older adults, fall history is associated with US measured lower muscle mass and HGS.

Abstract # 616

AREA: Falls and fractures

Quality indicators in the Spanish National Hip Fracture Registry (RNFC): evolution from 2017 to 2019 and international comparison with other registries

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Introduction: The Spanish National Hip Fracture Registry (RNFC) was created in 2016 with the objective of understanding the process and improving quality of care [1]. In 2018, seven quality indicators were established [2].

Objective: to compare the RNFC's quality indicators with other established audits worldwide in two time periods.

Methods: Comparison of the quality indicators of the RNFC with other registries from 7 countries (Scotland [3], United Kingdom [4], Denmark [5], Ireland [6], Australia, New Zealand [7], and Germany [8]) in 2017 and 2019 was made.

Results: In 2017, the RNFC ranked second in the cases included (7208 patients) and third in the participating centers (54 hospitals). 40.5% of patients underwent surgery in < 48 h, 58.5% were mobilized on the first postoperative day and 6.7% developed a pressure ulcer, ranking the last place in all. The prescription of antiosteoporotic treatment at discharge was 36.7%, ranking third after Denmark and Ireland. In 2019, the RNFC ranked second in the cases included (13,181 patients) and participating centers (80 hospitals). The patients underwent surgery in < 48 h was 48.1% (keeping last place), 69.9%

were mobilized on the first postoperative day (surpassing Scotland) and 4.8% developed a pressure ulcer (surpassing Germany). The prescription of antiosteoporotic treatment at discharge was 42.2%, ranking fourth after Denmark, Ireland, and United Kingdom. The vitamin D supplementation ($> 70\%$) was superior to Germany in both periods. No registries measured calcium supplementation or ambulation at 30 days.

Key conclusions: Comparison with other countries shows a more pronounced evolution of the quality indicators in the Spanish registry and allows to detect areas for improvement.

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Abstract # 617

AREA: Falls and fractures

Factors determining falls gravity in elderly people

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Background: To achieve a falls prevention program (1) we first identified the effects of predisposing factors (neuro-sensitive deficiency; gait disturbances; cognitive disorders; depression; malnutrition; vitamin D3 deficiency; iatrogenic factors; feet's abnormalities) and precipitating factors (infections; stroke; confusion; ionic disturbances; toxic substances; anemia; rhythm and conduction heart disorders; orthostatic hypotension) on the severity of falls with: no trauma (FNT), mild trauma (FMT) and fractures (FF).

Methods: Retrospective study on 220 patients over 65 years old hospitalized for falls. A fall assessment model developed by the team of the Aging Department of RUHC Tours was used. The results were analyzed with ANOVA software.

Results: The mean age was of 85 years, 65% women and 35% men. 83% fell at home, 11% in Care homes and 6% in Acute Geriatric Department. There were less FF ($p < 0.001$) than FNT and FMT. 73% of patients had previous falls. Gait disturbances (71%), cognitive disorders (65%) and Vitamin D3 deficiency (54%) were the most frequent predisposing factors causing falls and infections (57.27%), rhythm and conduction heart disorders (57.27%) and confusion (56.36%) the most frequent precipitating factors. In FNT and FMT, the difference between the predisposing and precipitating factors is very significant ($p < 0.0001$). There is no difference ($p = 0.4$) between the predisposing and precipitating factors in FF.

Conclusion: The falls gravity is multifactorial and results from predisposing and precipitating factors addition.

Keywords: Falls gravity, elderly, predisposing factors, precipitating factors

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Abstract # 618

AREA: Falls and fractures

Sarcopenia screening tool (SARC-F) score and Fracture Risk Assessment Tool (FRAX UK) and prediction of the 10-year probability of osteoporotic fracture

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Introduction: Sarcopenia increases the risk of falls and fractures. SARC-F is a validated brief questionnaire, to screen for sarcopenia. It is a 5-point questionnaire used to score patients' self-perceived abilities (with regard to strength, assistance in walking, rise from a chair, climbing stairs and falls), and predict sarcopenia and poor functional outcomes. FRAX is a World Health Organisation (WHO) tool, which uses clinical risk factors without or with femoral neck bone mineral density (BMD) to predict the 10-year probability of sustaining major osteoporotic fracture or hip fracture.

Aim: To assess the correlation between SARC-F and FRAX (UK) in predicting future fracture risk in elderly patients with acute hip fracture. And to determine the effect of gender on this relationship.

Methodology: Acute hip fracture patients, 60 years and older, admitted in a 12 months period to a district hospital were analysed retrospectively. Patients with incomplete data were excluded. SPSS 27 was used for statistical analysis. Descriptive statistics were used for baseline characteristics and spearman correlation co-efficient and linear regression was used to assess correlation.

Results: 195 patients were included: 146 females and 49 males. The overall mean age was $82.2 \text{ years} \pm 8.48$. Mean age of females was $82.7 \text{ years} \pm 8.65$ and male's $81 \text{ years} \pm 7.97$. For the 10-year probability of major osteoporotic fracture: there was statistically significant positive correlation between the SARC-F score and FRAX (without BMD) overall and in females but not in males ($r = .247$; $p < .001$), ($r = .484$; $p < .001$), ($r = .267$; $p = .06$) respectively. As regards the 10-year probability of hip fracture: there was statistically significant positive correlation between SARC-F and FRAX (without BMD) overall and in females but not in males ($r = .352$; $p < .001$), ($r = .466$; $p < .001$), ($r = .165$; $p = .09$) respectively.

Conclusion: Sarcopenia screening tool (SARC-F) score correlates positively with Fracture Risk Assessment Tool FRAX UK (without BMD) in predicting the 10-year probability of major osteoporotic and hip fractures in elderly female patients with acute hip fracture but not in male acute hip fracture patients.

Abstract # 619

AREA: Falls and fractures

High adherence to secondary prevention treatments, low re-hospitalization and mortality rates among older adults with hip fractures entered the orthogeriatric outpatient service

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Introduction: To compare the outcomes of hip fracture patients who entered the interdisciplinary fracture liaison services (FLS) with those who followed the usual orthopedic care (UOC).

Methods: A prospective observational study including subjects aged ≥ 65 years hospitalized because of hip fracture. At the time of discharge, participants who underwent surgery were invited to enter FLS, received schedule of lab and x-ray exams and outpatient orthogeriatric assessment within 30 day from surgery.

Results: Among 762 patients eligible within 1 year, 540 (71.0%) attended the 30-day outpatient visit: 268 (49.6%) opted for FLS while 272 (50.3%) for UOC. The patients who entered the FLS compared to those in the UOC had higher 1-year adherence to Vitamin D supplementation, plus calcium if needed, as well as adherence to specific anti-osteoporosis drug (75.1% vs 8.0%; $p < 0.0001$), and complete anti-fracture treatments (defined as combination of specific anti-osteoporosis drug plus vitamin D, and calcium if needed) (72.3% vs 5.7%; $p < 0.0001$). The older adults who entered the FLS experienced a longer time of hospitalization free survival (176.4 vs 88.7 days; $p = 0.0152$) compared to those in UOC. Compared with participants in the UOC, a tendency to a lower lower annual mortality rate (19.7/100 person-year vs 25.5/100 person-years; HR = 0.62; 95% CI 0.35; 1.09) was found in those entered the FLS group independent of confounders.

Conclusion: The FLS may increase initiation and adherence to antifracture treatments over time. Compared with UOC, FLS may positively impact on health-related outcomes, such as time free from re-hospitalization and mortality rates.

Abstract # 620

AREA: Falls and fractures

Withdrawing fall-risk increasing drugs (FRIDs) by testing and improving the usability of a clinical decision support system (CDSS) And patient portal

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Introduction: Withdrawing fall-risk increasing drugs (FRIDs) is a promising intervention for decreasing falls in older adults. Digital interventions, such as a Clinical Decision Support System (CDSS) and Patient Portal, can support physicians and patients in the complex process of FRIDs withdrawal. Unfortunately, usability problems often occur because the end users' needs and preferences are overlooked when designing these systems. Furthermore, lower perceived ease of use and lower perceived usefulness lead to lower actual use. Therefore, this study aimed to test and improve the usability of a CDSS and Patient Portal.

Methods: The study consisted of two rounds. CDSS study 1 focused on ease of use and usefulness, and included 5 physicians. They were presented with three patient cases. Patient Portal study 1 focused on ease of use, and included 6 patients. They performed seven pre-determined tasks within the Patient Portal. While using the systems, participants were asked to state their thoughts out loud (i.e. concurrent think aloud). After coding the recordings, the Augmented User Action Framework was used to determine the severity of usability problems.

Results: Round 1 showed that the physicians require a structured and clear layout that enables them to have an overview in one glance. For the patients, difficult words required a definition. Based on the results, the systems were improved. Round 2 is currently in progress.

Key conclusions: Taking into account users' needs and preferences in developing a digital intervention proves to be beneficial in making more user-friendly systems, which will lead to more actual use.

Abstract # 621

AREA: Falls and fractures

Technology based instruments for predicting falls in older people: an umbrella review

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Introduction: Technology based instruments (such as wearable sensors) could potentially be an alternative approach to functional measures in predicting falls in older adults. This umbrella review

aims to describe the literature on the use of these technological assessments for predicting falls in older people.

Methods: We conducted an umbrella review. Medical and allied health databases were searched from their inception date to November 2020. Inclusion criteria were: all types of reviews; older adults aged ≥ 60 years in any setting; gait and balance assessment by accelerometers, sensors or platforms to predict falls; published in English. The screening of titles/abstracts (and then full texts) for inclusion, the data extraction using a standardised spreadsheet and the quality appraisal using the Risk of Bias in Systematic Review tool were performed in duplicate.

Results: Eleven reviews (1 narrative review, 8 systematic review without meta-analysis and 2 systematic reviews with meta-analysis) met the inclusion criteria. Five reviews were considered to have a high risk of bias, 5 an unclear risk of bias and 1 a low risk of bias. Most reviews included independent community-dwelling older people. Kinematic measures were obtained using accelerometers, wearable sensors and platforms. Seven reviews reported some, but not all positive findings in the objective measurements in predicting falls. Three reviews reported inconsistencies in the applicability of the instrumented test for falls prediction.

Key conclusions: Objective measures of technology-based instruments demonstrate early potential and warrant further high-quality prospective studies to determine their clinical ability to predict falls in older adults.

Abstract # 622

AREA: Falls and fractures

Association between vitamin D deficiency and prognosis after hip fracture surgery in older patients in a dedicated orthogeriatric care pathway

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Background: Vitamin D deficiency is common in patients undergoing hip fracture (HF) surgery and has been found to be associated with poor post-operative prognosis in other settings. This study aimed to analyze the association between vitamin D status and prognosis after HFS.

Methods: From 2009 to 2020, all patients admitted in a peri-operative geriatric unit after HF surgery were included. A moderate vitamin D deficiency was defined by a vitamin D level between 25 and 75 nmol/l and a severe deficiency by a vitamin D level < 25 nmol/l. The primary outcome was mortality 6 months after surgery. The secondary outcomes were bacterial infection and delirium during hospitalization. Odds ratio (OR) and 95% confidence interval (95% CI) were computed using logistic regression models with adjustment for confounders.

Results: 1197 patients were included (median age 87 years, IQR [82–91]). The median vitamin D level was 55 nmol/l (IQR [30–75 nmol/l]). A moderate vitamin D deficiency and severe vitamin D deficiency were reported in 52% and 21% of patients, respectively. There was no significant association between moderate or severe vitamin D deficiency and 6-month mortality (OR 0.91, 95% CI

[0.59–1.39], and OR 1.31, 95% CI [0.77–2.22], respectively), bacterial infection (OR 0.87, 95% CI [0.59–1.27] and OR 1.47, 95% CI [0.95–2.28], respectively), and delirium (OR 1.03, 95% CI [0.75–1.40], and OR 1.05, 95% CI [0.70–1.57], respectively).

Conclusions: Vitamin D deficiency was not associated with mortality, bacterial infection or delirium after HF surgery.

Abstract # 623

AREA: Falls and fractures

Impact of a dedicated orthogeriatric care pathway on the 6 month-mortality of elderly patients with post operative delirium after hip fracture

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Introduction: Delirium is a frequent complication of hip fracture (HF) surgery in the elderly, and associated with a poor outcome in numerous conditions. We hypothesized that a dedicated geriatric care pathway and management in Unit of PErOperative Geriatric care (UPOG), that previously improved prognosis of HF patients, may have an impact on mortality of patients with post-operative delirium (POD) after HF surgery.

Method: Between 2009 and 2020 all patients (> 70 years) admitted to UPOG after HF surgery were included. Diagnosis of POD was based upon Confusion Assessment Method scale. Patients with postoperative delirium (POD) were compared with patients without (NPOD). Main outcome was 6-month mortality. Data are expressed as hazard ratio (HR) for univariate cox analysis. Our main objective was to compare the 6-month mortality of POD and NPOD.

Results: 719 patients were included (78% female, 87 ± 6 years), 45% with POD. In univariate cox analysis, POD was associated with 6 month mortality (HR 1.91, 95% CI (1.33–2.74), $p < 0.001$). In multivariate analysis, after adjustment on gender, comorbidities, autonomy, denutrition and depression, POD did not remain associated with 6-month mortality.

Conclusion: in elderly patients managed after HF surgery in UPOG dedicated care pathway, POD was not independently associated with 6-month mortality, compared with NPOD patients.

Abstract # 624

AREA: Falls and fractures

Predictive factors for delirium in women hospitalized for a hip fracture

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Introduction: delirium is considered one of the most common geriatric conditions, given that it is a major complication that arises after being hospitalized for a hip fracture. Therefore, its prevention and early detection is essential for reducing the length of the patient's stay in the hospital and complications during the hospitalization process.

Objective: to analyze the predictors of the development of delirium in octogenarian women admitted for a hip fracture.

Methods: a prospective study conducted with a sample of 212 women recruited from the Trauma Unit of the University Hospital of León (Spain), with an average age of 86.7 ± 4.2 years. The variables

analyzed were sociodemographic, baseline, surgical, pharmacological, comorbidities and complications.

Results: when analyzing the baseline data presented by the women, it is observed that the Barthel index is not related at any of its levels with the development of delirium. With respect to the comorbidities studied, it was only observed that visual alterations appear to be a predictor of the development of delirium. The presence of a urinary tract infection is a significant predictor of delirium (61.2% vs. 30.2%; OR = 4.20; CI 2.12/9.05). The RAO presented by the women was another predictor of delirium with a significance of $P < 0.005$.

Conclusion: there are predictive factors that can be used to address and prevent delirium. Specifically, it has been found that ASA and loss of vision are predictive variables of its development in patients hospitalized for a hip fracture, a urinary tract infection or dementia.

Keywords: Delirium, hip fracture, woman, hospitalization.

Abstract # 625

AREA: Falls and fractures

Factors that burden the quality of life of elderly at risk of falls

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Introduction: Elderly at risk of falls are often characterized by limited independence and increased fear of falls, which have a negative impact in their physical and emotional-related quality of life. The aim of this study was to investigate the factors that burden the quality of life of elderly at risk of falls regarding their physical and psychological health.

Method: The health-related quality of life was assessed using the 36-Item Short Form Survey (SF-36). Furthermore, the Index of Independence in Activities of Daily Living (ADL), the Instrumental Activities of Daily Living Scale (IADL), the Short Physical Performance Battery (SPPB), the Falls Efficacy Scale-International (FES-I) and the Geriatric Depression Scale (GDS) were used.

Results: 20 people participated in the study (95% women, mean age: 69 years). A statistically significant positive correlation was found between the ADLs and the Emotional Well-being ($r = 0.569$, $p < 0.05$) as well as the General Health subcategory ($r = 0.650$, $p < 0.05$). Another correlation was found: a) between the score of IADLs and Emotional Well-being ($r = 0.446$, $p < 0.05$) and b) the performance in SPPB and Role Limitations due to Emotional Functioning ($r = 0.597$, $p < 0.05$). Increased fear of falls was connected with lower scores of SF Physical Functioning and SF Role Limitations due to Physical Functioning ($r = -0.557$, $p < 0.05$ and $r = -0.476$, $p < 0.05$ respectively). Finally, lower GDS scores led to higher scores in Emotional Well-being ($r = -0.463$, $p < 0.05$).

Conclusions: The results of the present study are indicating the detrimental effect of falls-related physical and psychological consequences in the quality of life of elderly at risk of falls.

Abstract # 626**AREA: Falls and fractures****Cervical mobility and cervical proprioception in relation to fall risk among older adults: a prospective cohort study**

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Introduction: Age-related decreases in cervical mobility and proprioception have previously been demonstrated. Potential associations of these deteriorations with fall risk have not been investigated so far. This study therefore aims to prospectively assess cervical abilities in relation to fall risk among healthy older adults.

Methods: 95 community-dwelling older adults underwent a cervical screening. Active cervical range of motion (aCROM) was measured using a digital inclinometer and cervical proprioception was assessed by determining joint position error (JPE). Fear of falling was identified through the Iconographical Falls Efficacy Scale. Falls were prospectively recorded during a 1-year follow-up period using monthly calendars. Univariate and multivariate logistic regression analyses were conducted to examine the association between these parameters and falls occurrence.

Results: 37 participants reported at least one fall event (“fallers”). Compared to non-fallers, fallers had smaller aCROM and poorer JPE. Univariate logistic regression analyses identified aCROM for extension and right lateral flexion as risk factors for future falls (OR 0.95, $p = 0.011$; OR 0.94, $p = 0.046$). aCROM for summed lateral flexion and mean JPE appeared to be borderline univariate fall risk factors. Univariate risk factors were entered in a final multivariate logistic regression model that correctly classified 77.8% of cases.

Conclusion: Baseline measurements revealed reduced cervical performance among individuals who reported at least one fall during the following year. Although the contribution of cervical parameters to fall risk identification seems to be rather small compared to well-known major risk factors, further research is needed to elucidate underlying mechanisms of cervical abilities in relation to falls.

Abstract # 627**AREA: Falls and fractures****Management of hip fractures in Romanian elderly patients**

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Introduction: Hip fractures, a common consequence of falls in the elderly, are an important cause of morbidity and disability; therefore orthopedic trauma should have a multidisciplinary approach.

Methods: We conducted a retrospective study (Jan.–Dec. 2020): patients with hip fracture ($N = 82$), hospitalized in a ward of an orthopedic hospital. We used the following variables: age, gender, length of hospitalization stay (LOS), type of surgical intervention, main comorbidities (HBP, DM, obesity and osteoporosis).

Results: 84% of hospitalized patients were over 65 years old. (geriatric population), mean age 75.27 [38, 96] (SD: 10.80586); 85.4% were females. Only 14.6% of patients were diagnosed with osteoporosis before being admitted to the orthopedic ward. The average number of LOS: 8.2 days [2, 24] (SD: 3.51167). Most

patients (58.5%) were hospitalized 6–10 days. 91.5% of patients presented polyopathy; 64.6% had HBP ($p = 0.873$); 71.4% of those without any comorbidity were under 65 years old ($p = 0.001$). HBP was associated with longer LOS: 86.8% were hospitalized over 6 days ($p = 0.016$). LOS depended on the type of surgery: 72.7% of patients with cementless-prostheses and 54.2% of patients with Gamma-Stem stayed between 6 and 10 days ($p = 0.017$). 9.8% of patients did not have surgery or biopsy, all of them having over 65 years old and associating comorbidities ($p = 0.061$).

Key conclusions: Hip fracture pathology is specific to geriatric patients. Identifying fall risk in elderly patients is necessary in order to conceive a management plan to prevent falls and their consequences. Osteoporotic pathology is underdiagnosed, therefore it is necessary to perform an active and correct screening of osteoporosis in the elderly. Polyopathy in elderly with hip fracture may lead to lack of surgery. Elderly patients with cardiovascular comorbidities are prone to longer hospitalization, their recovery needing more care.

Abstract # 628**AREA: Falls and fractures****Assessing the relationship between a change of environment and the incidence of falls in the elderly**

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Aims: A retrospective study to assess the extent to which changes in environment influence the incidence of falls.

Background: The Geriatric Giants, proposed by Bernard Isaacs represents 5 major frailty syndromes affecting elderly patients. These include incontinence, immobility, impaired cognitive function and instability. In particular, falls tend to be associated with an increased risk of fractures and hospitalisation. In order to help mitigate the burden that falls have on the elderly, this retrospective study attempts to identify a major potential modifiable risk factor which has occurred with the construction of the new block in Saint Vincent De Paul Residence, a long term care facility in Malta, namely change in environment, and to assess the extent to which this may influence the incidence of falls.

Methodology: The data of 60 ambulant patients from old SVPR wards and 60 patients from the new block in SVPR were collated from patient files and old notes. Inclusion criteria included patients that had been just admitted for new block and patients who had been in the ward for at least 1 year for residents from the old block. Non ambulant patients were excluded from the study. Half of all the patients included the study were located in closed dementia wards and the other half from regular wards for both old and new block. The frequency and nature of falls within the first month up to 6 months from admission for residents in the new block was compared to that of the old block starting July 2020 when the new block was opened. The number of patients who sustained a head injury when they fell was also recorded.

Results: The incidence of patients who fell within 4 weeks of changing environment was higher (23% in new block) compared to patients who were familiar with their environment (8% in old block). Over a 6 month period between July 2020 to December 2020, there was a greater incidence of patients who fell in new block (40%) compared to old block (30%). Similar percentages of patients sustained a head injury when they fell (23% in old block vs 22% in new block).

Conclusion: The findings indicate that a change of environment is associated with an increased incidence of falls assuming other factors

are controlled for. Priority should be given to creating a stable and familiar environment for elderly patients, avoiding unnecessary transfers between wards where possible.

Abstract # 629

AREA: Falls and fractures

Osteoporosis in the elderly population hospitalized for hip fracture and factors associated with the lack of treatment

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Objective: The objective of this study is to know how many patients received treatment for osteoporosis before and after being hospitalized for a hip fracture, as well as the characteristics of the patients who did not receive any treatment for osteoporosis.

Methods: The data used have been extracted from the database of the National Registry of Hip Fractures (RNFC), which is a multicenter cohort study that included patients hospitalized in Spain for hip fracture from 2017 to 2020. At baseline age, sex, institutionalization, cognitive ability (Pfeiffer), mobility (adaptation of the questionnaire used in the Fragility Fracture Network) and treatment for osteoporosis were recorded: antiresorptive drugs, bone forming agents, calcium, Vit D or others. One month after the fracture, treatment, mobility, and place of residence were recorded again. The statistical analysis studied the frequency of patients without treatment for osteoporosis before the hip fracture, the frequency of patients without treatment after the hip fracture, and the factors associated with the lack of treatment, using binary logistic regression models.

Results: 73% of the sample were women, the mean age was 86.5 years (SD: 5.7 years), 32% were previously institutionalized, 88% traveled without assistance from another person and the median of the Pfeiffer test was of 4 (IQR: 9). 77% (95% CI 73–81%) of the patients did not receive any treatment for osteoporosis before the fracture. One month after the fracture, the percentage of untreated patients dropped to 40% (95% CI 35–45%). Of the total number of patients who had treatment before the fracture, 43% (95% CI 34–53%) received only vitamin-D. After hospitalization, this percentage dropped to 12% (95% CI 8–17%), with the rest of the patients being treated more completely. Institutionalization was the only factor significantly associated with the lack of treatment before the fracture. Age > 85 years, dementia, and difficulty moving were additional factors associated with not receiving treatment 1 month after the fracture.

Conclusion: A high percentage of elderly hospitalized for hip fracture did not receive treatment for osteoporosis, before or after the fracture.

Abstract # 630

AREA: Falls and fractures

Using a template to improve communication on discharge letters regarding bone protection therapy after hip fracture

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Introduction: Hip fractures are a significant cause of morbidity and mortality amongst older adults. The Irish Hip Fracture Database Standard 5 requires that all patients with hip fracture have a bone

health assessment completed; most are commenced on bone protection therapy (BPT) to reduce future fractures. Communication to general practitioners (GPs) regarding long-term BPT is often incomplete and challenging to improve. We aimed to upgrade this communication process at discharge.

Methods: Initial audit was conducted assessing documentation of BPT after hip fracture in discharge letters to GPs. Subsequently we created a detailed BPT template for discharge letters containing clear information for GPs regarding medication initiation and advice for ongoing management. The template was introduced and doctors were educated on its use. We then re-audited discharge letters following this intervention. Patients included were over 60 years with hip fracture. Patients deemed clinically unsuitable for BPT were excluded.

Results: Seventy discharge letters were reviewed, 35 at initial audit and another 35 after introducing the BPT template. Mean age was 80 years, 50 (71%) were female. In the first audit cycle, 19/35 discharge letters (54%) briefly specified BPT. On repeating the audit cycle (following introduction of the discharge letter template) all 35/35 discharge letters (100%) clearly specified BPT. Most letters (32/35; 91%) included the detailed BPT template. Following this intervention all doctors reported increased awareness and understanding of BPT and satisfaction with template use in discharge letters.

Conclusions: Effective implementation of a discharge letter template significantly improved communication to GPs regarding BPT following hip fracture.

Abstract # 631

AREA: Falls and fractures

Importance of geriatric syndromes for the diagnosis in the emergency room

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Introduction: Falls in the elderly population are an important public health problem, with notable medical and economic consequences. The doctor's attitude to a patient who has fallen, especially in multiple falls, should not go unnoticed. The fall in many occasions must be considered a warning sign that reflects a situation of fragility and, therefore, we must try to know the causes, the consequences and the circumstances in which it has occurred. It may be the first manifestation of an acute disease in the elderly.

Methods: Presentation of a clinical case of a 90-year-old male patient who came to the emergency room for presenting when getting out of bed a loss of strength in lower extremities and as a consequence presents a fall from his own height. Currently in the emergency department he refers generalized weakness. Personal history of arterial hypertension and a prostate adenocarcinoma with L4–L5 bone metastases on hormonal treatment and last RT session 2 weeks ago. By looking at the personal history, it is suspected that the fall has occurred as a warning sign of an acute disease.

Results: A Geneva scale is performed where a mild probability of Acute pulmonary embolism is observed. Therefore, ct angiography was requested which showed a pulmonary embolism in the left lobar artery and segmental branches.

Conclusions: In the emergency department, some geriatric patients and especially falls often go unnoticed during the interrogation. It is important for all clinicians to be aware of the geriatric syndromes.

Abstract # 632**AREA: Falls and fractures****Mortality predictors of complex orthogeriatric patients in a major trauma services center**Mahwish Nida¹, Kunal Shah², Shvaita Ralhan¹, Faria Kanwal³¹Oxford University Hospital trust, UK, ²Oxford University Hospital Trust, UK, ³Lahore College for Women University, Lahore, Pakistan

Introduction: Mortality rate in hip fracture patients is trending down owing to improved quality of care [1] and better integration of orthogeriatric services with trauma centres [2]. Advanced Frailty, high Nottingham Hip Fracture score (NHFS) and chronic systemic diseases are well known predictors of mortality in such patients [3]. The objective of this study was to determine the mortality rate of rather complex group of orthogeriatric patients referred to a major trauma service and evaluate the relationship of common predictors to mortality.

Materials and methods: Data was gathered retrospectively from January 2019 to February 2020 from all patients presenting with femoral fracture. Binary logistic regression analysis was applied to determine the relationship of common predictors like age, gender, dementia, pulmonary and cardiovascular diseases, cancer, type of fracture, pre operative hemoglobin, delirium, pre hospital residence status, Clinical frailty score (CFS) and NHFS to short and long term mortality. For discrimination to predict mortality Area under curve (AUC) analyses were performed.

Results: Total 554 patients (median age 83) were included. Mortality at 1 month and after 1 month was 6.0% and 18% respectively. For 30 days mortality, AUC for NHFS was 0.68 (95% CI 0.59–0.77) and for CFS was 0.82 (0.74–0.90). Other commonly implied predictors were not statistically significant in relation to mortality.

Conclusion: The CFS owing to ease of administration outperformed NHFS as a predictor of 30 day mortality. CFS could be used instead of the NHFS to identify high risk perioperative patients and focus the care given to them.

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Abstract # 633**AREA: Falls and fractures****Frailty features and fear of falling assessed with the Short Falls Efficacy Scale-International in geriatric ward patients**Łukasz Magnuszewski¹, Marta Świątek¹, Agnieszka Kasiukiewicz¹, Zyta Beata Wojszel¹¹Medical University of Białystok

Introduction: About one-third of people aged 65 and over fall at least once a year. Fear of falling is an important psychological consequence associated with falls and a significant public health concern. The study aimed to verify an association between characteristic

features of frailty syndrome and the fear of falling measured by the short version of The Falls Efficacy Scale-International (Short FES-I).

Material and methods: We performed a cross-sectional study of 199 patients consecutively admitted to the geriatric ward at the turn of 2019 and 2020 and analysed comprehensive geriatric assessment results, fear of falling measured by The Short FES-I, handgrip strength (HGS), gait speed, falls, and fractures after the age of 60.

Results: The average age of participants was 81 (6.35) years, and 76.3% were women. 42% of them reported more than one fall in the last 12 months, and 23.1% experienced fractures in old age. The higher score of the Short FES-I, suggesting the increased fear of falling, was observed in patients with lower (≤ 0.8 m/s) gait speed [median (Me) 17.0, IQR, 13.0–23.0; versus 11.0 (8.0–15.0) in gait speed > 0.8 m/s, $P < 0.001$] and those with low (< 27 kg in men and < 16 kg in women) HGS [Me 17.0, IQR (12.5–23.0) versus Me, 14.0, IQR (10.0–22.0) in those with normal HGS, $P = 0.048$]. Also, patients who reported fractures were more afraid of falls [Me 18.5, IQR (14.0–24.0)] than the non-fracture group [Me, 15.0; IQR (10.0–22.0)], $P = 0.037$.

Conclusions: We proved that past fractures and the characteristic features of frailty syndrome (decreased walking speed and HGS) were significantly connected with the fear of falling assessed with the Short FES-I in geriatric ward patients. Key words: fear of falling, falls, older people, geriatric ward, FES-I, frailty.

Abstract # 634**AREA: Falls and fractures****Relationship between the Short FES-I, balance, walking ability and history of falls in the previous year in older patients of the hospital ward**Łukasz Magnuszewski¹, Marta Świątek¹, Agnieszka Kasiukiewicz¹, Zyta Beata Wojszel¹¹Medical University of Białystok

Introduction: Fear of falling is an important psychological factor associated with falls in older people and has been reported in both risk factor and intervention studies. Fear of falling is a common problem in older people. At least 25% of older people report fear of falling, with a higher prevalence among people who have fallen and people living in institutional settings. This study aimed to verify how balance, walking ability and recurrent falls affect the fear of falling measured by short version of The Falls Efficacy Scale-International (Short FES-I).

Material and methods: A cross-sectional study of 199 patients consecutively admitted to the geriatric ward at the turn of 2019 and 2020 and analyzed comprehensive geriatric assessment results, fear of falling measured by The Short FES-I, physical function measured by Performance-Oriented Mobility Assessment (POMA) which measure balance and walking ability.

Results: The average age of participants was 81 (6.35) years, and 76.3% were women. 42% of them reported more than one fall in the last 12 months. The results of the studied group of patients presented in relation to the severity of the fear of falling look as follows: 41% a “little”, 23% “quite”, 36% “very much”, no patient reported fear of falling “not at all”. The higher score in POMA score was observed in patients with a little fear of falling [median POMA score 27.0 (21.0–28.0) versus 25.0 (19.0–28.0) in quite fear of falling versus 18.0 (15.0–22.0) in very much fear of falling group]. There were no significant differences in patients group who has experienced one fall [median Short FES-I score 14.0 (10.0–22.0) or more falls 17.0 (12.0–25.0) in previous year compare to non fallen at all group 15.0 (11.0–22.0), $P = 0.21$].

Conclusions: The FES-I short is a useful scale for assessing older patients fear of falling. By analyzing the results, it was proved that the functional efficiency of walking and balance ability was significant by analyzing the results. Still, they did not differ in the number of falls in the previous year. If researchers or clinicians are particularly interested in the specific fear of falling-related activities not included in the Short FES-I, the use of the full FES-I is recommended.

Keywords: Fear of falling, falls, ageing, geriatric ward, FES-I.

Abstract # 635

AREA: Falls and fractures

Blood transfusions before, during and after hip fracture surgery in old patients

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Background: Blood transfusions, kidney injury and mortality are associated in old patients with hip fracture. This study aimed to assess when and to whom blood transfusions were given.

Methods: All patients aged ≥ 65 years admitted with a hip fracture to Bispebjerg University Hospital in 2018 were included. Logistic regression was used to examine variables associated with blood transfusion in the preoperative (PreOp), peroperative (PerOp) and postoperative (PostOp) periods. The first hemoglobin after admission and the first hemoglobin after surgery were used in the analyses. Data are given as odds ratios (OR) with 95% confidence intervals.

Results: We included 299 patients, 219 (73%) women (83.2 ± 8.5 years) and 80 (27%) men (80.1 ± 9.3 years). At PreOp 15 patients (W: 13, M: 2) received transfusions, compared to 32 (W: 26, M: 6) patients at PerOp and 74 patients (W: 56, M: 18) at PostOp. Patients that received transfusions had lower hemoglobin (g/dL) (PreOp: 9.1 vs 12.6; PerOp: 10.9 vs 12.6, PostOp: 8.6 vs 10.8) compared to patients that did not receive transfusions. Hemoglobin PostOp was below a recommended transfusion threshold of 6.9 g/dL only in 8 (11%) of the patients given transfusions. At PreOp transfusions were associated with dementia (OR 2.82; 1.12–7.10, $p = 0.03$) and living in nursing home (OR 3.49; 1.22–9.98, $p = 0.02$). In contrast, at PostOp transfusions were associated with acute kidney injury (2.82; 1.31–3.97, $p = 0.003$), and delirium (2.64; 1.36–5.13, $p = 0.004$), but not dementia (0.75; 0.65–1.47, $p = 0.75$).

Key conclusions: Blood transfusions were given at relatively high hemoglobin levels to the clinically most vulnerable patients.

Abstract # 636

AREA: Falls and fractures

Prevalence of falls among community-dwelling older people with frailty

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Background: Frailty is a condition characterised by vulnerability to respond to stressful stimuli and is associated with adverse health outcomes.

Objective: To estimate the prevalence of falls among Chilean community-dwelling older people with frailty.

Methods: A cross-sectional study of ALEXANDROS cohorts on community-dwelling people aged 60 and older living in Santiago, Chile. 2096 participants (67.0% women with an average age of 69.4 years ± 7.1) were assessed to estimate the prevalence of falls in the last 12 months. Frailty was defined according to Fried's frailty phenotype. In the interviews, all subjects informed about chronic diseases, self-reported disability/functional limitations, and mobility. Age and sex-adjusted logistic regression for falls were estimated according to frailty and multimorbidity.

Results: The prevalence of falls in the last 12 months was 29.2% (95% CI 27.1–31.3%) for the non-frail and 42.3% (95% CI 36.7–47.9%) for frail status ($p < 0.001$). The prevalence of 3 or more falls in the last 12 months was 27.4% (95% CI 23.5–31.3%) for the non-frail and 37.5% (95% CI 28.8–46.2%) for the frail ($p = 0.014$). In the logistic regression, falls in the last 12 months were associated with frailty (OR = 2.94; 95% CI 1.47–5.89), women (OR = 1.77; 95% CI 1.10–2.85) and multimorbidity (OR = 1.57; 95% CI 1.03–2.41).

Conclusions: The prevalence of falls is high in older people and higher in those with frailty; the same occurs with the prevalence of 3 or more falls among frail older people. Addressing fall prevention measures and preventing frailty in people is a key issue to reduce the prevalence of falls and other associated adverse health outcomes.

Abstract # 637

AREA: Falls and fractures

Changing activity in a small team in a big hospital: geriatrician experience in the last year

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Introduction: Since 2017 there is a Geriatric Team working with Traumatology Service in terms of traditional Orthogeriatric support. However, since COVID 19 outbreak in 2020. Also serving as a supportive team in COVID patient with hip fracture. Before pandemics. There used to be only two geriatricians working in orthogeriatrics and coordination with nursing homes and consultations. Now having four geriatricians, more patients are included in our follow up, also coordinating work with nursing homes (telematics assistance, improving attention of patients and working in the design of new strategies in electronic history).

Material and methods: Geriatric team's activity was evaluated since the last semester of 2020 and the first of 2021. We evaluated number of patients assisted also length of stay and the presence of complication such as COVID.

Results: Since July 2020, more than 360 patients, were assisted by a geriatrician during hospital stay in Traumatology ward. Our action consisted in mainly hip fractures (85%); with an increasing number of visits in other services different from Traumatology, for example: Cardiology, Gastroenterology, Maxillofacial Surgery.

Conclusions: Activity of our team was influenced by COVID 19 outbreak. There are benefits such as the incorporation of new specialist (now pending on renewal) in terms of number of patients assisted. Coordination between Orthogeriatric and Traumatology services helped attending patients with COVID 19 during pandemics. Cooperative efforts can be applied in different settings based on

results of traditional Orthogeriatric teams such as continuity of assistance.

Abstract # 638

AREA: Falls and fractures

Prevalence of osteoporosis and fragility fractures among patients with chronic respiratory diseases

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Introduction: Around 300,000 people in Ireland have osteoporosis [1]. Population based studies in Europe have identified a higher rate of osteoporosis and fragility fractures among people with history of asthma, COPD and inhaled corticosteroid use [2–4].

Methods: To study this population with regards to their osteoporosis risks and management, a retrospective cross-sectional study was carried out in University Hospital Limerick. All patients admitted under Medicine from March to April 2021 were identified and patients with chronic respiratory disease were selected. After applying exclusion criteria namely critical illness, advanced cognitive impairment or discharge prior to data collection, the remaining 45 patients became the study sample.

Results: There were 45 patients in this study of which 14 had asthma, 24 had COPD, 3 had asthma/COPD overlap, and 4 others. Mean age was 70 years old and mean BMI 28.1 kg/m². 13 patients had DEXA scans with average femoral neck T score of -1.69 . The average calculated FRAX scores for 10 year probability of fracture without BMD were 6.94 and 15.5 for hip and osteoporotic fractures respectively. 76% of our study population was categorised as high risk according to American College of Rheumatology (ACR) guideline and 77.8% of the patients were not treated accordingly. 22.2% were identified on imaging to have had suffered at least one fragility fracture.

Key conclusions: Majority of our respiratory patients were found to be high risk category on ACR yet not receiving appropriate bone protection. Their ACR fracture risk were underestimated as their intermittent and/or chronic usage of glucocorticoids which were dose-dependent were unaccounted for when FRAX was used as a screening tool. This population would benefit from increased awareness of their risk for osteoporosis with preventative therapy.

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Abstract # 639

AREA: Falls and fractures

Stepping thresholds as an assessment of fall risk

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Introduction: Reactive balance, is a relevant, but insufficiently studied fall risk factor (FRF). Associations with commonly assessed FRF's are unclear. Perturbation-treadmills can provide standardized and safe simulations of unstable balance situations and hence challenge reactive balance. In order to counteract a loss of balance, the stepping strategy is frequently used to regain balance. The aim of this study is to explore correlations between known FRF's, assessments, and stepping-thresholds.

Methodology: The reactive balance of healthy young adults, healthy robust older people and older people with a history of falls (N = 48, 21–87 years, 34 women) was tested on a perturbation-treadmill. Health-status (EQ-5D), fear-of-falling (Falls Efficacy Scale-International FES-I), gait-speed and functional performance (Mini-Balance-Evaluation-Systems-Test, MBEST) were assessed. The perturbations were progressively applied until the participant needed to perform a step to maintain balance. Platform displacement was recorded at the stepping-threshold (ST) for anterior (A), posterior (P), left (L) and right (R) perturbations.

Results: Higher age correlated with higher FES-I ($r = 0.682$) and lower MBEST-scores ($r = -0.786$) as well as ST-P ($r = -0.718$). The perturbation thresholds showed a moderate correlation with the FES-I score ($r = -0.572$) and gait speed ($r = -0.537$). The MBEST-Test showed a stronger relation with the mediolateral ST (ST-R, $r = 0.672$; ST-L, $r = -0.671$) than with the anteroposterior ST (ST-P, $r = 0.523$; ST-A, $r = 0.569$). Overall significance level of $p < 0.01$.

Discussion: All fall-risk-related-measures correlated moderately ($r > 0.5$) with the perturbation-triggered stepping-thresholds in multiple directions. The slightly higher correlations between the mediolateral threshold-levels with the functional-performance-batterie compared with the anteroposterior direction needs to be further investigated. Future studies should analyze the correlation of dynamic reactive balance during walking with traditional fall risk assessments.

Abstract # 640

AREA: Falls and fractures

Factors associated with frequent falls among elderly in Qatar

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Introduction: Falls is a major health problem among the elderly. There have been few studies from the Middle East evaluating falls in elderly patients. We present one of the first studies from Qatar examining factors associated with falls in the elderly population.

Methods: We conducted a retrospective chart review of elderly patients (n = 65) presenting during 2016–2017 to the Geriatrics Falls Clinic at Hamad Medical Corporation, the largest healthcare system in Qatar. Various factors, including sociodemographic factors, medication use, chronic conditions, and use of supportive devices were analyzed for association with our outcome, frequent falls (FF), defined as > 1 episode of falls/year.

Results: Among elderly subjects attending the Falls Clinic, 52.3% were men; average age was 73.5 years, 86.4% had polypharmacy, and 81.7% used antihypertensives. FF was present in 55.4% of the subjects. Factors associated with higher likelihood of FF were antidepressant medication use (78.6% vs. 47.8%), presence of neurological deficit (63.2% vs. 40%), congestive heart failure (83.3% vs. 51.7%), and abnormal get-up-and-go test (53.5% vs. 16.7%). In contrast, factors associated with lower likelihood of FF were use of grab bars (16.7% vs. 58.7%), bath chair (42.9% vs. 61.8%), Vitamin D use (44.1% vs. 69.2%), and patients who had their medications appropriately managed (45.8% vs. 85.7%).

Conclusions: In this retrospective chart review of elderly patients from Qatar, we found that antidepressant medication use, presence of neurological deficit, congestive heart failure and abnormal get-up-and-go test were associated with FF. Use of supportive devices and appropriate medication management were protectively associated with FF.

Abstract # 641

AREA: Falls and fractures

Patients with hip fractures need close follow up

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Introduction: Osteoporosis and osteoporotic fractures most often affect postmenopausal women, and osteoporotic fractures significantly increases disability, morbidity, and mortality. Several anti-osteoporotic agents are available, and they effectively reduce the incidence of low energy osteoporotic fractures. However, the post osteoporotic fracture treatment rate is low. The purpose of the present study is to follow up on patients with a recent hip fracture with focus on DXA scans and anti-osteoporotic treatment.

Method: Retrospective study including all patients ≥ 65 years of age admitted to one department of orthopedic surgery in Denmark in a 1-year period from 1st of June 2019 to the 30th of May 2020.

Results: 570 patients ≥ 65 years were treated for a hip fracture in this 1-year period. A total of 16.5% received any anti-osteoporotic treatment at follow up and 6.3% were initiated on anti-osteoporotic treatment or had a relevant change in anti-osteoporotic treatment. Only 10% received a DXA scan of which only 56% had osteoporosis. Thirty-three % of patients with a DXA scan confirming the diagnosis had no follow up and did not initiate any anti-osteoporotic treatment.

Conclusion: The majority of patients with a recent low energy hip fracture did neither receive a DXA scan, have relevant follow up nor receive any anti-osteoporotic treatment after discharge. Close follow up is necessary, for example in a geriatric outpatient clinic or by home visits to ensure that the patients are evaluated, and if indicated, are initiated, and maintained on relevant treatment.

Abstract # 642

AREA: Falls and fractures

Trajectories of functional performance after a sentinel fall with presentation to the emergency department without hospital admission – a study protocol (SeFallED)

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Introduction: Older adults who present to the emergency department (ED) after a fall are at high risk of functional deterioration and recurrent falls. If not admitted to inpatient care medical follow-up of the incident is unlikely. Long-term observation of changes in functional abilities, physical activity, and individual fall risk is lacking. Reduced dynamic reactive balance and poor aerobic fitness as risk factors for falls have been studied insufficiently and are target outcomes of this project.

Methods: The goal is to recruit 450 patients aged 60 years and older, who are treated in the ED at the Klinikum Oldenburg after a fall without hospital admission. After 4 weeks, 6, 12, and 24 months functional abilities, fall risk factors, participation, quality of life, falls incidence, and physical activity will be assessed during home visits using validated instruments, including IMU sensor-data. Additionally, two thirds of the patients will undergo intensive testing in the gait laboratory including aerobic fitness measurements. In a RCT design half of these patients will be tested for reactive dynamic balance on a perturbation treadmill.

Results: All parameters assessed are incorporated into a multinomial regression model to predict functional trajectories after an index fall. The RCT will examine the effect of the diagnostic perturbation protocol on fall rate and the time course of functional abilities.

Key conclusion: The results will be used to identify risk factors with high predictive value for functional outcome after an index fall, to (re-)design future interventions to be initiated in the ED.

Abstract # 643

AREA: Falls and fractures

Walking aid use and decision-making in the prescription process in older people presenting gait disorders – a study protocol (RollGa)

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Introduction: Wheeled walkers are commonly used walking aids to enable mobility impaired persons to participate in activities of daily living. Although gait safety is a main concern to recommend a walker, there is evidence that the risk of falls can increase with its use. Despite easy access to walking aids, decision-making processes as well as alternative intervention options to improve the gait pattern remain unclear. Therefore, the aim of the study is to evaluate health services supply in gait disorders from patients' and health care practitioners' point of view.

Methods: Walker users aged 70 years and older will be interviewed individually and focus group discussions with medical professionals (e.g. practitioners, therapists, caregivers) from both, outpatient and inpatient sector will be conducted. Data sets will be analyzed using qualitative content analyses to gain more insights towards primary health issues causing gait insecurity. In addition, reported treatment strategies and processes, as well as expectations and experiences related to the use of a wheeled walker, will be evaluated.

Results: Results of the interviews and focus groups will be presented regarding initial contact to health services, needs analysis, gait assessments, and interventions guiding the decision process. Selection and fitting procedures of the chosen walking aid will be reported.

Key conclusions: The project will help to develop a framework to support future decision processes to prescribe the permanent or transitional use of a walking aid. Appropriate prescriptions may

reduce fall risk and avoid individuals getting accustomed to a walker who would have benefited from an alternative treatment.

Abstract # 644

AREA: Falls and fractures

Improving inpatient fall assessment using a new electronic request (equest) and post-fall medical assessment proforma

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Introduction: NICE guidelines recommend that inpatient falls require multifactorial assessment to include; a post-fall protocol with assessment for injury before being moved, a documented medication review and timely medical assessment. Timescales for medical assessment are within 12 h or 30 min if signs of serious injury.

Method: In September 2019, 69 inpatient falls were identified and 10 excluded due to incomplete records. Electronic records were analysed for; use of post-falls protocol with suspected injury, time to medical assessment, documented medication review and completion of medical assessment form. Change was implemented with an electronic request (eQuest) for urgent medical review out-of-hours. A new medical proforma was developed and a falls teaching session for juniors.

Results: 93% (55) had a medical review by a doctor after an inpatient fall. 64% (38) had a post-falls checklist completed by ward staff to assess for injury. 45% (26) received a medical review within the timescale outlined on the post-falls checklist. The pre-existing medical proforma was used in 46% (27). 17% (10) had a documented medication review.

Conclusion: The initial audit identified the need for improvement in timescale of medical review, use of a medical proforma and a documented medication review after inpatient fall. Change was implemented to address these issues. Re-audit was delayed due to COVID-19 escalation but is planned for September 2021. It will assess whether the interventions have improved outcomes to be aligned with national guidance. Further change is required to increase use of the post-falls checklist by ward staff in suspected injury.

Abstract # 645

AREA: Falls and fractures

Prefracture geriatric syndromes as determinants of 6-month mortality following hospitalization for osteoporotic fractures in older adults

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Introduction: Osteoporotic fractures are a highly prevalent cause of functional decline and mortality among older individuals, however geriatric syndromes (GS) are not included in the algorithms guiding anti-osteoporotic treatment decisions, and their prognostic significance for geriatric fracture patients has not been adequately assessed.

We aimed to examine the prevalence and prognostic value of pre-existing GS in older inpatients admitted to acute care with osteoporotic fractures.

Methods: Among 120 consecutive patients > 70 years admitted to our hospital with acute fracture between May and October 2020, 19 patients were excluded based on predetermined criteria, and the remaining 101 older osteoporotic fracture patients were randomized to receive a complete geriatric assessment and counseling (N = 51), or usual orthopedic care (N = 50). Pre-fracture dementia, mild cognitive impairment, depression, repeated falls, urinary incontinence, frailty (by the Rockwood Clinical Frailty Scale), and being randomized to the geriatric assessment were investigated as determinants of 6-month mortality.

Results: The combined prevalence of GS was 92%; most common among them were urinary incontinence (67%) and recurrent falls (54%). Despite this 44% were previously independent in ADLs and 29% in iADLs. Most patients were fit according to the clinical frailty scale (30% CFS 1–2, 40% CFS = 3), 21% were pre-frail and 7% were frail. At 6 months, 18 patients (18%) had died, which was highly correlated with pre-existing GS, but not a one-time geriatric assessment and consultation.

Conclusions: Geriatric syndromes are common among orthogeriatric fracture patients, even those maintaining fair functional status, and highly correlated with 6-month post-fracture mortality.

Abstract # 646

AREA: Falls and fractures

Risk factors for instability in older people

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Introduction: Instability has a high prevalence and an important impact on morbidity, mortality and independence in older people. Aim of the study was to identify specific patterns regarding risk factors for instability in this category of subjects.

Material and methods: We carried out an observational, retrospective, analytic, case-control study on 846 subjects, age-range 50–91 years. They were divided into two groups, both presenting instability: 362 adults (50–64 years), 484 older adults (75–91 years). Patients have been evaluated by Romberg test (sign) and Downton score.

Results: Majority of patients lived in urban area. Prevalence of instability was significantly ($P < 0.001$) more prevalent in older people, especially in men. Alcohol consumption was significantly higher in men with instability, irrespective of gender. Prevalence of positive Romberg sign was significantly ($p > 0.01$) in older people with instability, irrespective of gender. A higher risk of falls as assessed by Downton score was significantly higher ($p < 0.01$) in older female patients with instability. Peripheral vestibular and central nervous conditions have been significantly more prevalent ($p < 0.01$) in patients beyond the age of 70 years. Psychiatric diseases (including depression, anxiety and neurocognitive disorders) have

been significantly ($p < 0.01$) more prevalent in older women with instability, while neuropathies have been more prevalent in adults, irrespective of gender. Presence of at least 4 risk factors was significantly more prevalent amongst older people with instability ($p < 0.05$), irrespective of gender.

Conclusions: Older people present some specific risk factors for instability that need to be identified early in order to prevent falls and their complications.

Abstract # 647

AREA: Falls and fractures

Can we predict fall risk for older patients with mild cognitive impairment?

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Introduction: Mild cognitive impairment (MCI) is defined as cognitive decline with preserved activities of daily living. MCI patients have a higher risk of falls compared to cognitively healthy people. Despite international guidelines for the general population, falls are still under-diagnosed. For a personalized prevention, we need to target specific group of population such as MCI patients with specific predictive factors.

Methods: MEMENTO is a French prospective, multicentric cohort including people with MCI or subjective complaints. Patients were recruited from 26 memory clinics. We included participants older than 65 years with a diagnosis of MCI at baseline. They were followed every 6 months during 2 years. Falls were collected as adverse events. We have compared clinical, neuropsychological and biological data at baseline between fallers and non-fallers.

Results: 190 (13.4%) of 1416 included patients have fallen at least once during their follow up. Bivariate analysis showed that fallers were older (76.6 years old median age vs 74.3 years old), predominantly females and lived more frequently alone. Some executive tests, such as TMT A test duration, Rey complex figure copy and FAB test, were more pathological in fallers. SPPB was lower in fallers (10 vs 11 in non-fallers). Only age and living alone were significantly different in multivariate analysis.

Conclusion: We only observe sociodemographic predictive factors of falls in older MCI patients. This suggest the need to test and define other predictive factors through a specific cohort in this population.

Abstract # 648

AREA: Falls and fractures

An audit of the management of frail older trauma patients at an Irish University Hospital in 2019

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Introduction: Acute and post-acute management of the older persons with trauma comes with challenges given their complex medical and rehabilitation needs. We aimed to assess the current management of frail older persons with non-hip fracture trauma/other injuries in our Emergency Department (ED) and compare our practice to the standards listed in the British Orthopaedic Association guidelines for older orthopaedic trauma patients. Our focus was on acute management/identification, comprehensive geriatric assessment, multifactorial falls assessment and advance care planning.

Methods: We conducted a retrospective review of hospital electronic records. We included adults over 65 years old presenting with trauma to our ED between October and December 2019 and those triaged as clinically frail using the Variable Indicator of Placement (VIP) frailty tool. We excluded patients with hip fractures.

Results: Total, $n = 28$ of which 64% patients were female. Median age was 83.3 years. 93% of patients had falls from standing height. 93% of patients had cross sectional imaging performed (cervical spine imaging was performed in only 25%); advance care planning/ceiling of care decisions were documented in 25% of patients. 54% of patients underwent comprehensive geriatric assessment and multifactorial falls risk assessment was done in 46%, bone health review was documented in 36% of patients.

Conclusions: We identified an urgent need for improvement in several aspects of care of the older trauma patient. Since this audit, a multidisciplinary frailty intervention team and a “Silver Trauma” pathway have been established in our ED. We aim to re-audit our practice following these changes.

Abstract # 649

AREA: Frailty and resilience

Outcome of cardiopulmonary resuscitation in frail patients

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Introduction: The concept of frailty is one which is gaining increasing attention due to its multifactorial constituents, and its impact on geriatric patient care.

Method: In this study, we analysed the outcome of cardiopulmonary resuscitation (CPR) in Maltese Hospitals for the year 2019 in relation to frailty status using the Charlson Comorbidity Index. 185 eligible patients were obtained from the CPR register after excluding patients < 18 years of age, peri-arrest cases, a test case, double-recorded CPR documents and patients with insufficient data recorded.

Results: From these 185 patients, the statistics were of 123 males and 62 females, with an age range of 26 years to 99 years. The median age was 78 years whilst mean age was 76.2 years. The majority of patients fell within Charlson Comorbidity Scores of 4–8 (143 patients), with the largest cohort obtaining a score of 6 (39 patients). The results highlight a low rate of ROSC (4.32%) irrespective of Charlson Comorbidity index score. However, when ROSC was achieved, survival to discharge was noted to be greater with lower Charlson Comorbidity Index scores.

Key conclusions: This data is in keeping with other studies regarding CPR in frail patients, despite the use of other scores such as the Clinical Frailty Score. Smith et al.’s study in Australian tertiary centres between 2008 and 2017 used the Charlson Comorbidity Index, and points out a lower rate of discharge home in frail patients who survive an in-hospital cardiac arrest [1]. Limitations of our study

include the small population, although exhaustive of the CPRs performed on the Maltese Islands in 2019.

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Abstract # 650

AREA: Frailty and resilience

Frailty associations with socioeconomic status, healthcare utilisation and quality of life among older women residing in regional Australia

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Aims: This study examined the association between frailty and socioeconomic status (SES), healthcare utilisation and quality of life (QOL) among older women in south-eastern Australia.

Methods: Based on cross-sectional data from 360 women participants (ages > 60 years) from the Geelong Osteoporosis Study, multinomial logistic regression was conducted with frailty groupings as outcome. Results were reported as odds ratios (OR) with 95% confidence interval (CI). Frailty was identified using a modified version of the Fried's phenotype. Weight and height were measured. Individual measures of SES and healthcare utilisation were documented by questionnaire. Area-based SES was determined by cross-referencing residential addresses with the Australian Bureau of Statistics Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). QOL was measured using the Australian World Health Organisation Quality of Life Instrument (WHOQoL-Bref).

Results: Sixty-two (17.2%) participants were frail, 199 (55.3%) were pre-frail and 99 (27.5%) were robust. Frail participants were older (OR 1.15, 95% CI 1.08–1.21) and had higher body mass index (OR 1.10, 95% CI 1.03–1.18) than robust participants. Frailty was associated with lower education (secondary education vs no secondary education: OR 0.20, 95% CI 0.05–0.72) but not with marital status, occupation or IRSAD. Strong associations with frailty were demonstrated for all WHOQoL-Bref domains. Frailty was associated with more primary care doctor visits (16.1% frail, 6% pre-frail, 0% robust participants had > 3 visits over a 4-week period, $p < 0.001$) but not with hospital presentations.

Conclusions: This population-based study highlights the significant impact frailty has on older women, indicating reduced QOL and increased primary care doctor visits.

Abstract # 651

AREA: Frailty and resilience

Frailty associations with socioeconomic status, healthcare utilisation and quality of life among older women residing in regional Australia

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Aims: This study examined the association between frailty and socioeconomic status (SES), healthcare utilisation and quality of life (QOL) among older women in south-eastern Australia.

Methods: Based on cross-sectional data from 360 women participants (ages > 60 years) from the Geelong Osteoporosis Study, multinomial logistic regression was conducted with frailty groupings as outcome. Results were reported as odds ratios (OR) with 95% confidence interval (CI). Frailty was identified using a modified version of the Fried's phenotype. Weight and height were measured. Individual measures of SES and healthcare utilisation were documented by questionnaire. Area-based SES was determined by cross-referencing residential addresses with the Australian Bureau of Statistics Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). QOL was measured using the Australian World Health Organisation Quality of Life Instrument (WHOQoL-Bref).

Results: Sixty-two (17.2%) participants were frail, 199 (55.3%) were pre-frail and 99 (27.5%) were robust. Frail participants were older (OR 1.15, 95% CI 1.08–1.21) and had higher body mass index (OR 1.10, 95% CI 1.03–1.18) than robust participants. Frailty was associated with lower education (secondary education vs no secondary education: OR 0.20, 95% CI 0.05–0.72) but not with marital status, occupation or IRSAD. Strong associations with frailty were demonstrated for all WHOQoL-Bref domains. Frailty was associated with more primary care doctor visits (16.1% frail, 6% pre-frail, 0% robust participants had > 3 visits over a 4-week period, $p < 0.001$) but not with hospital presentations.

Conclusions: This population-based study highlights the significant impact frailty has on older women, indicating reduced QOL and increased primary care doctor visits.

Abstract # 652

AREA: Frailty and resilience

Frailty in advanced chronic kidney disease

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Introduction: Frailty evaluation has become challenging in chronic kidney disease. It is a predictor of morbidity and mortality. Multidimensional assessment is useful to establish situational diagnosis and identify end-of-life situation in advanced chronic kidney disease (ACKD).

Objective: to analyze moderate to advance frailty as multidimensional concept based on comprehensive geriatric assessment (frailty index; FI-CGA) in ACKD.

Material and methods: observational descriptive analytical study carried out on patients older than 66 years and glomerular filtration rate less or than 15 ml/min/1.73 m² as has been defined in Kidney Disease: Improving Global Outcomes guidelines. They were being followed-up by nephrology consultations for 4 years. The statistical analysis was performed using the SPSS version 25 program.

Results: From 41 patients seen in ACKD nephrologist consultation, we analyze 37 patients with moderate to advance frailty. Mean age was 82.28 ± 7.23 years. 51.4% were women (n = 19). Charlson 9.84 ± 1.32 . Frailty was identified as moderate in 65.9% of patients (n = 27; FI-CGA 0.35–0.55), severe in 24.4% (n = 10; FI-CGA > 0.55) and mild in 9.8% (n = 4; FI-CGA 0.15–0.35). Non patients were robust. Most prevalent cardiovascular risk factors were hypertension, diabetes, and dyslipidemia (94.6%, 78.45% and 73%). 59.5% of patients have adequate social support and 24.3% suffer from dementia. All patients have polypharmacy. Heart disease, malnutrition and mortality were more prevalent in advance frailty (51.4%, 60%, 86.5%; p .050).

Conclusion: Moderate to advance frailty is a common diagnosis in older adult in nephrology consultation and is associated with higher prevalence of cardiovascular heart disease, malnutrition, and risk of mortality in ACKD.

Abstract # 653

AREA: Frailty and resilience

Frailty analysis across populations: the use of the Hospital Frailty Risk Score in Specialised Services using NHS national data

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Introduction: Frailty is increasingly used to risk stratify older people, but across specialised services there is no standardised approach. The aim of this study was to answer the question posed by NHS England to assess if frailty could be measured and related to outcomes across Specialised Services. Hospital Frailty Risk Score (HFRS) was used and the data was published Age and Ageing in 2020.

Method: A retrospective cohort study was performed using the Secondary Uses Service (SUS) electronic database for people aged 75 or older admitted between April 2017 and March 2018. Based on HFRS, the populations were risk stratified into mild, moderate and severe frailty risk. The relationships with length of stay, readmission rate, mortality and some selected condition specific treatment complications were quantified using descriptive statistics.

Results: Frailty was differentially distributed across the specialities: around one-third had mild frailty, another third had moderate frailty and one-quarter severe frailty. Increasing frailty risk was associated with increased length of stay for the index admission, more days in hospital in the year following intervention and increased risk of dying in hospital. Severe frailty was a powerful discriminator of the risk of death; between 25 and 40% of those with severe frailty risk died at 30 months across all specialties.

Conclusion: This study demonstrates the first application of the HFRS to a national dataset to describe service outcomes and mortality

for older people undergoing a TAVI. This information could be used to identify those that might benefit from holistic assessment, aid prognostication, commissioning and service planning. It informed the promotion of quality improvement work in this area via the Specialised Clinical Frailty Network. By implementing the HFRS, changes in outcomes can be plotted across years to assess improvements, performance and benchmarking.

Abstract # 654

AREA: Frailty and resilience

G-8 geriatric screening tool independently predicts improved progression free survival in older ovarian cancer patients - results of a retrospective cohort study

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Purpose: We attempted to evaluate the prognostic impact of various global health assessment tools in patients with ovarian cancer (OC) older than 60 years.

Methods: G-8 geriatric screening tool (G-8-score), Lee Schonberg prognostic index, Eastern Cooperative Oncology Group (ECOG) performance status and Charlson Comorbidity Index (CCI) was determined retrospectively in a consecutive cohort of elderly patients with OC. Univariate and multivariate Cox regression analyses and Kaplan–Meier method were performed to determine the impact of the global health assessment tools on progression free survival (PFS) and overall survival (OS).

Results: 116 patients entered the study. In multivariate analysis adjusted for tumor stage, postoperative tumor burden, and surgical complexity score, only the G-8 score retained its significance as a good prognostic factor of 5-year PFS (HR: 2.009; 95% CI [1.091–3.699]; p = 0.025). 56 patients (50.9%) were classified as the G-8-non-frail cohort (cut-off value > 14 points) according to the G-8 score with an increased 5-year PFS rate compared to the G-8-frail cohort (53.4% vs. 16.7%; p = 0.010). Analyzing the eight items of G-8 score separately, only the question of weight loss (HR 0.661; 95% CI [0.459–0.951]; p = 0.040) and self-estimation as age-appropriate health status (HR: 0.560; 95% CI [0.290–1.080]; p = 0.080) independently predicted 5-year PFS. The CCI was associated with the PFS using the Kaplan–Meier estimation (45.1% vs. 22.2%; p = 0.012) but did not influence the risk of recurrences or death calculated with the univariate Cox-regression analyses (p = 0.360; p = 0.111, respectively).

Conclusions: The G-8 score independently predicts 5-year PFS in elderly OC patients irrespectively of the maximal surgical effort. It might be useful to select preoperatively older and G-8-frail patients to secure for maximal surgical effort and could benefit from a following Comprehensive geriatric assessment.

Abstract # 655**AREA: Frailty and resilience****Lee Schonberg prognostic index independently predicts improved overall and progression free survival in older endometrial cancer patients - results of a retrospective cohort study**

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Purpose: We attempted to evaluate the prognostic impact of various global health assessment tools in patients with endometrial cancer (EC) older than 60 years.

Methods: Lee Schonberg prognostic index (Lee-Index), G-8 geriatric screening tool (G-8 score), Eastern Cooperative Oncology Group (ECOG) performance status, Charlson Comorbidity Index (CCI) and American Society of Anesthesiologists (ASA)—Physical Status System was determined retrospectively in a consecutive cohort of elderly patients with EC. Univariate and multivariate Cox regression analyses and Kaplan–Meier method were performed to determine the impact of the global health assessment tools on progression free survival (PFS) and overall survival (OS).

Results: 153 patients entered the study. In multivariate analysis adjusted for common clinical-pathological risk factors e.g. histological type (FIGO), histological grading, FIGO-stadium, tumor stadium and postoperative tumor burden only the Lee-Index retained its significance as a good prognostic factor of 5-year OS (HR: 2.354; 95% CI [1.086–5.101]; $p = 0.030$) and 5-year PFS (HR: 2.756; 95% CI [1.110–6.841]; $p = 0.029$). 85 patients (58.2%) were classified as the Lee-non-frail cohort (cut-off value < 20% 4-year mortality) according to the Lee-Index with an increased 5-year PFS and OS rate compared to the Lee-frail cohort (PFS: 86.3% vs. 59.3%; $p = 0.022$ and OS: 77.8% vs. 50.5%; $p = 0.033$; respectively).

Conclusions: The Lee-Index independently predicts 5-year OS and PFS rate in elderly EC patients irrespectively of the maximal surgical effort.

Abstract # 656**AREA: Frailty and resilience****Handle with care**

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Background: The ageing demographic is reflected in the population presenting for surgery. In our hospital last year, 55% of the patients referred to the pre-assessment clinic were over 65 years of ages, and of these 27% were over 75. The older person presents particular challenges perioperatively. Guidelines issued by both the AAGBI and the RCOA indicate that this vulnerable cohort should be assessed for frailty, baseline cognitive and functional status, in recognition of the effect that these potentially unheralded deficits can have on postoperative outcomes.

Method: We undertook a snapshot study to characterize those people referred to the pre-assessment clinic aged 65 or older over 4 weeks. We screened using the Clinical Frailty Scale, the Mini-Cog (abnormal

value being less than 3), and the Duke Activity Status Index (threshold of < 34 indicating functional limitation).

Results: In total, fifty-eight ($n = 58$) patients were assessed in the pre-operative assessment clinic. Of this group, 60% were ASA 1 or 2. Our data showed 50% were CFS 4 (vulnerable) or greater and 30% had Mini-Cog < 3. A DASI < 34 was self reported in 72% of cases.

Conclusion: These results suggest that a significant proportion of the older elective surgical population in our hospital have vulnerability as described by limitations in cognitive or functional status or overall frailty. Reframing our understanding of vulnerability as a comorbidity to be coupled with anesthetic risks, in elderly patients—is essential for service improvement. In addition; recognition, discussion, and communication of these risks is one step in making perioperative care safer for our more vulnerable patients.

Abstract # 657**AREA: Frailty and resilience****Clinical Frailty Score as a predictor of discharge destination and recurrent admission: a retrospective analysis at a London Teaching Hospital**

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Introduction: The Rockwood Clinical Frailty Score (CFS) is commonly used as part of a comprehensive geriatric assessment upon hospital admission. The CFS ranges from 1 (very fit) to 9 (terminally ill) and is often used in clinical prognostication. However, in this study we assessed how CFS correlated with both discharge destination following hospital admission (dependence on care) and recurrent admissions to hospital.

Methods: A single centre retrospective cohort study was carried out by reviewing the electronic healthrecords of all discharges from the geriatric medicine ward of a London Teaching Hospital over a 4-week period. Data collected included CFS (a score of 8–9 categorised as extremely frail, 5–7 as frail and 1–4 as non-frail), number of hospital admissions in the last 12-months and discharge destination.

Results: 51 patients were included (mean age 84, 56.9% female). 9.8% of patients were extremely frail, 74.5% were frail and 15.7% were non-frail. 40% of extremely frail patients were discharged to a nursing home or hospice, dropping to only 13.1% of frail patients. Comparably, 87.5% of non-frail patients were discharged home with no care, falling to 15.8% of frail patients. Mean number of hospital admissions over the last 12-months increased with frailty; 0.1 in the non-frail group, 1.4 in the frail group and 4.2 in the extremely frail cohort.

Discussion: CFS demonstrated good predictive value with regards to patient discharge destination and need for recurrent admission. Therefore, CFS is a reliable indicator of care needs on discharge and could be used as part of admission avoidance strategies.

Abstract # 658**AREA: Frailty and resilience****The WHO ICOPE program is intended to prevent and screen psychological distress among informal caregivers at home in the context of Alzheimer's disease and related disorders**

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Introduction: Alzheimer's disease affects 900,000 people in France today and the number keeps increasing. 67% of patients live at home and are mostly cared for by family members. The burden of caring on informal carers can have a negative impact on the physical and psychological wellbeing and could promote isolation. The study "PsyDoMa" performed in the University Hospital Centre of Nice proposed to respond to isolation through the intervention of gerontopsychologists at home (non-drug approaches for the patient and a psychoeducation program for the carer). A nurse will carry out a screening for frailty and prevention activities. This follow-up is based on the ICOPE MONITOR (Integrated Care for Older People) developed by the University Hospital Centre of Toulouse.

Method: PsyDoMa is a 6-month feasibility study involving 14 patient/carer dyads. A nurse will handover ICOPE (step 1) at 1 and 4 months of care. If a decline in abilities is detected, the nurse will follow the ICOPE methodology and will proceed to referral to the hospital prescriber (step 2) and/or contacting the attending physician.

Results: The preliminary results of this ongoing study confirmed the importance of the ICOPE program for assessing and monitoring depressive symptoms among caregivers, for the implementation of a combined Home-Physician-CHU follow-up and the introduction of ICOPE self-assessments for carers following study completion.

Conclusion: This intervention could therefore represent a suitable and feasible strategy to address the need for prevention and management of potential psychological distress among carers.

Abstract # 659

AREA: Frailty and resilience

Prediction of adverse health outcomes by intrinsic capacity screening based on the Kihon Checklist

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Introduction: World Health Organization has proposed a new concept of "intrinsic capacity (IC)" to promote person-centered care for older adults in the primary care setting. We examined a predictive ability of adverse health outcomes (AHOs) by IC screening based on the Kihon Checklist (KCL) questionnaire and a self-report of sensory capacity (SC).

Methods: Participants were 293 patients aged 65 years and over who visited the Frailty Clinic and had medical records with comprehensive geriatric assessment at the time of the first visit and 1 year later. The cognition, locomotion, vitality, and psychological domains were assessed by the KCL questionnaire and SC by two questions on visual and hearing ability. Each IC was considered to be preserved if the reversed KCL score in each domain and the sensory score were above the cutoff. We investigated falls, deterioration of dependency, nursing home admission, emergency hospitalization, and death as AHOs for 1 year. Logistic regression analysis was used to analyze the ability of IC screening to predict AHOs.

Results: The mean age of participants was 77.7 years, with 67.6% women. The number of IC showed a significant positive correlation with higher functional activities of daily living and gait speed and a negative correlation with depressive mood. Of 293 patients, 131 had any of AHOs in 1 year. We found the number of reduced IC could significantly predict AHOs during 1-year follow-up with an odds ratio of 1.19.

Key conclusion: IC-screening based on the KCL significantly predicts incident AHOs.

Abstract # 660

AREA: Frailty and resilience

Physical frailty of institutionalized elderly patients - the impact of biomarkers

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Introduction: Aging is associated with the presence of frailty and chronic diseases, which causes a functional and cognitive decline, as well as a decrease of autonomy and the appearance of disability.

Methods: The purpose was to assess the impact of biomarkers on the functionality of frail elderly. The observational study included 50 institutionalized patients (77.72 ± 1.08 years). Questionnaires were used to collect data on frailty functionality tools and laboratory markers.

Results: Thus, mean values of 25-OH-Vitamin D correlated moderately with VES-13, $R = -0.29$; $p < 0.05$ and Groningen Frailty Index ($R = 0.29$; $p < 0.05$). Mean serum albumin values had direct correlations with Lawton score ($R = 0.41$; $p < 0.05$), with decreased muscle strength ($R = 0.49$), with fatigue ($R = -0.32$; $p < 0.05$), with reduced physical activity ($R = -0.40$), with reduced walking speed ($R = -0.29$), with SPPB ($R = 0.37$; $p < 0.05$) but also with the severity of the frailty syndrome CFS ($R = 0.42$; $p < 0.05$). The Dehydroepiandrosterone sulfate correlated moderately with decreased autonomy ($R = 0.28$; $p < 0.05$). At the same time, the mean serum values of Creatine kinase correlated with immobilization ($R = -0.30$; $p < 0.05$), with instrumental physical activity ($R = 0.44$; $p < 0.05$), with decreased autonomy ($R = 0.38$; $p < 0.05$), with fatigue ($R = -0.29$; $p < 0.05$), and with reduced walking speed ($R = -0.35$; $p < 0.05$).

Conclusion: The interrelationship between some biomarkers and the physical frailty of institutionalized elderly has been established.

Abstract # 661

AREA: Frailty and resilience

Frailty factors, geriatric syndromes and geriatric intervention in haemato-onco-geriatric patients

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Background: A comprehensive geriatric assessment provides an overview of the general health status of older individuals and identifies the level of frailty and the risk of geriatric impairments. In this retrospective study we wanted to evaluate the profile of the frail patient facing cancer disease.

Methods: For all patients admitted between August 2018 and February 2019 in our service of haemato-onco-geriatrics with a diagnosis of solid or liquid tumour, we performed the Comprehensive Geriatric Assessment (CGA) and inventoried geriatric syndromes as well as geriatric interventions implemented.

Results: Geriatric syndromes observed were poly-medication (90%), dehydration (28%), depression (26%), confusion (23%), urinary incontinence (21%), falls (19%), sensory disturbances (19%), dysphagia (15%), urinary retention (11%), pressure ulcers (10%) and

faecaloma (9%). 97% of patients had at least one geriatric syndrome. Based on both the CGA and highlighted frailties, 94.5% of patients benefited at least one geriatric intervention: nutritional support (80.2%), change in treatment (74.7%), physiotherapy (54.9%), social support (48.0%), psychotherapy (39.6%), cognitive recommendations (19.8%), logopedic intervention (19.8%).

Conclusion: Frailty evaluation is considered a core part of geriatric medicine, especially when associated with cancer pathology. Almost all haemato-oncology elderly patients had at least one geriatric syndrome and received at least one geriatric intervention. This highlights the value of geriatric management of elderly patients with malignant disease.

Abstract # 662

AREA: Frailty and resilience

Prevalence of frailty and its association with other geriatric syndromes: data of Russian epidemiological EVKALIPT study

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Background: Data on frailty prevalence in Russian population is very limited. EVKALIPT is the first large epidemiological study in Russia. It included over 4300 subjects, in whom comprehensive geriatric assessment (CGA) was performed.

Aim: To study prevalence of frailty and its association with other geriatric syndromes in Russian subjects aged 65 + years.

Methods: 4308 subjects (30% males) aged from 65 to 107 (mean 78 ± 8) years from 11 Russian region were examined. CGA was performed in 2 stages: questioning based on a specially designed questionnaire and physical examination. The Short Physical Performance Battery (SPPB) was used for frailty screening.

Results: Prevalence of frailty (SPPB ≤ 7 points) was 62%. Univariate regression analysis with age and sex adjustment showed that frailty was associated with cognitive impairment (OR 2.19; 95% CI 1.89–2.55), depression (OR 2.70; 95% CI 2.36–3.10), malnutrition (OR 3.81; 95% CI 2.56–5.66), falls in the past year (OR 1.28; 95% CI 1.11–1.48), urinary (OR 1.68; 95% CI 1.47–1.93) and fecal (OR 2.09; 95% CI 1.46–2.99) incontinence, dependence in basic (OR 3.08; 95% CI 2.68–3.54) and instrumental (OR 4.62; 95% CI 3.98–5.35) activities in daily life, sensory deficits (OR 1.78; 95% CI 1.44–2.20), chronic pain (OR 1.52; 95% CI 1.26–1.85), pressure ulcers (OR 3.05; 95% CI 1.69–5.50). Frailty was not associated with orthostatic hypotension.

Conclusions: In Russian subjects aged 65 + years, frailty prevalence was 62%. Frailty was associated with a 1.3–4.6 times increase in risk of other geriatric syndromes.

Abstract # 663

AREA: Frailty and resilience

Use of the Clinical Frailty Score (CFS) in patients admitted to the elderly medicine department of a large teaching hospital

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Introduction: Hospitalisation of frail patients is associated with poor outcomes [1]. Responding to the COVID-19 pandemic, The National Institute for Health and Care Excellence (NICE) recommends CFS calculation within 24 h for patients aged > 65 admitted to hospital, and discussion about escalation and resuscitation decisions with patients scoring ≥ 5 [2]. The British Geriatrics Society (BGS) emphasizes the importance of good communication between health-care professionals about frail patients to facilitate timely advance care planning [3]. This audit reviews use of CFS in patients admitted to our department.

Methods: Spot audit in July 2020 of 30 inpatient clinical notes to establish percentage of patients having CFS documented within 24 h, and percentage of frail patients (CFS ≥ 5) with up-to-date escalation/resuscitation plans. Accuracy of CFS determined by weighted kappa scoring following retrospective recalculation by, and agreement between, two geriatricians. Further data collection at 3 months determined percentage of newly identified frail patients having this communicated on their discharge summary.

Results: 83.33% of patients had CFS documented within 24 h. The majority of patients (83.33%) presented via ED, and were more likely to be scored here than patients presenting via other routes (84.00% vs. 40.00%). Weighted kappa score correlating ED and geriatrician scores was 0.64 (substantial agreement). 82.34% of frail patients without a pre-existing resuscitation decision and 47.62% of frail patients without a pre-existing in-hospital escalation plan had one documented during admission. 0% of newly identified frail patients had frailty mentioned on discharge paperwork.

Conclusion: The majority of patients had CFS done within 24 h. ED staff are well placed to screen newly admitted patients and do so with reasonable accuracy. Patients admitted via other routes are less likely to be scored. Identification of frailty does not always prompt discussion of escalation/resuscitation. Newly identified frailty is not communicated to primary care. This is an important area for improvement.

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Abstract # 664

AREA: Frailty and resilience

An exploration of healthcare professionals' perspectives of the medicines optimisation in older people [MOOP] service for frail older patients in the acute care setting: a qualitative study

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Introduction: A pharmacist-led Medicines Optimisation in Older People [MOOP] service was introduced to an acute 22-bed frailty ward in Northern Ireland in 2019, and demonstrated improved medication appropriateness and cost-savings [1]. We aimed to explore healthcare professionals' (HCPs) perspectives of this MOOP service.

Methods: This study employed qualitative semi-structured interviews conducted via telephone and the Microsoft Teams audio/videoconferencing platform. Participants were recruited from the multidisciplinary team in the frailty ward with experience of the MOOP service. The interview topic guide was developed by discussion among the research team, and piloted with a nurse and a doctor. All interviews were recorded and transcribed verbatim. Sample size was determined by data saturation and interviews were analysed using inductive thematic analysis.

Results: Five doctors, five nurses and two social workers were interviewed. Analysis revealed four main themes: (1) Complex patient population; (2) Impact of the service; (3) Key role of the pharmacist in the multidisciplinary team and (4) Resource requirements. Frail older people are a challenging patient group often with multiple co-morbidities and polypharmacy, susceptible to side-effects from medicines. Participants acknowledged pharmacists as the experts in medicines, who communicate effectively with patients and HCPs. The MOOP service standardised and optimised care and facilitated the discharge process, improved HCPs' knowledge and reduced their workloads, and increased patients' awareness about their medications. Permanent and recurring funding of the service would ensure continual delivery of optimal outcomes.

Conclusion: A pharmacist-led medicines optimisation service can streamline care provided to frail older patients in acute care and improve care transitions.

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Abstract # 665

AREA: Frailty and resilience

Frailty can be an important prognostic factor in elderly with cardiovascular disease

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Introduction: In Romania 56.7% of all deaths are due from cardiovascular diseases (CVD); the 2/3 of them are old persons over 75 years. Most prognostic cardiovascular risk models consider age, but do not take into account other factors, such as frailty, disability and cognition.

Methods: A cross-sectional study on 100 patients, median age is 72 ± 6 years, 35% men hospitalized in the Geriatrics Hospital "St. Luca" October–December 2020. Inclusion criteria was presence of chronic CVD and negative test for COVID-19. All patients were assessed frailty by Groningen Frailty Index (GFI) (0–15 points from which 0–4 points = robust and > 4 points = disability) and Systematic Coronary Risk Evaluation (SCORE). We analyzed the relationship between frailty degrees and SCORE risk factors.

Results: The distribution of frailty shows predominant frail patients (64%) since prefrail are 27% and robust are 9%. The prevalence of frailty is higher among women (almost double that in men). Distribution of SCORE CVD shows: 65%-low risk, 6%-moderate risk and 29%-high risk. The Pearson Correlation showed a correlation of frailty with high cardiovascular risk ($p = 0.05$). At two components of GFI the outcomes show to be significantly associated with high risk of CVD: for low physical performance ($p = 0.03$) and polypharmacy > 4 drugs ($p = 0.01$).

Conclusions: Although studies to date have provide inconsistent results regarding the relationship between the SCORE and frailty scale at the elderly, we need to consider the potential impact of their use as screening in clinical practice. Identification of patients at increased risk of frailty and a better understanding of the impact of this variable on CVD management may improve the quality of healthcare.

Abstract # 666

AREA: Frailty and resilience

Development of Hospital Rapid Geriatric Assessment Scale and evaluation its diagnostic value in frailty screening

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Background: the Short Physical Performance Battery (SPPB) is standard screening test for frailty evaluation, but it require certain conditions for performance that are not always available. More simple and quick evaluation instrument is in need for frailty screening at hospital admission. Purpose: to develop Hospital Rapid Geriatric Assessment Scale (HRGAS) and to evaluate its diagnostic value in frailty screening.

Methods: 245 inpatients (25% male) aged 60–95 (mean 73 ± 8) years were examined using our specially designed algorithm (HRGAS) that includes 9 items (age, body mass index, dynamometry, Mini-Cog test, short depression assessment, falls in the past year, mobility, self-feeding ability, urinary incontinence). The results were scored from 0 to 3 for age and from 0 to 2 for all other items. Minimum score sum is 0, maximum—19. Assessment time was approximately 5 min. As control SPPB was used for frailty screening. The HRGAS results were compared with SPPB.

Results: Based on SPPB, frailty rate was 44.1%, pre-frail—28.6%, robust—27.3%. HRGAS score ranged from 0 to 13 (median 4, IQR 2–6) and correlated to SPPB score ($r = -0.654$; $p < 0.001$). For frailty detection, ROC-analysis demonstrated area under the curve (AUC) for HRGAS 0.836 (95% CI 0.784–0.888), $p < 0.001$, cut-off value ≥ 6 , sensitivity 59.3%, specificity 92.7%, positive prognostic value (PPV) 86.5%, negative prognostic value (NPV) 74.3%. For robust detection, ROC-analysis revealed AUC for HRGAS 0.799 (95% CI 0.742–0.856), $p < 0.001$, cut-off value ≤ 2 , sensitivity 50.8%, specificity 83.7%, PPV 54.0%, NPV 81.9%.

Conclusion: score 0–2 by HRGAS indicate robust, score 3–5—pre-frail and score ≥ 6 —frail patients.

Abstract # 667**AREA: Frailty and resilience****Comparison of Physical Activity Derived from the LASA Physical Activity Questionnaire (LAPAQ) and accelerometers in older adults from the Hertfordshire cohort study**

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Introduction: Physical activity is recognized as an important influence on musculoskeletal health and functional ability in older adults. Few studies have examined the validity of physical activity derived from questionnaires, in comparison with objective measures, in older adults over 80 years of age. The aim of this study was to assess the validity of the Longitudinal Aging Study Amsterdam Physical Activity Questionnaire (LAPAQ), a validated questionnaire for assessing physical activity in older people, against an accelerometer, in a sample of community-dwelling older adults all ≥ 80 years old.

Methods: Physical activity in milligravity (mg) units was measured over 7 days using GENEActiv wrist-worn accelerometers among 57 men and 40 women (aged 80–88 years) from the Hertfordshire Cohort Study. At home visits, self-reported physical activity (mins/week) was ascertained using the LAPAQ. Pearson correlations between self-reported and objective physical activity measures were examined.

Results: Median (lower quartile, upper quartile) physical activity levels were as follows: accelerometer-derived [men 25.5 (19.2, 28.4) mg, women 27.1 (21.9, 32.2) mg], self-reported [men 98.6 (60.0, 139.3) mins/day, women 153.2 (124.2, 228.4) mins/day]. Pearson correlations between these physical activity measures were 0.53 ($p < 0.001$) among men and 0.46 ($p = 0.003$) among women.

Conclusions: The LAPAQ was moderately correlated with the objective physical activity measure, suggesting that it is a valid method for assessing physical activity in later life, including at older ages.

Abstract # 668**AREA: Frailty and resilience****The effect of exercise on muscle strength, mobility and balance in prefrail older adults: a systematic review and meta-analysis**

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Introduction: Frailty is one of the most problematic expressions of a rapidly ageing population. Prefrailty, the precursor of frailty, is characterised by one or two of the following symptoms: unintentional weight loss, weakness, exhaustion, slow walking speed and low physical activity. Despite the higher prevalence of prefrailty in comparison to frailty, so far, no systematic review has clearly identified the effects of exercise on physical function and frailty status

exclusively in prefrail older adults. Therefore, the aim of this study was to determine the effect of exercise on muscle strength, mobility and balance and the possibility to reverse or prevent frailty transition. **Methods:** Pubmed, Web of Science and Cochrane Library were searched for intervention studies, before April 2021, examining the effect of exercise on muscle strength, mobility and balance in prefrail older adults (> 65 years old). Mean differences and odds ratios were calculated using a random effects model, with a significance level of $p < 0.05$ (95% confidence interval).

Results: Nineteen studies were retrieved after full-text screening (1289 prefrail participants). Meta-analysis showed significant improvements in grip strength, knee extensor strength, Timed Chair Stand Test, Timed Up and Go Test and preferred walking velocity after the exercise intervention in prefrail older adults. No significant changes were observed for muscle power and balance parameters. Prefrail older adults undergoing the intervention were 3.49 times more likely to become robust as compared to prefrail controls.

Key conclusions: Exercise improves muscle strength and mobility in prefrail older adults and can prevent the transfer to frailty.

Abstract # 669**AREA: Frailty and resilience****A cross-sectional questionnaire study to explore community pharmacists' knowledge of frailty and role in management of frail older patients in primary care**

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Introduction: Early identification and proactive management of frailty in primary care may improve patient outcomes [1]. This study aimed to explore community pharmacists' (CPs') knowledge and perceptions about frailty and experiences with frail older patients.

Methods: A questionnaire was mailed on two occasions (December 2020/January 2021) to all community pharmacies ($n = 528$) in Northern Ireland. The questionnaire comprised four sections encompassing CPs': demographic characteristics; knowledge of frailty; contact with and management of frail older patients. Responses were coded and analysed descriptively using SPSS Statistics (v22).

Results: The response rate was 30% (157/528). Characteristics commonly perceived by CPs to be related to frailty were 'declining physical performance' (99%, $n = 155$) and 'falls' (86%, $n = 134$), whereas fewer respondents (61%, $n = 95$) associated 'polypharmacy' with frailty. Most respondents (96%, $n = 150$) agreed that it is important for CPs to know a patient's frailty status, but only 17% ($n = 26$) were conducting frailty assessments. Most CPs (80%, $n = 126$) had daily contact with frail older patients. Nearly all respondents (97%, $n = 152$) agreed with the statement 'community pharmacists play a key part in medicines optimisation for frail older patients'. CPs frequently dealt with issues related to prescription acquisition/delivery (89%, $n = 139$), adherence (80%, $n = 125$) and provision of advice/counselling (69%, $n = 108$).

Key conclusions: This study highlights CPs' frequent contact with frail older patients and commonly encountered medicines-related issues. Yet few CPs assessed frailty and most viewed frailty from a physical lens only. Future research should focus on development and evaluation of CP training resources to improve their knowledge about frailty and its assessment.

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Abstract # 670

AREA: Frailty and resilience

Usability and acceptance of the smart self-assessment “fatigability in outcomes to monitor resilience targets in older persons” (FORTO)

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Introduction: We developed a smart (self-)assessment system “fatigability in outcomes to monitor resilience targets in older persons” (FORTO), consisting of a rubber bulb that is wirelessly connected to a smartphone-based application. The aim was to evaluate usability and acceptance of FORTO when older persons use it themselves at home to measure muscle fatigability.

Methods: Thirty community-dwelling persons aged 83–95 years performed self-tests of muscle fatigability ((fatigue resistance = time until grip strength decreased to 50% of its maximum during sustained maximal effort) and grip work (= area under the strength-time curve)) using FORTO. After an individual information session explaining how to use FORTO, participants performed the self-test daily during 1 week. Participants completed a questionnaire based on the Unified Theory of Acceptance and Use of Technology.

Results: Only two participants were unable to perform all tests due to inexperience with a smartphone. Although 48% of the participants did not consider themselves experienced in using a smartphone, almost 70% experienced FORTO easy in use. 55% of the participants expected a low effort, respectively 79% and 83% believed that FORTO will be useful and will provide better care for patients.

Conclusion: In general, participants felt confident using FORTO, which was experienced as an easy to use system. Moreover, they found the different functions well-integrated without contradictions in

the system. Participants were convinced that most older people would be able to get rapidly acquainted with using FORTO.

Abstract # 671

AREA: Frailty and resilience

A priori acceptability of a multimodal system for the early detection of frailty in older adults

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Introduction: Fried's phenotypic frailty would affect 4 out of 5 people over the age of 85 in France. The ACCORDS project (Combining Connected Functionalities for the Acquisition of Health Data aimed towards a Multimodal Approach) aims to develop a multimodal solution for the early detection of frailty of older adults living at home. This solution includes a weigh scale, a blood pressure meter, an actimeter, a connected activity tracker and a tablet with a health data self-monitoring application. Volunteers are offered regular health monitoring with 10 home visits over a maximum of 2 years, during which clinical and paraclinical data from this set of connected sensors are collected. One of the recurring difficulties faced in previous experiments on health issues detection is acceptability, from which the concrete use of the proposed solution relies on.

Methods: We present here the quantitative part of the a priori acceptability study of the ACCORDS multimodal device. The inclusion criteria in the cohort are: age ≥ 80 years, living at one's own home or in a senior citizen residence, assessed as being “non-frail” or “pre-frail” at inclusion. A priori acceptability is assessed through self-questionnaires comprising 46 items, exploring 8 themes of acceptability, evaluated by a 7-point Likert scale, associated with an overall score and a rate of recommendation concerning this device before its first use.

Results: As of 21st May 2021, 34 volunteers were included (24 females, 10 males, mean age 85.6 (± 4.0) years), 21 lived at their own home and 13 in a senior citizen residence. According to Fried's criteria, 20 volunteers were classified as “non-frail” and 14 as “pre-frail”. The average scores obtained for the different themes will be detailed. The volunteers are not very familiar with information and communication technologies (ICTs). Overall, a priori attitudes, a priori usability, a priori comfort of use and the influence of friends and family in initiating health monitoring using ICTs were evaluated in an average to a quite good way, whereas a priori usefulness of the multimodal system, a priori intentions of use, the overall score and the rate of recommendation of the device before its first use were clearly in favor of the device.

Conclusion: We showed that intentions to use the device are positive, despite an a priori usability of the device evaluated as rather average, probably due to the important number of connected sensors (in this case 5) brought to the person at the same time during the first home visit. Those results point a need for significant ease of use and almost-perfect functioning of this connected system for good acceptability.

Keywords: Frailty, acceptability, information and communication technologies, e-health, prevention.

Abstract # 672**AREA: Frailty and resilience****How missing responses bias results: comparisons of responders, dropouts and deceased in the longitudinal urban cohort ageing study (LUCAS) covering 12 years**

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Introduction: Using data from the longitudinal urban cohort ageing study (LUCAS) we investigated how missing responses bias results.

Methods: For each member of the LUCAS cohort we have repeated responses at 2 years' intervals in waves 2007, 2009, 2011, 2013, 2015, 2017 and 2019. We statistically compared the responses of persons at year x, grouped by response status at year x + 2: responders vs. dropouts vs. persons deceased between years x and x + 2.

Results: LUCAS comprised n = 2012 persons in 2007, mean age 76.2 years, 63.1% women; in 2017 n = 776. For each pair of years, we found consistent differences between the three groups; e.g., mean age in years in wave 2017 grouped by status 2019: responders 82.2, dropouts 83.8, deceased 85.8; e.g., functional ability measured with the LUCAS functional ability index (FAI) [1]: FAI in 2017 by status responder (n = 605) in 2019: Robust (50.4%), post robust (12.4%), preFrail (7.4%), Frail (29.8%); FAI in 2017 by dropouts (n = 93) in 2019: robust (25.8%), post robust (9.7%), preFrail (9.7%), Frail (54.8%); FAI in 2017 by deceased (n = 78) in 2019: Robust (16.7%), postRobust (9.0%), preFrail (9.0%), Frail (65.4%). Such significant, systematic differences were found in all LUCAS waves for age, FAI status and additional sociodemographic and health characteristics.

Key conclusions: We have shown that statistics based solely on responders are biased. Missing responses deserve special attention. Dropouts e.g. present important information when retrospectively assessing their study leave in longitudinal studies. When interpreting any questionnaire data, these effects need to be considered and assessed.

References:

1. Dapp et al. BMC-Geriatrics 2014; 14:141.

Abstract # 673**AREA: Frailty and resilience****Oral health in elderly people aged 80 years or more**

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Introduction: Although Brazil has one of the most fast aging process, very little attention is driven to oral health in longevity elderly. This study aims to study the outpatient's oral health aged 80 years and plus, who are not frail.

Methods: Pilot cross-sectional study with a convenience-based sample. Geriatric assessment, nutritional, oral health self-perception and the Oral health impact profile (OHIP) were performed. Patients were stratification in fit and at risk. At risk group were composed by sarcopenic and pre-frail. Statistical analysis performed in the SPSS 19.0 program.

Results: 18 elderlies 87.3 ± 5.7 years (mean $\pm$ SD), 61.1% female and 27.8% ex-smokers were studied. The mean value in OHIP was 1.5 (0.0–8.0) that was not related to sex, functionality, alcohol consumption and smoking. With age, OHIP showed a tendency to negative correlation (-0.447 , $p = 0.063$). Edentulism was found in 76.5% of the sample studied and was associated with smoking ($p = 0.031$). No elderly had adequate occlusion and 94.4% of the elderly used dental prostheses. The risk of frailty was associated with the non-use of prosthesis or the use of prosthesis only in the upper arch ($p = 0.038$).

Conclusions: The oral health of the elderly studied is precarious, not coincident with low OHIP, suggesting a high resilience of the elderly relative to oral health, which increases with age. Smoking is a risk factor for edentulism and the latter as a possible risk factor for frailty.

Abstract # 674**AREA: Frailty and resilience****The inter-relationship between depressed mood, functional decline and disability over a 10-year observational period within the longitudinal urban cohort ageing study (LUCAS)**

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Introduction: The WHO defines 'healthy ageing' as 'the process of developing and maintaining the functional ability'. Late-life depression and frailty compromise wellbeing and independence of older people. To date, there exists little research on the interaction of the dynamic processes of frailty and depression and only a few studies were longitudinal. Conclusions about the direction of effects remained uncertain.

Methods: Data were obtained from each of the last six biyearly waves (2007–2017) of the Longitudinal Urban Cohort Ageing Study (LUCAS) in Hamburg, Germany, a prospective observational cohort study of manifold aspects of ageing. Screening of predictor and event variables: depressed mood: one question from the 5-item Mental Health Inventory Screening Test; frailty: LUCAS Functional Ability Index, status 'frail'; disability: one question on need for help with basic activities of daily living. Kaplan–Meier curves and Cox's proportional hazards regression were used for time-to-event analyses with shifting baseline.

Results: Sample size in 2007 was 2012, average age 76.2 years; ± 6.5 .

Main results: (1)depression significantly increased the hazard of subsequent frailty (HR = 1.581; 95% CI 1.257–1.988; $p < 0.001$); (2) frailty significantly increased the hazard of subsequent depression (HR = 2.324; 95% CI 1.703–3.172; $p < 0.001$); (3)depression significantly increased the hazard of subsequent disability (HR = 2.589; 95% CI 1.885–3.557; $p < 0.001$) and (4)disability did not significantly increase the hazard of subsequent depression (HR = 1.540; 95% CI 0.917–2.579; $p = 0.102$).

Key conclusions: Our results suggest an interdependence of the processes of depression and frailty/disability rather than unidirectional dependencies. These observable processes may be representative of underlying unobservable profound life changes. Obviously, there is a need for early screening to initiate appropriate interventions.

Abstract # 675

AREA: Frailty and resilience

Being actively engaged in life in old age – determinants, temporal trends and prognostic value

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Introduction: In old age BAEL (being actively engaged in life) is an important marker for successful ageing. The aim of this study is to explore (1) the determinants of BAEL as defined by “having plans for the future”, (2) changes in BAEL over three decades, (3) and its prognostic value on mortality.

Methods: We studied Helsinki Aging Study cross-sectional cohorts of 75–96-year-old home-dwellers in 1989, 1999, 2009 and 2019. “Do you have plans for the future” (yes/no) was used as a surrogate for BAEL. Participants were asked about demographics, health, physical functioning, happiness and other possible determinants for BAEL.

Results: The proportion of those with BAEL has increased significantly over three decades from 29 to 44% (p for linearity < 0.001). Those with BAEL were significantly different from those without BAEL in most demographic and health variables as well as attitudes towards life. In stepwise logistic model determinants of BAEL were male sex, younger age, better income, happiness, having hobbies, meeting friends, and being satisfied with close relationships, whereas being widowed and poor physical functioning decreased odds of BAEL. Comorbidities, self-rated health, mobility, sight or hearing did not predict BAEL. BAEL predicted lower 5-year mortality even adjusted for age, sex, income, functioning, and comorbidities (RR 0.71, 95% CI 0.56–0.90).

Conclusions: Being actively engaged in life is important predictor of survival beyond diseases or physical functioning and it is highly associated with wellbeing in old age. Active agency of older people should be promoted.

Abstract # 676

AREA: Frailty and resilience

Frailty prevalence and its association with readmission among older medical inpatients discharged from a Danish Regional Hospital - a cohort study

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Introduction: Frailty prevalence among medical inpatients across medical specialties is widely unknown. The objectives were to establish frailty prevalence and associations with hospital readmission and mortality.

Methods: A secondary analysis of frailty prevalence and its distribution across one emergency department and four subspecialised medical wards (cardiology; respiratory medicine; endocrinology/gastroenterology and geriatric medicine) was made on an existing cohort of 1190 older (75+) patients. Included patients were frailty rated using the record-based Multidimensional Prognostic Index close to hospital discharge. Inter-ward frailty grade comparisons were made using the Kruskal–Wallis ANOVA and Dunn's test. Crude and age-, frailty- and LOS-adjusted Hazard Ratios (HR) for 30-day readmission and 90-day mortality were calculated in a Cox regression model, using geriatric medicine as reference.

Results: The highest prevalence of severely frail patients was 54% in geriatric medicine and the lowest prevalence was 17% in cardiology. Inter-ward frailty grade distribution differed significantly, except from ED versus cardiology ($p = 0.30$) and respiratory medicine versus endocrinology/gastroenterology ($p = 0.16$). Adjusted HRs for readmission were: respiratory medicine: 1.9 (1.2–3.0), $p = 0.004$; ED: 1.9 (1.2–2.9), $p = 0.005$; cardiology: 1.4 (0.9–2.4), $p = 0.14$; endocrinology/gastroenterology: 1.3 (0.8–2.1), $p = 0.40$. There was no significant difference in adjusted 90-day mortality across wards.

Conclusions: Frailty is a prevalent condition among older medical inpatients, and is unevenly distributed across ED and subspecialised wards. Despite highest frailty prevalence in geriatric medicine, the patients discharged from the geriatric ward had the lowest readmission risk.

Abstract # 677

AREA: Frailty and resilience

Frailty measurement: it's a one time thing

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Aim: To determine if the trajectory of frailty over 1 year using the Rockwood Clinical Frailty Scale (CFS) [1] in patients presenting to the age-related ambulatory care hub was predictive of adverse outcomes including mortality, institutionalisation, and acute hospital admission.

Methods: This was a retrospective observational study. CFS from patient's first and last attendance at the age-related ambulatory care hub in 2018 was collected from the hospital information systems.

Results: 255 patients were included. 54% ($n = 134$) were female. The median age of patients was 78 (73–83). The median CFS at baseline was 5 (IQR 4–6) and the final visit was 5 (IQR 3–6). 24% ($n = 61$) were classified as robust (CFS1–3), 21% ($n = 53$) as pre-frail (CFS 4) and 55% ($n = 141$) as frail (CFS ≥ 5). A baseline CFS ≥ 5 (frail) was associated with mortality (27% [$n = 38$]), acute hospitalisation (34% [$n = 48$]) and institutionalisation (10.6% [$n = 15$]). In line with international research. Serial CFS measurement did not predict patient outcomes for nursing home admission, mortality and institutionalisation.

Conclusion: Point measurement of frailty using the CFS predicts mortality, acute hospitalisation, and institutionalisation. Measuring the trajectory of frailty using the CFS over 1 year does not predict adverse outcomes. This may be influenced by several external factors. More studies are required to investigate this further.

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Abstract # 678**AREA: Frailty and resilience****Circulating biomarkers characterizing physical frailty: CRP, hemoglobin, albumin, 25OHD and free testosterone as best biomarkers. Results of a meta-analysis**

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Introduction: During aging, individuals can be classified as being in one of 3 different states: robust, frail or dependent. Frailty is described as reversible, so early detection offers the potential of returning the subject to a robust status. There are multiple clinical frailty scales but no gold standard and frailty is not systematically assessed in clinicians' daily practice. Reliable biomarkers of frailty are lacking, however, while their identification and systematic use would make this simple scale a useful clinical tool.

Objective: To conduct a review of the literature concerning the biomarkers associated with frailty and to compare in a meta-analysis the plasmatic values of each biomarker in the frail with the robust group.

Results: 503 articles were identified on PubMed, 467 on Scopus and 369 on Web Of Science. 67 articles were included, collecting a total of 32,934 robust subjects and 6864 frail subjects. C-reactive protein (CRP) (Standardized Mean Difference (SMD): 0.49 CI 95% [0.37–0.61]) was significantly higher in the frail group whereas hemoglobin (SMD: – 0.67 [–0.90; – 0.44]), albumin (SMD: – 0.62 [–0.84; – 0.41]), 25-hydroxyvitamin D (25OHD) (SMD: – 0.43 [–0.64; – 0.21]) and, in men, free testosterone (SMD: – 0.77 [–1.05; – 0.49]) were significantly lower in the frail group.

Conclusion: We found 5 biomarkers that were associated with frailty (CRP, hemoglobin, albumin, 25OHD and free testosterone in men) belonging to multiple physiological systems. Further cohort studies are needed to verify their ability to screen for frailty.

Abstract # 679**AREA: Frailty and resilience****Validation of Hospital Rapid Geriatric Assessment Scale**

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Background: we had developed a scale for simple and quick geriatric assessment—Hospital Rapid Geriatric Assessment Scale (HRGAS)—

and determined its diagnostic value for frailty screening in patients ≥ 60 years old.

Purpose: To validate HRGAS in control group.

Methods: 325 inpatients (19% male) aged 60–95 (mean 73 ± 8) years were examined using both The Short Physical Performance Battery (SPPB) and HRGAS that includes 9 items (age, body mass index, dynamometry, Mini-Cog test, short depression assessment, falls in the past year, mobility, self-feeding ability, urinary incontinence). Every item of HRGAS was scored from 0 to 2, and age that was scored from 0 to 3. Minimum possible HRGAS score is 0, maximum—19. HRGAS was compared with SPPB results.

Results: Based on SPPB, 41.2% of patients were frail (≤ 7 points), 24.6%—pre-frail (8–9 points), 34.2% robust (10–12 points). HRGAS score ranged from 0 to 14 (median 4, IQR 2–6) and correlated to SPPB result ($r = -0.606$; $p < 0.001$). For frail patients detection, ROC-analysis demonstrated area under the curve (AUC) for HRGAS 0.803 (95% CI 0.755–0.851), $p < 0.001$, sensitivity 56%, specificity 86.4%, positive prognostic value (PPV) 74.3%, negative prognostic value (NPV) 73.7%. For robust patients detection, ROC-analysis revealed AUC for HRGAS 0.776 (95% CI 0.723–0.828), $p < 0.001$, sensitivity 58.6%, specificity 83.6%, PPV 65%, NPV 79.6%.

Conclusion: HRGAS validation proved very good quality of our model for frail patients detection and good quality for robust patients detection.

Abstract # 680**AREA: Frailty and resilience****The predictive validity of the Lab-Based Frailty Index on clinical outcomes in geriatric inpatients**

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Background: A limitation of a clinical frailty index (FI) is that it requires evaluation of a long list of clinical deficits. Deficits based on routinely taken laboratory tests can overcome this if the resulting FI has adequate validity. We examined the construct and predictive validity of a lab-based FI in geriatric inpatients against a clinical FI, hospital length of stay, discharge destination, and survival.

Methods: In this clinical cohort study, hospitalized geriatric patients ($n = 103$) admitted to the Radboud University Medical Center in The Netherlands, aged ≥ 65 years, were included. The lab-based FI was compiled using routine lab data taken at our ward and contained liver, renal, hematological, electrolyte, inflammatory, coagulation, and thyroid parameters. The mean follow-up time was 17.2 months ($\pm$ SD 11.3).

Results: The average age was 84 ($\pm$ SD 7) years old, 58% were female. The mean clinical FI was 0.35 ($\pm$ SD 0.11) and the mean lab-based FI 0.41 ($\pm$ SD 0.16). Statistical significant correlations were found between the lab-based FI and clinical FI (0.24, $p = 0.02$) and length of stay (0.24, $p = 0.02$). The tertile with the highest lab-based FI had the shortest survival time, although this group did not statistically significantly differ from the other tertiles (log-rank: $p = 0.3$ and 0.07 respectively against medium and lowest tertile). A multi-variable negative binomial regression showed that patients with a higher lab-based FI had a longer hospital stay (OR = 1.13; $p = 0.02$). Lab-based FI was not associated with discharge destination.

Conclusion: We established the construct and predictive validity of a lab-based FI in geriatric inpatients.

Abstract # 681

AREA: Frailty and resilience

Community frailty care in a pandemic: expanding the rapid access frailty team (RAFT) during COVID-19

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Introduction: During the global COVID-19 pandemic older frail adults in the United Kingdom experienced high mortality as result of COVID-19. (1) Additionally social isolation resulting from shielding, cancellation of services and advice to avoid hospitals impaired management of chronic conditions in this vulnerable group. (2) In reaction to this, the community frailty service RAFT, operating in East London sought to increase capacity for providing home visits without compromising quality of care.

Methods: Using iterative quality improvement cycles the team introduced multiple interventions: a single point of access for referrals, electronic documentation templates, a virtual team diary for real-time appointment allocation and geographic organisation of visits. The primary outcome measure was weekly number of home visits. A secondary metric to assess care quality was 7-day unplanned admission rate following home visits. Data was collected from November 2020 to March 2021.

Results: The interventions allowed RAFT to increase weekly home visit capacity 300% (μ 4–12). The quality of care delivered by RAFT also improved over this period, with a reduction in 7-day unplanned admissions from 15 to 6%.

Conclusions: Changes made to the Rapid Access Frailty team in light of increased demand during the COVID-19 pandemic facilitated an increase in service capacity and a consequent decrease in unplanned admission rates. Given the vulnerability of older adults to seasonal illnesses and future COVID-19 infection surges, frailty care should remain responsive to both population and environment.

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Abstract # 682

AREA: Frailty and resilience

Frailty and the risk of dementia: is the association explained by shared environmental and genetic factors?

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Introduction: Frailty has been identified as a risk factor for cognitive impairment and dementia. However, it is not known whether familial factors, such as genetics and shared environmental factors underlie

this association. Twin studies offer the possibility to control for such familial factors.

Methods: We used Rockwood frailty index (FI) in 41,550 participants of the Screening Across the Lifespan Twin (SALT) study (aged 41–97 years at baseline) to analyze the role of familial factors in the association between frailty and incident dementia. Cox regression was used to assess the population-level estimate between the FI and dementia and a within-pair analysis was used to assess the effect of the familial effects.

Results: 3183 individuals were diagnosed with dementia during a 19-year follow-up. At the population level, a 10% increase in the FI was associated with an increased risk of dementia (hazard ratio [HR] 1.17 (95% confidence interval [CI] 1.13, 1.23) when adjusting for age, sex, education and tobacco use. The associations were not attenuated when adjusted for APOE ϵ 4 carrier status or considering the competing risk of death. After adjusting for familial effects, we found no evidence for significant attenuation of the effect between frailty and dementia. The risk conferred by higher FI on dementia was constant after age 50 until very old age.

Key conclusions: Higher level of frailty is predictive of dementia and the association is independent of familial factors. Better mitigation of frailty might thus provide a strategy to prevent or delay dementia.

Abstract # 683

AREA: Frailty and resilience

Disentangling the relationship between frailty and intrinsic capacity (IC): a cluster analysis

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Introduction: Frailty and IC are distinct but interrelated constructs. Uncertainty remains regarding how they are related and interact to influence health outcomes. We aim to understand the relationship between frailty and IC by identifying subgroups based on frailty criteria and IC domains and studying 1-year outcomes.

Methods: We studied 200 independent community-dwelling older adults (mean age 67.9 ± 7.9 years). Frailty was defined by modified Fried criteria. Scores (range: 0–2) were assigned to individual IC domains (cognition, psychological, locomotion, and vitality) to yield a total IC score of 8. To identify subgroups, two-step cluster analysis was performed with age, frailty and IC domains. Cluster associations with 1-year outcomes (frailty, grip strength, Modified Barthel Index (MBI) and EuroQol (EQ)-5D)) were examined using multiple linear regression adjusted for age, gender and education.

Results: Three distinct clusters were identified: Cluster 1 (C1): High IC/Robust (37%); Cluster 2 (C2): Intermediate IC/Prefrail (36.5%); Cluster 3 (C3): Low IC/Prefrail-Frail (26.5%). Comparing between clusters, IC domains, cognition, depressive symptoms, nutrition, strength and physical performance were least impaired in C1, intermediate in C2 and most impaired in C3. At 1-year, proportion transitioning to frailty or remaining frail was highest in C3 compared to C2 and C1 (39% vs 6.9% vs 2.8%, $P < 0.001$). Compared to C1, C3 experienced greatest declines in grip strength ($b = -4.1$, $P < 0.001$), MBI ($b = -1.24$, $P = 0.045$) and EQ-5D ($b = -0.053$, $P = 0.005$), with C2 intermediate between C1 and C3.

Conclusions: IC is complementary to frailty measures through better risk-profiling of 1-year outcomes amongst pre-frail individuals into intermediate and high-risk groups. The intermediate group merits follow-up to ascertain longer-term prognosis.

Abstract # 684**AREA: Frailty and resilience****Prevalence of multidimensional frailty in older people in different settings: a systematic review and meta-analysis**

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Background: Frailty is a common condition in older people. The epidemiological data available, however, are mainly based on the physical frailty phenotype. Increasing literature has reported the importance of defining frailty using a multidimensional approach, such as the multidimensional prognostic index (MPI). Given this background, we aimed to investigate the prevalence of frailty and pre-frailty, using a multidimensional definition, in older people.

Methods: We searched several databases until 10th May 2021 for studies reporting the prevalence of frailty according to MPI values. MPI was categorized, where possible, in < 0.33 (robustness), $0.33–0.66$ (pre-frailty) and > 0.66 (frailty) or using a RECPAM approach. A meta-analysis of the prevalence, with the correspondent 95% confidence intervals (CIs) of pre-frailty and frailty was performed stratified by setting (community, hospital, outpatients, and inpatients).

Results: Among 177 papers initially screened, we included 53 studies for a total of 53,712 older people. The mean age was 79.4 years, with a slight prevalence of females (55.2%). The overall prevalence of frailty (MPI-3) was 24.8% (95% CI 20.5–29.2), being higher in hospital setting (28.4%) and lower in nursing home setting (11.4%). The prevalence of pre-frailty (MPI-2) was 37.4% (95% CI 33.5–41.2), being higher in the nursing home setting (57.7%) and lower in community (31.8%).

Conclusion: Frailty and pre-frailty, according to a multidimensional definition are common in older people affecting, respectively, one person over four and one over three. Our work further strengthens the importance of screening frailty in older people using a multidimensional approach.

Abstract # 685**AREA: Frailty and resilience****A priori acceptability of a multimodal system for the early detection of frailty in older adults**

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Introduction: Fried's phenotypic frailty would affect 4 out of 5 people over the age of 85 in France. The ACCORDS project (Combining Connected Functionalities for the Acquisition of Health Data aimed towards a Multimodal Approach) aims to develop a multimodal solution for the early detection of frailty of older adults living at home. This solution includes a weigh scale, a blood pressure meter, an actimeter, a connected activity tracker and a tablet with a health data self-monitoring application. Volunteers are offered regular health monitoring with 10 home visits over a maximum of 2 years, during which clinical and paraclinical data from this set of connected sensors

are collected. One of the recurring difficulties faced in previous experiments on health issues detection is acceptability, from which the concrete use of the proposed solution relies on.

Methods: We present here the quantitative part of the a priori acceptability study of the ACCORDS multimodal device. The inclusion criteria in the cohort are: age ≥ 80 years, living at one's own home or in a senior citizen residence, assessed as being "non-frail" or "pre-frail" at inclusion. A priori acceptability is assessed through self-questionnaires comprising 46 items, exploring 8 themes of acceptability, evaluated by a 7-point Likert scale, associated with an overall score and a rate of recommendation concerning this device before its first use.

Results: As of 21st May 2021, 34 volunteers were included (24 females, 10 males, mean age $85.6 (\pm 4.0)$ years), 21 lived at their own home and 13 in a senior citizen residence. According to Fried's criteria, 20 volunteers were classified as "non-frail" and 14 as "pre-frail". The average scores obtained for the different themes will be detailed. The volunteers are not very familiar with information and communication technologies (ICTs). Overall, a priori attitudes, a priori usability, a priori comfort of use and the influence of friends and family in initiating health monitoring using ICTs were evaluated in an average to a quite good way, whereas a priori usefulness of the multimodal system, a priori intentions of use, the overall score and the rate of recommendation of the device before its first use were clearly in favor of the device.

Conclusion: We showed that intentions to use the device are positive, despite an a priori usability of the device evaluated as rather average, probably due to the important number of connected sensors (in this case 5) brought to the person at the same time during the first home visit. Those results point a need for significant ease of use and almost-perfect functioning of this connected system for good acceptability.

Abstract # 686**AREA: Frailty and resilience****Is resilience prior to the coronavirus pandemic related to changes in frailty status in older adults during the coronavirus pandemic? Results from the Hanze Health and Ageing Study**

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Introduction: Resilience is expected to be a protective factor for frailty. We aimed to investigate if resilience is associated with change in frailty status in community-dwelling persons aged > 55 years during the second wave (November 2020) of the Corona pandemic (CP).

Methods: Participants (≥ 55 years) were recruited from the Hanze Health and Ageing Study, a longitudinal cohort study in the Northern Netherlands. Frailty was assessed by the Groningen Frailty Indicator (GFI) before CP (from 2016 to 2019) and during the CP ($\text{GFI} \geq 4$). Resilience was assessed by the Groningen Ageing Resilience Inventory (GARI), before CP. Univariate and multivariate logistic regression analyses were used to assess the association between resilience and change in frailty status (difference between both GFI measurements), adjusting for gender, age, cohabitation, education level, body mass index (BMI), comorbidities (Charlson comorbidity index), physical performance (SPPB), cognitive function (QMCI-D), and sleep quality (PSQI-D). Significance was set at $p < 0.05$.

Results: Eighty adults (65 ± 6.4 years, 62% women, 22% living alone, 68% higher educated) were included in the analysis. Frailty was 13.8% before CP and 15.1% during CP. While GFI scores increased during CP ($p = 0.002$), prevalence of frailty did not ($p = 0.146$). Mean GFI score increased 0.5 points ($p = 0.002$). Resilience before CP was not associated with change in GFI score in the univariate and multivariate analysis ($p = 0.783$ and $p = 0.932$ respectively).

Conclusion: While prevalence of frailty did not increase during the second wave of the CP, frailty status deteriorated in community-dwelling persons. However, this deterioration was not associated with low resilience.

Abstract # 687

AREA: Frailty and resilience

A periodic medication review in frail older people from a community with chronic kidney disease

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Introduction: Chronic kidney disease (CKD) is associated with polypharmacy and adverse drug events [1]. A periodic medication review (MR) in older people with CKD leads to optimize drug use.

Objectives: Describing baseline situation, frailty, polypharmacy, inappropriate prescription (IP), calculate therapeutical complexity and anticholinergic/sedative burden of patients with CKD.

Methodology: Prospective, descriptive, observational study performed from June 2019 to October 2020 on patients ≥ 65 years with CKD (creatinine equation) and multimorbidity who lived in the community. Clinical and pharmacological data were assessed. The degree of frailty was analysed by Frail-VIG index ($\text{IF-VIG} < 0.20$ no frailty, $0.20\text{--}0.35$ mild, $0.36\text{--}0.50$ moderate, $\text{IF} > 0.50$ severe frailty) [2]. It was determined moderate (5–9 medications) and excessive polypharmacy (≥ 10). Therapeutical complexity (with MRCI) and anticholinergic and/or sedative burden (using DBI) were also assessed. Finally, a MR was carried out through the application of the Patient-Centred Prescription (PCP) model [3].

Results: 186 patients with CKD (mean age 87.71 (SD 6.61); 43.5% female). Up to 54.3% had ≥ 3 geriatric syndromes. 66.1% presented moderate-severe frailty and mean Frail-VIG index was 0.38 (SD 0.13). Mean drug use per patient was 8.44 medications (SD 3.9). 48.4% of patients had moderate polypharmacy and 36% excessive. ≥ 2 IP were detected in 78.5% of patients. 14% of patients presented high DBI (≥ 2) and 29.6% had a high MRCI (≥ 40).

Conclusions: Patients ≥ 65 years with CKD who lived in a community present a relevant degree of frailty. Up to 84.4% have polypharmacy. PCP model identifies a high proportion of patients with ≥ 2 IP.

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Abstract # 688

AREA: Frailty and resilience

Prevention for more participation in old age – introducing the PromeTheus-study

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Background: Everyday life participation is dependent on physical functions which are negatively influenced by physiological aging processes. The loss of several functional abilities (e.g. walking, stair climbing) is usually preceded by a state of (pre)frailty with gradual deterioration of functionality and an increased vulnerability to stressors and at the same time associated with a need for increased homecare or institutionalization. The need for a timely, appropriate and sustainable intervention is urgent. We will present the study design of a multifactorial, interdisciplinary intervention program (PromeTheus) intended to improve functionality and participation to maintain independence in (pre-)frail community-dwelling older adults.

Methods: Pre-frail older adults living at home or in assisted living, recruited by general practitioners will take part in this multicenter, single-blinded RCT. Participants randomized into the intervention group ($n = 200$) receive home-based exercises, complemented by optional advice on person-environment-fit, nutrition, coping with everyday life, and group offers over 12-months. The control group ($n = 200$) receives recommendations on physical activity and nutrition. Primary outcomes measured at baseline, 6- and 12-month follow-up are participation and mobility, assessed via the function component of the Late-Life Function & Disability Instrument and the University of Alabama at Birmingham Study of Aging Life-Space Assessment respectively. Secondary outcomes are physical capacity, quality of life, physical activity, fear of falling and frailty (according to Fried's phenotype). Additionally, health-related resource use, social network, loneliness and nutritional status will be evaluated.

Discussion: We hypothesize that this multidimensional intervention improves functionality in order to maintain independence, prevent need for care and improve participation in (pre-)frail older adults.

Abstract # 689**AREA: Frailty and resilience****Functional decline in the elderly with fragility syndrome correlated with nutritional status**

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Introduction: Fragility syndrome (FS) refers to the elderly prone to frequent decompensations with the installation of an increased state of vulnerability and negative prognosis.

The purpose: To assess the functional status of frail elderly patients correlated with altered nutritional condition.

Material and methods: The epidemiological study included 50 patients (73.44 ± 0.38 years), the nutritional status determined according to MNA and the FS—by Fried criteria. Functional decline was assessed through scores—autonomy (Katz, Lawton), gait and balance (Tinetti) and muscle strength (dynamometry). The results were analyzed in the software program Statistics 7.

Results: According to the results of SF screening—robust elderly people-14%, pre-frail people-6% and frail elderly-80%. The functional aspect of SF was determined—dynamometry, mean value—16.6 ± 1.13 kg, Tinetti score—12.78 ± 1.21, Katz score—8.70 ± 0.43, Lawton score—7.84 ± 0.67. The mean values of the MNA score had a direct correlation with decreased muscle strength ($r = 0.53$; $p < 0.05$), low autonomy ($r = 0.40$; $p < 0.05$), and disorders of balance and gait ($r = 0.35$; $p < 0.05$). Correlations between mean values of MNA score and criteria of fragility Fried were established: general weakness ($r = -0.62$; $p < 0.05$), fatigue ($r = -0.59$; $p < 0.05$), reduced physical activity ($r = -0.63$; $p < 0.05$), reduced walking speed ($r = -0.53$; $p < 0.05$) and weight loss ($r = -0.29$; $p < 0.05$).

Conclusion: The results of the study reveal the functional status as one of the most affected aspects of the fragility syndrome on the background of altered nutritional condition.

Keywords: Functional decline, fragility, nutrition, elderly.

Abstract # 690**AREA: Frailty and resilience****Comparing frailty in Europe: predictive validity of a global burden of Disease Frailty Index**

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Background: Deficit accumulation is a common approach for measuring frailty, which considers the number of deficits present (diseases, signs and symptoms), rather than their individual nature, as the key determinant of frailty. Global Burden of Disease (GBD) studies provide comparable population-level statistics for disease

causes and risk factors globally. This study externally validates a deficit accumulation frailty index (FI) using items available in the GBD.

Methods: Using 12 European nations in the Survey of Health, Aging and Retirement in Europe (SHARE) harmonised database, individuals aged ≥ 50 years with no missing FI items at wave 2 were included ($n = 28,112$). Based on a 36-item GBD-FI, a modified 20-item GBD-FI drawn on the SHARE database, was internally validated against well-established 70-item FI (FI-70), the Frailty Phenotype (FP) and the Clinical Frailty Scale (CFS). Mortality follow-up was assessed 4 years later at wave 4 ($n = 24,711$) to predict the validity of this modified 20-item GBD-FI employing c-statistics.

Results: Mean 20-item GBD-FI scores correlated well with mean scores for the FI-70 ($r = 0.85$), FP ($r = 0.56$) and CFS ($r = 0.57$). At country-level, mean GBD-FI scores correlated very strongly with other measures ($r = 0.98$, $r = 0.97$ and $r = 0.94$, respectively). For predicting 4-year mortality, GBD-FI performed well (c-statistic = 0.70); comparable to established scales: FP (c-statistic = 0.67, p -value < 0.001), CFS (c-statistic = 0.71, p -value = 0.017) and FI-70 (c-statistic = 0.75, p -value < 0.001).

Key conclusions: The findings suggest that limited items available to the GBD Study are sufficient to compare frailty using the accumulation of deficits approach. GBD estimates can provide a valid and accessible resource for comparing mean frailty levels in Europe.

Abstract # 691**AREA: Frailty and resilience****Frailty prevalence and association with adverse outcomes in patients with acute hospital admission: a systematic review and meta-analysis**

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Introduction: The majority of hospital admissions are older people with complex conditions, but the prevalence of frailty in this population is uncertain. We conducted a systematic review to determine the prevalence of frailty in the acute hospital population, methods of ascertainment and association with mortality, length of stay (LOS), residential care admission and readmission.

Methods: We searched MEDLINE, EMBASE and CINAHL on 22/10/2020 for studies ascertaining frailty in hospital or general (internal) medicine admissions > 16 years using validated methods. One reviewer (EB) screened studies and assessed risk-of-bias with the JBI prevalence checklist. Relative risks were calculated, but not pooled due to heterogeneity.

Results: We identified 34 eligible cohorts (median age = 80 [range = 64–87 years]; 15/34 low-to-moderate risk-of-bias) from 9471 records. Of the 17 frailty instruments identified, frailty indices ($n = 10/39$ estimates) and the clinical frailty scale ($n = 9/39$) were the most used. Function, cognition and mobility/balance were the most common domains. Among hospital-wide cohorts ($n = 10$), the median prevalence of frailty was 39.4% (IQR = 26.9–46.3; $n = 36,892,963$ admissions), which was similar to general medicine cohorts ($n = 23$) (40.92% [IQR = 33.30–56.06%]; $n = 14,703$ admissions). Overall,

frail patients had greater relative risks (RR) of all-cause mortality (90–120 day: range = 1.63 [95% CI 1.09–2.46] to 4.53 [3.26–6.30]; n = 5 cohorts), long LOS (range = 1.35 [95% CI 1.11–1.64] to 3.04 [3.01–3.06]; n = 4) and residential care admission (range = 1.60 [95% CI 1.43–1.79] to 5.55 [2.42–12.72]; n = 6), but not readmission (30-day: range = 0.52 [95% CI 0.34–0.78] to 1.64 [1.11–2.44]; n = 7).

Conclusion: Frailty was associated with increased mortality, LOS and residential care admission in older hospital and general medicine patients, regardless of the method of ascertainment.

Abstract # 692

AREA: Frailty and resilience

Examining the construct validity of the self-reported Frailty Phenotype Questionnaire (FPQ) and FRAIL questionnaire in community-dwelling older adults

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Introduction: Although self-reported scales permit frailty screening in the community setting without needing physical measurements, construct validity is not established. We aim to examine construct validity of FPQ and FRAIL against Fried Frailty Phenotype (FFP), outcomes, inflammation and body composition.

Methods: We studied 229 independent community-dwelling older adults (mean age: 67.2 ± 7.4 years) in the GeriLABS-2 cohort study. We compared area under receiver operating characteristic curves (AUC), Pearson's correlation, and agreement against FFP, and predictive validity against outcome measures [Chair Stand (RCS-5); International Physical Activity Questionnaire (IPAQ); and social frailty (SFS-8)] using logistic regression adjusted for age, gender and vascular risk factors. We examined concurrent validity across robust vs pre-frail/frail for inflammatory blood biomarkers (TNF-R1 and CRP) and DXA body composition [bone mineral density (BMD); appendicular lean mass index (ALMI); and fat mass index (FMI)].

Results: Prevalence of Pre-frail/Frail was 25.7%, 14.8% and 48.3% for FPQ, FRAIL and FRIED respectively. Compared with FRAIL, FPQ had better diagnostic performance (AUC = 0.617 vs 0.531, p = 0.002; Sensitivity = 37.8 vs 18.0%; Specificity = 85.6 vs 88.2%), correlation (r = 0.306 vs 0.229), agreement (AC1-Stat = 0.303 vs 0.197), and predictive validity (RCS-5:OR = 2.38, p = 0.017; IPAQ:OR = 3.62, p < 0.0005; SFS-8:OR = 2.11, p = 0.001 vs FRAIL: all p > 0.05). Both FPQ and FRAIL showed concurrent validity for TNF-R1, compared with FRAIL only for CRP. For body composition, FRAIL showed concurrent validity for BMD, FMI and ALMI, unlike FPQ (all p > 0.05).

Conclusions: Our results support the complementary validity of FPQ and FRAIL in independent community-dwelling older adults. FPQ has increased sensitivity for case detection with good predictive validity whereas FRAIL demonstrates concurrent validity for inflammation and body composition.

Abstract # 693

AREA: Frailty and resilience

Shifting to a frailty-based model of care and resulting resource demand in a UK hospital

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Background: Frailty assessments are a useful tool in acute hospital admissions to prognosticate and plan patient care. The aim of our study was to compare an age-based triage model against admission based on Clinical Frailty Scale (CFS).

Methods: A retrospective cohort of 240 individuals ≥ 65 years (median age 79, IQR 73–86 years; 52% female) admitted over a 2-week period were included. Electronic patient records were used to derive CFS, demographic data and identify frailty presentations.

Results: Of patients admitted 49% were 80 years or over. Clinical Frailty was normally distributed in the cohort with 62% of patients scored at CFS ≥ 5. 29% of patients presented with 1 or more frailty syndrome. Falls (n = 27, 11%), reduced mobility (n = 14, 6%), delirium (n = 21, 9%), and functional decline (n = 17, 7%) were the most common presentations. The current age-based model of care (geriatric triage if ≥ 80 years) captured 64% of patients with a frailty syndrome. Lowering the age cut-off to 75 raised this to 78%, with a total case volume of 171 (46% increase on pre-existing workload). Moving to a frailty-based model of care (CFS ≥ 5) also provides geriatrician review for 78% of frailty syndromes, with a case volume of 148 (26% workload increase).

Conclusion: Lowering age-cut off and switching to a frailty-based model have the potential to increase the proportion of specialist geriatric input for frailty syndromes on the medical take by a similar volume. However, a frailty-based model does so with a smaller increase on total workload volume, suggesting greater resource efficiency.

Abstract # 694

AREA: Frailty and resilience

Cognitive impairment in people with frailty - a systematic review and meta analysis

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Introduction: Frailty as a clinical syndrome is associated with negative outcomes like falls, disability, hospitalization, and increased

mortality (1), and defined as the reduced ability to cope with stressors due to an increased vulnerability resulting from physiological ageing. Impaired cognitive function has been proposed to impact on the development of frailty, though the level of evidence has been deemed inadequate (2). We performed a systematic review to study the relationship between global cognitive functioning and frailty status.

Methods: We searched in Pubmed, Cochrane Library and Epistemonikos from 2000 until January 2021, and used the PRISMA guidelines (3). Samples included older persons of both sexes, ≥ 70 years, ≥ 4 diagnoses, ≥ 4 drugs, assessed with standardized cognitive tests, and assessed through the frailty phenotype model (1).

Results: Of the 4292 records identified through the search, eight studies published from 2008 until 2019 (4, 5, 6, 7, 8, 9, 10, 11) were included in a meta-analysis. Sample sizes varied from 104 to 4649 individuals. Mean MMSE scores ranged between 17.02 and 27.6, with a mean difference of -2.68 (95% CI $-3.53, 1.84$) in frail compared to robust persons. CASP (12) and CEBM (13) checklists were used to assess the quality of the included studies. According to GRADE (14), our confidence in the estimate is low.

Key conclusions: There was a significantly lower MMSE score in frail compared to robust persons. It is very likely that new research will alter the estimate. Further research is needed on the relationship between cognitive impairment and frailty.

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Abstract # 695

AREA: Frailty and resilience

Frailty syndrome in community-dwelling older adults - results of the PolSenior2 Study

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Introduction: Frailty syndrome (FS) is a worldwide concern. However, national epidemiological data on the global prevalence of frailty and pre-frailty are still lacking in many countries. We aim to present estimates on the prevalence of frailty in older adults living in a community setting in Poland.

Methods: PolSenior2 Study was a multicentre, cross-sectional nationwide survey conducted from 2017 to 2020 in Poland. A representative sample of 5987 community-dwelling older adults were recruited to the study. Physical frailty syndrome was diagnosed using Fried criteria: weight loss, exhaustion, low physical activity, slowness and weakness.

Results: Data were obtained for 5410 subjects aged 60 + years. Physical frailty and physical pre-frailty affected respectively 15.9% and 55.8% of community-dwelling Polish older adults (1.358 million, 95% CI 1.251 million–1.466 million and 4.775 million, 95% CI 4.558 million–4.992 million older Poles, respectively). FS was diagnosed significantly more often in older women than in older men (17.4% vs 13.8%), and its prevalence increased with age (from 11.6% among those aged 70–74 to 70.8% among those aged 90 + years). Slow walking speed was a frailty element that was confirmed most often (56.3% of older Poles), with older women presenting slowness more often than older men (60.4% vs 50.7%). Less than one third of Polish older adults presented no elements of frailty, ranging from 41.7% among those aged 60–64 to 0.9% among octogenarians and older subjects.

Key conclusions: For the first time, we present data on global, nationwide prevalence of FS in Poland. Prevention and treatment strategies should be population specific and established as a priority.

Abstract # 696

AREA: Frailty and resilience

Optimising mobility in frail older adults on an orthopaedic trauma floor

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Introduction: Hospital associated decline occurs in up to 40% of older patients and is attributed to low mobilisation and prolonged bed/chair rest. Older patients with acute trauma fractures are most at risk.

Aim: The project aimed to increase mobilisation in older post-operative patients.

Methods: Quality improvement with pre-post evaluation Setting: Orthopaedic Trauma unit [62 beds with 50 for orthopaedics]. Population: 60 years and older Intervention: Following detailed situational analysis, the main change targeted communication between physiotherapy and the bedside nursing team. Using Plan-Do-Study-Act (PDSA) cycles a 'mobility board' was introduced into each 5-bed bay displaying patient mobility capability and daily goals. Physiotherapist and nurses met for 2–3 min each morning. Other staff-led changes were a patient mobility record and afternoon nursing huddle. An observation mobility audit recorded patient position (sitting, standing, walking) every 30 min from 8 am to 17:00. A sub-group of patients were recruited for detailed analysis including daily step count (measured using accelerometer) over 4 days.

Results: Audit: 68 patients were observed (pre n = 35, post n = 33), there were small non-significant increase in patients walking/standing (mean time pre 8% vs post 10.5%) and sitting out of bed (86% vs 88%). Daily step count was recorded in 40 patients (pre n = 31, post n = 9), mean age 76 Years (min 62–max 89), Mean clinical frailty score 5 (min 2–max 7). There was a non-significant improvement in median step count pre = 162.7 (IQR 89, 337) vs post 259 (IQR = 81,719), p 0.37 (data collection ongoing). Observables changes were an increase in functional mobility e.g. walking patients to toilet and physicians mobilised patients during medical rounds.

Conclusions: Optimising mobility in frail older adults requires efficient mechanism for interprofessional communication and a positive team attitude to continuous quality improvement.

Abstract # 697

AREA: Frailty and resilience

Caring for older people with acute frailty syndromes in the community: one year of the rapid access frailty team

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Introduction: RAFT (Rapid Access Frailty Team) is an older adults community outreach service, established in an English Hospital in March 2020 in response to the COVID-19 pandemic. The service provides a home-based Comprehensive Geriatric Assessment (CGA) as an alternative to hospitalisation. RAFT aims to assess and manage older people experiencing acute frailty syndromes in the community, enabling them to recover in their own environment, and avoiding unnecessary admissions that might lead to hospital-acquired complications.

Methods: Routinely-collected data study from March 2020 to April 2021. Key outcome metrics were 7- and 28-day admission as well as 28-day mortality. Statistical analysis performed in R (v4.1.0).

Results: Three hundred and ten cases included in the analysis. Median age was 83 years old (IQR 11). Major referrer was general practitioners (n = 96). The majority of cases reviewed presented with falls (n = 148), followed by immobility (n = 52). Seven-day admission rate following home-based CGA was 6% (n = 9). Twenty-eight-day admission rate was 24% (n = 75). Twenty-eight-day mortality was 0.3% (n = 1).

Key conclusions: Seven-day admission and 28-day mortality rates were low, following a home-based CGA. These findings suggest that acute community-based models of care, such as RAFT, can provide high quality and safe care as an alternative to hospitalisation. Further analysis is required to determine whether or not 28-day admission rates relate to preventable conditions, or are a marker of clinical vulnerability in a cohort living with frailty.

Abstract # 698

AREA: Frailty and resilience

Association of frailty in multidrug-resistant infections in an Acute Geriatric Unit

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Objectives: To evaluate the association of frailty in multidrug-resistant infections in an Acute Geriatric Unit (AGU).

Methods: a retrospective study of review of medical records of patients admitted to UGA from January 1, 2019, to January 1, 2020, diagnosed with infection by enterobacteria producing carbapenemases, ESBL, or *Clostridium difficile* collected by the Preventive Medicine service. The association of frailty is analyzed, through the Fragile-VIG index, relating to the type of infection, mortality, and hospital stay. Significance level and 95% confidence interval.

Results: N = 183 patients (55% women, mean age 89.33 ± 7.58 years). 43% came from home, 54% residence, and 3% hospital environment. The presented fragility of the sample was: 10% mild, 42% moderate, and 44% severe. The most frequent infections were: 28% MRSA, 25% Klebsiella EPC and 12% *Clostridium difficile*. Frailty is associated with a higher tendency to SAMR infection (11% vs 31%, p = 0.055), without higher mortality (27% non-fragile vs 20% fragile).

Conclusions: Moderately-severe frailty is a common clinical marker in geriatric patients admitted for multidrug-resistant infections in the UGA without being associated with a clear higher mortality.

Abstract # 699**AREA: Frailty and resilience****Cognitive and emotional decline in the elderly with fragility syndrome related to nutritional status**

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Introduction: Geriatric frailty syndrome (FS) refers to the elderly predisposed to functional, cognitive and affective decline with a negative prognosis.

The purpose: To assess the cognitive and affective status of frail elderly in correlation with impaired nutritional status.

Material and methods: The epidemiological study included 50 patients (73.44 ± 0.38 years), nutritional status determined according to—MNA, FS according to Fried criteria, cognitive impairment by MMSE (Mini-Mental Status examination) score, depression—Hamilton score. The results were analyzed in the Statistics 7 software program.

Results: According to the results of FS screening—frail elderly were 80%. The data of the evaluation of the psycho-emotional factors determined the depressive syndrome in 54% of elderly, with Hamilton score—average value 7.34 ± 0.81 points; cognitive disorders, established in 58% of the elderly, MMSE score—mean value 21.98 ± 0.67 points. The impact of cognitive and psycho-emotional disorders on the nutritional status of the elderly was demonstrated by the Pearson correlation method, thus, the mean values of the MMSE score had an average direct correlation with the mean values of the MNA score ($r = 0.44$; $p < 0.05$), but the mean values of the Hamilton score had a significant indirect correlation with the mean values of the MNA score ($r = -0.72$; $p < 0.05$) in the elderly from the study.

Conclusion: The results of the study reveal the cognitive and emotional status affected against the background of fragility syndrome and altered nutritional status, the presence of depression syndrome and cognitive disorders is attested.

Keywords: Cognitive decline, depression, frailty, nutrition, elderly.

Abstract # 700**AREA: Frailty and resilience****Prevalence of frailty in an Irish hospital; an underreported but prominent problem**

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Background: Frailty affects 21.5% of Irish people > 65 years [1]. Frail, older adults experience poorer outcomes when hospitalised. Rockwood Clinical Frailty Scale (CFS) is a well-validated tool to identify frailty [2]. Identification of frailty improves short- and long-term health management.

Objectives: (1) Assess documentation of frailty among older inpatients in an Irish hospital. (2) Identify prevalence of frailty among older inpatients.

Methods: This point prevalence study was conducted in one day. Charts of inpatients > 65 were reviewed checking for CFS documentation. Where CFS was missing, CFS was estimated using

documented baseline function. Current functional ability was also recorded.

Results: Of 197 inpatients, 157 were admitted medically, 40 surgically. 54.36% were male. The mean age was 79. 7.69% had CFS recorded. For patients where CFS estimation was possible, 62.7% had frailty. Of these; 27.1% were mildly frail, 12.7% moderately frail and 22% severely frail. Patients who demonstrated new functional decline post-admission had an average CFS of 5. Patients without functional decline had an average CFS of 4. The 4 wards with the highest average CFS (6) included two general geriatric wards (nurse:patient ratio 1:3.2 and 1:4.2) and two general medical wards (nurse:patient ratio 1:5.2 and 1:4.8)

Conclusion: Our study demonstrates that frailty is poorly recognised and documented in hospital. There is an almost three-fold higher prevalence of frailty in hospitalised older adults compared to those living in the community. The increased vulnerability of frail older adults to acute illness is evidenced by decline in function following hospitalisation. This underscores the importance of prompt identification of frailty, early rehabilitation and adequate ward staffing.

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Abstract # 701**AREA: Frailty and resilience****Measured frailty, polypharmacy and potentially inappropriate prescribing in acutely hospitalised older adults based on STOPP/START Version 2: a prospective observational study**

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Introduction: Frailty characteristics such as compromised response to stressors and accumulation of deficits in physiological systems may leave frailer older adults at higher risk of adverse outcomes from PIP, compared with non-frail counterparts of the same age. This study aims to examine the relationship between measured frailty and potentially inappropriate prescribing in older adults presenting acutely to hospital.

Methods: A prospective observational study. Inclusion criteria: age ≥ 65 years old, acute admission < 72 h, expected length of stay > 24 h. Exclusion criteria: < 65 years of age, actively dying, direct admission to ICU, inability to provide informed consent and next of kin declined consent, patients in isolation for infection control purposes. Medical chart review was carried out, followed by a short interview using a standardised data collection proforma. Frailty was measured using the Clinical Frailty Scale and the Frail-VIG frailty index. Potentially Inappropriate Prescribing was identified using the STOPP/START criteria. Results are presented for the first 50 participants: The mean (± standard deviation [SD]) age of study participants was 79.6 (± 7.0), 52% were female. The prevalence of frailty measured using the CFS and Frail-VIG were 50% and 56% respectively. The mean number of STOPP criteria in non-frail patients was 1.24 and 2.16 for frail patients ($p = 0.02$) and 1.06 and 2.15 ($p = 0.002$) using Frail-Vig.

Conclusion: Frailty is associated with functional decline, falls, hospitalisation and death. Frail patients had a higher mean number of

STOPP criteria. Medication review and patient centered medication optimisation should be guided by patient's frailty status to reduce adverse outcomes.

Abstract # 702

AREA: Geriatric emergency medicine

Tell me how long will you stay ... tell me how long how long ... Analysis of the duration of hospital stay (hospital length of stay) of the patient with embolism: experience of 4 years in First Aid

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Premise: Pulmonary embolism is a disease still characterized by high mortality. It requires emergency department resources to be diagnosed promptly and can require lengthy hospital care.

Purpose: To assess which parameters, in the real life of an Emergency Department, correlate with the duration of a hospitalization for pulmonary embolism (hospital LOS).

Methods: Single-center retrospective observational study, on all geriatric patients (> 75) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and Years), and for the presentation of the risk of mortality at 30 days (sPESI). We analyzed all the blood chemistry and blood gas analyzes performed upon access to the emergency room. We then had all chest CTs retested by an experienced radiologist. We also analyzed vital parameters and the various shock indexes from these derivatives. We then analyzed whether patients had massive pulmonary embolism or the presence of organ damage (right ventricular dilation, pulmonary artery dilation and presence of pulmonary infarction).

Results: We enrolled 247 patients, all in need of hospitalization for acute pulmonary embolism. The average age is 83 with female prevalence (F = 63%). Regarding the length of hospital stay, the presence of massive embolism shows a good statistical correlation ($p < 0.01$), while the presence of organ damage seems irrelevant ($p > 0.05$). The need for resuscitation care and the high sPESI index also show no correlation ($p > 0.05$). Age and vital signs (blood pressure, respiratory rate, heart rate) as well as derived shock indices are unrelated ($\rho \sim 0$; $p > 0.05$). A weak correlation is instead present with high D-dimer values ($\rho \sim 0.20$; $p < 0.005$) while the other blood samples do not show correlation ($\rho \sim 0$; $p > 0.05$). No correlation for the blood gas analysis parameters taken into consideration (pH; pO_2 ; pCO_2 ; lactates).

Conclusions: The study suggests that the presence of massive pulmonary embolism and to a lesser extent high D-dimer values correlates with a long hospital stay.

Abstract # 703

AREA: Geriatric emergency medicine

D-Dimero: an old neglected test that goes beyond expectations D-dimer analysis in the stratification of patients with pulmonary embolism: experience of 5 years in the emergency room

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Background: D-Dimer is an old enzyme test widely used in the diagnosis of pulmonary embolism. However, due to its non-specificity it is often overlooked and sometimes not taken into consideration. Recent studies have shown that it could play a role not only in the exclusion of low-risk cases of pulmonary embolism but could also help in the stratification of the same.

Purpose: To see if D-dimer correlates, in the real life of an Emergency Department, with more severe forms of pulmonary embolism (massive pulmonary embolism, presence of organ damage), with the need and duration of hospitalization in resuscitation or the length of hospital stay. We then analyzed correlations with sPESI index, shock indices and blood gas parameters.

Methods: single-center retrospective observational study, on all geriatric patients (> 75) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2015 and ended in 2019. We collected data from medical history, physical examination, laboratory tests, imaging; we calculated the characteristic scores from the diagnostic/therapeutic algorithm, both for the risk of PE (Wells, Geneva and Anni), and for the presentation of the risk of mortality at 30 days (sPESI). We analyzed all the blood chemistry and blood gas tests performed upon access to the emergency room. We then had all chest CTs retested by an experienced radiologist. We also analyzed vital parameters and the various shock indexes from these derivatives. We then analyzed whether patients had massive pulmonary embolism or the presence of organ damage (right ventricular dilation, pulmonary artery dilation and presence of pulmonary infarction).

Results: We enrolled 247 patients, all in need of hospitalization for acute pulmonary embolism. The average age of 83 with female prevalence (62%). High values of D-dimer show a strong correlation with the presence of massive pulmonary embolism ($p < 0.001$) and a correlation, albeit to a lesser degree, with the presence of organ damage ($p < 0.01$). D-Dimer values show a strong correlation ($p < 0.005$) even with patients at high risk of short-term mortality (presenting right cardiac ventricular dilation and myocardiospecific enzyme elevation). However, the AUC of the ROC curve is not optimal (0.63; with specificity 63% and sensitivity 62%). They also showed a correlation with the need for hospitalization in the ICU ($p < 0.01$) and a slight correlation with the length of stay in

resuscitation ($\rho = 0.25$; $p = 0.05$) and hospital stay ($\rho = 0.20$; $p < 0.01$).

Conclusions: D-Dimer values appear to be useful in the severity stratification of patients with pulmonary embolism.

Abstract # 704

AREA: Geriatric emergency medicine

Secret beyond the door. triage analysis and recognition at the door of patients with pulmonary embolism who arrive in the emergency room. The real-life experience of 5 years in the emergency room

Gabriele Savioli¹, Iride Francesca Ceresa¹, Michele Pagani², Mirko Belliato², Paolo Maggioni³, Federica Fumoso³, Alessandra Martignoni⁴, Amedeo Mugellini⁴, Massimiliano Lava⁵, Lorenzo Preda⁵, Federica Manzoni⁶, Viola Novelli⁷, Alba Muzzi⁷, Giovanni Ricevuti⁸, Maria Antonietta Bressan⁹

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Background: The range of symptoms of pulmonary embolism is wide and its recognition difficult.

Purpose: To analyze the efficiency of triage in the EP.

Methods: Single-center retrospective observational study, on all geriatric patients (> 75 years) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2015 and ended in 2019. We analyzed means of presentation, priority codes for medical examination, exit code, hospitalization needs. We collected data from medical history, physical examination, laboratory tests, imaging, outcomes.

Results: We enrolled 247 patients, all in need of hospitalization. 44% came for dyspnea, 17% for chest pain, 16% for signs of DVT, 8% for syncope. 5% had only atypical symptoms (dizziness, general malaise, low-grade fever, neurological symptoms ...). 45% had concomitant deep vein thrombosis. 50% showed alteration of the ECG tracing, 49% alteration of the shock index. Only 4% showed hypotension, 13% tachycardia and 8% desaturation. 39% arrived with their own vehicle. 32% was allocated to the area with low intensity of care, 68% to the area with medium-high intensity of care. As regards the priority code for the visit, 0% received a non-urgency code (white code or code 5), 27.9% a minor urgency code (green code or code 4) and 3.6% a high priority to the visit with assignment to low intensity of care (low intensity yellow or code 3). 63.15% received an emergency code (urgency or code 2) and 5.3% an emergency code (red code or code 1). The severity code at discharge, given on clinical criteria, was a low severity code (white or green) in 18% of cases, while 76% was considered high severity (urgency, yellow code) and in 6% for very high gravity (red code). 34% showed massive PE, 32% showed organ damage. 41% were considered to be at high risk of short-term mortality according to European guidelines, 8% required intensive care and in-hospital mortality was 7.7%. Under triage is 32%.

Conclusions: The population that arrives in ED due to pulmonary embolism presents extremely varied symptomatological pictures, and an overall high degree of clinical risk and care and therapeutic

complexity in spite of the symptoms complained of and vital parameters. Under-triage remains a real problem for ED for this category of patients.

Abstract # 705

AREA: Geriatric emergency medicine

When Harry met Sally. Description of patients with pulmonary embolism arriving in the emergency room. The real-life experience of 5 years in the emergency room

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Premises: Pulmonary embolism represents one of the major causes of mortality linked to cardiovascular events. The range of symptoms is extremely wide and its recognition difficult. The patients who therefore come to the emergency room are a diverse population.

Purpose: To describe the population that refers to the emergency room and finds there a diagnosis of acute pulmonary embolism.

Methods: single-center retrospective observational study, on all geriatric patients (> 75 years) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We analyzed means of presentation, priority codes for medical examination, exit code, hospitalization needs. We collected data from medical history, physical examination, laboratory tests, imaging, outcomes, severity scores.

Results: We enrolled 247 patients, all in need of hospitalization. 44% came for dyspnea, 17% for chest pain, 16% for signs of DVT, 8% for syncope. 5% had only atypical symptoms (dizziness, general malaise, low-grade fever, neurological symptoms ...). 45% had concomitant deep vein thrombosis. 50% showed alteration of the ECG tracing, 49% alteration of the shock index. Among those subjected to blood gas analysis 11% showed alteration of pH, 16% showed alteration of pCO₂, 8% showed alteration of pO₂, 5% of BE, 2% of lactate. 34% showed massive PE, 32% showed organ damage. In particular, 21% showed pulmonary artery dilation, 16% pulmonary infarction and 19% right ventricular dilation. 40% showed elevation of myocardiospecific enzymes. 41% were considered to be at high risk of long-term mortality according to European guidelines, 41% at intermediate risk and 18% at low risk of mortality. 1.4% underwent thrombolysis, 2.4% required intubation. 2.8% needed an operating room for mechanical thrombolysis; 8% of hospitalization in the intensive ward during hospitalization. In-hospital mortality was 7.7%. 5% experienced bleeding during hospitalization following anticoagulation therapy.

Conclusions: The population that arrives in ED for pulmonary embolism presents extremely varied symptomatological pictures, but an overall high degree of clinical risk and assistance and therapeutic complexity.

Abstract # 706**AREA: Geriatric emergency medicine****RED ZONE: 22 miles of fire. Analysis of the timing and processes of patients with acute pulmonary embolism in the emergency room. The real-life experience of 5 years in the emergency room**

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Purpose: To describe the role of the emergency room in the diagnostic-therapeutic process of acute pulmonary embolism.

Methods: single-center retrospective observational study, on all geriatric patients (> 75 years) who entered our ED, where they were diagnosed with acute PE. Enrollment began in 2016 and ended in 2019. We analyzed means of presentation, priority codes for medical examination, exit code, hospitalization needs. We collected data from medical history, physical examination, laboratory tests, imaging, outcomes.

Results: We enrolled 247 patients, all requiring hospitalization for acute pulmonary embolism. The average age of 83 with female prevalence (63%). Median wait times for medical examination were 42 min. The average waiting times, however, for the large number of low priority codes (40% between 5 and 4 codes), was more than 6 h. All patients required a chest CT with contrast, 44% first did a chest x-ray and 2% an ultrasound. All patients underwent ECG and blood tests. The time spent in the Emergency Department (LOS) was on average 18 h. 58% of patients were managed in areas of low or medium intensity, 42% were sent to OBI for therapeutic diagnostic completion or necessary monitoring. OBI patients were on average 504 min. 56% face the phenomenon of boarding. 34% showed massive EP, 32% showed organ damage. 41% were considered to be at high risk of short-term mortality according to European guidelines, 8% required intensive care and in-hospital mortality was 7.7%. Under triage is 31%.

Conclusions: The population that arrives in ED due to pulmonary embolism presents an overall clinical picture with a high degree and high care and therapeutic complexity. Need for numerous investigations and second level imaging. They often require complex therapies and multi-parameter monitoring during stabilization and observation. Therefore, the time spent in the emergency room is long. The workload to treat these patients is high and requires excellent multi-professional and multidisciplinary integration, especially between the various professional figures in urgency, the laboratory and radiology.

Abstract # 707**AREA: Geriatric emergency medicine****“What Matters Most” to older adults presenting to the emergency department**

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Introduction: As an Institute for Healthcare Improvement (IHI) accredited Age Friendly Health System, our Geriatric Emergency Multidisciplinary Service (GEMS) assesses the 4Ms of geriatric medicine (Mind, Mobility, Medication, and What Matters Most) (1) for every patient we review. As suggested by its wording “What matters most?” is often the most important aspect of our assessment. The IHI (2) introduced this question as a means of discussing treatment goals and advanced care planning. It is a crucial but often forgotten question to ensure our healthcare interventions align with the priorities of our patients.

Method: Discharge letters are dictated under the 4Ms for each patient. We recorded the responses to the “What Matters Most” question for each patient reviewed. We then conducted a qualitative thematic analysis to identify the most common themes.

Results: A review of 55 patients assessed by our service over a 3 month period found 73% prioritise returning home from hospital and remaining in their own home for as long as possible. 38% identified regaining their independence as most important. 31% value spending time with family and friends above all else. 12% reported their health as what matters most.

Conclusion: This question affords us a unique insight into our patients priorities, and allows us to customise care to that individual. This work provides us with a brief overview of what matters most to our patients attending the emergency department. It is our duty as geriatricians to advocate for our patients and help them to achieve what matters most.

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Abstract # 708**AREA: Geriatric emergency medicine****Detection of unknown atrial fibrillation by holter monitoring in post-stroke patients**

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Introduction: Stroke is a leading cause of death and disability worldwide and approximately 10,000 people have a stroke related event every year in Ireland (1). Atrial fibrillation (AF) is one of the most common sustained arrhythmias and is a major risk factor for stroke (2). However, a substantial number of patients with stroke have asymptomatic AF (3). Thus, the Royal College of Physicians National clinical guidelines for stroke 2016 (NICE accredited), recommend that a 24-h Holter monitor/24-h ECG monitor be used to detect AF (1).

Aims: 1. Identify the number of patients with a background history of AF prior to stroke. 2. In reference to the RCP NICE Stroke guidelines (1), audit if a Holter monitor was performed on all stroke patients without a background of AF.

Methods: A search for all patients who had a stroke between January 2018 and December 2018 in Portiuncula hospital was conducted. Of these 17 patients, 4 patients had a background history of AF prior to their stroke. Abiding by the RCP NICE accredited guidelines 2016, the 13 remaining patients with no background history of AF, should have had Holter monitors performed to assess for undiagnosed AF. The incidence of ischemic stroke increases with age². Thus, patients' ages were also investigated.

Results: 41% of the patients were above the ages of 71 years. 24% of all stroke patients had a background history of AF prior to their stroke. All patients with no background history of AF had Holter monitors performed.

Discussion: There were 35 patients assessed at the Stroke Clinic during the period of January to December 2018. The patients ages ranged from 41 to > 81 years. 65% of the stroke patients were greater than 71 years of age, highlighting the incidence of stroke increases with age. It was construed that 24% of the patients had a previous background history of AF prior to their stroke illustrating AF as a risk for stroke. The remaining 76% of patients, all had 24-h ECG Holter monitors, abiding by the NICE standard practice guidelines. Of these patients, 17% were newly diagnosed with AF from their Holter monitor analysis and admitted to being asymptomatic and having no AF symptoms prior to their stroke.

Conclusion: Stroke patients who have no background of AF and no known cause for their stroke, should have a Holter monitor performed (1). In this Audit, 100% of patients with no background of AF and no known cause for their stroke, had Holter monitors performed. This illustrates that the hospital is abiding by the NICE guidelines and their standards are exemplary. A re-audit is to take place in January 2020 to assess that these high standards of practice are continued.

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Abstract # 709

AREA: Geriatric emergency medicine

Assessment of falls in older aged patients in the Emergency Department

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Background: Falls in the older aged population are a leading cause of presentation to the emergency department. A previous fall is one of the strongest risk factors for further falls. Guidelines recommend that all older patients presenting to medical facilities with a fall should have a multifactorial risk assessment to assess for a cause of the fall.

Methods: Retrospective audit of clinical records for patients aged > 65 years who presented to the emergency department at a UK district general hospital. We collected data on patient examination, bedside investigations, and delirium screening.

Results: Records of 43 patients clerked by emergency medicine doctors were reviewed. Mean age 84.7 years, range 68–101 years, 76% female. 48.8% had full assessment for injuries including head, C-spine, upper and lower limbs, chest and abdomen. 88.3% had a full cardiovascular examination whereas only 55.8% had documentation of neurology. All patients received an ECG whereas only 14% had a lying/standing blood pressure in the emergency department, and of these only half received the standing measurement at the 1st and 3rd minute as recommended by the Royal College of Physicians. 65.1% received delirium screening.

Conclusions: Greater awareness is needed on appropriate falls assessment for older aged patients presenting to the emergency department. Appropriate assessment includes examining for occult trauma, assessing for neurological abnormalities, and screening for postural hypotension with a lying/standing blood pressure. We implemented a local teaching program to raise awareness of multifactorial falls assessment.

Abstract # 710

AREA: Geriatric emergency medicine

Under-triage of older trauma patients in prehospital care: a systematic review

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Introduction: It is argued that many older trauma patients are under-triaged in prehospital care which may adversely affect their outcomes. This systematic review aimed to assess the accuracy of prehospital triage decisions of older trauma patients and their impact on outcomes.

Methods: A computerised literature search using MEDLINE, Scopus, and CINAHL databases was conducted for studies published between 1966 and 2021 using a list of predetermined index terms and their associated alternatives. Studies which met the inclusion criteria were included and critiqued using Critical Appraisal Skills Programme tool. Due to the heterogeneity of the included studies, narrative synthesis was used in this systematic review.

Results: Of the 280 identified studies, 23 met the inclusion criteria. Current trauma triage guidelines have poor sensitivity to identify major trauma and the need for Trauma Centre (TC) care for older adults. Although modified triage tools for this population have improved sensitivity, they showed significantly decreased specificity or were not applied to all older people. The issue of low rates of TC transport for positively triaged older patients is not well understood. Furthermore, the benefits of TC treatment for older patients remain uncertain.

Key conclusions: This systematic review showed that under-triage is an ongoing issue for older trauma patients in prehospital care and its impact on their outcomes is still uncertain. Further high-quality prospective research is needed to assess the accuracy of prehospital triage criteria, the factors other than the triage criteria that affect transport decisions, and the impact of under-triage on outcomes.

Abstract # 711

AREA: Geriatric emergency medicine

Domestic violence and abuse among older trauma patients at a major trauma centre

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Introduction: Older people now represent over half of all trauma admissions [1]. There is currently no published evidence on the prevalence of, or effect of domestic violence and abuse (DVA) on older people within a UK trauma setting.

Methods: A single centre retrospective observational cohort study was undertaken. The primary aim was to identify the prevalence of DVA in older people presenting to a Major Trauma Centre. Data were analysed from the local Trauma Audit and Research Network database. The 'Scene Description' field in the database was searched using keywords formulated by a team of DVA and geriatric medicine researchers.

Results: Six patients > 65 year olds presented with trauma between April 2012 to October 2019. The overall annual prevalence of DVA was 0.6 cases per 1000 trauma discharges. Of these, 50% were male, the median age was 80 years old (IQR 74–83), and the median ISS was 16 (IQR 11–17). When compared to patients over 65 in the overall major trauma population, those with DVA had longer hospital stays and more likely to be admitted to ITU.

Key conclusions: Older people who experience major trauma as a result of DVA had worse outcomes compared to older trauma patients injured through other mechanism. Trauma pathways need systems to detect and manage cases of DVA in older people presenting with major trauma.

References:

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Abstract # 712

AREA: Geriatric emergency medicine

The effectiveness of interventions to reduce adverse outcomes among older adults following Emergency Department discharge: umbrella review

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Introduction: Population ageing is increasing rapidly worldwide. Older adults are frequent users of health care services including the Emergency Department (ED). Given the adverse outcomes following an ED visit, a number of interventions have been examined to improve the outcomes of older adults following presentation to the ED. The aim of this umbrella review was to evaluate the effectiveness of ED interventions in reducing adverse outcomes in older adults discharged from the ED.

Methods: Systematic reviews of ED interventions for older adults presenting to the ED exploring clinical, patient experience and healthcare utilisation outcomes were included. A comprehensive search strategy was employed in eleven databases and the PROSPERO register from inception until May 31st 2020. Quality was assessed using the A MeaSurement Tool to Assess Systematic Reviews 2 tool. An algorithm to assign the Grading of Recommendations Assessment, Development and Evaluation to assess the strength of evidence was applied to outcomes.

Results: Nine systematic reviews including 29 randomised controlled trials were included. Interventions comprised of solely ED-based or transitional interventions. The specific interventions delivered were highly variable. There is low quality evidence to support ED interventions in reducing functional decline, improving patient experience and improving quality of life. The quality of evidence of the effectiveness of ED interventions to reduce mortality and ED revisits varied from very low to moderate.

Key conclusion: The existing evidence for the effectiveness of ED interventions for older adults is limited. Higher quality intervention studies in line with current geriatric medicine research guidelines are recommended.

Abstract # 713

AREA: Geriatric emergency medicine

Mortality of older patients admitted to an ICU: a systematic review

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Introduction: The objective was to conduct a systematic review of mortality and factors independently associated with mortality in older patients admitted to ICU.

Methods: Data sources were MEDLINE via PubMed, EMBASE and the Cochrane Library. Two reviewers independently selected studies conducted after 2000 evaluating mortality of older patients (≥ 75 year old) admitted to ICU. General characteristics, mortality rate, and

factors independently associated with mortality were extracted. Because of expected heterogeneity, no meta-analysis was performed. **Results:** We selected 129 studies (median year of publication, 2015). Most were conducted in Europe and North America. The median number of included patients was 278. ICU and in-hospital mortality were most frequently reported with considerable heterogeneity observed across studies that was not explained by study design or location. ICU mortality ranged from 1 to 51%, in-hospital mortality from 10 to 76%, 6-month mortality from 21 to 58%, and 1-year mortality from 33 to 72%. Factors addressed in multivariate analyses were also heterogeneous across studies. Severity score, diagnosis at admission, and use of mechanical ventilation were the independent factors most frequently associated with ICU mortality, whereas age, comorbidities, functional status, and severity score at admission were the independent factors most frequently associated with 3–6 and 12 months mortality.

Conclusion: In this systematic review, we have documented substantial variation in short- and long-term mortality as well as in prognostic factors. To better understand this variation, we need consistent, high-quality data on pre-ICU conditions, ICU treatments, structure and system factors, and post-ICU trajectories.

Abstract # 714

AREA: Geriatric emergency medicine

Unexplained coma during summer, think of heat stroke

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A 93-year-old patient was found unconscious on a hot summer day. Medical history included arterial hypertension and trifascicular block. Chronic medication included statin and aspirin. Clinical examination revealed GCS 4/15 with myotic pupils, core temperature 42 °C and hemodynamic instability. Rapid intubation was performed. The lab results revealed acute kidney injury and minor inflammation, lumbar puncture was negative and cerebral angiographic showed no signs of ischemia. Neurological exam after extubation (D5) highlighted a left hemi-neglect, leg hemiparesis and dysarthria. Magnetic resonance imaging confirmed bilateral ischemic lesion of the basal nuclei. The diagnosis of heat stroke complicated by cerebrovascular stroke was made. Heat stroke is the most severe heat-related illness and due to global warming, more (fatal) cases of heat stroke have been reported and elderly patients are less able to cope with physiological responses to heat stress. The diagnosis is made clinically upon elevated body temperature, exposure to environmental heat and central nervous dysfunction (~ lack another explanation for hyperthermia). Common findings include tachycardia, tachypnea, hypotension, flushing and oliguria. Heat stroke and its complications are due to thermoregulatory failure, hypovolemia, direct cytotoxicity of heat, and excessive production of inflammatory cytokines. This causes endothelial cell damage thrombosis and organ failure similar as seen in sepsis. An acute ischemic brain stroke due to this cascade is a possible complication. Heat stroke is often fatal and those who do survive may sustain permanent neurologic damage. Timely diagnosis, supportive treatment including patient ‘cooling’ are key for preventing bad outcome.

Abstract # 715

AREA: Geriatric emergency medicine

Usefulness of bedside lung ultrasound to detect acute pneumonitis in elderly patients

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Pneumopathy is a serious disease, which is one of the first causes of mortality in the elderly. Early detection of patients hospitalized for the suspicion of pneumopathy, using a portable ultrasound, could make it possible to adapt treatment and care more quickly. This is a cross-sectional observational study of elderly patients (≥ 75 years) hospitalized in acute unit, acute unit Covid and the geriatric SSR unit with clinical suspicion of possible pneumopathy, or a clinically fever or inflammatory syndrome that may concern the lung. The goal of this study was to assess the diagnostic value of pulmonary bedside ultrasound, performed by geriatricians, non radiologists, for the diagnosis of pneumopathy by comparing the results with those of the thoracic scanner, taken as gold standard. 66 patients, 39 with COVID-19 and 27 non-COVID, were included. The average age was 87 years. Among all 66 patients, the geriatrician performed a pulmonary bedside ultrasound which showed a sensitivity of 88%, a specificity of 15%, a PPV of 81%, a NPV of 25%, a LR+ of 1.04, a LR– of 0.75, a precision of 0.74. The study showed that pulmonary bedside ultrasound technique was better for the diagnosis of patients with COVID-19 (92% of sensitivity, 25% of specificity, 92% of PPV, 25% of NPV, 1.22 of LR+ , 0.33 of LR– and 0.85 of precision) than for those without COVID-19 (81% of sensitivity, 27% of specificity, 62% of PPV, 50% of NPV, 1.12 of LR+ , 0.69 of LR– and 0.59 of precision). Pulmonary ultrasound has a good enough sensitivity but a poor specificity for the diagnosis of pneumonitis in elderly hospitalized patients. It appears to be more effective in the diagnosis of pneumonitis SARS-CoV-2 related. Further studies, including more patients, would be required to define its usefulness in clinical practice.

Abstract # 716

AREA: Geriatric emergency medicine

Bedside ultrasound (bed us) in geriatrics

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Introduction: The objective of the study is to evaluate the effectiveness of abdominal bedside ultrasound (BED US) performed in Geriatrics Department for all the elderly patients referred by the Emergency Room before the admission.

Materials and methods: Seven doctors of the Geriatrics ward performed bedside ultrasound on all patients referred by the Emergency Room with any pathology in consultation in the geriatrics ward over a period of 6 months. The patients underwent bedside ultrasound during the geriatric consultation by one of the doctors. 500 patients aged between 75 and 95 years (295 women and 205 men) were examined in 6 months. All abdominal organs and the thyroid were evaluated with ultrasound following a predefined reporting scheme aimed at an

accurate assessment of the complete abdomen and neck. The ultrasound data that made it possible to modify the diagnostic and therapeutic process of the patients were evaluated and the symptoms and pathologies that have decisively benefited from the diagnostic contribution of bedside ultrasound were identified. In addition, the time elapsed between the execution of the geriatric consultation with bedside ultrasound and the decision of admission or discharge at home of the elderly patient was evaluated and finally the number of patients actually admitted to the geriatric ward and the number of elderly patients hospitalized in other departments were evaluated.

Results: The bed side ultrasound (BED US) examination performed in patients with the main symptom of dyspnea allowed to identify with US pleural effusion unidentifiable with physical examination and chest X-ray in 72 patients, and signs of heart failure were identified with US in 87 patients. The main symptom of jaundice allowed to identify with US in 21 patients lithiasis of the biliary tract, in 20 patients medical jaundice, in 9 patients pancreatic cancer. The symptom of abdominal pain allowed to identify with US in 35 patients hepatic neoplasia and 23 liver metastases, in 48 ascites, in 20 renal colic with stones and hydronephrosis, in 8 diverticulitis, in 11 uterus ovarian pathology. The hematuria symptom made it possible to identify with ultrasound 15 bladder neoplasms, 7 renal neoplasms, 13 bladder stones, 5 prostatic neoplasms. In elderly patients with suspected abdominal mass, ultrasound revealed 14 uterus ovarian masses, 7 peritoneal carcinomatosis, 9 abdominal aortic aneurysms, 5 colon neoplasms. The pathological aspects highlighted by the bed side ultrasound allowed hospitalization in surgical wards in 30% of geriatric patients sent from the emergency room for geriatric counseling. It was also possible to carry out the home discharge of 15% of the patients sent by the geriatric consultant who, by performing the bed side ultrasound, did not detect pathologies worthy of hospitalization. The time between performing the geriatric consultation with ultrasound and the decision to admit to the appropriate ward was reduced by 50%.

Conclusions: The data of our observational study confirm that bed side ultrasound is essential above all in the evaluation of the elderly patient and in particular in the patient who comes to the emergency room with symptoms that do not allow to formulate a certain diagnosis or to immediately choose the ward for appropriate hospitalization. Therefore, if the doctor who carries out the geriatric consultation has the competence to perform an abdominal and thyroid bed side ultrasound scan, he will be able to provide the emergency room doctor with all the information that will allow to reduce the time of the hospitalization decision, and of the diagnostic and therapeutic procedure, increasing the appropriateness, effectiveness and efficiency. An adequate period of practical basic ultrasound training is obviously essential for all doctors who carry out geriatric consultations.

Abstract # 717

AREA: Geriatric emergency medicine

Emergency Department admission of older people living in care homes: descriptive analysis and factors associated with mortality according to the multicenter caregery study

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Introduction: The study sought to describe the characteristics and outcomes of the residents admitted to five Emergency Departments (ED), and to analyse the factors associated with early mortality.

Methods: We conducted a multicentric retrospective observational study. We identified the admissions of residents from Care Homes (CH) to the ED of five university hospitals in Catalonia throughout 2017. We selected a randomized subsample of admissions and extracted data from the electronic records and the Hospital Data Set regarding: socio-demographic characteristics, multimorbidity, cognitive and functional status, vital risk at admission, main ED diagnosis, need for hospitalisation and early mortality (during ED admission or 30 days after discharge). Two multivariate analyses were conducted to evaluate factors associated with early mortality.

Results: A total of 2444 ED admissions were analyzed. Mean age was 85.9 (SD 7.1) years old; 67.7% were women, the median Charlson index was 3 (IQR (2–4)). Cognitive impairment was observed in 77.9% of ED admissions, severe functional impairment in 44.3% and potential vital risk at admission in 69%. Main ED diagnoses were infections (33.5%) and falls (13.5%). Hospitalisation was required in 42.9%. Early mortality was 21.2%. Factors associated with mortality were age ≥ 90 , multimorbidity and functional impairment, higher vital risk at admission, longer ED stay and hospitalisation.

Key conclusions: CH residents admitted to ED often have multimorbidity, functional and cognitive impairment, frequently present with potential vital risk, and usually require hospitalisation. Residents with all these characteristics, together with age ≥ 90 and longer ED stay may be at higher risk of early mortality.

Abstract # 718

AREA: Geriatric emergency medicine

External validation of GERTality Score to predict mortality in geriatric trauma patients

Georgios Filippatos¹, Maria Tsironi¹, Sofia Zyga¹, Markella Xaralabistou², Panagiotis Andriopoulos¹

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Introduction: The GERTality Score has recently developed by the TraumaRegister DGU[®] to predict mortality in geriatric trauma patients but it remains to be externally validated in other cohorts. The aim of the study was to assess the performance of the GERTality Score in Greek injured elders.

Methods: This retrospective study was performed in two tertiary hospital and all trauma patients ≥ 65 years admitted with principal diagnosis ICD-10 codes S00 to T14 between 2016 and 2019 were identified. GERTality score was calculated by added up one additional

point for each of its five variables (age ≥ 80 years, GCS < 14 , AIS ≥ 4 , ASA ≥ 3 and blood transfusion prior to admission). The primary outcome was in-hospital mortality. Model performances were evaluated using area under the curve and Brier score.

Results: The sample ($n = 2,347$) had a mean age of 80.6 ± 7.9 years, ISS 9.1 ± 6.4 and mortality of 6.1%. The maximum GERTality score showed an in-hospital mortality rate of 80.3% compared to 71.9% and 52.6% of patients with score 4 and 3 points, respectively. The area under the curve and Brier scores for GERTality score was 0.846 (CI 95% 0.824–0.868) and 0.051, respectively.

Key conclusions: The GERTality score accurately estimates the probability of death that can be used as a tool during conversation of treatment in geriatric trauma patients.

Abstract # 719

AREA: Geriatric emergency medicine

Comparison of two prognostic models in geriatric trauma outcome

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¹University of Peloponnese, Faculty of Health Sciences, Department of Nursing, ²General Hospital of Elefsinas “Thriassio”

Introduction: The need for robust predictive models is increasingly recognized as being vital for improvement of care of geriatric trauma patients. The aim of the study was to assess the performance of the Geriatric Trauma Outcome Score (GTOS) and compare it with the Trauma Injury Severity Score (TRISS) in Greek injured elders.

Methods: We collected retrospective data for all patients aged 65 years or older hospitalized with a principal diagnosis in the range ICD-10 S00-T14 in two tertiary hospitals between 2016 and 2019. GTOS was calculated using the formula [GTOS = age + (ISS $\times$ 2.5) + 22 (if transfused packed red blood cells (PRBCs) by 24 h)] and TRISS using the Major Trauma Outcome Study (updated 1995) coefficients. The primary outcome was in-hospital mortality. Model performances were evaluated using area under the curve and Brier score.

Results: In total, 4,039 geriatric trauma patient records were reviewed. The mean age was 79.8 ± 7.4 years, the mean ISS 9.3 ± 5.9 , mortality of 6.4% and 5.8% receiving PRBCs at 24 h. The area under the curve and Brier scores for GTOS was 0.859 (CI 95% 0.838–0.880) and 0.049, respectively and for TRISS was 0.875 (CI 95% 0.854–0.895) and 0.043, respectively.

Key conclusions: GTOS and TRISS performed similarly in predicting mortality of injured elderly patients. Both models establish a quantitative framework of mortality risk stratification and could serve as a common language of communication among physicians, patients and their families.

Abstract # 720

AREA: Geriatric emergency medicine

A case report of lethal contipation: stercoral colitis

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Introduction: Stercoral is a rare complication of chronic constipation and faecal impaction. It is defined as inflammatory colitis that is caused by increased pressure in colon from the impacted faeces.

Case report: We report a case of 90-year-old lady who presented with abdominal pain and diarrhoea for 4 days on a background of being bedridden for 2 years due to arthritis. Her examination was notable for tachycardia, dry mucus membranes and a soft, non-distended abdomen, hypoactive bowel sounds and diffuse abdominal tenderness. A collateral history confirmed that she hadn't opened her bowel for a week. A foleys catheter was placed for retention of urine. Initial laboratory values were notable for a CRP of 543, leucocytosis of 14 and stage 2 acute kidney injury. A per rectal examination revealed overflow diarrhoea. Abdomen X-ray showed faecal impaction and a CT scan revealed faecal loading in the rectum up to splenic flexure with rectal wall thickening and peri colonic fat stranding. Treated as stercoral colitis secondary to constipation with IV fluids, empirical antibiotics, manual disimpaction and aggressive oral bowel regimen. Despite all the treatment she continued to deteriorate and passed away on day 9 of admission.

Conclusion: Stercoral colitis should be considered in all elderly patients who present with abdominal pain and chronic constipation who are on long-term opioids or bedridden. Computed tomography is the diagnostic modality for stercoral colitis and the described features should alert clinicians to the presence of this uncommon and often fatal complication of chronic constipation.

Abstract # 721

AREA: Geriatric emergency medicine

A case report of lethal contipation: stercoral colitis

Anupama Vijay¹, Sharan Gopal Sunil¹

¹Department of Geriatric Medicine, Leicester Royal Infirmary-UK

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Abstract # 722

AREA: Geriatric emergency medicine

Profile and rate of hospital admissions of nursing homes residents in the emergency department

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Introduction: Institutionalized older people attending the emergency department (ED) represent a vulnerable population, so the traditional one-dimensional assessment is not the most appropriate. A multidimensional assessment that includes a Comprehensive Geriatric Assessment (CGA) may reduce the rate of hospitalization and readmissions. The objective was to describe the characteristics of nursing home residents attending the ED at a 1000-bed university hospital and to know the rate of hospital admissions.

Methods: Descriptive study of nursing home residents admitted to the ED from September 1st 2020 to April 30th 2021 and requested by a Geriatrician. Geriatric management included CGA, clinical monitoring and medical treatment as necessary and coordination with the nursing home. Barthel Index (BI), Functional Ambulation Category (FAC) y Global Deterioration Scale (GDS) were applied.

Results: We included 653 institutionalized patients treated in the ED during the weekday morning shift, mean age was 87.5 ± 7.8 years and 72.4% were female. The most frequent diagnoses were infections caused by SARS-CoV-2 (14.4%), other respiratory infections or pneumonia (17.3%), heart failure (12.6%) and urinary tract infection (11%). Three hundred and twenty patients (49%) were requested by geriatricians. Mean values were: BI: 42.7 ± 31.8 , FAC 1.7 ± 1.8 , GDS: 3.9 ± 2.2 . The rate of hospital admissions was 72.5% (474 residents).

Key conclusions: Nursing home residents attending the ED show a high grade of cognitive and functional impairment and they need hospital admission in a high number of cases.

Abstract # 723

AREA: Geriatric emergency medicine

Efficiency of comprehensive geriatric assessment in the Emergency Department in nursing homes residents awaiting hospital admission

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¹Geriatrics Departments. La Paz University Hospital. Madrid, Spain,

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Introduction: The aim was to evaluate the efficiency of Comprehensive Geriatric Assessment (CGA) of nursing home residents attending the emergency department (ED) and the effectiveness of the coordination between nursing home doctors and liaison geriatricians to reduce the rate of hospitalization in a 1100 bed university hospital.

Methods: Descriptive study of nursing home residents admitted to the ED from January 1st 2021 to May 31st 2021 and requested to a Geriatrician. Geriatric management included CGA, clinical monitoring and medical treatment as necessary and coordination with the staff

of nursing homes. In the hospital catchment area there were 39 nursing homes (NHs) which have been classified as type 1 (medically supplied) and type 2 (not medically supplied). Only type 1 NHs had enough resources to be able to administer intravenous therapy.

Results: One hundred and sixty-eight nursing home residents awaiting hospital admission were assessed by a geriatrician. Mean age was $88.4 (\pm 6.9)$ years, 118 (70%) were women. Sixty seven (40%) residents experienced a ED visits in the previous 3 months. One hundred and nineteen (71%) came from type 1 NHs and 49 (29%) came from type 2 NHs. After geriatric assessment, 20 (17%) residents from type 1 NHs were discharged (16 with intravenous therapy, like fluid therapy, antibiotics and/or analgesia, y 4 with other prescriptions) while only 3 (6%) from type 2 NHs came back to their NHs.

Key conclusions: A coordinated hospital discharge program between liaison geriatricians and the NHs staff reduces many unnecessary hospital admissions in medically supplied NHs.

Abstract # 724

AREA: Geriatric emergency medicine

Hemotorax after multiple costal fractures in an elderly patient

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Introduction: Trauma represents a frequent cause of emergency care for elderly patients, with multiple rib fracture being one of the causes of hemothorax.

Method: Clinical case analysis of a 79-year-old woman, admitted for multiple post-fall rib fractures.

Results: 79-year-old female patient with a history of atrial fibrillation anticoagulated with acenocoumarol, heart failure, pulmonary hypertension, mitral mechanical valve, chronic renal failure. Baseline situation: independent for basic activities of daily living, no history of cognitive impairment. Patient is admitted after a fall presenting rib fracture of the fourth to ninth right ribs, presenting dyspnea, desaturation 48 h after admission, observing right pleural effusion with placement of a chest tube with an output of about 1500 cc blood content, secondary anemia that requires transfusions in several occasions and suspension of acenocoumarol, with worsening of his renal insufficiency, for which fluid therapy and treatment of respiratory superinfection with broad-spectrum antibiotics is adjusted. Presenting at 72 h a decrease in the level of consciousness with normal brain tomography and in analytical mixed acidosis with hypercapnia, for which orotracheal intubation is performed and subsequent support with non-invasive mechanical ventilation with BIPAP, requiring respiratory rehabilitation and physiotherapy due to deconditioning syndrome, with progressive improvement of the clinical picture.

Conclusion: Hemithorax is one of the post-thoracic trauma complications with significant mortality, which requires an acute multidisciplinary intervention for its proper management.

Abstract # 725

AREA: Geriatric emergency medicine

The elderly patients with renal colic and hematuria: role of ultrasound

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Introduction: The objective of the work is to evaluate the role of ultrasound (US) in the assessment of elderly patients with abdominal pain, suspected renal colic and hematuria.

Materials and methods: 200 elderly patients (age from 75 to 95 years, 85 women, 115 men), admitted in Emergency Room with abdominal pain and hematuria, were evaluated with ultrasound performed by geriatric consultant. In Emergency Room the patients were also evaluated by urologist consultant if, after the ultrasound examination by geriatrician, the clinical problems of the elderly patients required hospitalization in urology.

Results: The geriatric consultant with US examination detected renal stones and associated hydronephrosis in 36 elderly patients and only renal stones in 15 patients: all these 51 patients underwent abdominal CT examination without contrast medium; US diagnosis were confirmed. 13 elderly patients had prostatic diseases, 8 bladder stones, 5 bladder cancer, 3 bladder diverticula, 1 renal cancer. In 15 patients US detected only gallbladder stones, in 9 diverticulitis, in 5 women US revealed ovarian uterus cancer, in 8 patients diverticulosis, in 7 ascites, in 2 colon cancer. The urologist consultant was involved only for the elderly patients of urological competence.

Discussion and conclusion: Renal and urinary tract diseases frequently force the elderly patients to go to the Emergency Room. Often abdominal pain in elderly patients is not related to urological diseases or to renal colic or to renal stones, and very often the geriatric consultant can very easily with only an US examination conclude with the correct diagnosis without ionizing risks and without inappropriate urological consultation and inappropriate hospitalization. Often hematuria in elderly patients is related to anticoagulant therapy and for these elderly patients it is very useful fast and appropriate hospitalization without urologist consultant and without hospitalization in urology. Our study suggests that in Emergency Room geriatric consultation needs to be associated with US examination in order to evaluated correctly all elderly patients with suspected renal colic, abdominal pain and hematuria. Our observation has demonstrated that only 25% of 200 elderly patients with abdominal pain, suspected renal colic and hematuria has been hospitalized in Urology with renal stones and hydronephrosis, and that only 15% of 200 patients with suspected renal stones, abdominal pain and hematuria has been hospitalized in urology with prostatic diseases, bladder diseases and urinary tract disease related to uterus ovarian cancer (detected with US examination) if in Emergency Room the geriatric consultant performs also a fast US evaluation. In conclusion the 60% of 200 elderly patients observed in Emergency Room by geriatrician with US examination were discharged at home or hospitalized in appropriate not urological department.

Abstract # 726

AREA: Geriatric emergency medicine

Role of ultrasound in the elderly patients with anemia

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Introduction: The objective of the work is to evaluate the role of Ultrasound (US) in the assesment of elderly patients with anemia.

Materials and methods: 400 elderly patients (age 75–95 years, 235 women, 165 men), admitted in Emergency Room with a diagnosis of anemia were evaluated with ultrasound by the geriatric consultant. In Emergency Room the elderly patients were also evaluated by other consultants referring to the pathologies highlighted by the US examination performed by geriatrician. The symptoms reported by the elderly patients were: digestive haemorrhage (ED), melaena, haematemesis, enterorrhagia, rectorrhagia, esophageal variceal or haemorrhoid haemorrhage, asthenia, anorexia, whight loss, fever, dizziness. The US was performed by geriatric consultant before endoscopy and before invasive diagnostic procedures in order to reduce the risks for the elderly patients and for increasing the appropriateness of hospitalization and appropriateness of diagnostic and therapeutic prescriptions.

Results: Esophagogastroduodenoscopy (EGDS) and/or colonoscopy (COL) and/or rectoscopy (RET) were performed after US examination in 120 elderly patients with melaena, haematemesis, enterorrhagia and rectorrhagia. US diagnoses were correlated with clinical data and with endoscopic diagnosis. In 250 patients without symptoms related to Digestive Haemorrhage, endoscopy was not performed in Emergency Room. The geriatric consultant detected with ultrasound (US) examination in 280 elderly patients without symptoms related to digestive hemorrhage: 65 liver cirrhosis, 18 hepatocarcinomas, 5 pancreatic neoplasms, 3 gallbladder neoplasms, 11 suspected abdominal neoplastic pathologies, 35 ascites related to abdominal cancer, 4 gastroduodenal cancer, 4 colon cancer, 8 pelvic uterus ovarian cancer. In 70 patients the US was normal. In 70% of 65 cases of cirrhosis and in 80% of cases of HCC there was bleeding at the esophageal, gastric or duodenal or rectal level. CT or arteriography was performed to confirm the diagnoses. In 33 patients were detected by US enlarged lymph nodes and enlarged spleen and haematological counseling was requested. In elderly patients also were requested other consultations (surgical, urological, gynecological, etc.) in relation to the clinical situation and the diagnostic suspicion formulated by the US performed in Emergency Room by the geriatric consultant.

Discussion and conclusions: The geriatric counseling in Emergency Room for elderly patient with anemia with the fast US, even in the presence of Digestive Hemorrhage, can be considered as the most appropriate method to be performed in urgency, before endoscopy and before the evaluation of other consultants. The multidimensional geriatric global evaluation is the most appropriate procedure in Emergency Room for the elderly patients with anemia: infact anemia is related to multiple associated diseases, especially in elderly patients with unknown cancer. In addition digestive bleeding can often be caused by drugs, especially anticoagulant therapies. Therefore, before prescribing invasive investigations with contrast medium, the US performed in Emergency Room and the multidimensional geriatric evaluation allows to highlight unknown diseases that are the causes of progressive increase of anemia in the elderly, especially if associated with iatrogenic and neoplastic causes. Our observation has demonstrated that anemia in elderly patients is related to Digestive Hemorrhage only in 30% of patients. Therefore in all elderly patients with anemia it is useful to carry out an ultrasound scan immediately with geriatric consultant and prescribe endoscopy and CT scan after the multidimensional geriatric evaluation with other consultants.

Abstract # 727

AREA: Geriatric emergency medicine

Spontaneous lumbar artery haemorrhage in an elderly patient on apixaban

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Case report: An 85-year-old gentleman presented to the emergency department with abdominal pain associated with guarding. He denied any traumatic injury or recent change in medication. He was hypotensive and tachycardic on admission. Patient has multiple comorbidities including coronary artery disease, hypertension, stage 3A chronic kidney disease, and atrial fibrillation. His medications included prognostic heart failure therapy and apixaban anticoagulation (5 mg BD dose). He was noted to have an acute haemoglobin drop from 12.4 to 4.8 g/dL. A CT abdomen-pelvis showed a large left retroperitoneal, predominantly fluid containing mass. Multiple foci of active extravasation of contrast were seen throughout the arterial phases, compatible with active arterial bleeds from a left-sided lumbar artery. Resuscitation measures with intravenous fluids and blood transfusion were administered to stabilise the patient and he underwent emergency percutaneous coil embolization of the bleeding artery. Following this, he was transferred to an intensive care unit. Unfortunately, he developed pulmonary oedema and his renal function deteriorated. He passed away a few days later. Learning points: spontaneous lumbar artery haemorrhage with absence of preceding trauma (iatrogenic or otherwise) is an uncommon complication of anticoagulation therapy. Indolent haemorrhage should be considered in elderly patients on anticoagulation presenting with signs of shock.

Abstract # 728

AREA: Geriatric emergency medicine

Accounting for frailty and multimorbidity when interpreting emergency high-sensitivity Troponin-I (hs-TnI) tests in patients over 75 years old

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Background: Older patients frequently exhibit elevated serum high-sensitivity troponin I (hs-TnI) when evaluated in Emergency Departments (ED) for suspect Acute Coronary Syndrome (ACS). Most of these cases are labelled as unspecific elevations. The aim of this longitudinal study was to identify the interaction of multimorbidity and frailty with hs-TnI levels in older patients seeking emergency care.

Methods: A group of 268 patients (147 F) aged ≥ 75 (median 85, IQR 80–89) was enrolled in our acute geriatric ward immediately after ED assessment and hs-TnI testing for symptoms compatible with ACS. Multimorbidity was measured with the Cumulative Illness Rating Scale (CIRS), while frailty was determined with the Clinical Frailty Scale (CFS). Diagnosis of ACS was considered as the main study endpoint, while pooled 3-month mortality was the secondary endpoint.

Results: hs-TnI was elevated in 191 patients (71%, median hs-TnI 23 ng/L, IQR 11–65). Twelve patients (4.5%) had ACS. ROC analysis showed that hs-TnI levels were associated with ACS (AUC

0.751, 95% CI 0.580–0.922, $p = 0.003$) with a population-specific cut-off of 141 ng/L. hs-TnI elevation above this cut-off was significantly associated with CFS (OR 1.582, 95% CI 1.146–2.184, $p = 0.005$), while hs-TnI elevation below this cut-off was associated with the cardiac subscore of CIRS (OR 1.357, 95% CI 1.074–1.714, $p = 0.011$) at multivariate logistic regression models accounting also for the diagnosis of ACS. Three-month mortality was predicted by CFS, but not by hs-TnI levels.

Conclusions: In older subjects with suspect ACS, the presence of frailty and cardiovascular multimorbidity should be carefully considered in emergency hs-TnI testing interpretation.

Abstract # 729

AREA: Geriatric emergency medicine

Treatment of severe hyperkalemia in the elderly patient. About a case

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Introduction: Severe hyperkalemia is a complication in the elderly with a history of chronic renal failure, which requires urgent attention due to its neurological and cardiological manifestations.

Method: Analysis of the clinical case of an 82-year-old patient with a history of chronic renal failure who presents with severe hyperkalemia.

Outcome: 82-year-old female patient with a history of arterial hypertension, diabetes mellitus, chronic renal failure, with mild dependence for basic activities of daily life, no cognitive impairment, with good family support. She was admitted for a peritrochanteric fracture of the left femur, multifactorial anemia that required transfusion of packed red blood cells. After 72 h, symptoms of asthenia and drowsiness begin, a control blood test reveals potassium > 7.4 mEq/L, creatinine 2.95 mg/dl, urea 132 mg/dL, total proteins 5.6 g/dL, respiratory acidosis, therefore non-invasive mechanical ventilation is prescribed in BIPAP mode, intravenous furosemide. The chest X-ray shows bilateral pleural effusion with signs of heart failure, the control electrocardiogram shows peaked T waves, so cardiac monitoring is performed and treatment with intravenous calcium gluconate, a glucose solution associated with intravenous rapid insulin, polystyrene calcium sulfonate, inhaled salbutamol, a nephrology assessment is requested, carrying out potassium control 8 h after the start of treatment, which, given an improvement in analytical levels, medical treatment is maintained, with favorable symptomatic evolution.

Conclusion: Severe hyperkalemia with neurological and cardiological manifestations is an emergency that requires a rapid establishment of medical treatment.

Abstract # 730

AREA: Geriatric rehabilitation

The effect of a group physical exercise training program in people with neurodegenerative disorders (Dementia, Alzheimer's disease, Multiple Sclerosis, Parkinson, Polyneuropathies, etc.) through THERA-Trainer rehabilitation equipment (THERA-Trainer balo a

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Introduction: An initial pilot study was launched this year by 1st Department of Neurology, Medical school, Aristotle University of Thessaloniki in collaboration with one of Greece's largest healthcare organisation the Hellenic Association of Alzheimer's Disease and Related Disorders (Alzheimer Hellas) and the financial support of the Greek Shipowners' Social Welfare Company SYN-ENOSIS. Balance disorders and associated involuntary mobility impairments are among the leading symptoms of neurological and geriatric patients. They lead to a reduction in the quality of life and to falls with a subsequent increase in morbidity and mortality. Sustainable and effective training in neurological and geriatric rehabilitation should be based on certain training principles in order to achieve long-term success. With the help of equipment, training at the patient's performance limit is easier to achieve and more convenient to compare. The purpose of this project is to evaluate the usability and the efficacy of THERA—Trainer rehabilitation equipment in people with different neurodegenerative disorders, and their improvement in functional capacity, fatigue, walking, balance, mobility, anxiety, depression and quality of life.

Method: Controlled experimental interventions are developed by forming a group of people with moderate dementia (n = 5), Alzheimer's disease (n = 5), Parkinson disease (n = 5), Multiple Sclerosis (n = 5), Polyneuropathies (n = 5) and other types of neurological disorders (n = 5). The total of participants included (30) are all affected by mild or moderate disability. Duration: the pilot project will last 8 months and the first results will be discussed at the conference.

Abstract # 731

AREA: Geriatric rehabilitation

Sinking flap syndrome Geriatric Functional Recovery Unit. Case report

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We present the case of a 74 years-old woman who suffered left parieto-occipital intraparenchymal hematoma on 11/04/2020. She previously was independent for ADLs (Shah's mBI 100, FAC 5a) and had no cognitive impairment (GDS 1, CRM 0/5). Until 12/2019 she was independent for IADLs, but after a L1 fracture she required help. Surgery was performed on 11/04/2020. After surgery the patient required admission to ICU and an emergency discharge craniotomy and intubation. She was admitted to our Geriatric Functional Recovery Unit on 12/01, pending reconstruction cranioplasty. During her stay in our centre, the patient showed motor and language fluctuations, coinciding with an UTI and in the context of "Sinking Skin Flap syndrome". In an urgent CT scan performed coinciding with one of this fluctuations, paradoxical herniation of the parenchyma to the contralateral side to the craniectomy was shown. We took postural measures, after consulting with Neurosurgery, with a clear improvement of her symptoms. After the diagnosis and recommendations

from Neurosurgery we performed a brief bibliographical review of the available evidence. We found that few cases, and lesser case series, have been reported, despite being one of the complications of discharge craniotomy, with an incidence of 16–25% in some of the reported series. The incidence may be underestimated, because of its' sometimes unspecific symptoms (headache, cognitive decline, seizures, motor syndromes, proprioceptive deficit...) but it is a serious condition that can lead to severe and progressive neurological deterioration and even to death. It should be diagnosed as early as possible.

Abstract # 732

AREA: Geriatric rehabilitation

Challenging rehabilitation environment: rehabilitants, caregivers and professionals' opinions. A qualitative study

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Introduction: There is a trend to formalise the rehabilitation process for older rehabilitants in a Challenging Rehabilitation Environment (CRE). This concept involves the comprehensive organisation of care, support and environment on a rehabilitation ward. Until now, literature about the principles of CRE is scarce. This study aims to explore the opinions of rehabilitants, caregivers and professionals regarding CRE.

Methods: Between 2018 and 2020, a qualitative study was performed. One international expert group (n = 6), three Dutch expert groups (n = 17), three Dutch healthcare professional groups (n = 23), three Dutch nursing groups (n = 28), three Dutch rehabilitants and caregiver groups (n = 18) were interviewed and three Dutch caregivers were interviewed by telephone. All professionals worked in rehabilitation. Rehabilitants (age 43–90, median 75) and caregivers (age 49–77, median 72) had experience with a rehabilitation trajectory in the last 3 years. The analysing process was performed using open coding in Atlas TI. The groups (1) professionals and (2) rehabilitants and caregivers were analysed separately.

Results: Regarding the rehabilitation process the themes were (1) rehabilitant, (2) rehabilitant centered, (3) informal caregivers, (4) communication, (5) exercise, (6) peer contact, (7) daily schedule, (8) nutrition, and (9) eHealth. Regarding organizational aspects processes were (1) environmental aspects, (2) staff aspects, (3) organizational aspects, and (4) factors outside the department. The themes showed up in both groups, with nuance differences in some themes.

Conclusions: The results from this study and a prior literature study will be used for further conceptualisation of CRE. Further research into the CRE concept and its effectivity is necessary.

Abstract # 733

AREA: Geriatric rehabilitation

Orthogeriatric rehabilitation: a matter of time?

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Background: Orthogeriatric rehabilitation following acute fracture or osteoarticular prosthesis is often needed, as these outcomes are associated with functional dependency and institutionalization. This

retrospective multicentric study evaluates the effectiveness of multidisciplinary rehabilitation on functional progression, and on discharge destination.

Methods: Retrospective multicentric study including all patients aged ≥ 75 years, hospitalized in rehabilitation in Geneva between 2018 and 2019, following any type of acute fracture and/or new osteoarticular prosthesis. We performed multivariate logistic regressions to determine which variable was correlated with the functional (Montebello score ≥ 0.5) and destination (returning home) outcomes. Comorbidities were assessed using cumulative illness rating scale. Results are reported as odds ratio (OR).

Results: Mean age was 84.3 ± 5.5 and 78.8% of female. On 562 stays, 242 (43.1%) had a Montebello score ≥ 0.5 and 438 (77.9%) returned home. Being a male (OR 1.62, 1.00–2.61 95% CI, $p = 0.049$), younger (OR 0.93, 0.89–0.97 95% CI, $p = 0.001$), having less comorbidities (OR 0.95, 0.91–0.98 95% CI, $p = 0.006$) and staying hospitalized longer (OR 1.05, 1.03–1.07 95% CI, $p < 0.001$) was associated with successful rehabilitation in the logistic multivariate model. Age (OR 1.11, 1.05–1.17 95% CI, $p < 0.001$), comorbidities (OR 1.10, 1.04–1.16 95% CI, $p = 0.001$), LOS (OR 1.04, 1.01–1.07 95% CI, $p = 0.004$) and baseline functional status (OR 0.97, 0.96–0.99 95% CI, $p = 0.001$) were significantly associated with returning home. There was no correlation between number of physical therapies and the outcomes.

Conclusion: LOS is associated with successful rehabilitation while the number of therapies is not. This could influence our way to consider orthogeriatric rehabilitation planification.* Montebello score: (discharge functional independency measure (FIM) – admission FIM)/(maximum possible FIM – admission FIM) $\times 100$ (réf).

Abstract # 734

AREA: Geriatric rehabilitation

eHealth in geriatric rehabilitation: a systematic review of effectiveness, feasibility and usability

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Background: eHealth has the potential to improve outcomes such as physical activity or balance in older adults receiving geriatric rehabilitation. However, several challenges such as scarce evidence on effectiveness, feasibility and usability hinder the successful implementation of eHealth in geriatric rehabilitation.

Objective: The aim of this systematic review is to assess evidence on the effectiveness, feasibility and usability of eHealth interventions in older adults in geriatric rehabilitation.

Methods: 7 databases were searched for randomized controlled trials, non-randomized studies, quantitative descriptive studies, qualitative research and mixed methods studies that applied eHealth interventions during geriatric rehabilitation. Included studies investigated effectiveness, usability and/or feasibility of eHealth in older patients with a mean age of ≥ 70 who received geriatric rehabilitation. Quality was assessed using the Mixed Methods Appraisal Tool and a narrative synthesis was conducted using a Harvest plot.

Results: In total 40 studies were selected, with clinical heterogeneity across studies. In 15 studies eHealth was found to be at least as effective as non-eHealth interventions (56% of the included studies with a control group), 11 studies found eHealth interventions to be

more effective than non-eHealth interventions (41%), and 1 study reported beneficial outcome in favor of thenon-eHealth interventions (4%). 16 out of 17 studies concluded that the eHealth was feasible. However high exclusion rates were reported in 7 studies. 4 studies included outcomes related to usability and indicated that there were certain aging-related barriers related to cognition, physical ability or perception that lead to difficulties in using eHealth.

Conclusions: eHealth can potentially improve rehabilitation outcomes for older patients receiving geriatric rehabilitation. Simple eHealth interventions were more likely to be feasible for older patients receiving geriatric rehabilitation, especially in combination with another (non)eHealth intervention. However, a lack of evidence on usability might hamper the implementation of eHealth. eHealth applications in geriatric rehabilitation show promise but more research is required, including research with a focus on usability and participation.

Abstract # 735

AREA: Geriatric rehabilitation

Pain management and functional outcomes after hip fracture surgery in an intermediate care unit. A retrospective cohort

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Introduction: To assess pain, analgesia and functional gain of patients admitted to an intermediate care unit (ICU) following hip fracture surgery.

Method: Retrospective unicenter observational study of a random sample of patients admitted to an ICU during 3 or more weeks for functional rehabilitation between October and December 2020. Study variables: socio-demographic factors; pain assessment using the verbal categorical scale and analgesia on admission and discharge; absolute functional gain. Exclusion criteria: surgery more than 2 weeks before the admission, severe cognitive impairment, delirium, concomitant fractures, and osteosynthesis replacement due to infection.

Results: Among 27 patients, 11 met the inclusion criteria [9 (81.82%) women, mean age: 80.45 years (standard deviation—SD 9.03). Exclusion criteria: 6 (37.5%) severe cognitive impairment, 5 (31.25%) more than 2 weeks since surgery, 2 (12.5%) delirium, 2 (12.5%) concomitant fractures, 1 (6.25%) osteosynthesis material replacement. At hospital admission, 8 (72.73%) referred no pain, 2 (18.18%) mild and 1 (9.09%) moderate pain; at hospital discharge, 10 (90.91%) referred no pain and 1 (9.09%) died during admission. Analgesia on admission: 11 (100%) acetaminophen, 8 (72.73%) dipyrone, 5 (45.45%) tramadol, 2 (18.8%) ibuprofen, 1 (9.09%) gabapentin, 1 (9.09%) amitriptyline and 1 (9.09%) duloxetine; at discharge: 8 (72.73%) acetaminophen, 5 (45.45%) tramadol, 4 (36.36%) dipyrone, 2 (18.18%) duloxetine, 1 (9.09%) ibuprofen and 1 (9.09%) transdermal fentanyl. Nine (81.81%) patients required rescue analgesia. Absolute functional gain mean: 38.10 points (SD 24.09).

Conclusions: All patients who completed the study period had an optimal pain management. Acetaminophen was the most used

analgesic on hospital admission and discharge. Furthermore, a functional gain mean of 38 points was achieved.

Abstract # 736

AREA: Geriatric rehabilitation

Enriched gardens improve cognition and independence of nursing home residents with dementia: a pilot controlled trial

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Background: Dementia is a major issue worldwide, and considerable efforts were made to design therapeutic mediation tools and evaluate their benefits on the health of patients.

Methods: Design: multi-center cluster-controlled pilot trial. Settings and participants: Four nursing homes that offered separated access to one conventional sensory garden (CSG) and one enriched garden (EG). The participants were residents with dementia, independent for walking and with no severe dementia or behavioural troubles. Eligible residents were distributed into three groups based on the proximity of their rooms to the CSG or EG for the first two groups respectively, and without easy access to either garden for the third (control) group. Interventions: We asked staff members to frequently invite residents to visit the EG or the CSG depending on their group allocation. No invitation to gardens was made to the control group. We installed 12 enrichment modules in the EG that stimulated cognitive, independence and walking/balance functions.

Measures: Cognitive function (MMSE), independence for activities of daily living (ADL) and risk of falls (unipodal stance and Timed up and go—(TUG)) were assessed at baseline and after 6 months.

Results: The 120 participants were 81.0 ± 3.5 years old and comprised of 83 women. Their MMSE score was 17.5 ± 2.9 . Patients characteristics were not significantly different between the three groups. Among the participants invited to visit the EG group, 6 months changes in MMSE showed improved compared to other groups ($+0.93 \pm 0.65$ vs -0.25 ± 0.71 and -0.24 ± 0.73 in the EG vs CSG and control groups, respectively, $P < 0.0001$). Changes in ADL, TUG and unipodal stance were significantly improved in the group visiting the EG as compared to other groups, which indicates better functioning.

Conclusions: EGs offer a new approach to therapeutic mediation for residents of nursing homes with dementia.

Abstract # 737

AREA: Geriatric rehabilitation

Low food intake, urinary incontinence and cognitive impairment as predictors of in-hospital mortality and institutionalization at discharge in nonagenarian patients

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Introduction: Nonagenarian patients may suffer more adverse outcomes and functional impairment after an acute illness. Therefore, most of them may need to be admitted to a post-acute care unit. The

purpose of the study is to identify predictors of mortality and institutionalization in nonagenarian patients admitted to an Intermediate Care Unit.

Methods: A descriptive, prospective, observational, single-center study was performed. Demographic and clinical variables and a comprehensive geriatric assessment were recorded in nonagenarian patients admitted during 6 consecutive years. Predictors of mortality during admission and institutionalization at discharge were identified via multivariate cox regression analyses. Patients who lived in a nursing home prior to admission, were excluded from the analysis.

Results: A total of 254 (76.4% women) patients were included. Eighty-eight patients (35.3%) died during admission or were discharged to a Long Term Care Unit or nursing home. Multivariate cox regression analyses identified low food intake during the first 5 days of admission, urinary incontinence and cognitive impairment (Mini-Mental State Examination of Folstein score at admission) as independent predictors of in-hospital mortality and institutionalization at discharge: hazard ratio 2.74; $p < 0.01$; 95% confidence interval [CI] 1.44–5.20, hazard ratio 1.90; $p < 0.05$; 95% CI 1.01–3.61 and hazard ratio 0.96; $p < 0.01$; 95% CI 0.93–0.99, respectively.

Key conclusions: A low food intake, greater cognitive impairment at admission and urinary incontinence were independent predictors of mortality and institutionalization in this sample. Further studies should be done to determine the role of these factors.

Abstract # 738

AREA: Geriatric rehabilitation

Indoor geriatric early rehabilitation; a randomised outcome study of 2.227 patients

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Introduction and aims of the study: Indoor geriatric early rehabilitation is very well implemented and sufficiently standardized in many countries. But is indoor geriatric early rehabilitation sufficiently in functional outcome for patients from all assigning specialist departments?

Purpose: Is it possible to reach for all indoor geriatric early rehabilitation patients no matter from which department they come from a sufficient therapeutic progress in functional outcome?

Methods: The retrospective study includes all the patients from 2013 to 2020 which our department of Geriatrics and Remobilisation took over from the neurologic, traumatologic, orthopaedic and internal/cardiological departments. The development was measured with the FIM (functional independence measure). The take over FIM was taken inside 72 h after arriving and the discharge FIM was taken inside the last 48 h before leaving.

Results: The study contains 2.227 patients, 723 orthopaedic patients with an average age of 78.56 years, a residence time from 17.09 days and a FIM development from 97 to 114 points; 675 traumatological patients with an average age of 81.89 years, a residence time from 19.92 days and a FIM development from 82 to 102 points; 611 neurological patients with an average age of 77.80 years, a residence time from 20.36 days and a FIM development from 73 to 90 points as well as 218 cardiological/internal patients with an average age of 80.28 years a residence time from 18.08 days and a FIM development from 76 to 96 points. The FIM development of all patient groups is $1.18 (\pm 0.13)$ points per therapeutic day. The recommended aim value of the American Rehabilitation Counselling Association (ARCA) amounts to 1 FIM point per therapeutic day.

Conclusions: It is possible to obtain a sufficient functional progress for all patients in indoor early geriatric rehabilitation independently from which specialist department they were overtaken from.

Keywords: Early geriatric rehabilitation, functional outcome, FIM.

Abstract # 739

AREA: Geriatric rehabilitation

Perspectives of functional recovery according to Body Mass Index after hip fracture surgery at discharge of a dedicated orthogeriatric rehabilitation unit: OrthoGerontolRehab Cohort - OGRC Part 1

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Introduction: Hip fracture in older people is frequent, severe and has a negative impact on functional performances generating transfer to rehabilitation unit after acute hospitalization. The objective of this study is to evaluate according to body mass index (BMI) the functional recovery in activities of daily living after hip fracture at discharge of a dedicated orthogeriatric rehabilitation unit (RU).

Methods: We retrospectively analyzed data of OrthoGerontolRehab database from May 2012 to July 2018 of patients in a dedicated orthogeriatric rehabilitation unit and benefiting multidisciplinary rehabilitation. Patients were classified into four groups based on BMI at admission in RU: underweight (BMI < 18.5 kg/m²), normal weight (BMI 18.5 to < 25 kg/m²), overweight (BMI 25–30 kg/m²) and obese (BMI ≥ 30 kg/m²). Functional recovery was assessed using Agence Technique de l'Information et de l'Hospitalisation (ATIH) motor autonomy instrument and Groupe Iso Ressource (GIR) scale.

Results: In the 295 hip-fractured patients aged 86.9 ± 5.8 years, BMI at admission in RU was 22.81 ± 4.28 kg/m² with 56.6% considered as normal weight, 15.2% as under weight, 22.4% as overweight and 5.8% as obese. No differences according to BMI between the four groups were observed concerning inpatients characteristics at admission, in particular concerning autonomy, except for MMSE score lower in people with lower BMI (p = 0.037). At discharge of RU, 66.4% of patients were considered as moderately or very dependent according to ATIH motor score and 87.1% were dependent with GIR group 1–4. No difference of functional recovery at discharge or discharge setting was significantly observed according to BMI groups.

Key conclusions: In a sample of hip-fractured patients of a dedicated orthogeriatric rehabilitation unit, functional recovery at discharge improved but remained relatively bad and was not affected by BMI.

Abstract # 740

AREA: Geriatric rehabilitation

Perspectives of functional recovery according to serum albumin after hip fracture surgery in a dedicated orthogeriatric rehabilitation unit: OrthoGerontolRehab Cohort—OGRC Part 2

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Introduction: Hip fracture has a negative impact on functional performances generating transfer to rehabilitation unit. Nutritional status is usually assessed with serum albumin despite limitations. Regardless of being nutritional marker, serum albumin is prognostic factor. The aim of this study was to evaluate the functional recovery at discharge of rehabilitation unit after hip fracture according to serum albumin.

Methods: We retrospectively analyzed data of OrthoGerontolRehab database from May 2012 to July 2018 of patients in a dedicated orthogeriatric rehabilitation unit. Patients were classified into two groups based on serum albumin at admission in rehabilitation unit: ≥ 30 g/dl considered as well-nourished or moderate malnourished and < 30 g/dl as severe malnourished. Functional recovery was assessed using Agence Technique de l'Information et de l'Hospitalisation (ATIH) motor autonomy instrument and Groupe Iso Ressource (GIR) scale.

Results: In the 295 hip-fractured patients aged 86.9 ± 5.8 years, median serum albumin at admission in rehabilitation unit was 28.5 ± 3.7, and 59% (n = 174) were considered as severe malnourished, 39% (n = 116) as moderate malnourished and 5 patients as well-nourished. Patients with serum albumin < 30 g/dl had worst autonomy at admission and were more dependent at discharge with worst ATIH score (p = 0.0006) and GIR groups (p = 0.0508) and returned home less (p = 0.037) without difference concerning length of stay in rehabilitation unit, than patients with serum albumin ≥ 30 g/dl.

Key conclusions: In a sample of hip-fractured patients of a dedicated orthogeriatric rehabilitation unit, functional recovery at discharge improved but less in subjects with severe malnutrition who were more dependent at admission in rehabilitation unit.

Abstract # 741

AREA: Geriatric rehabilitation

Computer and internet usage are rare among frail geriatric in- and outpatients a cross-sectional study

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Introduction: Severe frailty affects almost half of geriatric patients when they are discharged from hospital, and this makes them extra vulnerable to further loss of physical function and an increased risk of death. Frequent training sessions can help; but are resource demanding. Telerehabilitation (TR) might help prevent frail patients from exhausting physical transportation between home and training centres. However, recruiting patients for TR intervention was not possible. This study examines the impact of frailty on computer and Internet usage in relation to telehealth solutions.

Methods: Inpatients admitted to geriatric wards, geriatric patients in the emergency department (ED) and outpatients referred to a fall clinic, 65 + years, were consecutively included and surveyed at Aarhus University Hospital (AUH). Frailty was measured by the Multidimensional Prognostic Index, which explores co-habitation, health, function, cognitive ability and nutrition. Patients were excluded if they did not understand Danish, were cognitively impaired, or suffered from terminal illness.

Results: A total of 311 patients undertook the survey. Forty-three percent were moderately frail and 36% severely frail. Outpatients were significantly less frail ($p = 0.001$) and 67% of the outpatients were computer and Internet users compared to 34% of inpatients ($p = 0.001$). We found an association between frailty and computer and Internet use. Education level was an effect modification for those with higher levels of education.

Key conclusion: Frailty level has an impact on computer and Internet use. Frail geriatric patients with lower education levels might be dependent on support if telehealth solutions, such as TR, are to be a realistic offer.

Abstract # 742

AREA: Geriatric rehabilitation

Pan-European survey on nutritional care in geriatric rehabilitation

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Purpose: Geriatric rehabilitation (GR) aims to provide an effective multidisciplinary treatment for older patients after functional decline. The aim of the study was to provide an overview of the current status of nutritional care in GR across Europe via assessing the clinical structures in place.

Methods: All members of the European Geriatric Medicine Society (EuGMS) were asked to complete an online questionnaire about current nutritional care structures and best practices in their GR facility.

Results: 113 EuGMS Members, Health Care Professionals (HCPs) from 17 different countries completed this survey, mainly geriatricians, (56%) and Dietitians/Nutritionists (38%). In 87% of the facilities, a person dedicated to nutritional care is available, mostly dietitians. In 58% of the facilities a larger nutritional team is available. However, 45% of HCPs indicate insufficient time to dedicate to nutritional care. While 73% of the HCPs screen all patients for (risk of) malnutrition, 24% screen only selected patients. Seventy-eight percent of the HCPs implemented (inter)national guidelines for nutritional screening. In almost all facilities (96%) a standard screening tool is used (e.g. MNA/MNA-SF, MUST, SNAQ), however BMI is also used frequently. Malnutrition treatment is based mainly on oral nutritional supplements (88%), diet adaptations (86%) and dietary counselling (83%).

Conclusion: Nutritional care is well-implemented across GR facilities in EuGMS member countries. However, availability of resources, implementation of guidelines, extent of nutritional care is country dependent. These observations can inform a pan-European best practice guideline to optimize nutritional care in GR patients.

Abstract # 743

AREA: Geriatric rehabilitation

Better functional recovery after acute illness by an early multidisciplinary geriatric visit after discharge in frail older patients

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Introduction: Physical functional loss is a well-known consequence of acute hospitalisation and bed rest. Previously we found that early multidisciplinary geriatric visits after discharge reduce the risk of readmissions. Contributing to explore other effects of the intervention, we compared functional recovery in patients receiving the early geriatric visit with receiving an early visit by a municipality nurse.

Methods: In a randomised controlled trial, frail 65 + year old patients discharged from emergency department or geriatric ward were included from January 1, 2018 to June 30, 2019. By the Functional Recovery Score (FRS), the patients' activity of daily living (ADL), mobility and instrumental ADL (I-ADL) were measured at discharge and likewise in the homes 30 days after discharge. FRS ranges from 0 to 100 points where 0 is worst and 100 best possible function. In both groups, FRS at discharge was measured by a hospital physio- or occupational therapist and at home by a physiotherapist from the municipality.

Results: In 804 patients we found that better functional recovery occurred in patients receiving early geriatric visit compared to patients receiving visit by the municipality nurse. Within the 30 days after discharge, the FRS-score increase was 36.0 points (± 23.7) by the geriatric visit versus 32.3 points (± 23.3) by the municipality nurse visit. The FRS-increase compared between groups was 3.7 point (95% CI 0.45–6.98), $p = 0.026$.

Key conclusions: Physical recovery after hospitalisation due to acute illness seems to improve more in patients that receive early multidisciplinary geriatric visit compared to early visit by a municipality nurse.

Abstract # 744

AREA: Geriatric rehabilitation

The design choices for the development of an augmented reality game for people with visuospatial neglect

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Introduction: Visuospatial neglect (VSN) is common after stroke and can hamper everyday life. The most commonly used rehabilitation methods is Visual Scanning Training (VST) which requires a lot of repetition that could make the treatment intensive and less appealing for the patient. One solution to motivational issues might be

Augmented Reality (AR) which offers new opportunities for increasing natural interactions with the environment during treatment of VSN.

Methods: Design research (DR) approach, which is characterized by the iterative and incremental use of prototypes together with a strong human-centered focus. Several design thinking methods were used to explore which design elements the AR game should comply with. Seven patients with VSN, eight occupational therapists, a game design professional and seven other healthcare professionals participated in this co-creation.

Results: Fundamental design choices for an AR game for VSN patients were extrinsic motivation, nostalgia, metaphors, direct feedback, independent movement, object contrast, search elements and competition. Designing for extrinsic motivation was considered the most important design choice, because due to less self-awareness of the target group.

Key conclusions: This study produced a prototype AR game for people with VSN after stroke. Further research is focused on including gradation, competence and personalization elements in the AR game through DR.

Abstract # 745

AREA: Geriatric rehabilitation

Effects of music on depression and general health among older adults in Greece. A cross sectional study

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Introduction: Depression and stress in older adults are increasing with age and constitute important contributing factors for disability. Music has been proposed as a mean of socialization and emotional involvement which can manage these conditions. The aim of this study was to examine the impact of music on the levels of depression, stress and psychological disorders of community dwelling older persons.

Methods: A cross-sectional study was performed with a convenience sample of 143 older persons, more than 60 years old, members of 2 Open Care Centers. Participants completed three self-reported questionnaires: (1) Interest in Music (IiM) scale (2) General Health Questionnaire (GHQ-28) and (3) Short Form of Geriatric Depression Scale (GDS-15).

Results: 37.1% of participants were male, 62.9% were female, 73.4% were married, 95.8% had children and 72.7% were living with spouse. With regard to some recreation activities 19.7% were participating in a choir, 19% in traditional dances and 47.9% in theater visits. 14.7% of participants were suffering from moderate to severe depression. Univariable and multivariable linear regression analysis showed that involvement and interest in music as a mean of socialization and emotional involvement was a protective factor against geriatric depression, stress and psychological disorders reducing the possibility of occurrence by 16.6% (95% CI 0.765–0.908), and 12.6% (95% CI 0.814–0.939) respectively.

Key conclusions: Music can be used in Public Health as an effective and economic non-pharmacological intervention through specific art programs in order to manage psychological disorders and depression of older adults and increase their quality of life.

Abstract # 746

AREA: Geriatric rehabilitation

Post-discharge light physical activity indicates recovery in acutely hospitalized older adults – the Hospital-ADL study

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Introduction: Physical activity levels might be a simple overall physical marker of recovery in acutely hospitalized older adults; however, cut-off values post discharge are lacking. We aim to identify cut-off values for post-discharge physical activity that indicate recovery among acutely hospitalized older adults and stratified for frailty.

Methods: Prospective observational cohort study including acutely hospitalized older adults (≥ 70 years) during hospitalization and at home. Frailty was assessed using Fried's criteria. Steps and intensity of physical activity were assessed using Fitbit up to 1 week post discharge. The primary outcome was recovery at 3-months post discharge. ROC-curve analyses were used to determine cut-off values, and logistic regression analyses to calculate odds ratios (ORs).

Results: The analytic sample included 174 participants with a mean (standard deviation) age of 79.2 (6.7) years of whom 84/174 (48%) were frail. At 3-months, 109/174 participants (63%) had recovered. In all participants, determined cut-off values were 1369 steps/day (OR: 2.5, 95% confidence interval [CI] 1.3–4.6) and 76 min/day of light intensity activity (OR: 3.0, 95% CI 1.6–5.8). In frail participants, cut-off values were 1043 steps/day (OR: 3.3, 95% CI 1.3–8.4) and 72 min/day of light intensity activity (OR: 4.2, 95% CI 1.6–10.8). Determined cut-off values were not significantly associated with recovery in non-frail participants.

Conclusions: We recommend at least 1369 steps per day and 76 min of light activity to help older adults patients recovery from an acute hospitalization.

Abstract # 747

AREA: Geriatric rehabilitation

Management of acquired deforming hypertonia in patients over 75 years of age: case report

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Introduction: By definition, it is any joint deformation with reduced amplitude and increased resistance to passive mobilization, regardless of the cause and origin of functional discomfort, discomfort and any other limitation in activities of daily living. The recent study shows that more than 1/3 of patients living in institutions suffered from at least 4 acquired deforming hypertonias. The problem concerns both

the patient (functional complications: hygiene, maceration, mycosis, pain and cognitive: loss of gestural ability, communication disorder, isolation, depression), as well as the staff (toilet, care) and caregivers (burden related to the loss of autonomy, self-image, exhaustion). Botulinum toxin injections are an effective treatment for acquired deforming hypertonia, although their use in older people is not common practice.

Methods: Case report An 80-year-old patient hospitalized at the geriatric SSR of the Saint Quentin hospital center, suffered from a deforming hypertonia acquired following a stroke: flexum of the elbow, wrist and finger claw causing functional discomfort during dressing, lack of hygiene with maceration, pain and unneal-palmar conflict. We performed the injections at the level of brachial triceps muscle, superficial finger flexor, round pronator and radial flexor of the carpus, under ultrasound tracking, in total 500 UI of botulinum toxin. Physiotherapy has been prescribed. The patient was seen again in a check-up 1 month later.

Results: Improvement of functional discomfort with reduction of pain and deformities was noted. Passive extension of the elbow, wrist and fingers became possible as well as prono-supination of the forearm with a positive psychological impact.

Conclusion: The treatment of deforming hypertonia acquired in older patients by injection of botulinum toxin is effective, and allows an improvement in the quality of life in this very vulnerable and fragile category of people, which should encourage to expand this practice in geriatric departments.

Abstract # 748

AREA: Geriatric rehabilitation

Impact of vitamin D deficiency on functional recovery after hip fracture in elderly patients hospitalized in Orthogeriatric Rehabilitation Unit

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Introduction: Hip fracture in older people is a severe complication of osteoporosis by mortality, morbidity, functional prognosis and socio-economic costs. The aim of this study was to assess the impact of vitamin D deficiency on functional recovery after hip fracture at discharge of an orthogeriatric Rehabilitation Unit (RU).

Methods: A retrospective cohort study of patients hospitalized after hip fracture surgery in geriatric RU from 2014 to 2018 was performed. Patients were classified into four groups based on vitamin D postoperative measurement: 0–10; 11–20; 21–30; > 30 (ng/mL). Functional recovery at discharge of RU was assessed using: walking distance (in meters: 0; 1–10; 11–50; 51–100; > 100), use of walking aid, autonomy in the activities of daily living by the Groupe Iso Ressource (GIR) scale and the Agence Technique de l'Information et de l'Hospitalisation (ATIH) motor score (dressing, feeding, physical ambulation and toilet), discharge setting and length of stay in RU.

Results: In the 248 patients aged of 86.5 years, 23% (n = 58) had a vitamin D between 0 and 10 ng/mL; 23% (n = 56) between 11 and 20 ng/mL, 28% (n = 69) between 21 and 30 ng/mL and 26% (n = 65) > 30 ng/mL. Median postoperative vitamin D levels was

22 ± 12.63 ng/mL. No significant difference was found concerning walking distance (p = 0.81), use of walking aid (p = 0.45), GIR score (p = 0.57), ATIH motor score (p = 0.17), discharge setting (p = 0.53) and length of stay (p = 0.19).

Key conclusions: Vitamin D deficiency in older subjects was not associated with poorer functional recovery after hip fracture surgery at discharge of an orthogeriatric rehabilitation unit.

Abstract # 749

AREA: Geriatric rehabilitation

Supporting older patients in working on rehabilitation goals: a scoping review of nursing interventions

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Introduction: Nurses are consistently present throughout the rehabilitation of older patients, but they experience apprehensiveness to perform their tasks in the multidisciplinary team. This review explores working methods on setting goals and working with goals designed for nurses in geriatric rehabilitation and describes their distinctive features.

Method: A scoping review was performed. Pubmed and Cinahl were searched through May 1, 2021. Search terms were used relating to the following themes: nurses, rehabilitation, geriatric, goal and method. Additional articles were found through snowballing.

Results: Seven methods were found. They were developed with four different aims: improving multidisciplinary team care, increasing patient centeredness, improving disease management by patients and increasing nursing involvement in rehabilitation. The methods appeal to five aspects of the nursing profession: assessing patients selfcare abilities, educating patients, setting goals with patients, being patients advocate in the multidisciplinary setting and supporting goal achievement.

Key conclusions: Not many methods were found meant to support the nursing role. This may indicate a blind spot in the rehabilitation community to the additional value of its contribution. The methods show that the nurse, in the multidisciplinary team, can play an important unifying role towards the patient, through her activities in the areas of education, advocacy, goal setting and achieving. With the support of nurses increased patient awareness of the geriatric rehabilitation process and transfer of ownership of treatment goals from the multidisciplinary team to the patient might be achieved.

Abstract # 750**AREA: Geriatric rehabilitation****Screening of the elderly population participating in the APTITUDE project in Navarre (Spain)**

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Introduction: There is a continuous and growing interest in developing multicomponent interventions to prevent and reverse functional, cognitive, emotional and self-care problems in older people.

Methods: This study framed within the APTITUDE project presents the results of the baseline evaluations prior to a multicomponent intervention in community patients. The objective is to promote skills related to five different domains (physical exercise, nutrition, psychosocial problems, prevention of cognitive impairment and medication review). The study is part of the APTITUDE Project, 65% of which has been co-financed by the European Regional Development Fund (FEDER) through the Interreg V-A Spain-France-Andorra Program (POCTEFA 2014–2020).

Results: A total of 105 patients (79% women) were evaluated with a mean age of 77.6 years, body weight of 69.8 kg, height of 156.5 cm and a BMI of 28.2. The mean Handgrip strength for men was 34.8 kg while for women it was 18.7 kg. According to Fried's criteria, 18% were robust, 41% pre-frail, and 39% frail. According to the Mini-Mental Estate Examination (MMNA) 13% had mild cognitive impairment (MCI), 7% had a suspected MCI and 80% did not have MCI. According to the Mini Nutritional Assessment (MNA), 90% had a normal nutritional status and 10% showed a risk of malnutrition. According to the Yesavage Geriatric Depression Scale, 10% had established depression, 20% had probable depression, and 10% did not have depression.

Key conclusion: This study will aid in better identifying the characteristics of the older population in order to identify the necessities of said population and, therefore, better distribute resources in the implementation of multicomponent interventions. It also will aid in improving cooperation between geriatricians and other healthcare professionals.

Abstract # 751**AREA: Geriatric rehabilitation****The management of geriatric rhinitis**

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Introduction: Chronic non-allergic rhinitis is grouped into 8 subtype entities: atrophic rhinitis, drug-induced rhinitis, gustatory rhinitis, hormonal rhinitis, nonallergic rhinitis with eosinophilia syndrome, nonallergic rhinopathy, occupational rhinitis, and senile or geriatric rhinitis [1, 2, 3].

Objectives: The present study aims to evaluate the treatment administered to patients with geriatric rhinitis.

Method: The study included 30 patients over the age of 70, diagnosed with geriatric rhinitis. The 30 patients were divided into 3 groups, 10 patients each, depending on the administered treatment: intranasal corticosteroid, intranasal anticholinergics, combined intranasal corticosteroid + intranasal antihistamines.

Results and conclusions: This study shows that intranasal corticosteroids treatment in patients with geriatric rhinitis is more effective than the administration of intranasal anticholinergics [1, 4–9]. On the other hand, intranasal corticosteroid treatment is found to be equally effective when compared to combined intranasal corticosteroid-antihistamines treatment. The combination may be considered if monotherapy does not control symptoms.

Keywords: Geriatric rhinitis; intranasal corticosteroid; intranasal anticholinergics; intranasal antihistamines.

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Abstract # 752

AREA: Geriatric rehabilitation

Patient characteristics as early indicators of referral to post-acute care

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Introduction: Following acute hospital admission, approximately 30% of older patients show moderate to severe conditional or functional decline and may need geriatric rehabilitation or other post-acute care. The Dutch National Safety Management System (VMS) is a mandatory screening protocol used at hospital admission, aiming to identify frail patients over 70 years of age in need of geriatric hospital care. We studied whether VMS data or other patient characteristics were related to referral to geriatric rehabilitation (GR) or other post-acute care (PAC) at hospital discharge.

Methods: Retrospective cohort study with electronic medical records, concerning acute admissions of patients discharged from an urban tertiary hospital. Data at admission included diagnoses, comorbidity, attending medical specialism, functional (Katz-ADL) and nutritional status, VMS risk of falling score and presence of delirium and discharge destination. Differences between patients returning home or referred to geriatric rehabilitation and other post-acute care were analyzed.

Results: Out of 491 discharges, 339 (71%) patients returned home, 60 (12%) patients were referred to GR and 82 (17%) to other PAC. 70% of GR-patients versus 21% of PAC-patients were referred from surgical wards. Men under 80 were overrepresented in the GR-group compared to the Dutch population. In a linear regression model chance of referral to GR or other post-acute care was correlated with VMS-functional status and with referring medical specialism.

Key conclusions: In this cohort, functional status and frailty of hospital patients correlated with the decision regarding post-acute care destination.

Abstract # 753

AREA: Geriatric rehabilitation

Early supported discharge for older adults admitted to hospital with medical complaints: a systematic review and meta-analysis

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Introduction: Early supported discharge (ESD) has been researched extensively in the stroke population, showing reduced length of stay for patients and improved functional outcomes. This systematic review explores the totality of evidence for the use of early supported discharge in an older adult population who have been hospitalised with medical complaints.

Methods: Systematic searches were conducted in MEDLINE, CINAHL, Ebsco, Cochrane Library and EMBASE. Randomised controlled trials (RCTs) and quasi-RCTs were included if they provided an ESD intervention to older adults admitted to hospital for medical complaints compared to usual inpatient care. Patient and process outcomes were explored. The Cochrane Risk of Bias Tool was used to assess the methodological quality. A meta-analysis was conducted using RevMan 5.4.1.

Results: A total of 5 RCT’s were identified. The quality of the trials was mixed overall. ESD demonstrated a statistically significant reduction in length of stay (MD – 6.04 days, 95% CI – 9.76 to – 2.32) and improvements in function, cognition and health related quality of life, with no increased risk of long term care admission, hospital re-admission or mortality in the ESD interventions versus usual care.

Discussion: This review demonstrates that ESD positively impacts patient and process outcomes for older adults. Further consideration should be given to exploring the experiences of those involved in ESD including older adults, family members, caregivers as well as healthcare professionals.

Abstract # 754

AREA: Geriatric rehabilitation

Improving the assessment and management of sarcopenia in a specialist geriatric rehabilitation unit – a MDT Quality Improvement Project

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Background: The European Working Group for Sarcopenia in Older Adults outlines guidelines for assessment and management of sarcopenia in older adults [1]. An audit of 26 medical charts (PMRs) in a specialist geriatric rehabilitation unit (SGRU) found that nobody was screened for sarcopenia using a validated tool, 20% were assessed using a standardised strength assessment, 19% had sarcopenia severity assessed, 62% were referred dietetics, 50% placed on high protein diets and PRT was implemented in 54% of patients. This QI project aimed to improved adherence to the guidelines.

Methods: Using a PDSA cycle, a multidisciplinary intervention included an education campaign involving MDT infographics and in-

services on Sarcopenia, PRT and dietetic management. Patient education was provided through information leaflets. Sarcopenia measures were added to MDT assessment forms. Funding was obtained for weights to deliver PRT programs.

Results: 26 PMRs were re-audited. 46.2% were screened. 84.6% (n = 22) were assessed using a strength tool. Severity was assessed in 100% of those found to be Sarcopenic. 61.5% were referred to a dietitian, 42.3% placed on high protein diets. PRT was implemented in 95% of patients.

Conclusion: A multidisciplinary intervention improved the adherence to assessment and management guidelines of Sarcopenia in a SGRU, most notably in the areas of standardised strength assessment and PRT prescription. Further targeted intervention is required to improve sarcopenia screen completion, and referral to dietetics, with barriers to change requiring analysis. This practice will continue and expand to other subspecialties and should be considered in all Irish SGRUs.

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Abstract # 755

AREA: Geriatric rehabilitation

Experiences of early supported discharge services following a stroke: a qualitative evidence synthesis

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Introduction: Early supported discharge (ESD) facilitates people with a stroke to be discharged from the hospital environment earlier than conventional care to continue their rehabilitation within the home with a multi-disciplinary team. Benefits of ESD from Randomised Controlled Trials include reducing the length of hospital stay, cost savings and reducing long term dependency. This systematic review and qualitative synthesis explores the experiences of those involved in ESD including people with stroke, family members, caregivers as well as the healthcare professionals.

Methods: A literature search was completed in 11 databases with 3425 articles generated. Qualitative or mixed methods studies that included qualitative data on the experiences of people with stroke, family members, caregivers and healthcare professionals of an ESD service were included. Methodological quality was appraised using the Critical Appraisal Skills Programme checklist. Findings were synthesised using thematic synthesis.

Results: Fourteen studies were identified. The methodological quality of the studies was good overall. Four key themes emerged: (1) ESD is experienced by people with stroke as a goal-focused and supportive process leading to positive outcomes, (2) ESD eases the transition from the hospital to the home environment but the transition from ESD to social and community services is often problematic, (3) Organisational, logistical and inter-professional factors are critical to the success of ESD and (4) The home environment enhances rehabilitation.

Conclusions: Our findings highlight the importance of home in the rehabilitation process post stroke. Key practice implications point to the need for increased attention to periods where care transitions occur.

Abstract # 756

AREA: Gerodontology

The effect of a training programme on the knowledge and attitudes of nursing home staff towards oral health and care provision to residents

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Introduction: Older adults, especially those who are frail and reside in nursing homes, often face a rapid oral health deterioration due to several barriers, including nursing home staff's inadequate knowledge and negative attitudes towards daily oral care support. The purpose of the present study was the evaluation of the effect of an oral health education programme on nursing home staff's knowledge and attitudes towards oral health and care provision to residents.

Methods: Fifty-five formal caregivers working in the three units of a nursing home in the region of Attica in Greece were allocated to either a control (n = 27) or an intervention group (n = 28) and they completed a knowledge and attitudes questionnaire about oral health. Then, an education programme about oral health in older adults was applied to the intervention group, and the completion of the questionnaire was repeated by both groups.

Results: Within groups analyses showed a statistically significant improvement in knowledge and attitudes only in the intervention group after the implementation of the education programme (P < 0.001). Between-group analyses revealed a statistically significantly higher total knowledge and attitudes score post-training in the intervention group compared to the control group (P < 0.001 and P = 0.02, respectively).

Key conclusions: This education programme was effective in improving nursing home staff's knowledge and attitudes towards oral health and care of residents. Further studies with larger samples and long follow-up periods are needed, including assessment of the effect of the education programmes on oral health outcomes of the residents.

Abstract # 757

AREA: Gerodontology

Oral health literacy among Greek community-dwelling older adults

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Introduction: Information about oral health literacy among older adults is scarce. The purpose of this study was to investigate the sources of oral health information and their association with oral hygiene habits among urban community-dwelling older adults.

Methods: One-hundred fifty-four community-dwelling older adults were interviewed and clinically examined at community centers in the region of Attica in Greece. Demographic characteristics, oral hygiene habits and sources of information about oral hygiene were

investigated. The number of natural teeth and the use of removable prostheses were also recorded.

Results: A total of 10.3% were edentulous and 36.4% used denture (s). Regarding toothbrushing techniques, 49.1% of the dentate individuals ($n = 138$) had received related information from their dentist. When the dentist was the source of toothbrushing information, 56.7% brushed the teeth more frequently than once per day compared to 30.6% when no related information from a dentist was obtained ($p = 0.003$). Forty-one percent of the denture wearers ($n = 56$) had received denture hygiene information from a dentist. Denture hygiene frequency was not associated with the source of information ($p = 0.536$), but the majority of denture wearers who obtained information directly from a dentist, removed them at night (94.3%) compared to only 21.1% of those who were not educated by a dentist ($p < 0.001$).

Key conclusions: This study revealed that few older adults received oral health education directly from a dentist. Moreover, the information obtained from a dentist led to improved oral care practices. Appropriate policies should be developed and implemented in order to improve oral health literacy among older adults.

Abstract # 758

AREA: Gerodontology

Dental status and oral health satisfaction among nursing home residents

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Introduction: The oral health of nursing home residents is very often poor. However, relevant epidemiological data are scarce. The purpose of this pilot study was to investigate the dental status and the levels of oral health satisfaction among nursing home residents.

Methods: Residents of a nursing home in the region of Attica in Greece were interviewed and clinically examined in their rooms using portable dental equipment. Demographic characteristics, smoking habits, number of natural teeth and level of oral health satisfaction were investigated.

Results: Twenty-nine residents (10 males, 19 females) with a mean age of 85.3 ± 8.2 years were examined. They had been living in the nursing home for 3.9 ± 4.1 years and 20.7% had received professional education, while 20.7% were active smokers. Regarding the number of natural teeth, 13.8% had more than 20 teeth, 44.8 had 1–20 teeth, while 34.5% were edentulous. A total of 37.9% were satisfied with their oral health, while 34.5% and 20.7% reported moderate and no satisfaction respectively. The number of natural teeth was not statistically significantly associated with gender, age, education, years living in the nursing home, smoking habits or satisfaction with oral health ($P > 0.05$). More female residents were satisfied with their oral health compared to males ($P = 0.042$).

Key conclusions: This pilot study identified increased levels of partial and complete edentulousness and relatively moderate levels of oral health satisfaction in nursing home residents. Future studies are needed to comprehensively evaluate their oral status and oral health satisfaction.

Abstract # 759

AREA: Gerodontology

Innovative treatment approaches for salivary hypofunction

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Saliva is a complex human body fluid which plays a central role in the maintenance of oral health, facilitating swallowing and protecting hard and soft tissues through various mechanisms. As life expectancy increases, the high prevalence of hyposalivation of 33% in elders becomes an important health issue. Hyposalivation may result from systematic disorders like Sjögren syndrome (SS), diabetes mellitus type I and II or thyroid dysfunction but it may also result from medication intake. These alterations have a major impact in the quality of patient life. Currently, there are some treatments such as artificial saliva products and saliva stimulants, but unfortunately they do not treat all the symptoms and sometimes have side effects. The purpose of this review is to present current approaches to tissue engineering of salivary glands. Scientific articles were retrieved by PubMed/MEDLINE from 2017 until 2021, and they were reviewed by title, abstract, and text relevance. In order to overcome the limitations related with current treatment options, many scientific groups have turned their attention to tissue engineering procedures and regenerative approaches. Tissue engineering is a field that combines the principles' application of engineering and biology in order to restore or replace different cells and tissues. The predictability of whole organ's reconstruction remains challenging, but the future of these innovative therapies seems very promising.

Abstract # 760

AREA: Gerodontology

The “Patient centric solution for smart and sustainable healthcare” (ACESO) project, rationale and protocol

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Introduction: The “Patient centric solution for smart and sustainable healthcare” (ACESO) project aims to leverage the use of artificial intelligence (AI) to create an integrated health and oral-care platform through the use of intelligent devices and data analytics, with the focus on oral hygiene and xerostomia.

Methods: Sixty participants, including with xerostomia, aged ≥ 60 years, with varying states of dentition will be recruited in the pilot study, following classification based on a Comprehensive Geriatric Assessment. Participants' salivary status at rest as well as in function will be assessed using citric acid challenge test to differentiate between patients with and without xerostomia. The individual components to assess the end-user's oral hygiene (smart toothbrush) and oral-hygienic behaviour will be tested together with devices measuring

general health status (sphygmomanometer, thermometer, pulsoximeter, weighing scale, activity and sleep bracelet, and glucometer). Further, the platform integrating these components will be set-up and tested in all individuals giving input to the underlying AI engine.

Results: The AI models will help to associate the seemingly disparate health and oral hygiene phenomena possibly indicating rapid changes in patients' health and wellbeing. The hitherto performed feasibility pilot, demonstrated that the adopted salivary secretion challenge is capable of differentiating patients into those with and without salivation problems.

Conclusion: Preliminary tests performed revealed that most cases responded well to chemical stimulation. However, some participants displayed decreased salivary flow due to a decrease in parotid secretions. Further research is required to establish the basis of these findings.*equal contribution.

Abstract # 761

AREA: Gero-oncology

Tricky diagnostic

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Woman aged 77 with medical history of hypertension, dyslipidemia, ischemic heart disease (left ventricle ejection 60%) and acute lymphoblastic leukemia proB in complete remission since July 2018, in treatment with acetyl salicylic acid, olmesartan + amlodipine and rosuvastatin. She is completely independent, no cognitive impairment, Barthel 100 points. The patient refers asthenia, oliguria and left back pain for the last 5 days. Her labs show an acute kidney failure, ruling a CT abdominal scan which showed a pelvic mass into the uterine cervix, conditioning ureters entrapment and ureterohydronephrosis II-III degree. First of all, a bilateral nephrostomy is achieved to solve the obstructive acute kidney failure. Biopsies of the mass are taken by the gynecologist. During the hospitalization, the patient suffers an episode of dizziness and breathlessness, without pain chest and decreasing cardiac enzymes, which leads to believe ischemic heart attack has taken place, now in resolution. Since the bad prognosis of her gynecological cancer stage IV the attitude taken is a conservative approach and palliative care. The patient starts showing some signs of depression, starting Citalopram. Later on, she begins with fever from unknown origin, finding *Pseudomonas Putida* in urine culture for which antibiotics are given. Meanwhile, the results of the biopsy shows a delay extramedullary relapse of her lymphoblastic leukemia, instead of a gynecological cancer as originally envisaged. Treatment options are now an option for the patient, now in charge of Hematology. She is currently receiving active treatment with chemotherapy.

Abstract # 762

AREA: Gero-oncology

Prostate ultrasound imaging and PSA for prostate cancer control during one year

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Purpose: Correlation between PSA values and prostate size measurement in patients performed U/S scan in Kastelli Primary Health Care Unit during the year 2017.

Introduction: Prostate cancer is the most common male cancer and a major cause of mortality among male population worldwide. Presymptomatic control is based on Digital Rectal Exam and PSA (Prostate Specific Antigen) blood measurement. The combination of these tests may help to detect prostate cancer in early stage, although elevated PSA blood levels may also be due to prostate inflammation as well as benign prostatic hyperplasia.

Methods: All male population examined in Kastelli Health Center Laboratory during the year 2017 was reported. Pathological values of PSA (> 4 ng/ml) were evaluated and correlated to the gland size measured by a Mindray DC30 U/S device (trans-abdominal ultrasound approach, C 5–2 probe).

Results: In total 172 men over 50 years old were examined. Elevated PSA values were detected in 33/172 men (19.2%), 7 of which 50–60 years old, 11 of which 60–70 years old and 15 of which > 70 years old. The U/S scan revealed enlarged prostate gland in 23/33 patients (69.7%). All patients with pathological PSA values were scheduled for prostate biopsy.

Conclusion: 33/172 men (19.2%) had elevated PSA blood levels, most of which over the age of 60 years old. Combination of PSA pathological values and increased gland size was detected in 23/33 patients (69.7%). Annual presymptomatic PSA blood measurement and prostate ultrasound imaging are essential for the early stage prostate cancer detection and treatment.

Abstract # 763

AREA: Gero-oncology

Prevalence of absolute iron deficiency in patients ≥ 75 years old with cancer and impact on mortality

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Introduction: In oncology, the serum ferritin value is influenced by chronic inflammation associated with cancer and by frequent iron deficiency (ID). The transferrin saturation coefficient (TSC) completes the iron deficiency screening.

Main objective: to assess the link between serum ferritin, TSC and mortality in patients aged ≥ 75 years old with cancer.

Methods: Retrospective study of the French single-center oncogeriatric ANCRAGE cohort (ANALyses Cancer et sujet AGE) including all patients evaluated during a 1st geriatric oncology consultation at Poitiers University Hospital between 2009 and 2017, with available serum iron tests in the 12 months preceding the evaluation. Absolute or functional ID were defined according to the criteria of—the European Society of Cardiology (ESC): absolute ID (ferritin level < 100 µg/L); functional ID (ferritin between 100 and 299 µg/L and TSC < 20% and in patients with cardiac insufficiency)—and of the National Comprehensive Cancer Network (NCCN): absolute ID (ferritin < 30 µg/L and TSC < 15%); functional iron deficiency (ferritin ≤ 800 µg/L and TSC < 20%). Variables studied: socio-demographic data, tumor site, metastatic status, ferritinemia and TSC values, vital status on 24 April 2021. Statistical survival analyses were performed using the Cox proportional hazards model.

Results: During the 8 years of recruitment, 597 patients were included (45% women, mean age 82.1 ± 4.6 years, most frequent cancer: colon (17%, n = 104), metastatic cancers in 36.7% (n = 218). Prevalence of absolute ID was 6% (n = 34) according to NCCN criteria and 28% (n = 166) according to ESC criteria. Median duration of follow-up: 325 days. We found a significant association

between mortality and absolute ID according to both the NCCN criteria (HR = 1.76, 95% CI [1.08, 2.87] $p = 0.022$), and the ESC criteria (HR = 1.34, 95% CI [1.07, 1.70] $p = 0.010$).

Conclusion: In our study, absolute ID is associated with mortality in the older population with cancer. These results pave the way of iron exploration in geriatric oncology population, and question the prognostic value of iron supplementation, which remains to be validated by clinical trials.

Abstract # 764

AREA: Gero-oncology

Classification of anemia in oncology patients

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Introduction: Anemia is the decrease of hemoglobin, hematocrit and of the number of red blood cells. Classification of anemia is based on red blood cell morphology regarding Mean Corpuscular Volume (MCV normal range 80–100 fl), Mean Corpuscular Hemoglobin (MCH n.r 27–32 pg) and Mean Corpuscular Hemoglobin Concentration (MCHC n.r 32–37 g/dl).

Methods: 122 blood count tests of oncology patients from September 2019 until May 2020, of which 78 male and 44 female, were studied. Blood count vials containing EDTA were used. Erythrocyte index values were measured by Coulter DxH 600 analyzer of Leriva company.

Results: Most common anemia in oncology patients, was normochromic normocytic anemia (79.5%) both in men (84.6%) and women (70.4%). Second most common was hypochromic microcytic anemia (17.2%) followed by normochromic macrocytic anemia (3.3%). Although most of the oncology patients studied were male, it is worth-mentioning that hypochromic microcytic anemia concerned mainly women.

Conclusion: Oncology patients suffer from normochromic normocytic anemia in a percentage of 79.5%. Although a small percentage of oncology patients (17.2%) face hypochromic microcytic anemia, this type of anemia afflicts mostly women while normochromic macrocytic anemia is quite rare (3.3%) among oncology patients.

Abstract # 765

AREA: Gero-oncology

POEMS syndrome in the oldest old. A case report and literature review

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We present an 83-year-old male patient, institutionalised, with a history of AHT, type 2 diabetes mellitus, L3–L4 spinal canal stenosis. Up until March 2020, he was a functionally independent (Barthel index 100/100), without cognitive impairment. He was admitted to the hospital: in March for pneumonia type COVID 19 and in April 2020 for upper gastrointestinal bleeding. After that he needed followed up at his nursing home by the residential care team due to

motor weakness in the lower limbs. It was decided to admit him to the acute care unit of our hospital. On admission he had Barthel index 55/100. Paraparesis and sensory deficit were observed and this weakness has been evolving progressively, ascending and initially asymmetrical with a right predominance, associated with double incontinence. We did not find any alteration in the spinal MRI but neither in the cerebrospinal fluid. A CT scan of the brain showed only sclerotic images in both frontal bones. Analytically showed anaemia, leukocytosis and thrombocytosis, so we consulted haematology and suspected POEMS syndrome. A bone marrow biopsy showed plasma cells with typical morphology. Before starting specific treatment, he developed a nosocomial pneumonia of probable bronchoaspirative origin, dying days later. POEMS syndrome (Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal protein, Skin changes) is a rare monoclonal plasma cell disorder with multisystemic clinical manifestations, that's why diagnosis is delayed. In our case the diagnosis was suspected in a more targeted manner due to the rapid and severe development of polyneuropathy, which is an essential feature of this syndrome.

Abstract # 766

AREA: Gero-oncology

Tumor hypercalcemia in advanced multiple myeloma. About a case

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Introduction: Multiple myeloma is a hematological tumor of plasma cells associated with hypercalcemia due to increased bone resorption due to activation of osteoclasts. It is also related to renal failure due to injury to the renal tubular epithelium.

Methods: Analysis of the clinical case of an 82-year-old patient with a history of multiple myeloma who presents with tumor hypercalcemia and renal failure in the context of her underlying pathology.

Results: 82-year-old female patient with a history of major neurocognitive disorder, partially independent for basic activities of daily life, with good family support who consulted for generalized polymyalgias, nocturia and swelling of the ankles. Previously diagnosed with multiple myeloma, on chronic corticosteroid treatment, not being a candidate for oncospecific treatment due to her baseline situation. In analytical control, renal failure, hypernatremic dehydration and hypercalcemia stand out. Treatment with hydration and anti-myeloma therapy, including steroids, was instituted. Calcitonin was administered for its mechanism of inhibition of bone resorption without the risk of nephrotoxicity, but its hypocalcemic effect was modest and transitory, initiating bisphosphonate therapy, as they are potent inhibitors of osteoclasts. After the administration of zoledronic acid, the patient presented improvement in the levels of calcium and her symptoms, and could be discharged with weekly treatment with bisphosphonates.

Conclusion: It is necessary to closely monitor calcium levels in patients with multiple myeloma and to initiate therapeutic measures early. In cases of malignant hypercalcemia, bisphosphonates are recommended as the most effective therapy.

Abstract # 767

AREA: Gero-oncology

Comprehensive geriatric assessment of older persons with cancer evaluated in an oncogeriatric consultation: main results and derived interventions

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Introduction: Comprehensive geriatric assessment (CGA) is recommended for older people with cancer. The aims of this study are to describe the problems identified through a CGA among older people with cancer and the derived interventions.

Methods: Retrospective descriptive study including all older persons consecutively referred for a first oncogeriatric evaluation at the University Hospital Parc de Salut Mar, Barcelona, from 2017 to 2020. CGA included: tumor group, functional status (Barthel Index (BI), Lawton Index (LI)), cognitive-emotional status (Pfeiffer test (PT), screening single-question for depression), social risk assessment (Gijón scale), nutritional status (MNA/Mini-MNA), geriatric syndromes, frailty group (Balducci's classification (not frail/frail/very frail)). Data on any interventions carried on, aimed at improving functional status/falls, nutritional status and medication appropriateness were collected.

Results: 891 patients were evaluated: 57.5% women, mean age 82.61 (SD 5.63) years. Most frequent tumor groups were lower digestive tract (32.2%), upper digestive tract (25.4%), breast (19.2%). The mean BI was 85.09 (20.05), mean LI was 4.94 (2.75); 17.3% had moderate-severe cognitive impairment, 26.1% suspicion of depression, 33.7% moderate-severe social risk, 48.5% risk of malnutrition or malnutrition, 30.8% falls, 46.7% gait disorder, 74.9% polypharmacy. 26.5%, 53% and 20.5% belonged to the non-frail, frail, and very frail groups, respectively. Interventions aimed at improving functional status/falls, nutritional status, and medication appropriateness were prescribed in 58.8%, 66.0%, and 22.9%, respectively.

Key conclusions: CGA within an oncogeriatric evaluation helps to manage older persons with cancer who frequently suffer from geriatric syndromes such as frailty, risk of malnutrition, malnutrition, gait disorders and polypharmacy.

Abstract # 768

AREA: Gero-oncology

Relationship between frailty and oncological treatment received in patients referred to an oncogeriatric consultation

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Purpose of the study: Analyze whether there is a relationship between frailty degree according to the different frailty scales and whether or not receiving cancer treatment, and if frailty degree is related to the cancer treatment that patients receive.

Methods: This is a descriptive research of the patients assessed in the Oncogeriatric consultation of the University Hospital of Guadalajara

(Spain) from February 2019 to January 2021. We reveal the types of tumors, treatments received, the type of patient according to the SIOG1, as well as different Frailty scales (SPPB, Fried frailty criteria) and their relationship with receiving or not any cancer treatment. Analyzes with descriptive statistics were used, comparison of means with Student's t-test and frequencies with Chi².

Results: 92 patients were analyzed, 39.1% men and 60.9% women with a mean age of 84.12 years. Types of tumors collected: 36.8% gynecological, 26.2% gastrointestinal, 11% urological, 9.8% lung, 7.6% hematological, 3.3% cerebral and 2.2% others. According to the SIOG1 scale, 100% of Type I patients, 90.5% of Type II, 70.7% of Type III and 29.6% of Type IV received some cancer treatment. According to the Fried frailty scale, 75% of the fit patients, 80% of the pre-frail and 40% of the frail and, according to the SPPB, 84.6% of fit patients, 70.8% of the pre-frail, 64.7% of the frail and 36% of the very frail with advanced disease. Patients who received some cancer treatment compared to those who did not, had greater Gait Speed Test while there were no significant differences in the hand grip strenght test. When analyzing the types of treatment separately, only chemotherapy maintained the same significant differences.

Conclusion: The classification according to the SIOG1, the SPPB and Gait Speed Test help in making decisions to initiation of chemotherapy treatment.

Abstract # 769

AREA: Gero-oncology

Oncologic treatments-Related fatigue in oncogeriatrics: a scoping review

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Background: Fatigue in older cancer patients is multicausal. It can be either interpreted as a symptom of the cancer itself, present in several comorbidities, linked to-several comedications and intricated with psychocognitive vulnerability or as a syndrome by itself, related to aging. Moreover, fatigue is one of the pillars of the phenotypic view of frailty. Consequently, 70–80% of oncogeriatric patients complaint about fatigue, with an heavy impact on quality of life. However, fatigue is seldomly presented as an expected side effect of cancer treatments and included in the assessment of the risk–benefit balance during cancer decision.

Methods: A scoping review on treatments related fatigue in oncology was performed in PubMed, Scopus and CINAHL databases.

Results: Rates of all grade and grade 3 fatigue were collected for the most frequently used specific treatments or chemotherapeutic regimens. A colour code was displayed with the following correspondence considering grade 3 fatigue rates: red ($\geq 20\%$), yellow ($\geq 10\%$ and $< 20\%$) and green ($< 10\%$). Adjuvant breast cancer poly-chemotherapies associating (sequential or concurrent) taxanes and anthracyclins induced a high rate and age-dependant grade 3 fatigue reaching 15–22% in classical regimens and even 40% in dose-dense regimens. In lung cancers, gemcitabine cisplatin and gemcitabine carboplatine led to 8–40% grade 3 fatigue, paclitaxel-cisplatin, paclitaxel carboplatine and docetaxel cisplatin induced 7–16% grade 3 fatigue. In urothelial cancer, MVAC regimen was associated with a 24% risk of fatigue grade 3.

Conclusion: When considering that grade 3 fatigue means impairment in activities of daily living, those rates may be good indicators for the risk/benefice balance when considering treatments, particularly in the adjuvant setting.

Abstract # 770**AREA: Gero-oncology****Association between myasthenia gravis and multiple myeloma. A case-report**

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Introduction: Myasthenia gravis (MG) is the most common disorder of neuromuscular transmission. In approximately 10 percent of patients, myasthenia is a paraneoplastic manifestation of a thymic tumor and rarely occurs in patients with other cancers.

Methods: A 92 years-old female was submitted to geriatric consultation for cervical weakness and ptosis. Myasthenia was the initial suspicion, which was confirmed by elevated levels of antibodies against the acetylcholine receptor (AChR). Concomitantly, the patient presented a total white blood cell count of $3.87 \times 10^3/\mu\text{L}$, hemoglobin 10.0 g/dL, and a serum gamma M component was detected with 4129 mg/dL, qualified as IgG on immune electrophoresis, with a total kappa light chains of 1323 mg/dL and lambda light chains 15 mg/dL. Peripheral blood smear showed rouleaux formation. Bence-Jones kappa proteins were detected in the urine sample. A cervical MRI ruled out thymoma. With the diagnosis of MG associated with multiple myeloma (MM), treatment with pyridostigmine and erythropoietin was started. Due to the absence of symptoms and relative clinical irrelevance of the myeloma, no specific treatment for this disease was started. The patient presented evident clinical improvement with disappearance of cervical weakness and ptosis. One year after diagnosis, she died from COVID-19.

Conclusions: Some studies have reported the presence of autoimmune neurologic disorders including MG in patients with MM. The coexistence of MG and MM in the literature is rare and none of them were described in elderly people. This case reminds us that MM screening should be done especially in patients with late-onset MG.

Abstract # 771**AREA: Gerotechnology****The engineered glove hand test system (hts) as a part of a new Digital Multidimensional Frailty Index**

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Background: The correct stratification of older people in relation to their functional intrinsic capacity and the presence of frailty risk factors is the basis of the proactive medicine and the active and healthy aging programs. AIM The aim of the present study was to establish the current or potential state of cognitive and physical frailty

at a very early stage, by using a technological procedure, i.e. the engineered glove Hand Test System (HTS), as a part of the project DIGIFRAIL4P—“Development and validation of a multidimensional Digital Frailty Index”, co-funded by the Regione Liguria 4P Health (Predictive, Personalized, Preventive, Participatory).

Methods: This pilot study was carried-out in ambulatory older subjects who underwent a Comprehensive Geriatric Assessment (CGA)-based Multidimensional Prognostic Index (MPI) to assess risk of multidimensional frailty. Age, comorbidities, psychosocial problems, previous or predicted healthcare utilization, change in living situation and specific geriatric conditions were also recorded. Moreover, functional and clinical dimensions were also explored including: (1) pain's presence with Visual Analogical Scale-VAS (mean VAS 2.8 ± 2.2); (2) cognitive function with Mini Mental State Examination-MMSE; (3) physical performance and motor activity through the Speed Gait (mean $8.2 \text{ s} \pm 3.2$) and Hand Grip Strength (mean HP $28.3 \text{ lb} \pm 7.8$) tested by a dynamometer. All subjects underwent the glove HTS, which measures the hand dexterity by specific sequences performed at spontaneous and maximum speed. HTS is able to explore the hand functions, i.e. a complex system which requires important motor skills. Data were analysed with Logic Learning Machine (LLM), a machine learning method able to automatically retrieve IF-THEN rules starting from labelled data. A classification approach was adopted by dividing subjects according to the value of the considered dimensions. Obtained intelligible rules allow a better comprehension of the model with respect to standard machine learning approaches (e.g. Neural Networks) and, moreover, automatically generates a ranking of the most important parameters for classification, thus highlighting the key factors that influences the onset of frailty signals.

Results: Twenty-five consecutive ambulatory older subjects (mean age 74.9 ± 6.0 years; females 68%), with a low risk of multidimensional frailty (MPI-1) and with normal cognitive functions (MMSE > 26 , mean value MMSE = 28.2 ± 0.8), were included in the study. Selected HTS parameters correlate with every functional parameters studied. At dominant hand, Hand Rate (HR) parameter measured during the self-paced IMRL (index-medium-ring-little) task showed a correlation with MMSE ≤ 28 , while Touch Duration (TD) correlated with MMSE ≥ 28 and Inter Tapping Interval (ITI) parameter correlated with VAS ≤ 2 . During the finger tapping task at maximum velocity ITI correlated with Speed Gait.

Conclusion: These findings confirm data of previous cross-sectional studies indicating an association between hand dexterity and cognitive performances. Moreover, the results of this study suggest that engineered glove HTS is a simple to use digital tool, able to identify early impairment of functional parameters of multidimensional frailty in older people. Further studies are needed to evaluate whether the glove HTS may be useful to identifying older subjects at risk of cognitive or physical frailty in order to personalize training programs of active and healthy aging.

Abstract # 772**AREA: Gerotechnology****The WHO ICOPE Handbook App validation**

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Purpose: The World Health Organization launched the digital application WHO ICOPE Handbook App. This tool detects loss of intrinsic capacity (all the physical, functional and mental abilities of an individual) to assess health and social care needs, support caregivers, and develop a personalized care plan. The ICOPE handbook App is an assessment tool presented in questions or tests to detect decreases in intrinsic capacity. It proposes step one with a quick evaluation of mobility, vision, hearing, cognition, nutrition, and emotional state. The examiner must complete the selection tool by checking the corresponding boxes. In detecting any affection in any domain, a second step is passed in which a more exhaustive assessment is carried out. The objective of our study is to compare the results of step 1 with step 2 (considered the gold standard) of the WHO ICOPE Handbook App to validate step1 statistically.

Methods: The Ageing and Health department team from the Andorran Healthcare System, with the collaboration of the Canillo Town Hall, evaluated older persons from the community with the WHO ICOPE Handbook App from 13 July to 4 September 2020. We performed an intrinsic capacity evaluation of older performing step 1 and step 2 on all the people regardless of the results of step 1. The completion of both steps had a duration of 30 min. In addition, we completed a statistical analysis to estimate the sensitivity and specificity of step 1.

Results: The analysis comprised 72 persons over 65 years with a Barthel index > 90 points, 39 women and 33 men, with an average age of 73. The sensitivity (Sen) and the specificity (Spe) of step 1 were calculated for all the domains. The results for each domain are as follow: cognitive impairment (Sen: 71%, Spe: 55%), malnutrition (Sens: 58%, Spe: 92%), visual impairment (Sen: 100%, Spe: 22%), depressive symptoms (Sens: 61.5%, Spe: 74%), limited mobility (Sens: 98%, Spe: 76%).

Conclusions: Our study defines mobility as the domain with step one with the highest sensitivity and specificity. On the other hand, the domains with the lowest sensitivity concern nutrition and depressive symptoms. Finally, those with the lowest sensitivity in step 1 are related to vision and cognition. Based on these results, we have proposed some minor adjustments to the step 1 of WHO ICOPE Handbook App to increase its statistical validity, which we currently carry out in another pilot study.

Abstract # 773

AREA: Gerotechnology

Innovation about sensory rituals in the geriatric facility

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Neurodegenerative disorders cause deterioration at the level of higher cognitive functions. Sensory systems can help us to connect elders with these degenerative processes with the environment and with the perception of their emotional status, improving their baseline state, generating feelings of calm, well-being, and reducing apathy, anxiety or behavioral disturbances. Sensory rituals can be designed to transform daily activities into pleasant moments and generate a more welcoming living environment for elders. Examples of these rituals include daily hygiene, aesthetic self-care, and guided mindfulness involving relaxing tunes. We present an innovation project to plan, implement, and evaluate a pilot program for the development of services integrating sensory rituals within the geriatric facility. Our

methodology involves a multidisciplinary assessment of the resident's sensorial preferences, behavioral alterations and cognitive impairment, if present. We leverage a questionnaire portfolio and metrics from diverse scales like Yesavage, MMSE, Neuropsychiatric Inventory, Cohen Mansfield Agitation Inventory, and quality of life in advanced dementia scale (QUALID) to establish the baseline of the resident's overall health and level of impairment, design a suitable sensory plan targeting global benefits, and periodically monitor improvement. The advantages of our approach are twofold. First, it actively integrates the residents and their families in the design and evaluation of their sensory experience and its benefits. Second, it allows the collection of experience profiles that can be analyzed through statistical and computational methods to quantify the value of each activity, tailor the experience to each resident, and design new services in the future.

Abstract # 774

AREA: Gerotechnology

Standardised recording of affinity for digital tools in geriatrics

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Introduction: Tomorrow's social development clearly shows a trend towards the increased use of digital tools. It increasingly offers possibilities to overcome spatial barriers in new therapy concepts and to reduce the increasing social isolation of very old people by networking with friends and family members. Therapy concepts in geriatrics have so far not sufficiently taken these technical possibilities into account therapeutically. Only few data are available so far on the technical affinity of geriatric patients to such new communication and therapy options.

Methods: In the Geriatric Medicine Centre Cologne, Germany, a technology affinity assessment (TAA) has been implemented since February 2021. This assessment contains 19 items with four sub-scales:—Enthusiasm for technology- Competence in handling- Positive consequences of technology- Negative consequences of technology According to the assessment, technology competence is evaluated and classified into five levels and assigned to therapy groups. The groups consisted of a maximum of five people.

Results: Since February 2021, 183 rehabilitants have been recorded so far, 68 had no interest in further training and therapy, 115 had interest in principle. The availability of digital tools was recorded as the basis for further therapy integration in home care. According to this, 29% own a smartphone, 19% a mobile phone with keyboard, 15% no mobile phone and 37% had no interest in such tools. The age group studied had an average of 86 years and 15 diagnoses in the context of multimorbidity. The results of the therapy groups so far have been consistently positive and characterised by great enthusiasm. So far, none of the participants has dropped out of therapy. The social background was not evaluated.

Conclusions: There is already a striking affinity for digital assistive devices even in the very old age group and enables new therapy concepts in the fields of physiotherapy, cognition and social inclusion. This requires a reorientation of training in the activities of daily living of a geriatric ward. The low financial resources and cognitive level will strongly favour the “digital scissors” and should receive more attention.

Abstract # 775**AREA: Gerotechnology****User-centered design (UCD): iterative development and usability of a tablet-based E-coach for older patients in rehabilitation centres for sustainable improvement of nutrition and physical activity behaviour**Lisa Happe¹, Marie Sgraja¹, Andreas Hein¹, Rebecca Diekmann¹¹Assistance Systems and Medical Device Technology, Department of Health Services Research, Carl von Ossietzky University, Oldenburg, Germany

Introduction: Maintaining nutritional status and regularly performing exercises after rehabilitation can be difficult for older people. A technical assistance system such as a health app might support them and thus contribute to a healthy lifestyle. Existing apps have mostly been developed and evaluated with healthy individuals < 70 years, making transferability to geriatric rehabilitation patients unlikely. This study aimed to design, test, and iteratively optimize app elements through User-Centered Design for a nutrition and mobility e-coach that is perceived as easy to use by the target group.

Methods: An iterative testing of app elements was performed with patients (≥ 65 years) of a rehabilitation centre. Participants used an app prototype with educational and interactive elements on nutrition and mobility as a one-time application test. They performed navigation and comprehension tasks, gave feedback on these tasks, as well as on design aspects. Hints were given by the study team when needed and were documented. Usability was subsequently rated by patients using the System Usability Scale (SUS).

Results: Three iterative test phases (T1–T3) were conducted with 49 participants (49% female, 77.6 ± 6.1 years). SUS increased from $69.6 \pm 15.8\%$ (median 68.8%) at T1– $78.1 \pm 11.3\%$ (median 82.5%) at T3. Fewer hints were needed for navigation (T1: 13%; T2: 24%; T3: 18%) than for comprehension tasks (T1: 27%; T2: 16%; T3: 24%).

Conclusion: Good usability (SUS 80th–84th percentile) was achieved through iterative optimizations. The long-term feasibility and possible effects on nutritional and physical activity behaviour need to be evaluated in further studies.

Abstract # 776**AREA: Gerotechnology****The impact of frailty on the effectiveness of assistive technologies – results from a systematic literature review**Marina Fotteler¹, Viktoria Mühlbauer¹, Simone Brefka², Sarah Mayer³, Brigitte Kohn³, Felix Holl¹, Walter Swoboda¹, Petra Gaugisch⁴, Beate Risch⁴, Michael Denking², Dhayana Dallmeier³¹DigiHealth Institute, Neu-Ulm University of Applied Sciences, Neu-Ulm, Germany, ²Institute for Geriatric Research, Ulm University at Agaplesion Bethesda Clinic and Geriatric Center Ulm, Germany, ³Agaplesion Bethesda Clinic Ulm, Ulm, Germany, ⁴Fraunhofer-Institute for Industrial Engineering IAO, Stuttgart, Germany

Introduction: Assistive technologies (AT) are designed to assist seniors, enable independent living, and improve quality of life by addressing age-related difficulties. When conducting studies with older adults, frailty is an essential factor to consider. We aimed to evaluate if frailty modifies the effectiveness of AT for older adults.

Methods: A systematic literature review of randomized controlled trials evaluating AT was performed according to the PRISMA

guidelines. The databases Ovid Medline, PsycINFO, SocIndex, CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL), and IEEEExplore were searched from Jan 1st, 2009 to March 15th, 2019. AT were included when aiming to support autonomy, communication, or safety of older adults with a mean age of 65 years and older. Trials conducted in a laboratory setting were excluded. Studies were retrospectively categorized for the frailty status of participants.

Results: 19 heterogeneous trials, covering six device categories, were identified: Mobility, personal disease management, medication, mental support, hearing, and vision. Only one study performed a frailty characterization of the participants. For six other studies, frailty could be assessed retrospectively. Studies including significantly or severely impaired participants showed no effectiveness of AT. Additionally, AT was not effective in studies conducted in nursing homes.

Conclusions: Our analysis suggests that the evaluated AT might not (yet) be suitable for frail older adults. A lack of frailty characterization and high-quality research for promising devices, suggesting an uncertain effectiveness of AT were confirmed in this systematic review. Further research should include measures of frailty to increase the focus on this vulnerable group.

Abstract # 777**AREA: Gerotechnology****Ethics in the use of ict by geriatricians- the older person's perspective**Elizabeth Mestheneos¹¹50 + Hellas, HAGG, AGE Platform Europe

Introduction: Digital technologies radically change ways of supervising, supporting and helping older people with their health problems but ethical considerations must be taken into consideration.

Methods: Review of current ethical debates concerning ICT based technologies in their use and implementation by key organizations, research and innovation programmes e.g. Council of Europe, European Union (EU), ICT App platforms, focusing on older people's participation, privacy, and well being. The meaning of independence, the rights of those needing long term care, and the ethical problems arising from the social exclusion of older people in the context of ageism have been reviewed in programmes and discussion groups by members of Age Platform Europe, an EU level organization representing over 100 older people's organizations. Geriatricians expertise and ethical positions concerning digital technologies have to consider dilemmas e.g. in promoting or using robots e.g. electronic pets for company, tele-meetings, telemonitoring, and AI.

Results: An Aristotelian approach as to what is useful, moral and acceptable is advocated, ensuring older people's voices are heard e.g. on ethical committees and review boards, as well as the professionals such as geriatricians. NGOs of older people are pushing for the adoption of a human rights Charter at the UN level to ensure non-discrimination against older citizens. Ethical decisions have constantly to be reviewed and reconsidered as technologies develop. Geriatricians, usually sensitive to older patients, also face the need to consider what forms of ICT can aid them in their own work with older people while maximizing well being.

Abstract # 778

AREA: Gerotechnology

What needs to change? Perspectives on virtual clinics during the COVID-19 pandemic

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Introduction: The COVID-19 pandemic necessitated a rapid shift from in-person to virtual (phone and video) clinical assessments. Literature indicates that older people are more likely to be digitally excluded [1], and therefore it is important to understand their views and the views of their clinicians on the provision of virtual clinics.

Methods: As a local service evaluation, service users (patients and informal carers) were identified from older person clinic lists at a London Hospital. Service users were contacted by phone to complete a questionnaire, while clinicians self-completed a different questionnaire. Quantitative and qualitative data were analysed.

Results: 31 service users responded. 13 (42%) specifically highlighted a positive experience including increased convenience. However, there were concerns regarding loss of physical examination and non-verbal cues, in addition to difficulties with involving carers in appointments, problems for those with sensory impairment, and fears of fraud. Many service users reported using video communication apps, however the majority of consultations were telephone based. 17 clinicians responded. Clinicians felt virtual clinics were time efficient, but raised concerns over difficult communication. Many suggested that follow ups and hospital discharges should continue to be virtual, while new patients and those with cognitive or sensory impairment should be seen in person. Ideas for the future included formalised pre-selection of patients and increased use of video technology.

Conclusion: Many service users and clinicians feel the delivery of virtual consultations is acceptable but requires adjustment in order to be sustainable. With adjustments, hybrid clinic provision could improve efficiency and user satisfaction.

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Abstract # 779

AREA: Gerotechnology

Influence of primary motivation on the a priori acceptability and acceptance of a wearable activity tracker in older adults aged 80 and over

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The ACCORDS project aims to detect frailty in autonomous elderly people at an early stage, using a technological device consisting of various sensors and a tablet that recovers all collected data. One objective of the project is to evaluate the a priori acceptability (M0), then the acceptance (M1) of the multimodal device. In this study, we want to observe the influence of the participants' primary motivation on their intention to use the device between M0 and M1. The volunteers are 80 years and over and evaluated as "robust" or "pre-frail"

according to Fried's criteria. Acceptability and a priori acceptance are measured by self-evaluation questionnaires that quantify eight variables. The primary motivation was collected during semi-structured interviews. Our results show a strong intention to use the device at M0 and M1, as well as a significant influence of the type of primary motivation on acceptance in general. Participants who participated in this study to better monitor their health have a lower intention to use than those who entered the study to contribute to scientific research. Beyond the technological issue, this study shows that frailty detection will necessarily rely on human behavior and that individuals' motivations need to be studied. Our results also suggest the potential existence of a cognitive bias in the evaluation of a technological device, depending on whether the participant expects a direct benefit from participating in the study.

Abstract # 780

AREA: Gerotechnology

Development of an evaluation matrix to support participation of frail elderly people through assistive technologies – at home thanks digitalization

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Introduction: Assistive technologies (AT) should support older people performing their activities of daily living. However, while smart home applications for the "silver agers" improve constantly, technologies for frail older adults are still scarce and insufficient. "Daheim Dank Digital", i.e. at Home Thanks Digitalisation, as part of the project City of the Future Ulm 2030 aims to investigate, whether and how AT can support autonomy, safety and communication among frail older adults.

Methods: In order to evaluate ATs a matrix for health care professionals was developed in collaboration with experts from IT, human-computer interaction, home management, psychology and digital science. The developed matrix was used for a 2-step contest for the identification of the best product supporting autonomy, safety and communication with participation of companies from Germany, Austria and Switzerland.

Results: The matrix addresses user-centricity (user and caregiver), technological and economical aspects. Altogether 38 items are being rated using a 5-point likert scale. The matrix was further adapted after the contest to improve face validity and will be presented at the conference. Among 17 products the three winners addressed problems related to communication and safety.

Conclusion: The evaluation of ATs remains a challenge for older adults, their relatives and caregivers. The matrix helped to evaluate AT in a new contest for the best new digital products for frail older adults. We will now evaluate the utility and usability of four of the products using an explorative before-and-after observational

implementation study, contrasting these results with the evaluation through the matrix.

Abstract # 781

AREA: Gerotechnology

Clinical validation of GaitKeeper- an artificial intelligence based video gait analysis system

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Introduction: Frailty is associated with increased risk of falls, dependency, disability and higher health and social care utilisation. Frailty is characterised by a slowly progressive functional deterioration, which can be delayed or reversed through timely intervention. Identification of those at risk of new or worsening frailty remains a challenge. Case-finding tools that are feasible to use in the clinical setting, such as gait speed, provide a solution to this problem. Slow gait speed can discriminate those at high risk to declining frailty. Current gait assessment instruments are often not feasible in the clinical setting due to cost, training, and space requirements. Here we introduce GaitKeeper, a system that uses artificial intelligence (AI) to measure gait and step events from video recorded on a mobile phone, thus facilitating identification of those at risk of new or worsening frailty.

Methods: A technical evaluation, at Dublin City University (n = 30), measured GaitKeeper's ability to capture accurate positional data from video using the Vicon system as the verification standard. A clinical evaluation (n = 30), at Tallaght University Hospital, compared gait speed data with specialist-physiotherapist clinical observational studies and GaitRite systems during 5 m walking under single and dual task conditions.

Results: The technical evaluation provides evidence of the ability of GaitKeeper to capture accurate gait data from video (n = 30, p < 0.001, error < 3%). The clinical evaluation provides evidence of the accuracy in comparison with the gold standard (n = 30, p < 0.001, error < 6%).

Key conclusions: This innovative AI based approach enables new services that benefit from collection of frailty information in previously challenging environments.

Abstract # 782

AREA: Gerotechnology

UNRAQ – a questionnaire for the use of a social robot in care for older persons. A multi-stakeholder study and validation

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Background: While there exist validated measures to assess the needs of older people, there are relatively few validated tools to assess the needs and requirements for the use of robots. Henceforth, the aim of the study was to introduce and validate such a tool.

Methods: The study group included 720 subjects (mean age 52.0 ± 37.0, 541 females) who agreed to fill the Users' Needs, Requirements, and Abilities Questionnaire (UNRAQ). The validation part of the study included 125 persons.

Results: The acceptance of the robot was good in the whole group. The social functions were rated worse than assistive ones. A correlation was found between the scores of social and assistive functions. The respondents claimed that older adults were not prepared to interact with the robot and not very good at handling it, and were sceptical about their willingness to learn to operate the robot. The Cronbach alpha value for the whole questionnaire was 0.95 suggesting excellent internal consistency, and the ICC value of 0.88 represents excellent agreement.

Conclusions: The UNRAQ, as the only available assessment tool for the use of social robots in care for older people, has good psychometric properties. We observed a good overall acceptance of the robot across the studied group. There is considerable demand for the use of a social robot in care for older people.

Abstract # 783

AREA: Long-term care

Nurses' inappropriate decision-making when the health status of residents acutely deteriorates: A thinking aloud study

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Introduction: Regardless of nurses' training in clinical reasoning and decision making, the outcome of the interventions when a resident's health status deteriorates is not always optimal. Many studies described factors influencing the process of clinical reasoning and decision making, but it is unclear why focusing on these factors has not always resulted in enhanced outcomes in practice. Our aim is to explore the processes underlying clinical reasoning and decision-making of nurses when the health status of a resident in a nursing homes deteriorates acutely.

Methods: A qualitative study with interviews based on the thinking aloud method with fifteen nurses from nine nursing homes was conducted.

Results: When nurses recognized deterioration in a resident's health status, they felt a sense of responsibility and needed a sense of control and professional credibility. In case of uncertainty or anxiety, nurses did not follow all steps of the clinical reasoning and decision making process and passed their responsibility to another caregiver. Safety of residents and caregivers, feeling competent and available decision support, approval and confirmation influenced nurses' sense of control and professional credibility.

Conclusions: When the health status of a resident deteriorates acutely, nurses' emotional responses is superior to nurses' rational responses. This may lead to inappropriate decisions. Managers and general practitioners should be aware of the regulating role of nurses' emotions. A supportive leadership and management style, including investment in a sense of competence among nurses, an optimal decision-support and a culture of reflection, may strengthen nurses' sense of control and professional credibility.

Abstract # 784

AREA: Long-term care

Establishing a weekly multi-disciplinary team (MDT) meeting with Geriatrician involvement focusing on pro-active care planning within a 70 bed care home

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Introduction: One in seven people aged 85 and over live in a care home and the evidence suggests that many residents do not have their needs fully met, which can lead to many unnecessary admissions to hospital and unsatisfactory end of life care. This project aimed to establish a weekly MDT involving the care home manager, frailty General Practitioner (GP) and a Geriatrician, focusing on pro-active care with anticipatory care planning and admission avoidance if appropriate.

Methods: One weekly MDT has been established in a 70 bed care home ensuring each resident has a care plan, as well as addressing any other concerns raised by care home manager.

Results: Quantitative evidence suggests before the MDT took place, only 12 out of 70 residents had a care plan and this has now increased to 28 residents in 4 months with clear decisions about hospital admission avoidance outlined. Qualitatively feedback from care home staff include; ‘this meeting has enabled us to make good future plans for our residents and have been invaluable’. Complex discussions with relatives have been received well with comments such as ‘this has allowed my father to choose quality of life staying in familiar surroundings rather than going to hospital’.

Conclusion: There is both quantitative and qualitative data to support the success this first MDT has been. Working with frailty advanced nurse practitioners we hope to expand this service to other care homes within the primary care network.

Abstract # 785

AREA: Long-term care

Self-supporting care training to elderly in the mental health

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Introduction: Taiwanese elderly is growing and resulted to living in the long-term care (LTC) facilities, and then losing the physical activities of self-supporting care due to the routine of the facility, therefore, the self-supporting care training for those people is an essential.

Methods: This study was based on the samples of a LTC in the middle of Taiwan. There was a following research on the self-supporting care training of daily life with the number of samples 40 collected by this study, comparing the self-supporting care training group (n = 20) and routine care group (n = 20) and used a structured questionnaire as the Mental Health Dimension of Quality of Life (QOL) [1], as data collection included demographic information and the dimensions of mental health. Data analysis used SPSS 22.0 for Window 2000 to answer questions.

Results: The results noted that the Mental Health Dimension of QOL for Taiwanese elderly. A Chinese version of the Mental Health Dimension of QOL containing 6 items, has been used for elderly from the LTC in Taiwan with good reliability, Cronbach's alpha 0.77 [2–3]. The result of t-test analysis found that increasing mental health regularly showed a positive correlation with QOL, the result

recommended that there was a higher level of mental health dimension of QOL on the self-supporting care training group (20.6 ± 3.60) comparing with the routine care group (16.1 ± 5.03). Finding shows the comparison of mental health dimension of QOL significant differences with two groups $p = 0.000$ ($p < 0.05$).

Key conclusions: This study showed that Taiwanese elderly living in the LTC, advising an essential as the self-supporting care training group was higher than that routine care group on the mental health dimension of QOL. The results can also provide the reference for community, to encourage Taiwanese elderly living in the LTC to participate in self-supporting care training for daily life in the future, and therefore also improving their mental health dimension of QOL.

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Abstract # 786

AREA: Long-term care

Development of scale with psychological health promotion program in the long-term care

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Introduction: The World Health Organization (WHO) declared in 2004 that “no health without mental health”, so it is an important trend to care about the development, planning, and implementation of psychological health. However, the elderly in Taiwan in long-term care (LTC) stills a need related to promote suitable psychological health promotion program. The purpose of this research is to development of the scale to assess for “Psychological Health Promotion Program”.

Methods: The development of scale with teaching strategy of the “Psychological Health Promotion Program” that phased in the action, and then reviews it after implementation. Reflect and revise, and hope that the psychological health promotion program will suitable for elderly. The research designs to recruit five experts, including professional backgrounds with the medicine, nursing, social worker, psychologist and rehabilitator. To discussion and mark the scores to assess “Psychological Health Promotion Program” and the expert validity is presented as content validity index (CVI), and is set at above 0.75. The measurement scale is structured questionnaire, including basic data and the scale to psychological health promotion, to collect and analyze of the psychological health with participants. It is hoped that the findings from this study can be used as the basis for planning psychological health promotion programs for LTC.

Results: The scale is designed and developed for the psychological health promotion program at the current stage. This study assumes that the program is to help those participants experience their daily life, thereby improving their psychological health, and the research is still processing as well.

Key conclusions: The research results will provide reference with development of the LTC and psychological health promotion program in the future and to understand the elderly using the scale to assess

with the program and to experience their daily life, then therefore to improve of psychological health.

Abstract # 787

AREA: Long-term care

The awareness of discharge planning and the needs of the long-term care education: the acute wards nursing staff's perspective

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Due to the increase of the chronic diseases and the disabled population, the long-term care problems have been caused great burdens and problems for family members. Since 2017, the Ministry of Health and Welfare of Taiwan has been to actively implement the "Discharge planning Transferring Long Term Care 2.0". The long-term care resources for patients of the need with discharge planning, which is connected to the nursing staff in the acute ward with the important roles to apply the resources for improving quality of care issues. This study used a questionnaire as "Discharge planning Awareness and Implementation of Discharge planning Demand Scale", to survey 126 nurses who working in the acute ward in the hospital, those people were collected data in January 2019. The research found that the average scores were high level among the nursing staff's awareness of discharge planning, the needs of the long-term care education and the needs from the full responsibility nurses assistance. This study suggested to improve the discharge planning with training course for nursing staff's in acute wards, the willingness on the performances with nurses staff's and quality of care for the patients.

Keywords: Nurses staff's, discharge planning, long-term care.

Abstract # 788

AREA: Long-term care

Exploring the cognition and implementation willingness of nursing staff

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Introduction: Due to the continuous increase in the elderly population, in 2018, the elderly population has been exceeded 14% and to be an advanced society in Taiwan. Based on the advances in medical treatment, life expectancy has been extended, therefore, the increase in the number of chronic diseases and disabled people, to face with long-term care (LTC) is an important issue for many families. The National Health Service (NHS) of the United Kingdom also pointed out that the completion of discharge planning for patients that can improve the quality of care and prevent readmissions (Comptroller and Auditor General, 2016) [1]. Thus, this study is explored the cognition and implementation willingness of nursing staff on discharge planning, and hoped to improve the care quality of discharge planning.

Method: Sampling of nursing staff as the subjects, a questionnaire survey was conducted on the "Discharge Planning Awareness and Implementation Willingness Scale", including basic information, cognition, and implementation willingness. The recruitment since 2019, a total of 126 questionnaires was collected, and SPSS 22.0 software was used for data analysis.

Result: According to the research results, nurses have a high awareness and willingness to perform discharge planning, and indicated that they need the medical team to assist in education and training to increase their confidence in performing discharge planning. Also, due to the heavy workload of clinical medical treatment, a need is that dedicated nurses to assist and provide the relevant resources for enhancing the willingness with perform discharge planning.

Conclusion: In order to strengthen the needs of elderly to prepare for discharge, it is recommended to strengthen the assistance of the medical team and dedicated nurses, such as providing education and training, and related resources to improve the care quality of nursing staff's discharge planning.

Keywords: Nursing staff, discharge planning, implementation

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Abstract # 789

AREA: Long-term care

Interprofessional collaboration in long term care and geriatric rehabilitation: a systematic review

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Introduction: Multimorbidity is common in patients in long-term care (LTC), and geriatric rehabilitation (GR). The complexity of multimorbidity makes that these patients need comprehensive care by healthcare professionals from various disciplines. Effective interprofessional collaboration (IPC) is thus essential.

Objectives: This review examines facilitators and barriers for IPC in LTC and GR, and provides an overview of instruments to assess IPC in LTC and GR.

Methods: We systematically searched relevant databases for papers using the terms: interprofessional collaboration, interdisciplinary, long-term care, geriatric rehabilitation, elderly, facilitators and barriers. We conducted a systematic integrative review following The Preferred Reporting Items for Systematic Reviews and Meta-Analysis method. Papers containing empirical data about barriers and facilitators for IPC in LTC and GR were included. The Mixed-Method Appraisal-Tool was used for quality assessment. Data were analyzed using qualitative thematic analysis.

Results: Three themes of facilitators and barriers of IPC emerged: Team performance, Organizational conditions, and Sharing information. Eight instruments for assessing IPC in LTC and none for GR were identified. None of the studies provided a comprehensive description of the instrument or reported its psychometric qualities.

Conclusion: As the three themes can be considered dependent, it is necessary to stimulating facilitators and limiting barriers on all three themes. Furthermore a reliable, validated instrument to assess IPC in LTC and GR, based on clear definition of IPC, is needed. Evidently, providing IPC for patients with multimorbidity in LTC and GR requires integration, understanding, and recognition of interdependency by all people engaged, including patients and informal caregivers.

Abstract # 790

AREA: Long-term care

Interprofessional medication reviews in long-term care: who profits?

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Introduction: Polypharmacy and inappropriate use of medication are widespread issues in nursing home residents [1]. Interventional studies have shown that these issues can be alleviated through an interprofessional medication review process involving physicians, pharmacists, and nurses [2] [3]. Whilst factors of potentially inappropriate medication have been extensively explored [4], it remains unclear which factors predict the potential to reduce inadequate medication, and thus who may profit from interventions. It was therefore our aim to identify these predictors.

Methods: The analysis encompasses data from two studies we conducted in Austrian and German nursing homes (2014–2018). Both implemented a similar, effective interprofessional intervention combining education, utilization of health information technology and a therapy check-process while assessing variables to control change in medication appropriateness as measured by the medication appropriateness index (MAI). Multivariable regression and equivalence testing was used to examine associations between patient-related, clinical, and structural predictors and change in MAI. A mean reduction of 3 MAI-points was defined as relevant change [5].

Results: 136 residents from 13 nursing homes were included. Multivariable regression analysis ($R^2 = 22\%$, $p < 0.001$) yielded inconclusive results for most predictors (age, sex, cognitive capabilities, delirium, several morbidities, activities of daily living, nursing home) except the number of regularly prescribed drugs ($p < 0.001$, $\text{Beta} = -0.50$). Equivalence testing showed that mean change of medication appropriateness does not differ regarding sex, diabetes, cerebrovascular and cardiovascular disease.

Conclusion: Most factors of potentially inappropriate medication cannot be confirmed as predictors for interventional success of interprofessional medication reviews. However, the number of prescribed drugs proves to be an indicator for possible improvement in nursing home residents' medication.

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Abstract # 791

AREA: Long-term care

Nutritional assessment of care home patients by a hospital liaison geriatric team

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Objective: To describe the characteristics, diagnosis, and management of institutionalized patients nutritionally assessed by a hospital-based geriatric team.

Methods: All the consultations received by a liaison geriatric unit asking for nutritional assessment between November 2020 and April 2021 were reviewed. Sociodemographic variables, baseline status, clinical, nutritional diagnosis, interventions, and evolution were collected.

Results: 68 patients (mean age 88.6, 80.9% women) with frequent functional and cognitive impairment and comorbidities (88.2% neurological disease, 82.4% polypharmacy, 54.4% heart disease, 45.6% SARS-CoV-2 infection, 25% dysphagia and 14.7% malnutrition). In nutritional assessment reports from the nursing homes, 65.5% had a BMI < 22 and 80.3% malnutrition diagnosed by MNA or MNA-SF, 85.7% had decreased food intake, 34.6% received enriched diet, 13.2% used thickeners, 11.8% used ONS and 7.3% were fed by PEG. 94.1% of patients were assessed electronically and 25% were reviewed at 3-months. 94.1% of reports mentioned GLIM criteria and 72.1% of patients fulfilled these criteria. Adaptation of the diet was prescribed in 94.1%, non-pharmacological measures in 82.4%, drug withdrawal in 66.4%, and ONS in 66.2. New medical diagnoses were made in 92.6% and an indication of advance care planning in 35.3%. 37.5% presented weight gain at 3-months and this weight gain was associated with a high number of previous drugs (9.67 vs 5.5, $p = 0.034$) and with a long time with ONS (50% vs 0%, $p = 0.036$).

Conclusions: Distance nutritional assessment of institutionalized patients allows for a multidimensional diagnosis and intervention with a low rate of 3-months of follow-up and weight improvement.

Abstract # 792

AREA: Long-term care

Adding life to years and years to life in long term care patients in Qatar

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Background: Residents in long-term care are characterized by high levels of dependency. A survey of 15,483 residents in 244 UK long-term care facilities reported that 76% required assistance with mobility or were immobile, and 78% had some form of mental impairment. Approximately 72% of new residents admitted to Long Term Care have diverse needs and require the development of person-centered care plans by a team of allied health care professionals, including physical therapists and occupational therapists. Long term Care Center in Qatar provides an advanced care system for long-term patients (more than 500 residents) with chronic illnesses and degenerative diseases that restrict their ability to care for themselves.

Methodology: Out of the 40 admissions over the last 1 year in Enaya—22 were categorized as active rehabilitation participants. The following standardized tools were used for assessment, intervention and follow up. By the Physical Therapy. Mobility scale grading. Functional ambulation category. RLA-Rancho los amigos levels of cognitive functioning. Asia scale –American spinal cord injury association impairment scale by the physiotherapist. By Occupational Therapy-Functional Independence Measure score.

Results: The occupational and physical therapist identified 22 active patients, over this period 45% of them showed marked improvement with various stimulation's given to them during the therapy.

Conclusion: Patients were given active/passive rehabilitation combined with cognitive, multi-sensory stimulation and spiritual religious activities. These resulted in significant improvement in patient's functional capacity and cognitive status.

Abstract # 793

AREA: Long-term care

Exploration of the relationship between Ehealth literacy, medication beliefs and adherence of older adults with chronic diseases in Greece

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Introduction: Ehealth literacy may provoke behavioral changes in health, medication beliefs and adherence; limited data though exists about internet use and corresponding changes in older adults with chronic diseases. Aim of the study is to investigate the effect of internet use on medication beliefs and adherence in older chronic patients.

Methods: 200 recipients of Primary Health Care services with chronic diseases were administered the Norman & Skinner eHEALS scale, the Morisky Green Levin Adherence Scale (MAQ) and the Horne BMQ scale.

Results: The average age of the participants was 68 years (SD = 3.1 years), 34.5% were primary school graduates and 46.5% were retired. The average score for eHealth literacy was 19.5 points [(range 8–39) (SD = 9.8 points)]. The higher the score of participants in ehealth literacy, the less they were worried about medication and the less they were afraid of their harmful effects. Moreover, participants with a high score in ehealth literacy ($p = 0.005$) showed high levels of medication adherence (41.2%) and a lower score in the dimensions of “concern”, “abuse” and “harmful consequences” ($p < 0.001$). Accordingly, the logistic regression analysis showed that the more they feared the harmful effects of the medication, the less likely they

were to have high adherence [OR (95% CI) 0.83 (0.75–0.93), $P = 0.001$].

Key conclusions: Participants with sufficient knowledge and ehealth literacy skills show higher medication adherence and less concern about the harmful effects of medication. Development of ehealth literacy skills by health professionals enables individuals to improve their medication adherence, management of their disease and quality of life.

Abstract # 794

AREA: Long-term care

Financial strain and medication adherence among older adults in rural Greece

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Introduction: World Health Organization pointed out that cost-related medication non-adherence reaches 60% for adults 60 years old and over. The aim of this study was to investigate cost-related medication non-adherence of Greek older adults.

Methods: This cross-sectional study was conducted in two rural health Centers, from October to December, 2019. 200 patients with chronic diseases completed the Morisky Green Levin Adherence Scale and a set of medication adherence questions with regard to cost, in the past 12 months.

Results: The mean age of the participants was 68 years (SD = 13.1), 50.5% were males, 38.5% had 500–1000 euro/month income, 63% spent > 50 euro/month for medicines. 26.5% faced difficulties to buy things for everyday life, 18.5% of the participants sometimes avoided refilling prescriptions and 47% decreased or stopped using healthcare services, due to costs. The low and moderate adherence was 58.8%. Participants who had difficulty in purchasing their living commodities were 66% less likely to have high adherence with their treatment than those who did not/rarely experienced difficulty [OR 0.34, $P = 0.002$]. Low medication adherence was observed in participants who sometimes/frequently stopped or delayed to refill ($p = 0.003$ and $p < 0.001$, respectively), participants who sometimes/frequently used fewer medications than those prescribed ($p < 0.001$), and those who decreased or stopped to use healthcare services ($p = 0.003$), because of cost.

Key conclusions: The last decade's financial austerity in Greece detrimentally affected older adult's behavior concerning medication adherence. Health care providers in primary care should consider this kind of behavior and should always investigate the real causes of poor health outcomes.

Abstract # 795

AREA: Long-term care

The lived experience of older adults transferring between long-term care facilities during the COVID-19 pandemic

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Introduction: Long-term care facility (LTCF) residents have been disproportionately affected by COVID-19; both from increased mortality, and from restrictive public health measures. Residents in our LTCF relocated from nightingale style open wards to single room accommodation at the outset of the pandemic. This study aims to describe the experience of residents relocating between facilities. Emphasis is placed on resident's sense of home, and how the pandemic and ensuing isolation affected their transition.

Methods: This qualitative study follows the principles of constructivist grounded theory. Conceptual frameworks elicited through semi-structured interviews generated the study's theory. Interviews were audio-recorded, transcribed verbatim, and analysed using Braun and Clarke's thematic analysis approach. Researchers independently identified codes and then collectively collated them into broader themes, reaching a consensus that was internally and thematically consistent.

Results: Even of ten residents interviewed had cognitive impairment (mean age 84). Four primary themes were elicited from the interviews. Theme one focused on residents' perceptions of their environment and highlights the value placed on privacy and control. Theme two described the multifaceted feeling of loss during the pandemic. Theme three emphasized the importance of relationships as a source of comfort and pleasure. Theme four was that of the resilience shown by residents in times of hardship.

Conclusion: The themes elicited describe psychological, social and environmental factors influencing the residents experience of transferring facilities during the pandemic. Our study adds to the body of literature on how COVID-19 affects LTCF residents by giving a voice to this vulnerable and often marginalized group.

Abstract # 796

AREA: Long-term care

Annual summer dehydration prevention campaign for nursing homes, working on extended care

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Introduction: Old people living in nursing homes are prone to suffer dehydration (most of all hypernatremic type) during summer months, due to the high temperature and their special inner conditions. This vulnerability leads to severe complications, many hospital admissions and death.

Methods: As part of our nursing homes medicalization plan during 2020 COVID 19 pandemic, we designed a protocol for early management of these cases. We offered a presentation to the 34 centres belonging to our area explaining usual water intake recommendations, alternatives of oral fluids when negative for intake and alarm signs and symptoms of dehydration for starting intravenous solutions there administered by their own staff. Initial packages of hyposaline solutions were given from our pharmacy, replacing them on request with guidelines to be used according to a liaison geriatrician criteria.

Results: From June to September 2020 we delivered 28 new serum kits for 26 patients and only 2 of them were attended at the Emergency Department being finally incharged for dehydration. Therefore we can assume that the campaign avoided 24 hospital referrals. We will repeat (and more hospitals will join) the intervention this and coming years.

Conclusions: Extended care strategies between hospital and nursing homes are needed to optimize the geriatric care, in order to enhance elderly quality of life and make profitable the resources for a sustainable sanitary system.

Abstract # 797

AREA: Long-term care

Provider attitudes to telemedicine care at nursing homes during the COVID 19 pandemic

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Introduction: Elderly patients at skilled nursing facilities (SNF) are particularly at risk during the COVID-19 pandemic. Many healthcare institutions therefore adopted telemedicine to deliver care in SNFs. We conducted this survey to obtain healthcare providers' perspective on use of telemedicine on quality of care and its feasibility as long-term healthcare delivery modality.

Methods: We surveyed 50 providers practicing in 19 SNFs from March to July 2020 served by Mayo Clinic Rochester or Mayo Clinic Health System using REDCap survey tool. The survey domains included technical components, physical examination, medication assessment, staff interaction, timeliness, efficiency, care coordination and resident safety. Responses were analyzed using descriptive statistics on central tendency and variance.

Results: 24 providers responded to the survey. Presence of high-quality video and audio connection, specialized wound camera, skilled proxy to auscultate and access to the electronic medical record were considered very important by over 70% responders. No negative impacts on medication assessment, orders, care coordination, or staff interactions were reported. 62.5% responders believed telemedicine improved timeliness and access and 29% believed it did not improve efficiency or safety. 25% providers felt that goals of care discussions were negatively impacted. 12.5% providers believed that the overall quality of care had been impacted negatively. 75% providers preferred using a hybrid approach of telemedicine and in-person visits to deliver care in this setting.

Key conclusions: The survey provided important information on healthcare providers' perspectives on use of telemedicine in SNFs in this cohort and highlights focus areas for improvement in this care setting.

Abstract # 798

AREA: Long-term care

Profiling national research in nursing home care

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Introduction: The COVID-19 pandemic highlighted deficits in Nursing Home (NH) care and knowledge base in many countries, prompting interest in developing an NH research agenda. Our aim was to characterise existing NH research in Ireland.

Methods: Analysis of PubMed for papers regarding Irish NHs from 1966, extracting data on disciplines and affiliations of authors, type of research, and involvement of NH residents or staff.

Results: Of 106 papers over 54 years, the majority were written by geriatricians (34.9%) or nurses (35.8%). Most authorship arose from a single discipline (53.7%), followed by two disciplines (32%): 11% of papers involved 3 or more disciplines. In one-fifth (22.6%) of papers at least one author was a clinician engaged in NH care. A minority acknowledged NH staff or residents (42.5%). The majority originated from 2 institutions (41%), a single institution in 35%, and 7% from 5

or more institutions. Most (87%) involved research in Ireland alone, with 9.4% with international involvement.

Conclusion: The research literature on NHs in Ireland is very slender, with most published studies undertaken by geriatricians or nurses, usually as a single discipline, with a minority arising from NH clinicians or staff. As NH care requires multi-disciplinary perspectives, we recommend development of a more collaborative national research programme involving more closely nursing home clinicians, staff and residents to better understand the challenges and opportunities of the as yet relatively poorly explored knowledge base required to provide high quality care for this large group with highly complex care needs.

Abstract # 799

AREA: Long-term care

Improving person-centered dietetic care by involving patients/family in plan of care at Enaya Specialized Care Centre

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Introduction: Enaya Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility to residents who have multiple comorbidities. A person-centered care is a practice of caring the residents and their families and It also involves partnership of healthcare professionals includes listening to, informing and involving the patients' in their care; providing care that is respectful of and responsive to, individual patient preferences, needs and values, and ensuring that resident values guide all clinical decisions.

Methods: A multidisciplinary team was formed to conduct a quality Improvement project to improve fluid management using "Plan-Do-Study-Act (PDSA) quality improvement methodology". All stakeholders were involved and interventions were carried out in three steps. First step was to Dietitians interviewed all patients using the appropriate languages and discussed plan of care with patient/Family (1st PDSA), Second step was to Patient/Family Engagement in Dietetics and Nutrition Care from admission to Discharge (2nd PDSA) and Final step was patient/Family satisfaction survey questionnaire was developed to evaluate the nutrition counselling and services provided by the Department of Nutrition and Dietetics (3rd PDSA) **Results:** Following culture change strategy intervention showed there was a noticeable family/Caregiver satisfaction improved from 30 to 75% and subsequently increased to 96%, which was beyond the set target of 90%.

Conclusion: Build a positive communication between patients/family it is not easy. Patients strongly desire individualized nutrition care and greater involvement in care, Family and caregivers feel more involved in the care, hence increasing overall satisfaction.

Abstract # 800

AREA: Long-term care

Care home staff experiences of managing responsive behaviours in dementia, during the COVID-19 pandemic

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Introduction: Psychotropic drugs are often prescribed to manage responsive behaviours including aggression and agitation but increase

the rate of strokes and death in dementia. Therefore, this study aims to understand how care home staff manage responsive behaviours in residents with dementia to identify the barriers and facilitators to implementing non-pharmacological approaches.

Methods: The qualitative study involved conducting 25 telephone interviews with care home staff from 21 care homes across Ireland. All participants provided written informed consent. Thematic analysis was used to conceptualise understanding of the barriers and facilitators to taking a non-pharmacological approach. Ethical approval was obtained from Lancaster University Faculty of Health and Medicine Research Ethics Committee (FHMREC20099).

Results: Psychotropic drugs were used if residents appeared distressed or posed a risk to themselves or others. Barriers to taking a non-pharmacological approach to manage responsive behaviours included inadequate staff training in person-centred care and managing responsive behaviour. In addition, teamwork and communication between nurses and healthcare assistants were often found to be suboptimal. Facilitators to taking a non-pharmacological approach to manage responsive behaviours included effective leadership, family involvement and multidisciplinary collaboration.

Key conclusions: To address these barriers, training for care home staff should include relevant work experience and development of peer networks to bridge the disconnect between nurses and healthcare assistants. Moreover, opportunities should be provided for healthcare assistants to progress in their career and contribute to decision-making. These recommendations will assist in the development of dementia guidelines to implement nonpharmacological strategies to manage responsive behaviours of residents with dementia.

Abstract # 801

AREA: Long-term care

Teledermatology in nursing homes: clinical features, consultation diagnosis, and treatments

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Introduction: Since COVID-19 pandemic, telemedicine in general and particularly teledermatology, has become one of the most important and commonly employed subsets of telemedicine in nursing home population. The aim of this study was to describe the activity of a new teledermatology consult for nursing home patients.

Methods: A prospective study of nursing home patients with skin lesions referred from nursing home doctor to a specialized teledermatology consultation managed by a dermatologist and a geriatrician at a University Hospital from June 2020 to May 2021. Socio-demographic variables (age and sex), functional status [Barthel index (BI), functional ambulation category (FAC)], cognitive status (Global Deterioration Scale de Reisberg (GDS)), clinical diagnosis and photographs were registered.

Results: Seventy-three patients were included in 12 teleconsultation sessions, the mean age was 87.3 ± 9 , 81% were female. Median values were: BI: 65 [(< 40) 30% (> 60) 48%], FAC: 4 [(0–1) 27% (2–3) 19%, (4–5) 49%], GDS: 4 [(1–4) 55% (5–6) 36%, (7) 5%]. Dermatology diagnosis were 34% malignancy or premalignancy, 49% inflammatory diseases, 11% miscellaneous and 6% infectious diseases. Treatments were: 47% medical (principally oral and topical corticosteroids), 8% surgical and 3% radiotherapy. Face-to-face visit after teledermatology consult was indicated only in 44% of the

patients, 75% due to malignancy or premalignancy, 16% inflammatory diseases and 9% miscellaneous.

Conclusions: Nursing home teledermatology consults reduce more than half of hospital face-to-face consultations by offering specialized clinical care and even improving patient quality of life by reducing hospitals visits and waiting times. The principal diagnoses are malignancy and premalignancy.

Abstract # 802

AREA: Long-term care

Teledermatology in nursing homes: a study of diagnostic accuracy

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Introduction: Since COVID-19 pandemic, telemedicine in general and particularly teledermatology, has become one of the most important and commonly employed subsets of telemedicine in nursing home population. The aim of this study was to assess the dermatological diagnostic accuracy of a new teledermatology consult for nursing home patients.

Methods: A prospective study of nursing home patients with skin lesions referred from nursing home doctor to a specialized teledermatology consultation managed by a dermatologist and a geriatrician at a University Hospital from July 2020 to May 2021. We examined domains of clinical diagnosis (malignancy/premalignancy, inflammatory, miscellaneous and infectious diseases), diagnostic precision (0–10), diagnostic capability of photographs and videocall to determine a diagnosis (certainty, probable, complementary test needed and poor quality) and agreement with the final diagnosis of dermatologist (yes–no).

Results: Seventy-three patients were included in 12 teleconsultation sessions. Dermatology diagnosis were 34% malignancy/premalignancy, 49% inflammatory diseases, 11% miscellaneous and 6% infectious diseases. Diagnostic precision was low (0–6) 24%, moderate (7–8) 30%, and high (9–10) 46%. Diagnostic capability was certainty 23%, probable 53%, complementary test needed 21%, and poor quality 3%. Diagnosis agreement was yes 62%, no 19%, and pending results 19%. An association was found between diagnosis agreement with diagnostic precision ($p < 0.05$) and with diagnostic capability ($p < 0.05$), but not with clinical diagnoses.

Conclusions: This study shows that teledermatology consults offers a high level of diagnostic capability and precision, associated with a high diagnosis agreement by offering similar specialized clinical care than face-to-face consultations by reducing hospitals transfers.

Abstract # 803

AREA: Long-term care

Working together. geriatric teams in coordination with nursing homes. surviving after pandemic times?

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Introduction: Before pandemic of COVID19 in Hospital Universitario 12 de Octubre, in Madrid, Spain, there were only two

geriatricians in our hospital. Now there are four geriatricians working together not only with traumatology but in nursing homes in order to guarantee continuity of attention and information exchange between nursing homes and Hospitals.

Material and methods: Activity of geriatric team in nursing homes was evaluated since the last semester of 2020 and the first semester of 2021.

Results: Our “Geriatra de enlace” during the first wave of pandemic (translated as link geriatrician between hospital and nursing homes) helping through phone calls and email connection, providing a total of 1659 intravenous drugs for use in the nursing homes (such as antibiotics). Since the incorporation of two new geriatricians our team was able to solve through e-mail and phone calls an average of four consults per day, with the peak of activity in January 2021. There were also telemedicine consultation. Through a secure platform (ZOOM) to evaluate patients and family meetings for decision making in geriatric issues. Finally, there is an educational programme through web application giving monthly sessions inviting both medical and nursing staff.

Conclusions: After the outcome of COVID 19 our geriatric team was able to participate in the continuity of attention of geriatric patients in nursing homes. Improvement in specialist number has helped in programs of telemedicine and medical education. Efforts must be done in order to estimate value of specialized geriatric attention in nursing homes.

Abstract # 804

AREA: Long-term care

A fracture prevention program in a long-term care facility at Hamad Medical Corporation in Qatar

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Introduction: Enaya/DAAM Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility that provides 24-h care to residents who have multiple comorbidities, disabilities and behavioral problems, all of which increases the risk of fracture. It is associated with significant complications such as pain, infections, immobility, pressure ulcers, malunion, thrombo-embolism. **Methods:** A multidisciplinary team was formed in December 2020 to conduct a quality improvement project to prevent fractures using “Plan-Do-Study-Act (PDSA) methodology”. All stakeholders were involved, and interventions were carried out in three steps. First step was to create Assessment screening tool which would help identify the high-risk category (1st PDSA). Second step was to develop Multidisciplinary Team interventions to prevent Fracture (2nd PDSA) and standardizing the approach by establishing an intervention guideline. Third step was to pilot in three units of the long-term care facility to analyze the effectiveness of this initiative (3rd PDSA).

Results: Following multimodal multifaceted intervention by the interdisciplinary team members (Physicians, Nursing, Dieticians, Occupational Therapist, Physiotherapist and Pharmacists) showed no evidence of fractures in the pilot units (out of 55 beds). However, there were 2 incidents of fracture in the other units which received standard care (out of 145 beds).

Conclusion: Prevention of fractures in the long-term care facilities is really challenging due to the complexity of the medical conditions. However, this project has shown fracture prevention is possible if interventions are implemented by multidisciplinary team members. Next steps would be to roll out this project into all the long-term care units.

Abstract # 805

AREA: Long-term care

Liaison Geriatrician Unit: nursing homes satisfaction

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Introduction: During COVID-19 pandemic, the need to improve the coordination between hospitals and nursing homes (NH) emerged. In Madrid (Spain) Liaison Geriatrics Units (LGU) were started at all public general hospitals. The activity of LGU included different areas (Teleconsultation, Televideoconsultation, Teledermatology consultation, onsite consultation in NH, and geriatric assessment in the emergency departments. The aim of this study was to evaluate the satisfaction degree of NH with this coordination model and its acceptance in the future.

Methods: A survey was carried out in the 35 NH in the catchment area of a 1000-bed university Hospital. The survey was sent to the NH directors and included multimodal questions about their satisfaction with the role of the LGU about support during COVID-19 pandemic and their wishes of maintenance of LGU after COVID-19 pandemic.

Results: Thirty two (91%) nursing homes responded to the survey. Twenty seven (84%) of respondents considered that they had an easy access and great support from LGU geriatricians and twenty six (80%) thought that the evolution of COVID-19 pandemic in their homes would have had worse without this coordination. Thirty (93%) considered that it will be necessary the maintenance of the LGU activity in the future. As outstanding activities, twenty nine (87%) considered that Teleconsultation was very useful and twenty seven (83%) considered that the follow-up during hospital admission was very useful.

Conclusion: SNH surveyed considered that coordination with LGU was a great support during pandemic and that it will be necessary to maintain this coordination in the future.

Abstract # 806

AREA: Long-term care

Relief from constipation without laxatives by using fructooligosaccharides (FOS) at Enaya Specialized Care Center

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Introduction: Enaya Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility to residents who have multiple comorbidities and behavioral problems. Constipation is widely considered to be a common problem among the elderly, as evidenced by the high rate of laxative use in this group. Chronic use of laxatives in elderly has been associated with numerous complications, including diarrhea, fecal soiling, hypoalbuminemia, and high serum levels of magnesium and phosphorus.

Methods: A quality Improvement project is conducted by using “Plan-Do-Study-Act (PDSA) quality improvement methodology”. All stakeholders were involved and interventions were carried out in three steps. First step was to establish a nutrition management protocol which outlined use of fructooligosaccharides (1st PDSA), Second step to stop all laxatives and assess by dietitian to prescribe liquid fructooligosaccharides and increase fluid (2nd PDSA), Third step was to monitor bowel motion every shift by using Bristol stool chart assessment tool (3rd PDSA).

Results: Following multimodal multifaceted intervention by the interdisciplinary team members (Physicians, Nursing and Dieticians) showed patients passing stool every day without laxatives administration, frequency from 2 to 3 time/day, and type of stool between 3 and 4 as Bristol stool scale, also no more gases, fullness, distention and bloating present with patients.

Conclusion: Prevention of constipation in the long-term care facilities is really challenging due to the complexity of the medical conditions. However, this project has shown constipation treatment and prevention is possible if interventions are implemented by dietitian and also decreasing using of the laxatives which reduce the cost.

Abstract # 807

AREA: Long-term care

Symptoms control in elderly patients with advanced disease. About a case

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Introduction: The care of elderly patients with advanced oncological disease requires the control of physical, emotional, spiritual, mental and social symptoms.

Methods: Analysis of the clinical case of an 85-year-old male patient with a history of Prostate Adenocarcinoma and Poorly differentiated Rectum Carcinoma, probable origin of prostate bearing Colostomy.

Results: Patient with a history of alcoholism, arterial hypertension, diabetes mellitus, chronic kidney failure, sacral pressure ulcer. Intervened for intestinal obstruction secondary to rectal neoplasia with colostomy placement. Baseline situation: I. Barthel 50/100, No cognitive impairment. Married. Institutionalized after surgical intervention and confirmation of progression of the tumor lesion in abdominal tomography after months of the intervention, being evaluated by Oncology that, given the baseline situation, follow-up is decided by the Palliative Care Unit and initiation of Palliative Chemotherapy with (Docetaxel), presenting after the first cycles, neuropathic pain and lymphedema of the lower extremities and genitals, hematuria and rectal bleeding, with secondary anemia, transfusions being performed, which after persistent bleeding, it is decided in a multidisciplinary meeting to continue conservative treatment: Tranexamic acid to control bleeding, Pregabalin for neuropathic control, Furosemide for signs of heart failure, morphine chloride for dyspnea/pain management, metoclopramide for nausea and vomiting. Given the persistence of bleeding and increased pain and dyspnea, it was decided to start sedation perfusion with the prior consent of the patient.

Conclusions: Needing care planning at each stage of the disease, maintaining an intuition of the prognosis and adequacy of effort.

Abstract # 808

AREA: Long-term care

COVID-19 infection in a patient with Chilaiditi Syndrome, a case report

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Introduction: COVID-19 virus can easily spread and can lead to asymptomatic cases, mild syndromes as well as severe manifestations, requiring hospitalization and Intensive Care Units (ICU). Chilaiditi sign is a radiological finding that occurs when a segment of a large bowel loop or small intestine is interposed between the liver and a diaphragm. When this causes gastrointestinal symptoms, it is known as Chilaiditi syndrome.

Case report: Patient admitted to the San Juan de Dios Hospital diagnosed of COVID-19 infection. He was treated with anticoagulation, antibiotics and corticoids, after 15 days had a negative COVID-19PCR test. Medical history: hypertension, dilated cardiomyopathy, Mild mitral and tricuspid regurgitation. Baseline assessment: Functional: Barthel index (BI) 100/100, independent ambulation. Cognitive: No cognitive impairment. Social: single, lives alone, has nephews who take care of him. Functional assessment at admission: (BI) 20/100, dependent ambulation. Evolution: During admission, the patient presented constipation, abdominal distension, bloating, an abdominal X-ray was performed, a chilaiditi sign, distention of the intestinal loops and feces in the rectal ampulla, were found. We started treatment with oral laxatives and enema, he improved and began to perform a bowel movement and presented clinical improvement. The patient started rehabilitation. The patient began rehabilitation (multimode exercise) and treatment with protein supplements, after 1 month of treatment he presented functional improvement, at discharge he walked independently with the help of a walking stick and had a (BI) 70/100.

Conclusion: The majority of hospitalized elderly patients present constipation, so early treatment with ambulation, oral laxatives and hydration is important.

Abstract # 809

AREA: Long-term care

Mapping quality of life domains in nursing homes

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Introduction: Quality of life (QoL) is an under-explored aspect of nursing home care and may be influenced by environmental and service delivery issues. We wished to explore key themes and issues relating to QoL in nursing homes (NH's), based on key work by Kane in 2003 (1) and mapped onto environmental design aimed at improving quality of life and infection control.

Method: Using a combination of scoping literature review and an iterative consensus based approach with key stakeholders (advocacy, nursing, architecture, geriatric medicine, regulatory bodies) we aimed to identify QoL concepts that are not defined by dimensions of old age and health, but theoretically based measures that reflect broad and

holistic approaches to QoL. Secondly, we aim to create a multi-dimensional evidence-based theoretical framework.

Results: We developed a framework of 15 QoL domains broken down into four main sectors (a) physical, sensory, cognitive, (b) psychological, subjective (c) social and (d) place-based, ecological.

Key conclusion: While many of the 15 QoL domains established by the process are often included as QoL frameworks, some of the selected domains do not appear frequently in established QoL frameworks, in particular place-based/ecological domains. By bringing about this research we have uncovered gaps in the literature exploring QoL and the role of the built environment and the effect this has on the well-being & thriving of older people in nursing homes. Few studies have specially explored these key concepts to enhance the QoL for residents.

References:

1. Kane R. Gerontologist 2003; 43 (suppl_2):28–36.

Abstract # 810

AREA: Long-term care

Do financial aspects affect care transitions in long-term care systems? A systematic review

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Background: Appropriate financial mechanisms improving care coordination are necessary for effective care transitions. Hypotheses that financial incentives affect providers behavior, quality of health care and care transitions are drawn mainly from general economics, Institutional Economics and principal-agent theory. Currently, there is no study that systematizes the financial mechanisms that may hamper or improve transitional care in long-term care systems.

Objective: This review aims to explore the link between financial mechanisms and care transition among older adults.

Methods: A systematic literature search was conducted in Medline Ovid, Embase and CINAHL. The search was limited to literature published between March 2005 and March 2020. No geographical or language restrictions were implied. Each study was assessed for risk of bias.

Results: Nineteen records were included in the qualitative analysis. All publications focused specifically on the role of financial incentives. These incentives included: reimbursement mechanisms, rewards, and penalties. Studies discussed mostly the role of rewards and their impact on care coordination. We identified three settings where financial incentives seemed to play a significant role in care transition: namely, primary care, hospital and social sector. Researchers were particularly interested in the role of financial incentives in primary care and hospitals. Studies demonstrate incoherent results with regard to financial incentives and their impact on care continuity and/or care transition.

Key conclusions: Financial incentives may have an impact on care transition in the long-term care systems. These results could aid policymakers in reforming health systems financing in order to optimize the care transition process.

Abstract # 811

AREA: Long-term care

Etiological profile and prognosis of lymphadenopathy in geriatrics

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Introduction: Lymphadenopathy is a frequent reason for consultation in internal medicine and geriatrics. They pose a problem of etiological diagnosis and management. Our work aims to clarify the etiological profile and prognosis of lymphadenopathy in the elderly.

Methods and materials: Retrospective and descriptive study of the files of patients hospitalized in internal medicine department between January 2007 and January 2020 in whom lymphadenopathy was revealed by clinical examination or by means of imaging.

Results: Eighteen patients with lymphadenopathy were found with varied revelation circumstances. A deep vein thrombosis in three cases, weight loss in five. Two cases of pericarditis, two of fever, the rest presented with palpable lymphadenopathy or hepato or splenomegaly. The lymphadenopathy was cervical in ten patients, axillary in two, spinal in one and umbilical in one, thirteen mediastineal and retroperitoneal. For the etiologies, the neoplastic origin was predominant with nine cases including one MDS, two CLL, gastric MALT lymphoma, classic Hodgkin lymphoma, Waldenstrom's disease, three cases of bronchopulmonary carcinoma. Among the rest we recall two cases of tuberculosis, a pulmonary sarcoidosis and primary sjogren goujerot syndrome without lymphomatous transformation. The course was marked by the onset of complications, with five patients dying during follow-up.

Conclusion: The neoplastic origin is the most frequent in front of any lymphadenopathy in the elderly with a grim prognosis. This requires a careful clinical examination, palpation of the lymph node areas is an essential part. The discovery of lymphadenopathy requires an exhaustive etiological investigation.

Abstract # 812

AREA: Long-term care

Prevalence of skin conditions amongst long-term care residents in Qatar: a retrospective study

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Introduction: Long-Term Care facilities in State of Qatar are very well established and cater for wide variety of cases with multi-morbidities, frailty and disabilities. Majority of them are either bedbound or chairbound and enterally/artificially fed. All of these factors puts patients at risk of having skin conditions including pressure ulcers. In this study, we set out to determine the prevalence and determinants of dermatological conditions in long-term care in-patients.

Methods: Study was a retrospective chart review of medical records of all the residents (aged 18 years and above) admitted to Long-Term

Care Facilities (Rumailah hospital and ENAYA specialized care center) in Qatar during the year 2019.

Results: Out of 201 patients, 72.6% were male, and mean age was 56.9 years. 72% were tube fed. Hypertension (66.7%) and diabetes mellitus (46.8%) were the most common underlying chronic diseases. Most of them (77.6% with 95% CI (71.2%, 83.2%)) had skin diseases [elderly (86%) and adult (72%)]. Elderly had OR 2.5 [95% CI (1.2, 5.2)] times more risk of developing skin disease compared to adults ($p < 0.05$). Pressure injury was the most common skin disease among elderly patients (31.3%), followed by redness (20%) and skin tear (12.5%). But redness was the most common skin disease among adult patients (20.7%), followed by Pressure injury (18.2%) and skin irritation (9.1%).

Conclusion: Our study highlights that older adults are more vulnerable to develop skin conditions especially pressure injury. Multifaceted approach using current evidence in managing residents in the long-term care facilities would help prevent these skin conditions.

Abstract # 813

AREA: Multimorbidity

Lady Windermere syndrome in cancer patient

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85 year-old woman with serous ovarian adenocarcinoma with peritoneal implants, she went to Emergencies due to the appearance of fever, accompanied by a persistent cough and expectoration of 3 months of evolution, presence of consolidation in the middle lobe in the radiograph of chest, suggestive of Lady Windermere syndrome, associating positive sputum culture with mycobacteria of the *Mycobacterium avium* complex. During follow-up presented intestinal subocclusion secondary to peritoneal carcinomatosis, deciding to suspend treatment due to the palliative situation. Lady Windermere Syndrome was described based on the Victorian female character from Oscar Wilde's "Lady Windermere's Fan". Is more common in women over 60 years of age who have a cough, insidious fever, sweating nocturnal, hemoptysis and dyspnea. It is a prevalence entity underestimated by the difficulty in differential diagnosis. Some series even collect that the cough was present for an average of 25 weeks before the correct diagnosis was made. Several hypotheses have been described, among which the suppression voluntary coughing by the patient, increasing the difficulty of expectoration which, associated with the anatomical difference of the middle lobe (with longer bronchi and narrow, with worse ventilatory access and greater difficulty in clearing secretions) makes these more prone to develop infiltrates and consolidations. Patients with a bronchiectatic pattern often have additional microbiological findings such as *P. aeruginosa* and occasionally other mycobacteria. The increasing prevalence of resistance to antibiotic drugs makes it difficult to manage the disease and increases its mortality, related to the extension of the infiltrate and comorbidities.

Abstract # 814

AREA: Multimorbidity

A rare cause of cervical adenopathy in the elderly patient in these times

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75-year-old man referred from residence after the appearance of adenopathy laterocervical. There is swollen right laterocervical adenopathy, warm, not painful with external skin involvement. Anodyne analysis, negative serologies, negative COVID-19 PCR. CT body image showing right cervical lymphadenopathy III, Va, Vb and VI with peripheral enhancement and hypodense center suggestive of necrosis; FNA was performed showing hypoechoic lymphadenopathy, some of them fistulized to skin suggestive of an infectious process by mycobacteria as a first possibility, obtaining biopsy sample with epithelioid granulomas centered by necrosis, scarce multinucleated giant cells without lymphocyte delimitation that suggested morphologically mycobacterial infection. With Ziehl–Neelsen staining recognized acid-fast bacilli. Study Microbiological with Thick Needle of the lymph node contributed to the diagnosis of lymphadenitis granulomatous due to mycobacteriosis (scrofula). Within the etiological differential diagnosis of lymphadenopathy in the elderly we must take into account it has infectious, onco-hematological, autoimmune, toxic or metabolic processes. Despite the decline in tuberculosis cases since it was declared an emergency by WHO in 1993, the elderly population continues to be a reservoir of infection. The multiple comorbidities in these patients together with malnutrition and physiological changes associated with aging, can damage the mechanisms of microbial elimination and contribute to the decrease of the immune response (especially in T lymphocytes) by increasing predisposition to disease. The institutionalized elderly can have up to four times the incidence of TB due, not only to reactivation, but also to greater environmental transmission.

Abstract # 815

AREA: Multimorbidity

Chronic generalized pain disorder in a patient with depression

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Female patient, 48 years old, comes to the consultation for pain in multiple locations. 5 years ago, as a consequence of the appearance of myoclonus, she began with myalgias and fatigue in the arms and legs without a decrease in strength with a tingling sensation in the arms and legs, asthenia, bad mood, non-restorative sleep, without systemic symptoms or arthritis or Raynaud's, feeling of instability, paresthesia in hands and feet without defined territory and feeling of loss of sensation in feet with certain postures. Clinical history: Intense depression in treatment and follow-up in Psychiatry. Idiopathic myoclonus with possible functional component, arthroscopy for chondromalacia patella in youth. She exercises. She is currently completely disabled. Exploration (E): Good general condition. E

normal cardiopulmonary and abdominal, without edema, skin without alterations, cervical, dorsal axial and lumbar pain, pain in trapezius, epicondyles and goose feet. Without arthritis, Lasague and Bragard (–). Complementary tests: complete normal analysis including CRP, ESR, HBV-C-HIV (–), TSH and proteinogram. Rheumatoid-factor, antinuclear-antibodies (ANA), antineutrophil cytoplasmic-antibodies (ANCA) (–), complement and cryoglobulins (–) Thoracoabdominal-CT: without significant alterations. X-rays: cervical-spine, rectification and lumbar, rectification and Schmorl's nodes. Diagnostic: Chronic generalized pain disorder in a patient with depression. Currently, there are no data on connective tissue. Treatment: Aerobic exercise 3 times/week. Good sleep hygiene and mood control. Capsaicin cream, 1 application/8 h in epicondyles, inner knee area. Paracetamol 500 mg with codeine 15 mg/24 h and increasing dose in case of pain up to 6 tablets/24 h. In case of ineffectiveness, change to Paracetamol 500 mg with codeine 30 mg.

Abstract # 816

AREA: Multimorbidity

Vitamin D and geriatric syndromes in centenarians

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Aim of the study: To assess vitamin D levels in centenarians and its interaction with the most common geriatric syndromes.

Materials and methods: It was a longitudinal study, including 92 centenarians (95 years and older), who live in Moscow. Complex geriatric assessment and blood tests were performed. Complex geriatric assessment included past medical history, FRAIL, IADL-C, MNA, GDS-15 and MOCA scores. QoL questionnaires were used as well. In all patients we measured 25OH vitamin D levels. In 1 year after the investigations we contacted patients' relatives or social workers to find out about patients' status. The statistical analysis was performed using IBM SPSS Statistics Version 26. Statistically significant were differences with $p < 0.05$.

Results: Mean age of the patients was 98.3 (± 1.9) years, while 87.8% of the cohort were women. Analyzing functional status we found out that 34.4% of the patients were frail, and the number of prefrail patients was 56.2%. Cognitive impairments of different severity were presented in 84.4% of the patients. Median vitamin D levels was 9.6 (6.9; 16.2) ng/ml. So in our group, 70 (86%) patients had vitamin D deficiency, 9 patients (12%) had vitamin D insufficiency and in only 3 patients (2%) we found vitamin D levels within the normal range. While comparing functional status and QoL with vitamin D profile we discovered positive correlation between vitamin D levels and Barthel index ($r = 0.348$), vitamin D levels and iADL ($r = 0.436$) and vitamin D and MNA ($r = 0.389$) (p less than 0.05).

Conclusion: Low vitamin D levels severely influence functional status, cognitive functions and QoL of older people, hence it is absolutely necessary to assess its levels in this population and restore them timely.

Abstract # 817

AREA: Multimorbidity

Monoclonal cryoglobulinemia associated with multiple myeloma

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A 61-year-old patient comes to the consultation due to the appearance of petechial lesions on the legs and feet, not painful and without symptoms, for 2 months. They are not related to exposure to temperature changes, nor do they have local exposure to heat. **PHYSICAL EXAM (E):** Extremities, hyperpigmented macular lesions, of variable size, that pale very slightly under pressure, without disappearing, and not palpable, on the feet, including soles, legs and distal ends of the same. Rest of normal examination. **COMPLEMENTARY EXPLORATIONS.** Systematic of normal blood. VSG 43 mm. Prothrombin 93%. D-dimer 794 ng ml. Ferritin 257 ng/ml. Saturation index: 36.9%. Normal biochemical rest. Proteinogram: monoclonal lambda, IgG gammopathy (2.4 g/dl). Total proteins 9.3 g/dl. IgM 64 mg/dl, IgA 51.3 mg/dl. CEA, CA 125, CA 15.3 and CA 19.9 normal. CA 72.4 22 kU/L. ANA and ANCA (–). IgG 3670 mg/dl. C3 normal. C4: 8.5 mg/dl (10–40). Systematic urine with leukocytes (15–25/field). **MEDULAR ASPIRATE:** Infiltration by 20% of pathological plasma cells, 99% pathological by phenotype and with poor cytogenetic prognostic factors: t (4; 14); P53 and 1q deletion. Immunoparesis: IgG 3750, IgM 64, IgA 51, CMs 2.45, CMO 0.056 gr/24 h, Kappa 10.2, Lambda 13.3 K/L 0.7. **NON-CLINICAL CRAB** (in CT neither visceromegaly nor bone lesions) **BIOPSY** of skin compatible with Monoclonal Cryoglobulinemia. **DIAGNOSIS:** **MULTIPLE MYELOMA IGG-LAMBDA (DURIE-SALMON STAGE I) IPSS-R: 2 (ISS-I + RA CYTOGENETICS) + CRYOGLOBULINEMIA.** Conclusion: multiple myeloma with very poor cytogenetic prognostic factors. We requested an MRI to stratify the risk and then think about the need or not for treatment.

Abstract # 818

AREA: Multimorbidity

Amyotrophic lateral sclerosis (ALS) requires specialist multidisciplinary care

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Individual approach: Anamnesis: a 57-year-old woman who consulted for generalized pain and stiffness of months of evolution, with worsening in the last weeks due to the association of difficulty walking and dysarthria. She was referred to a hospital emergency room, where an urgent cranial CT scan was performed, which revealed mild frontal-temporal cortical atrophy, and she was discharged with referral to the neurology clinic, where the patient was classified as not presenting neurological pathology in present and by appointment. It was made for review. After admission to neurology, for the same symptoms, a neurophysiological study compatible with bulbar amyotrophic lateral sclerosis (ALS) was performed. Examination: Rigidity of the cervical musculature, slightly limiting mobility, and doubtful neurological and Romberg dysphasia. In

hospital admission, a slow response to orders was added, ocular saccades involvement in both axes, anisocoria with mild reactive right mydriasis, moderate flaccid dysarthria, statopostular reflexes involvement, lingual fasciculations and slow gait. Supplementary tests: analytical study within normality. Plain chest radiograph with probable infiltrate of inflammatory/infectious origin in the right base. MRI without pathological findings. Neurophysiological study compatible with bulbar ALS.

Family and community approach: Information to the family is essential at the time of diagnosis, with emphasis on the anticipation of events given the poor prognosis of the disease. Clinical judgment: bulbar ALSEvolution: the patient requires a multidisciplinary follow-up by the family doctor, neurology, pulmonology, nutrition and dietetics, traumatology, rehabilitation, nursing and palliative care. Since his diagnosis, a progressive worsening of the symptoms has been observed: admissions for aspiration pneumonia, he requires a nasogastric tube for feeding and in the last admission he is intermittently dependent on non-invasive mechanical ventilation.

Conclusions: The detection of alarm signals thanks to the longitudinal vision of the family doctor provides a great diagnostic advantage.

Abstract # 819

AREA: Multimorbidity

Unstable gait and lumbar spinal stenosis

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The patient consults with his wife, who reports being concerned about the instability of the patient's gait. A complete neurological exam is done. EXAMConscious patient, oriented and with a coherent speech. Normohydrated, normocoloured and normoperfused. Hearing loss, unaltered cranial nerves. Preserved strength and sensitivity. Without dysmetria or adiadokinesia. Without nystagmus. Isochoric and normoreactive pupils. Negative Barany and Roomberg test, slight gait instability, inability to stand on one foot, walking with the trunk bent forward. Once the examination is complete, we explain to the patient that the examination is normal and that we suspect that his instability is related to his lumbar canal stenosis. We explain the hygienic and dietary measures that you must follow to improve your quality of life and avoid falls. And we recommend that you continue with the usual pain relief. His wife tells us that she is worried because lately she has been forgetting more things, so we performed a Mini Cognitive Examination on the patient, which obtained a score of 28/30. We reassure the woman and explain to her that it is a good score and that what we will do will be a follow-up of her husband's memory. **DIAGNOSIS-**Instability of gait possibly related to lumbar canal stenosis.-Alteration of memory. Importance of instability in primary care dizziness/instability is one of the most frequent reasons for consultation in Primary Care. The anamnesis and the examination are very important in this type of pathology and allow us to guide the diagnosis in most cases.

Abstract # 820

AREA: Multimorbidity

"Choosing Wisely" in the COVID 19 pandemic

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Introduction: Our project begins its journey in 2016; At that time, 27 scientific societies participating in the Initiative Commitment to the Quality of Scientific Societies in Spain had already provided their 5 recommendations not to do based on scientific evidence, a total of 135 recommendations being available.

Method: Prioritize the recommendations to be implemented; to do this, health professionals from primary care health centers were invited to prioritize 2 recommendations among those applicable in their field of work. This prioritization was carried out with the help of a tool (prioritization matrix) that evaluated, among others: prevalence of the problem, impact on patient safety, possibility of measurement, margin for improvement and feasibility of implementation. Once their 2 recommendations had been prioritized, each team of participants, in order to maximize the chances of success in the implementation, analyzed the possible barriers that could make it difficult and designed an action plan with the schedule of actions/activities to be carried out during the development. of the project.

Results: 100% of the health centers in our area have participated in the project. % Most prioritized recommendations: PPI as gastroprotection without risk factors: 93.7PSA determination not indicated: 62.5 DMII in self-monitoring who do not use insulin: 31. Obtaining positive results with improvement of more than 20% before applying the recommendation, 66.7% of the recommendations prioritized more frequently.

Conclusion: The results are positive, however there is room for improvement, we must continue working on the implementation of the recommendations in primary care to improve safety for the patient.

Abstract # 821

AREA: Multimorbidity

Temporal arteritis

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Case description: Personal history: allergy to metamizole, lumbosacral impingement, hypercholesterolemia, total thyroidectomy. Family history: no interest. Regular treatment: Levothyroxine 100 mcg, ASA 100 mg, Omeprazole 20 mg, Simvastatin 20 mg. Anamnesis: A 78-year-old woman who comes to the primary care clinic because the day before she had several episodes of vision loss and flashes of light in her left eye; the first episode was about 10 min long, the rest 5 min. Some of them are accompanied by mandibular

claudication. For a few days she has noticed mild hyperesthesia in the left temporal region, she was referred to the emergency room for suspicion of temporal arteritis. Family and community focus: elderly woman who lives alone, with a good social structure since she lives next to her 2 daughters who visit and take care of her daily. Good relationship between family members. Medium socio-cultural level. Exploration and additional tests: exploration: good general condition, conscious and oriented. Weak, symmetrical temporal pulses with pain on palpation in the left temporal artery and residual pain after palpation. No neurological focus. Fundus: normal. Supplementary tests: analytical: VSG 80 mm/h; CRP 37.1 mg/L. Brain CT: without acute intracranial pathology. Echography of the supra-aortic trunk and temporal arteries: mild bilateral carotid atheromatosis, without signs of stenosis.-Temporal artery biopsy: areas of necrosis in the arterial wall compatible with temporal arteritis. Diagnostic orientation: temporal arteritis. Treatment and action plans. Prednisone 60 mg and Omeprazole 20 mg per day until the neurologist's review. Evolution: At the next neurology visit, CRP 6 mm/h. ESR 13 mg/L. She is currently asymptomatic. Differential diagnosis: retinal detachment, optic neuritis, migraine with aura, trigeminal neuralgia. Final comment: this case shows the importance of the clinic in Family and Community Medicine, the main tool in the consultation of the Primary Care Physician is the anamnesis and physical examination, which is why they are crucial for a correct diagnostic and therapeutic orientation.

Abstract # 822

AREA: Multimorbidity

Rheumatoid arthritis: follow-up and response to treatment

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62-Year-old male, with no relevant personal history. 3 months ago he suddenly started with pain, heat and swelling of the fingers, hands and wrists with great functional impotence, which he improved with Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). After similar recurrent flare-ups, he begins prednisone treatment with improvement, but when he stops, the inflammation returns. He has no constitutional symptoms. He has no known thrombotic problems. He does not have psoriasis, uveitis, orogenital thrush, purpura, chest pain, diarrhea, dyspnea, photosensitivity, Raynaud's, lesions suggestive of erythema nodosum or parotidomegaly. Exam and additional tests: Examination: pain and limited mobility of both wrists, with swelling. He also presents mild swelling in the bilateral proximal interphalangeal (PIP) 1–5. Elbows without alterations. Shoulders, mobility preserved, painful in the left shoulder. Magnetic resonance imaging of the right shoulder: inflammatory degenerative arthrotic changes of the acromioclavicular joint. Inflammatory changes in the supraspinatus tendons, even with a small image of calcification at the insertion of the supraspinatus, value his calcifying tendonitis. Small subacromyodeltoid bursitis. Synovitis of the small bicipital groove. Humeral metaphyseal bone lesion of approximately 1 cm suggestive of a benign enchondroma-type lesion. Laboratory tests: Hemogram, 3 normal series. Rheumatoid factor: 271. Citrullinated peptide

antibodies (ACPAs): 1200. Ac. Anti beta2 glycoprotein, anticardiolipin IgG, M negative. antinuclear antibodies (ANAs) negative. HBV, HCV, HIV negative serologies. X-ray of the hands: no erosions, no joint space impingement, no juxta-articular osteoporosis. Chest X-ray: no alterations. Hip X-ray: coxofemoral degenerative signs. Ultrasound: left shoulder: without tendinitis in the long head of the biceps brachii, correctly located in the bicipital groove. Subscapular without alterations. Supraspinatus without evidence of rupture or calcifications. Without subacromyodeltoid bursitis. No glenohumeral synovitis visualized by posterior recess. Wrist: synovitis type synovial hypertrophy of both radiocarpals, with grade I–II Doppler signal. Without metacarpophalangeal synovitis (MCF), PiP. Ultrasound of the hands and wrists: no erosions were observed, except for a small defect in the 5th MCF of the left hand, possibly related to erosion. Daingostic orientation: rheumatoid arthritis. Calcific tendinitis of the left shoulder. Enchondroma in the right shoulder. Methotrexate treatment is started. Differential diagnosis: for monoarticular arthritis: transient hip synovitis, septic arthritis, viral arthritis, reactive arthritis and other post-infectious arthritis or inflammatory arthritis (such as juvenile idiopathic arthritis). In the case of arthritis with polyarticular involvement: viral, rheumatic, reactive arthritis, post-streptococcal fever, tumor, in relation to certain connective tissue diseases such as systemic lupus erythematosus or dermatomyositis. Final comment: the multidisciplinary follow-up from specialized care as well as in primary care of these patients with rheumatoid arthritis is important, not only because of the characteristics of the disease, but also because of all the issues that derive from the chronic use of drugs such as methotrexate.

Abstract # 823

AREA: Multimorbidity

Assessment of geriatric syndromes and conditions among elderly in the geriatric unit

Odetta Kucikiene¹

¹Lina Spirgiene, Tautvydas Joteika

Introduction: Medical diagnoses are not sufficient to describe the self-esteem condition of an elderly. Screening and evaluation for geriatric syndromes, particularly falls, urinary incontinence, frailty, and cognitive impairment, are crucial aspects of geriatric assessment [Carlson C, 2015]. The aim is to evaluate geriatric syndromes and conditions among the elderly in geriatric unit.

Methods: The survey was conducted in Geriatrics Unit in 2019–2020 years. The patients' medical data was used from medical records electronic form. In total, 270 elderly patients participated in the study. The study protocol was approved by the Centre of Bioethics at the Lithuanian University of Health Sciences (No. BEC-MF-123).

Results: The mean of patients' age was 80.83 ± 7.8 years. The most frequent conditions and geriatric syndromes among patients were sleep disorders (58.1%), urinary incontinence (51.9%) and pain (35.2%). Urinary incontinence was more frequent in ≥ 90 years. group (64.0%) than 75–90 years. (49.4%) and 60–74 years. (31.3%) age group, $p < 0.001$. Dementia was more diagnosed in ≥ 90 years. group (11.2%) and 75–90 years. (12.3%), 60–74 years. group hadn't diagnosis of dementia, $p = 0.016$. Pain was more frequent in 60–74 years. age group (57.8%) than 75–90 years. and ≥ 90 years. (respectively 33.3% and 24.8%), $p < 0.001$.

Conclusions: Geriatric syndromes and conditions are relevance in Geriatric Unit. Geriatric syndromes should be evaluated at admission for all patients and followed for comprehensive geriatric team during hospital stay.

Abstract # 824

AREA: Multimorbidity

Multimorbidity patterns and 5-year survival in older nursing home residents

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Introduction: There has been little research examining multimorbidity patterns within institutionalized populations. We aim to characterize multimorbidity patterns in older individuals living in nursing home (NH) and to investigate their association with survival, while considering disability.

Methods: We analysed data on 4249 NH residents in Italy, assessed through the interRAI LTCF instrument. Multimorbidity patterns were identified through Principal Component Analysis; resulting components were analyzed in quintiles (Q) and their association (Hazard Ratio [HR] and 95% confidence interval) with mortality tested in Cox regressions. Analyses were also stratified by disability status.

Results: Four multimorbidity patterns were identified: (1) heart diseases; (2) dementia/sensory impairments; (3) heart/respiratory/psychiatric diseases, and (4) diabetes/cerebrovascular/hypertension. Only the heart diseases (HR Q5 vs. Q1 = 1.86 [1.56–2.23]) and the dementia/sensory impairments patterns (HR Q5 vs. Q1 = 1.26 [1.09–1.46]) showed a higher and dose–response mortality hazard. Upon stratifying by disability status, the association between the dementia/sensory impairments pattern and mortality remained only in those presenting with severe disability.

Conclusion: Different multimorbidity patterns are differentially associated to mortality in older NH residents. Individuals' functional status may further modify this association. Better understanding the interaction between coexisting diseases may improve health care decisions for patients with multimorbidity and address individuals' care needs.

Abstract # 825

AREA: Multimorbidity

Association between dual sensory impairment and mental health in Spanish adults

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Introduction: We studied the association between dual sensory impairment (vision and hearing impairment) and mental health (depression and chronic anxiety) in Spanish adults.

Methods: We analyzed data of 23,089 adults (15–103 years, 45.9% men) from the Spanish National Health Survey 2017. Vision and hearing impairment were the exposure variables, while depression and chronic anxiety were the outcome variables. Multivariable logistic regression analyses were carried out for vision impairment alone, hearing impairment alone and both combined (dual sensory impairment), adjusting for gender, age, marital status, cohabiting, education level, smoking, alcohol consumption, body mass index, physical activity, use of glasses/contact lenses and hearing aid.

Results: Visual impairment, hearing impairment, and dual sensory impairment were all significantly associated ($p < 0.05$) with higher odds for depression (ORs 2.367, 2.098 and 3.852, respectively) and for chronic anxiety (ORs 1.983, 1.942 and 3.385, respectively). Dual sensory impairment was associated with higher odds ratios for depression and chronic anxiety when compared to either impairment (vision and hearing) alone.

Conclusions: Dual sensory impairment is significantly associated with higher odds of depression and chronic anxiety when compared to vision impairment alone or hearing impairment alone. It is necessary to carry out appropriate interventions to improve mental health in Spanish adults with vision and hearing impairment.

Abstract # 826

AREA: Multimorbidity

The impact of frailty on symptom severity at admission and on mortality, length of stay and complications during hospitalization in elderly patients

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Introduction: Frail older adults are heavy consumers of healthcare and social resources. Aim was to assess the impact of frailty on symptom severity at admission and on mortality, length of stay (LOS) and complications during hospitalization in elderly admitted patients.

Methods: 230 consecutively admitted elderly patients (50.9% women), median age 82 years-old (75–87 interquartile range) were categorized using Clinical Frailty Scale (CFS). CFS was estimated for the pre-morbid patients' status. Symptom severity at admission was assessed by quick SOFA (qSOFA) score. The differences of frailty according to qSOFA score, mortality, and complications during hospitalization were assessed by one-way ANOVA. The relation between CFS and LOS was evaluated using Pearson's correlation coefficient.

Results: Patients with higher qSOFA scores at admission had higher mean CFS scores [(4.33 ± 2.24 vs 5.76 ± 2.26 vs 6.22 ± 1.98 vs 7.40 ± 0.97 (M ± 1SD) in qSOFA scores 0, 1, 2, 3 respectively), (F (3225) = 14.632, $p \leq 0.001$)]. Patients who presented complications had mean CFS score 6.01 ± 2.14 in contrast to those without complications (4.30 ± 2.22, M ± 1SD) (F (1227) = 35.218, $p \leq 0.001$). Deceased patients had mean CFS score 6.97 ± 1.94 in contrast to those who were discharged (4.84 ± 2.28, M ± 1SD) (F (1224) = 25.493, $p \leq 0.001$). Considering LOS there was a weak positive correlation between LOS and CFS ($r_s = -0.128$, $p = 0.05$).

Conclusions: Frailty in elderly is associated with more severe symptoms at presentation, increased hospital mortality, increased LOS and adverse events during hospitalization. The prehospital stratification of vulnerable older adults and the management of modifiable risk factors, in order to reduce frailty, may help to prevent unwanted high-risk hospitalizations.

Abstract # 827

AREA: Multimorbidity

Geriatric syndromes in older adults treated with dialysis or kidney transplantation – a systematic review

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Introduction: In older patients with end-stage kidney disease (ESKD), the choice between kidney transplantation (KT) and dialysis may be more complicated than in younger patients because of a higher prevalence of comorbidities and geriatric syndromes. Moreover, many older patients prioritize outcomes such as quality of life (QOL) and functional status above medical outcomes (e.g. life expectancy). This systematic review investigates the impact of KT and dialysis on QOL and geriatric outcomes in older patients.

Methods: We included longitudinal research that investigated QOL and/or geriatric outcomes before and after KT or start of dialysis in patients aged 60 years or older.

Results: Sixteen studies matched the eligibility criteria. Of these, three studies included KT recipients. They showed that QOL improved and the prevalence of frailty decreased after KT. The remaining thirteen studies included dialysis patients. Most, but not all, studies showed that functional status declined after start of dialysis. Other studies showed that nutritional status improved and frailty decreased after start of dialysis. However, the possibility to interpret and compare the results of studies was limited by two methodological issues: heterogeneity in study designs and significant risk of bias.

Key conclusions: This review provides a comprehensive summary of QOL and geriatric outcomes after KT and start of dialysis in older patients. While awaiting the results of new, methodologically sound studies, we advise nephrologists to evaluate the presence of geriatric syndromes and to explore their patient's treatment goals during the decision-making process regarding the choice between KT and dialysis in older adults.

Abstract # 828

AREA: Multimorbidity

Self-reported older patients' health status and associated socio-demographic, clinical and medication-related risk factors

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Introduction: Self-reported good health in older patients is an important predictor of better health prognosis and is significantly associated with overall better quality of life (QoL) in older adults. The aim was to determine in community-residing older patients in Croatia correlation between their self-reported health and major sociodemographic, clinical and medication-related factors.

Methods: Patients (65 + years) attending community pharmacies in 3 different regions of Croatia participated in the EuroAgeism Horizon2020 ESR7 project "Inappropriate prescribing and availability of medication management services in older patients in Europe". Participants filled the study multi-sectional questionnaire. Descriptive and inferential statistical methods were used.

Results: In the study, 210 patients participated, the mean age was 74.7 ± 6.6 years, the majority were female (64.8%). Patients reported their health as very poor or poor in 10.5%, moderate in 39.0%, and good (38.6%) or very good (11.9%). Among patients using polypharmacy (5 + medications), 61.0% self-reported poorer health ($p = 0.015$). Hypertension (71.9%), vision-impairment (42.3%), dyslipidemia (40.7%), osteoporosis (21.9%) and gastritis (20.5%) were the most common chronic diseases conditions; and nycturia and ankle oedema (31.4%, respectively), vertigo (28.6%), heartburn (28.1%), and unsteady gait (26.2%) were the most prevalent symptoms. Patients suffering from osteoporosis and gastritis and those with vertigo and unsteady gait more often reported their health as worse than other subjects ($p < 0.05$).

Key conclusion: Self-reported worse health that may significantly influence the overall QoL of older adults correlated with the higher number of prescribed medications, higher number of chronic disorders and number of present acute symptoms. Grants: EuroAgeism

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Abstract # 829

AREA: Multimorbidity

JADECARE—joint action on implementation of digitally enabled integrated person-centred care solutions

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The growing challenges of chronic conditions and multimorbidity in the aging population is constantly increasing the demand for more comprehensive, efficient, personalized care based on innovative solutions. Thus, transformation of health care in Europe with the development and implementation of innovative digital solutions is highly needed. JADECARE (Joint Action on implementation of Digitally Enabled integrated person-centered CARE) addresses this need by reinforcing the capacity of health authorities to successfully address the transition to digitally-enabled integrated-person-centred care for vulnerable patients. It is focusing on the transfer and adoption of four original Good Practices (oGPs) to 23 "next adopters" in 17 European countries, taking local context, maturity of integrated care, legal frameworks and culture into account. Core features include integrated care, chronic conditions, multimorbidity, frailty and complex needs, prevention and population health, disease and case management. The oGPs are innovative ICT-supported, population-based integrated health care practices from Spain (Basque, Catalan), Germany (OptiMedis) and Denmark. The project lasts from October 1st, 2020 until September 30th, 2023. A three-step strategy will be used for oGP transfer: Pre-implementation (planning, preparation), Implementation (roll-out and operation, with PlanDoStudyAct cycles) and Post-implementation (impact assessment, learning). The long-term effect of JADECARE is supported by involving stakeholders in governance bodies providing political commitment to integrated care. As JADECARE has just started, we do not yet have results. JADECARE will improve collaboration among participating stakeholders and generate evidence on integrated care for geriatric patients, that will produce benefits beyond the project and will impact patients, carers, health professionals/authorities and general population.

Abstract # 830

AREA: Multimorbidity

Cannabinoids and elderly patients: a national plan and integration in geriatrics and palliative care

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Introduction: Since march 2019, we has a law on prescription for: "cannabis medicinalis" and a main indication represents chronic pain (advanced or terminal stages). The elderly persons can obtain the product either as: flowering tops, as teas (both as predominant concentration with TBC (tetrahydrocannabinol) and as an equal mixture with THC and CBD (cannabidiol) or as registered drugs.

Methods: A retrospective study over 2 years was undertaken in order to find out if some seniors had positive effects during the use. All physicians who wanted to prescribe these cannabinoids had to pass a 1-day training. Apart from chronic pain in late stage, 2 other indications are: nausea in chemo-therapy and muscle spasticity.

Results: More than 630 patients received at least 1 prescription. Less than 5% were over 70 years and only 6% had more than 65 years. 80% of the prescriptions had THC predominant content. 61% used the product as inhalation which limits its use in elderly. Mean dosage was 40 g per month. 91% of the prescriptions were for chronic pain and the main medical prescribers were: GPs (63%) and neurologists (4.7%). In our hospice only 6 patients used cannabinoids (123 admissions in 2020).

Conclusions and adaptations: A change of the law is in preparation where some more explicit indications will be written and where elderly patients might have indications: a) for neuropathic chronic pain as 3rd line; b) for spasticity in MS (multiple sclerosis) and spinal cord injuries/diseases.

Abstract # 831

AREA: Multimorbidity

Multimorbidity and geriatric problems in community-dwelling older adults - results of the PolSenior 2 study

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Introduction: The aim of the study was to reveal the frequency of multimorbidity (MM) in the Polish geriatric population and the connections between systemic diseases and main geriatric problems.

Methods: MM, defined as the occurrence of two or more conditions, was assessed in the entire population of the Polsenior 2 study (5987 people over 60 years old, 51.1% women). The occurrence of 30 diseases from 8 different systems and 7 geriatric problems were determined based on a medical questionnaire. The prevalence of MM was analyzed depending on the age group, gender, living and financial situation.

Results: The median of diseases' number was 3 (Q1–Q3: 2–5). The percentage of patients with MM increased with age (from 69.3% in 60–64 years old to 91% in 85–89 years old). The prevalence of MM in each age group was slightly higher in women. Living alone and financial problems did not influence MM. Cardiovascular (CV) problems (72.3%), metabolic and endocrine disorders (68.7%), sensory organ (32.7%) and kidney or urinary tract diseases (19.0%) were the most frequently reported diseases. Geriatric problems were reported in 59.4% of participants (more often in women [69.6%] than in men [45.2%]). Memory impairment (36.7%), urinary incontinence (29.6%) and falls (15.9%) were the most frequent geriatric problems. About one third (36.7%) of patients with CV diseases did not report geriatric problems, but only 22.7% with neurological or psychiatric diseases were without such problems.

Key conclusions: Strategies for improving diagnostic procedures screening for the coexistence of multiple diseases and geriatric problems should be developed.

Abstract # 832

AREA: Multimorbidity

Confidence as predictor of goal achievement in older hospitalized patients

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Introduction: In older multimorbid patients, expert consensus exists on patient-centered healthcare. An important aspect of patient-centered healthcare is aligning treatment to patients' goals and preferences to improve treatment outcomes. However, little is known about the effect of personal factors, like confidence, on goal achievement. Therefore, we aimed to determine if confidence affects goal achievement of older hospitalized patients.

Methods: Older (age ≥ 70) hospitalized medical, cardiological and surgical patients in the University Medical Center Groningen in the Netherlands were included between February 2017 and November 2018. Qualitative and quantitative data was collected. Binary logistic regressions were performed to assess if confidence was associated with goal achievement and which factors were associated with confidence.

Results: Five hundred eighty older hospitalized patients were included (61.6% male, mean age 76.73 ± 5.67). Around 40% of patients achieved their goal at follow up. Top three mentioned goals with the highest confidence were 'life enjoyment', 'wanting to know what the matter is' and 'maintaining autonomy'. Confidence in goal achievement was found to be associated with goal achievement at 3 months in older hospitalized patients. The combination of self-rated health (EQ-5D-VAS) and psychological resilience was found as associated with confidence in goal achievement in older hospitalized patients. Conclusions: Confidence in goal achievement is associated with goal achievement after hospitalization. Patients' confidence levels should be assessed within patient-centered healthcare. Future studies could look at interventions to improve confidence or help the patients with setting more realistic goals.

Abstract # 833

AREA: Multimorbidity

Severity of *Clostridioides difficile* infection among older patients: an observational pilot study

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Introduction: More than 60% of the *Clostridioides difficile* infection (CDI) cases are reported in patients aged 60 years and older. We aimed to describe the CDI severity and prognosis at 90 days following diagnosis in patients above 60 years affected by CDI in the Central Denmark Region.

Methods: Observational study based on all clinical records conducted among older patients in the period of January–February 2018. Inclusion criteria were: (1) age ≥ 60 years (2) index CDI defined as a positive CD toxin PCR test and no treatment for CDI within the last year. Severity of CDI was rated using the Danish national guidelines for CDI. The cohort was retrospectively frailty rated using the record-based Multidimensional Prognostic Index (rMPI).

Results: In total, 64 patients were enrolled, median age 76 years (Interquartiles 71–84), 56% male. In 89% of the cases, the CDI was related to hospital admission. An rMPI assessment was possible in 93% of the patients; Of these, 14 (23%) were categorized as non-frail, 15 (25%) moderately frail, and 31 (52%) severely frail. The 90-day mortality was 55%. CDI was categorized as mild/moderate in 17% of the cases, severe in 50%, and fulminant in 33%. Severity of CDI increases risk of 90-day mortality (relative risk 1.64, (95% CI 1.17–2.30), $p = 0.004$).

Conclusion: In older adults, CDI carries a high mortality. CDI is mostly diagnosed during hospital admission. Severity of CDI increases 90-day mortality and most of the patients are frail at discharge. The poor prognosis suggests a need for preventive strategies.

Abstract # 834

AREA: Multimorbidity

Metabolic syndrome is associated with better quality of sleep in the oldest old: results from the "Mugello Study"

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Background and aims: Reduced sleep quality is common in advanced age. Poor sleep quality is associated with adverse outcomes, chiefly cardiovascular, in young and middle-aged subjects, possibly because of its association with metabolic syndrome (MetS). However, the correlates of sleep quality in oldest populations are unknown. We evaluated the association of sleep quality with MetS in a cohort of subjects aged 90 + .

Methods and results: We analysed data of 343 subjects aged 90 + living in the Mugello area (Tuscany, Italy). Quality of sleep was assessed using the Pittsburgh Sleep Quality Assessment Index (PSQI). Good quality of sleep was defined by a PSQI score < 5 . MetS was diagnosed according to the National Cholesterol Education Program's ATP-III criteria; 83 (24%) participants reported good quality of sleep. MetS was diagnosed in 110 (24%) participants. In linear and logistic models, MetS was inversely associated with PSQI score ($B = -1.04$; 95% CI -2.06 to -0.03 ; $P = 0.044$), with increased probability of good sleep quality (OR = 2.52; 95% CI 1.26–5.02; $P = 0.009$), and with a PSQI below the median (OR = 2.11; 95% CI 1.11–3.40, $P = 0.022$), after adjusting. None of the single components of MetS were associated with PSQI (all P values > 0.050). However, an increasing number of MetS components was associated with increasing probability of good quality of sleep (P for trend = 0.002),

and of PSQI below the median (P for trend = 0.007). Generalized Additive Model analysis documented no smoothing function suggestive of nonlinear association between PSQI and MetS.

Conclusion: Our results confirm a high prevalence of poor sleep quality in oldest age; however, in these subjects, MetS seems to be associated with better sleep quality. Additional larger, dedicated studies are required to confirm our results, and, if so, to identify the subsystems involved and the potential therapeutic implications of such an association.

Keywords: Geriatric; metabolic syndrome; reverse epidemiology; sleep quality.

Abstract # 835

AREA: Multimorbidity

A new model of multidimensional discharge planning: continuity of care for frail and complex inpatients

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Objective: Delays in patient discharge can adversely affect hospital and emergency room productivity and increase healthcare costs. The discharge should be structured from the hospital admission towards the most appropriate environment. This study aims to investigate the efficacy of the Unit, named "Continuity of Care Center" (CCC), to guarantee a safest and fastest hospital discharge in frail patients and to test the effect of our team-approach on hospital outcomes (length of stay and hospital mortality).

Materials and methods: This is a prospective cohort study carried out in an acute care hospital with 1558 beds and is equipped with 41 operating theaters. We collected data from October 2016 to June 2019.

Results: The time of patient discharge had an important reduction: 15.5 ± 30.8 in the first 3 months vs. 11.0 ± 20.1 in the last 3 months considered. The median of the time of discharge in all 12 months considered was 12 day. The length of stay presented an important reduction from 33.3 ± 47.5 during the first 3 months vs. 28.8 ± 39.5 in the last 3 months of activity of CCC; and a significant reduction of hospital deaths was recorded from 20% during the first 3 months to 14% in the last 3 months of activity of CCC.

Conclusions: Results indicate a constant decrease in patient discharge time and length of hospital stay, with a consequent significant reduction of healthcare costs. According to the estimates of Italian Health Ministry concerning Latium region, every hospitalization day has a mean cost of € 674.00. Thus, the CCC activity has contributed to a reduction of approximately 12,832 days of hospitalization, in the considered period, with an estimated hospital saving of € 8,648,761.

Keywords: Continuity of care, Discharge planning, Palliativecare, Personalized medicine.

Abstract # 836

AREA: Multimorbidity

Prevalence and risk factors of untreated thyroid dysfunctions in the older Caucasian adults: Results of PolSenior 2 survey

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Introduction: Thyroid dysfunction is the leading endocrinopathy in older adults. The prevalence of thyroid dysfunction is estimated at 3.8% in the general European population (hypothyroidism—3.05% and hyperthyroidism—0.75%, 85% subclinical), undiagnosed thyroid dysfunction was estimated at 6.7% (hypothyroidism in 4.9% and hyperthyroidism in 1.7%). The previous epidemiological data revealed an 11% prevalence of thyroid abnormalities (8% of hypothyroidism and 3% of hyperthyroidism) in the Polish population aged 65 years. The aim of this study was to analyze the frequency of treated and untreated thyroid dysfunction and to identify factors associated with increased risk of undiagnosed thyroid dysfunction in older adults.

Methods: The PolSenior2 study enrolled 5987 subjects aged 60 years and above, the prevalence of thyroid dysfunction was estimated at 15.5% (21.5% in women and 7.2% in men, $p < 0.001$).

Results: Hypothyroidism was estimated at 13.9% (19.4% in women and 6.3% in men, $p < 0.001$). Hyperthyroidism was estimated at 1.6% (2.1% in women and 0.9% in men, $p = 0.003$). The prevalence of untreated dysfunctions was estimated at 3.2% (4.0% in women and 1.9% in men, $p = 0.001$). Multiple regression analysis revealed older age (> 75 years), male sex, a low education level (primary or lower) and low utilization of medical services (once a year or less) were independent risk factors for untreated thyroid disorders.

Conclusions: One-fifth of Polish seniors with hypothyroidism and one-third with hyperthyroidism is untreated. Older, poorly educated and rarely utilizing medical services, especially men, are more frequently untreated for thyroid dysfunction.

Abstract # 837

AREA: Multimorbidity

Transcultural adaptation of the healthcare task difficulty among older-adults with Multimorbidity Questionnaire

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Introduction: "Healthcare Task Difficulty Among Older-Adults With Multimorbidity" (HCTD) is a questionnaire developed to describe health care treatment difficulty (HCTD) in older adults with multimorbidity. The objective of this study was to translate and cross-culturally adapt the HCTD questionnaire into the Spanish language.

Methods: Direct translation and back translation were carried out followed by a synthesis and adaptation by a third translator and a panel of experts in order to guarantee the conceptual, semantic and content equivalence between the original and the Spanish version. Additionally, an evaluation of the comprehension of the questionnaire in Spanish was accomplished in a sample of elderly patients with multimorbidity.

Results: The Spanish version of the HCTD questionnaire (HCTD-E) was obtained. The overall difficulty of the translators to find an equivalent expression between both languages was low. In the synthesis and adaptation part, four discrepancies were resolved (two of them were adapted in order to use a terminology closer to our health system and the other two were completed with different examples). The validation was carried out in a sample of ten elderly patients with multimorbidity, and they showed an excellent comprehensibility.

Conclusions: This is the first cross-cultural adaptation to Spanish of the HCTD questionnaire. The comprehensibility of the questionnaire, measured through cognitive interviews, was high. Therefore, the HCTD questionnaire can begin to be used in patients whose main language is Spanish.

Abstract # 838

AREA: Multimorbidity

Is smoking a risk factor for osteoporosis?

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Objectives: Osteoporosis is the most common metabolic bone disease characterized by a reduction of bone mineral density (BMD). Osteoporosis can be defined as a silent disease due to the lack of symptoms and the increasing number of cases. The presence of osteoporosis occurs predominantly in the elderly where the main complication is the occurrence of fractures, especially hip fractures [1–10]. The aim of the study was to assess bone mineral density in a group of both female and male patients to determine the incidence of osteoporosis caused by tobacco use.

Methods: 130 patients (35 female and 95 male) with age between 39 and 65 years were included in the study. The diagnosis of osteoporosis was established on the basis of bone mineral density (BMD) assessment measured by dual-energy X-ray absorptiometry, osteocalcin and beta cross laps.

Results: Of the total cases taken in the study, about 60% of the patients (F 28% and M 32%) showed a T-score value between -2.5 SD and -4.5 SD, and 15% (F 7% and M 8%) showed a T-score value between -1 SD and -2 SD; beta cross laps with values in

female < 1 ng/ml and in male < 0.65 ng/ml; osteocalcin in female between 10 and 35 ng/ml, and in male between 11 and 40 ng/ml. Serum nicotine levels in female smokers ($123 \pm 25.6 \mu\text{mol/L}$) were higher than those in male smokers ($98 \pm 33.8 \mu\text{mol/L}$).

Conclusions: 1. The presence of osteoporosis is more frequent in females, but the incidence in males is slightly increasing. 2. Smoking is a risk factor for osteoporosis.

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Abstract # 839

AREA: Multimorbidity

Alcohol - the enemy in the glass of osteoporosis

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Objectives: Through the mutual influence of nutritional, genetic and lifestyle factors, osteoporosis plays a major role, especially for older people [1–10]. Lack of regular physical activity, weight loss and alcohol consumption can be risk factors, either acting individually or together, that lead to a loss of bone mass and thus to osteoporosis.

Methods: The study included a total of 175 patients who were divided into three groups: a group consuming alcohol on average between 0.5 and 1 drink/day, a group consuming on average 1–2 drinks alcohol/day and a group consuming more than 2 drinks alcohol/day.

Results: Following the analysis of the patients included in the study, we found a higher risk of osteoporosis in the group of patients consuming more than 2 glasses of alcohol per day, approximately 1.95 times more than the group consuming on average between 0.5 and 1 glass of alcohol per day.

Conclusions: A positive link can be established between alcohol consumption and the development of osteoporosis, especially in people consuming more than 2 drinks per day.

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Abstract # 840

AREA: Multimorbidity

Study on increased incidence of dentine hypersensitivity in the elderly

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Dentin hypersensitivity is one of the most common symptoms accompanying dental pathologies in the elderly [1–6]. The present study aimed to examine the intraoral distribution of dentine hypersensitivity and its relationship with age, gender, other dental symptoms, stimuli, predisposing factors and therapeutic strategies in dentistry [5–10]. The study was designed as a short questionnaire-based survey and was conducted by randomly selected dentists in private practice in Craiova. It was concluded that acid feeding, gingival recession and erosion are potentially associated with dentine hypersensitivity, with a strong predilection for older women. An important conclusion was also related to the presence of dentine hypersensitivity associated with the treatment of various general conditions in patients, especially those with endocrine diseases.

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Abstract # 841

AREA: Multimorbidity

A retrospective comparative review of biopsy-confirmed sarcoidosis in patients with late-onset compared with younger-onset

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Background: Late-onset sarcoidosis accounts for up to 30% of cases yet remains largely understudied. Diagnosis is frequently challenging in older patients due to difficulty in satisfactorily excluding malignancy and infection often necessitating repeated investigations.

Methods: We performed a retrospective comparative review of EBUS-confirmed sarcoidosis in late-onset (LOS) and young-onset cohorts (YOS) over an 8-year period. Electronic healthcare records were reviewed to obtain information on clinical presentation, investigations, treatment and outcomes.

Results: In total, 247 patients were included, 9.3% (n = 23) were LOS. Patients with LOS experienced lower extra-pulmonary features and systemic features than suggested in prior studies. Clinical outcomes were similar with 92% LOS and 88.3% YOS achieving clinical remission or stable symptoms. Clinical and/or radiological progression occurred in 7% in both groups. No treatment in majority of cases, 85% LOS and 68% YOS. Three LOS patients required systemic treatment, with oral corticosteroids (n = 2) or hydroxychloroquine (n = 1). LOS patients received less procedural sedation, median midazolam 6 (6–8) vs 4 (4–6), p = 0.001 and no complications were reported in the this group.

Conclusion: In conclusion, rates of extra-pulmonary involvement and systemic symptoms at presentation were low. There was no difference in treatment or outcomes with high rates of clinical remission and low corticosteroids and systemic therapy requirement. Progression to pulmonary fibrosis and mortality were low, correlating to low rates of organ damage at diagnosis. EBUS is safe and effective diagnostic method in all age groups and clinicians should have a low threshold to refer patients with possible sarcoidosis or unexplained mediastinal lymphadenopathy.

Abstract # 842**AREA: Multimorbidity****Prevalence of pathological body composition phenotypes in community-dwelling older adults from Poland**

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Introduction: Age-related loss of muscle mass along with the increase and redistribution of adipose tissue promotes the development of body composition disorders such as sarcopenia, obesity and sarcopenic obesity (SO), which are a direct threat to healthy aging. The aim of the study was to assess the prevalence of pathological body composition phenotypes in older adults and define the normal phenotype which gives a better chance for healthy aging.

Methods: 172 community-dwelling older adults (≥ 60 years) were included in this analysis (60% women). Based on the diagnostic criteria of European Working Group on Sarcopenia in Older People 2, participants were classified as sarcopenic and non-sarcopenic. Obesity was identified using BMI (≥ 30 kg/m²) or %Body Fat (%BF $> 25\%$ in men and $> 35\%$ in women). SO was diagnosed as (1) myopenic obesity (low muscle mass + obesity) and (2) dynapenic obesity (low muscle strength + obesity). The normal phenotype was defined as the lack of obesity and the presence of the normal muscle mass and strength.

Results: Frequency of sarcopenia accounted for 11.5% and over a half of the cases classified as sarcopenic had a negative result of SARC-F. The incidence of obesity ranged from 31% (for BMI ≥ 30 kg/m²) to 64% (for high %BF). SO as myopenic obesity was found in 3.5% of the respondents, while dynapenic obesity was five times more frequent (18.5%). Only 16% of the respondents presented the normal phenotype.

Key conclusions: Most of the older adults are characterized by a disturbed bodycomposition, which is associated with a higher risk of negative health consequences and requires therapeutic intervention.

Abstract # 843**AREA: Multimorbidity****Cardiovascular comorbidities in older people with chronic bronchopulmonary conditions**

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Introduction: Chronic bronchopulmonary conditions present increased prevalence in elderly and are accompanied by several

complications. Aim of the study was to identify specific characteristics of cardiovascular comorbidities in this category of patients.

Material and methods: We analyzed 937 older patients, 24% men, 76% women, women mean-age 75.35, men 73.24 years; 71% subjects from urban area; 68% with income above poverty level. Chronic obstructive pulmonary disease, chronic bronchitis, bronchiectasis, asthma and idiopathic pulmonary fibrosis have been considered. A retrospective, observational, analytic, case-control study has been carried out. Adults (48–64 years) were considered controls and elderly ($> / = 65$ years) cases. Presence and type of cardiovascular comorbidities have been followed.

Results: Highest prevalence of cardiovascular diseases was encountered, in order, in patients with asthma, idiopathic pulmonary fibrosis and chronic bronchitis. Arterial hypertension had significantly ($p < 0.05$) higher prevalence in older women with chronic bronchitis and in older men with chronic obstructive pulmonary disease. Significantly ($p < 0.05$) higher prevalence of valvulopathies was noticed in older men with chronic obstructive pulmonary diseases and in older women with asthma. Cardiac failure has been encountered with significantly ($p < 0.01$) higher prevalence in young-old patients (65–74 years) and aortic stenosis has been identified with a significant ($p < 0.05$) higher prevalence in older women with chronic obstructive pulmonary disease and asthma. Pulmonary hypertension had a significantly ($p < 0.01$) higher prevalence in older women with chronic obstructive pulmonary disease and with idiopathic pulmonary fibrosis.

Conclusions: Older people with chronic bronchopulmonary conditions have specific cardiovascular comorbidities and they require special attention. A gender difference was noticed.

Abstract # 844**AREA: Nutrition****Prealbumin is a predictor of mortality at D30 in intensive care patients 75 years of age and older: a four-year retrospective study**

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Rationale: Prealbumin is an early marker of malnutrition. ICU and post-ICU mortality rates are higher in elderly patients than in younger populations. Age itself explains only a small part of the increased hospital mortality, suggesting that specific information such as nutritional status should be collected to predict mortality in elderly ICU patients. The main objective of this study was to determine if prealbumin is a predictor of 30-day mortality of patients aged 75 years and older admitted in intensive care.

Materials and methods: In this monocentric retrospective cohort study, we reviewed the medical charts of patients aged 75 years and over, hospitalized in intensive care (Hospices Civils de Lyon, Groupement Sud, France) for at least 24 h, from 1st November 2015 to 31 December 2019. The data collected were: age, sex, prealbumin, prothrombin, diagnosis of infection, initial IGSII severity score, length of stay (LOS), and 30-day mortality. Exclusion criteria were unmeasured prealbumin, missing initial severity score, re-hospitalization or ICU < 24 h. Mortality at D30 was defined as death occurring within 30 days of admission to ICU.

Results: 253 patients (19%) fulfilled the study criteria. The rate of 30-day mortality was 23.3%. Mortality at D30 within the intensive care unit was significantly associated with prealbumin ($p = 0.009$). In the multivariate model, the different risk factors for death were: infection (OR = 2.81 [1.19; 7.53] $p = 0.025$) and IGS2 (OR = 1.35 [1.02; 1.05] $p < 0.001$). A prealbumin level between 0.1 and 0.2 g/L

was a protective factor (OR = 0.39 [0.19; 0.80]) $p = 0.010$. We observed a difference in survival according to the rate of prealbumin: prealbumin levels > 0.20 g/L increased probability of survival at D30: ($p = 0.0032$).

Conclusion: Our study showed that hypoprealbuminemia is a risk factor for death. Hypoprealbuminemia is possibly a marker of frailty in patients aged 75 years and older.

Abstract # 845

AREA: Nutrition

Association between empty-nest status and malnutrition risk among community-dwelling older adults: the mediation effect of social support

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Introduction: The purpose of this study was to explore the association of empty-nest status with malnutrition risk, and understand the mediating effect of social support between this relation.

Methods: This cross-sectional study was conducted among 1856 community-dwelling older adults aged 60 and older. All participants completed a systematic questionnaire, which evaluated demographic data, socioeconomic status, lifestyle habits, and clinical information. Nutritional status (the short-form mini-nutritional assessment, MNA-SF) and social support level (social support rating scale, SSRS) were measured. Physical examination were conducted. Binary logistic regression was used to analyze the effect of empty-nest status on malnutrition risk. Linear regression models were fitted according to the Baron & Kenny method for mediation analysis.

Results: The risk of malnutrition was significantly increased in empty-nest elderly adults, when compared to non-empty-nesters ($P < 0.001$). After adjusting for covariates including age, gender, socioeconomic status, comorbidities, and polypharmacy, empty-nest elderly adults were associated with a higher risk of malnutrition (hazard ratio = 1.68, 95% confidence interval = 1.06–2.66, $P = 0.027$). Per one score increase of SSRS was associated with a 3.5% reduced risk of malnutrition in elderly population ($P < 0.001$). The mediation analysis indicated that social support played a full mediation role between empty-nest status and malnutrition risk.

Key conclusions: Through full mediation effect, social support significantly impact the association between empty-nest status and malnutrition risk in a community-dwelling elderly adults. These findings emphasize that social support enhancement is essential to achieving better nutrition status for empty-nesters.

Abstract # 846

AREA: Nutrition

Perceptions of the nutrition of frail geriatric patients and their informal caregivers: a qualitative study

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Objective: Malnutrition is a common health condition that affects older persons. In conjunction with a frail phenotype, malnutrition is associated with an increased risk of functional dependency and hospitalization. Little is known about the possible role of frail geriatric patients and informal caregivers in the development and prevention of malnutrition. This study aims to explore the perceptions of frail geriatric patients and their informal caregivers to identify factors contributing to a high risk of malnutrition.

Design: Qualitative interview study.

Setting and participants: Twelve frail geriatric patients and 14 informal caregivers were individually interviewed in July until November 2018. Data were analyzed using the principle of open coding of early data.

Measurements: We also measured weight, length, body mass index and multimorbidity.

Results: Three themes were identified: (1) emotions related to eating, (2) knowledge about nutrition and malnutrition, and (3) support regarding daily dietary intake. Social aspects of eating were discussed in all three themes.

Conclusion: Patients and caregivers lack knowledge concerning healthy nutrition and have limited insight into the risk for malnutrition. Accessible information concerning healthy nutrition and the prevention of malnutrition that is targeted to this population is highly needed. Additionally, we need to focus on the positive emotions and social aspects concerning meals and nutrition; negative emotions and eating alone are typically associated with malnutrition. Future strategies to prevent malnutrition should incorporate these findings in their dietary guidelines to bring awareness of these patient-related factors so that health care professionals can act accordingly.

Abstract # 847

AREA: Nutrition

Relationship between nutritional status, physical activity and quality of life in older people living in the community and nursing homes

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Introduction: The aim of the present study was to examine and compare the relationship between nutritional status, physical activity (PA) level and quality of life (QoL) in community-dwelling (CD) older people and nursing home (NH) residents and to find out whether nutritional status and PA are independent determinants of QoL in the two environments.

Methods: One-hundred NH residents aged 60 years and above and 100 sex- and age-matched CD older adults were examined. Nutritional status was assessed with Mini Nutritional Assessment questionnaire (MNA), anthropometric measures and bioimpedance analysis (BIA). The 7-Day Recall Questionnaire and the Stanford Usual Activity Questionnaire were performed to evaluate the PA energy expenditure level (PA-EE) and the health related behaviours (PA-HRB), respectively. The QoL was examined with EuroQol-5D questionnaire.

Results: The nutritional status was better and the PA-EE and the PA-HRB of CD older people were higher in comparison with NH residents. CD group presented significantly higher self-assessment in VAS scale. However, QoL in 5 dimensions did not differ between the groups. Higher level of PA was connected with better nutritional status in both environments. Nutritional status and PA-HRB were related to VAS scale in CD subjects but not in NH residents. In domestic environment several nutritional parameters as well as PA were related with QoL dimensions, while in institutional environment

less of these relationships were present. It was found in multifactor analysis that in institutional environment only concomitant diseases were found as independent determinants for most of the particular elements of QoL. In the community the nutritional elements or PA-HRB were found, besides concomitant diseases, as independent determinants of QoL.

Key conclusions: There was a strong relationship between PA and nutritional status in older people. They both were connected with QoL in the two environments, however, these relationships were much more visible in the CD group. Nutritional status and PA-HRB were independent determinants of QoL only in domestic environment. Moreover, behaviours connected with PA were more significant for the QoL than PA-EE. Maintaining proper nutritional status and beneficial behaviours connected with PA seems to be crucial for QoL of CD older subjects, which is the relevant aim of geriatric medicine.

Abstract # 848

AREA: Nutrition

Evaluation of nutritional status of older adults during the perioperative period of planned cardiac surgery

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Introduction: Examination of the nutritional status prior to cardiac surgery allows the necessary measures to be taken perioperatively. The aim was to evaluate the nutritional status of older adults during the perioperative period of planned cardiac surgery.

Methods: Cross sectional assessment of the 65 years and older patients (totally 64 patients) in the Cardiology and Heart, Thorax and Vessels Departments of the University Hospital was performed using Mini Nutritional Assessment, Six Item Cognitive Impairment Test, and Edmonton Frail Scale. Permission from the Bioethics Center (No. BEC-ISP (M)-113) was obtained. SPSS 21.0 was used for statistical analysis.

Results: Before cardiac surgery half of the patients were at risk of malnutrition, and a quarter were with malnutrition. Malnutrition or risk for it was observed more frequently in widows than in married patients ($p = 0.012$), in those not eating fruits and vegetables daily ($p = 0.009$), in patients with lower body weight, and having frailty syndrome ($p < 0.001$). Antidepressants were used only by subjects with malnutrition (18.2%). The nutritional status was associated with the intraoperative complications (acute heart failure, anemia, $p < 0.05$). Patients with malnutrition had longer length of stay in the hospital ($p = 0.011$) and a higher incidence of renal failure ($p < 0.05$) postoperatively. Patients with malnutrition were less likely to be referred for rehabilitation ($p = 0.003$).

Conclusions: The risk of malnutrition and malnutrition are common before cardiac surgery. Lower education, widowhood, lower body weight, and frailty syndrome are associated with malnutrition. Malnutrition affected intraoperative complications and postoperative outcomes.

Abstract # 849

AREA: Nutrition

Impact of frailty status on dietary change in Japanese community-dwelling older adults during the coronavirus disease 2019 pandemic

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Introduction: The social restrictions established to reduce the coronavirus disease 2019 pandemic spread created difficulties in food shopping. Since frail older people are vulnerable to environmental changes, the restrictions may have affected their food habits more compared to non-frail older people. Therefore, we investigated the association between frailty status and dietary change during the pandemic.

Methods: A questionnaire was mailed for all independent residents of Higashiura, Aichi, Japan, aged ≥ 75 years for a survey. The survey investigated the residents' frailty status and changes in food consumption following the establishment of social restrictions. Frailty status was assessed using a five-item frailty screening index. Any resident reporting an increase or a decrease in one or more of 12 food categories was considered to have a dietary change. Further, we estimated the odds ratio (OR) and 95% confidence interval (CI) of the frailty status for the dietary change using multivariate logistic regression after adjusting for age, sex, and living alone.

Results: Among 4436 residents, 2999 answered all the questions. The respondents' average age was 80.1 years. Among them, 538 (17.9%) were frail, and 1211 (40.4%) experienced dietary changes. The adjusted OR (95% CI) of frailty for a dietary change was 1.95 (1.61–2.36) when non-frailty was the reference. Participants with decreased consumption of meat, fish, seaweed and mushroom, and fruits and those with increased consumptions of bread and noodles tended to be frail.

Key conclusions: The pandemic-related social restrictions changed older residents' dietary habits and affected frail older adults more strongly than non-frail ones.

Abstract # 850

AREA: Nutrition

Change in nutritional status during admission and mortality in older adults admitted to acute psychiatric wards

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Introduction: Undernutrition is associated with increased morbidity and mortality in older adults. An earlier study showed that 34% of older adults admitted to acute psychiatric wards was undernourished, as measured with the Mini Nutritional Assessment (MNA), but the MNA-score on admission was not predictive of mortality. In this study we investigated whether there was a change in nutritional status (weight and MNA-score) between admission and discharge in this older psychiatric population and if so, whether this change or the MNA at discharge is predictive of mortality within 5 years after admission.

Methods: Retrospective analysis of a cohort-study with a 5-year follow-up of 77 older patients. Nutritional status was assessed by measuring weight and MNA at admission and discharge. Survival analyses were conducted using Cox-regression analyses, to examine

whether the MNA change, weight change or MNA-score at discharge was predictive of mortality within 5 years after admission, adjusted for age, sex and multimorbidity.

Results: The 5-year mortality rate was 45%. The mean change in MNA-score was 2.0 points, the mean weight change was 0.80 kg during admission. The MNA change during admission was not predictive of mortality. However, the MNA at discharge predicted mortality with a hazard ratio of 0.87 (95% CI 0.81–0.97) per point increase in MNA-score.

Conclusion: A higher MNA-score at discharge was predictive of lower mortality, independent of age, sex and multimorbidity. This suggests that evaluation of the nutritional status by measuring the MNA at discharge on acute psychiatric wards, may have prognostic meanings.

Abstract # 851

AREA: Nutrition

The relationship between physical performance, body composition and nutritional status in older adults

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Background: Aging is associated with changes in body composition, which are exacerbated by a lack of physical activity. The aim of this study was to evaluate the relationship between nutritional status, body composition and physical performance in older adults.

Methods: Patients aged ≥ 60 years followed in the Geriatric Out-patient Clinic were included to the study. Demographic data and medical history were obtained using a structured questionnaire. Body composition was measured by DXA. Muscle strength was assessed using hand-grip, physical performance by gait speed (GS), Timed-Up-and-Go-Test (TUG), Six-Minute-Walk-Test (6MWT), and nutritional status by Mini Nutritional Assessment (MNA) and serum albumin level.

Results: Mean age of 78 examined patients was 71.93 ± 8.88 . The most common diseases were hypertension, coronary artery disease and osteoarthritis. In correlation analysis all physical measures related to age, MNA score, lean body mass (LBM) and appendicular lean mass (aLM). Moreover hand-grip strength correlated negatively with percent of arms and legs fat. TUG correlated positively with number of diseases, and negatively with albumin level. In regression analysis GS depended on age, percent of legs fat and good nutritional status according to MNA; TUG was influenced by age, MNA score and number of diseases; handgrip strength by age, sex, and aLM; 6MWT was affected by age and percent of legs fat.

Conclusions: Age and poor nutritional status remain a strong determinants of the deterioration of physical performance. Identifying the relationship between deficits in physical performance, body composition and nutritional status can help understand the causes of disability and target preventive measures.

Abstract # 852

AREA: Nutrition

Malnutrition, an underdiagnosed problem

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Introduction: Malnutrition is a condition associated with poor functional and clinical outcomes. Malnutrition and one of its main cause, the anorexia of aging, should be considered as true geriatric syndromes. The aim of the present study was to establish the prevalence of malnutrition in people aged 75 or older both in an acute care unit and in outpatients, as well as its relationship with other medical and epidemiological data.

Methods: An observational study between January and February 2021 was performed. For the screening of malnutrition, we used the MNA-SF, and the GLIM criteria for the diagnosis if the screening was positive. Moreover, demographic (age, sex, accompaniment to the main meals) and medical data (Barthel Index, comorbidities, anthropometric and hand-grip) were collected.

Results: A total of 80 patients were included (40 inpatients and 40 outpatients), with a mean age of 87 years old. Only 5% of inpatients and 17.5% of outpatients meet the criteria of normal nutritional status according to the MNA-SF. After applying the GLIM criteria, 42.5% of inpatients and 37.5% of outpatients were malnourished.

Key conclusions: Malnutrition is a prevalent condition in older people, underdiagnosed and undertreated. Taking into account all the factors that influence malnutrition and anorexia of the aging, it is our duty to create and implement specific protocols with multicomponent interventions that may help in the prevention and treatment of malnutrition in the older population.

Abstract # 853

AREA: Nutrition

Does a 12-month transitional care model (TCM) intervention by “pathfinders” improve nutritional status of older patients after hospital discharge? A randomized controlled study

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Introduction: At hospital discharge, many older patients are at health and nutritional risk, indicating a requirement for ongoing care. This study aims to evaluate the effects of comprehensive individualised care by “pathfinders” (PF) on nutritional status (NS) of older patients after discharge.

Methods: 244 medical patients aged 75 + years and without major cognitive impairment were analysed from a 12-month randomized controlled study (intervention group, IG: 123, control group, CG: 121). At discharge, a PF developed a comprehensive individualised care concept including nutritional advice, when required, with up to 7 home visits and 11 phone calls. The intervention effect was evaluated

after 3 months (T3m) and after 12 months (T12m) on change in MNA-SF (Mini Nutritional Assessment-Short Form) and BMI.

Results: Median age was 81.0 years. At discharge, mean MNA did not differ between IG and CG (10.7 ± 2.6 vs. 11.2 ± 2.5 ; $p = 0.148$), however, mean BMI was significantly lower in IG compared to CG (27.2 ± 4.7 vs. 28.8 ± 4.8 kg/m²; $p = 0.012$). At T3m, mean change did not differ significantly between the groups, neither in MNA-SF nor in BMI. At T12m, the mean change of MNA-SF, adjusted for age, gender, living situation and activities of daily living, was significantly higher in IG than in CG (1.40 ; 95% CI 0.55 – 2.26 vs. -0.03 ; -0.90 – 0.84 ; $P = 0.012$). BMI was significantly better maintained in IG than in CG (-0.02 ; -0.68 – 0.64 vs. -0.93 ; -1.62 to -0.23 , $P = 0.034$).

Conclusion: This study suggests a potential benefit of 12 months comprehensive individualised care by PF on NS in older patients after hospital discharge.

Abstract # 854

AREA: Nutrition

Nutritional intake and malnutrition in nursing home residents and community-dwelling older adults

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Introduction: The lack of uptake/intake of nutrition is part of malnutrition definition, but little is known about the relationship between the intake of individual nutrients and nutritional status in advanced age. The aim of this study was to analyse the association between nutritional intake and malnutrition in older adults.

Methods: This national survey included a representative sample of nursing home (NH) residents ($n = 563$) and community-dwellers ($n = 837$) aged ≥ 65 living in Portugal, and collected data on sociodemographic characteristics (sex, age, education), self-reported health, loneliness feelings, nutritional status (Mini Nutritional Assessment®), and dietary intake (2×24 -h recalls). Complex sample regression logistic models were used to estimate the associations with malnutrition.

Results: A higher energy intake was associated with lower odds of malnutrition in both settings, but only significantly in NH residents after adjusting for sociodemographic characteristics, self-reported health and loneliness (NH: OR = 0.66, IC 95% 0.50, 0.86; community: OR = 0.64, IC 95% 0.37, 1.10). The intake of carbohydrates, fat, fibre, vitamin C, sodium, and potassium was inversely associated with malnutrition in NH residents; as well as protein, fat, vitamin B6, folates, sodium, potassium, calcium, and magnesium intake in community-dwellers. After adjusting for total energy, the magnitude of

most associations remained similar but only retained statistical significance for sodium and magnesium in the community.

Conclusions: Total energy intake seems to have a greater impact in older adults' nutritional status than individual nutrients. In NH, but not in the community setting, the effect of energy intake on malnutrition seems to prevail over sociodemographic, health and psychosocial factors.

Abstract # 855

AREA: Nutrition

Evidence of interventions for malnourished older people in primary care: a scope review

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Introduction: Due to physiological changes, multimorbidity and functional limitation during the aging process, older people are predisposed for malnutrition (1–3). Since malnutrition has severe consequences, primary care should detect malnutrition at an early stage to ensure adequate treatment and care (4). The aim of this scope review was to search for interventions for malnourished patients in the primary care setting.

Method: Databases were searched for randomized controlled trials or non-randomized controlled trials, cross-sectional studies, cohort studies, case-control studies, evaluation or qualitative studies published between 2010 and 2020 including older patients in primary care or upon hospital discharge. Focus was on interventions relating to malnutrition prevention or management that present relevant nutritional, dietetic, clinical or behavioural outcomes.

Results: 18 studies with manifold study types, settings and outcomes were analysed. The data showed that malnutrition interventions have a significant effect on patient health outcomes and that patient characteristics can be significantly associated with nutritional care. Education programmes have a significant effect on increasing nutritional knowledge and on improvements in practice of healthcare professionals. Views and practices of patients and healthcare professional on malnutrition care shows that there are different barriers and gaps towards malnutrition, especially knowledge about nutrition and malnutrition as well as strategies to tackle malnutrition on the healthcare professionals' level.

Conclusions: In order to treat malnutrition effectively interventions on patient and healthcare professionals' level should be considered. Treatment should be patient-centered with well-educated health professionals in order to lower barriers and close gaps concerning malnutrition.

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Abstract # 856

AREA: Nutrition

Mineral profile in healthy longevous elderly

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Introduction: Calcium (Ca), magnesium (Mg), zinc (Zn), selenium (Se), Copper (Cu) and Manganese (Mn) has several functions in the biological and aging processes. **Objective:** To know the profile of Ca, Mg, Zn, Se, Cu and Mn in healthy longevous elderly.

Methods: Cross-sectional, analytical study with elderly people aged 80 and over, not fragile, from a geriatric reference clinic. Food consumption was assessed by records of three non-consecutive days. Plasma, erythrocyte and urinary biomarkers were evaluated in a blood and a 24-h urine sample. Statistical analysis was performed in the SPSS 19.0 program.

Results: 25 elderly were included, 60% women, with an average age of 86.5 ($\pm$ 6.6) years. The probability of adequacy in Ca intake was 10%, 12% for Mg, 48% for Zn, 44% for Mn, 52% for Cu and 92% for Se. All elderly presented adequate plasma and urinary Ca and Mn, plasma and erythrocyte Cu and Se erythrocyte and urinary. Plasma Se was below the reference in 100% of the elderly. 48%, 32% and 83% of the sample showed adequacy for plasma, erythrocyte and urinary Mg, respectively. For Zn, the adequacy was found in 80%, 4% and 91%, respectively. Urinary Cu showed 39% adequacy. Mineral intake was not correlated with the respective biomarkers.

Conclusion: Despite the low mineral intake, regulation by urinary excretion and mobilization of erythrocyte levels were able to maintain the plasma concentrations of these elements, maintaining the plasma pool, allowing the minerals are distributed in a way to preserve homeostasis and functionality in healthy long-lived elderly.

Abstract # 857

AREA: Nutrition

Audit of vitamin D levels and supplementation among older adults in a residential care setting

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Introduction: It is recommended that adults aged 65 and older living in Ireland take a vitamin D supplement of 15 µg (15 µg) daily to ensure they maintain adequate vitamin D levels [1] Others recommend vitamin D supplementation of 15–20 µg to prevent vitamin D deficiency [2].

Methods: the vitamin D levels and vitamin D supplement prescription of 123 residents living in a community nursing unit were audited between November 2020 and February 2021. Residents' most recent vitamin D levels and vitamin D supplement prescription were collected from electronic or paper-based medical records. Data was consolidated and analysed using Microsoft Excel.

Results: 105 residents (85%) had vitamin D levels available. 18 residents (15%) had no vitamin D levels available. 94 residents (76%) had sufficient vitamin D levels ($>$ 50 nmol/L) and 11 (9%) had insufficient levels ($<$ 50 nmol/L). 98 residents (80%) were prescribed vitamin D supplementation. Of those 11 residents with insufficient levels, all were prescribed adequate vitamin D supplementation. Of those 18 residents with no levels available, 16 were prescribed vitamin D supplementation.

Conclusion: This audit has shown that the majority of residents on the community nursing unit had sufficient vitamin D levels (76%) and were prescribed vitamin D supplementation (80%). The development of a vitamin D guidance document on the unit has been recommended following this audit.

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Abstract # 858

AREA: Nutrition

Nutritional status and quality of life in elderly people with falls risk

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Introduction: Malnutrition is connected with poorer quality of life in elderly people with an increased falls risk. The aim of this study was to investigate the effect of the nutritional status in the quality of life of elderly with a falls history.

Method: The health-related quality of life was measured using the 36-Item Short Form Survey (SF-36) and the nutritional status was assessed with the Mini Nutritional Assessment (MNA). This study is part of a holistic, multidisciplinary programme for the prevention of falls in elderly people.

Results: 20 people participated in this study (95% were women, mean age: 69 years). The initial MNA mean score was 25.5 ($\pm$ 1.8) and the MNA score after the completion of the programme was 26.6 ($\pm$ 2.9). A statistically significant positive correlation was found between MNA score and scores in the SF Physical Functioning subcategory ($r = .553$, $p < 0.05$), the General Health subcategory ($r = .671$, $p < 0.05$), the Energy/Fatigue subcategory ($r = .641$, $p < 0.05$) and the Pain subcategory ($r = .500$, $p < 0.05$). Improvements in MNA scores were associated with a positive change in the Physical Functioning subcategory ($r = .549$, $p < 0.05$).

Conclusions: The results of the present study prove the important role of the nutritional status as far as the quality of life of the elderly with falls history is concerned. It is of major importance to include dietary initiatives in falls prevention programmes.

Abstract # 859**AREA: Nutrition****Assessment of anorexia of aging in clinical practice**

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Introduction: Anorexia of aging is a common problem among old, hospitalized patients, yet appetite is rarely assessed in clinical settings using standardized measures. We aimed to assess reporting frequency and the quality of reports of appetite disturbances among old, hospitalized patients. Additionally, we checked the knowledge and understanding of nutrition in old age among medical staff.

Methods: A retrospective analysis was performed using medical records of patients aged 65 years and older hospitalized in the Department of Internal Medicine and Geriatrics of the University Hospital in Cracow from 2019 to 2020. Furthermore, a nutritional awareness survey was conducted among healthcare workers.

Results: We searched 1748 medical records manually. Information regarding appetite was included in 15.8% of all hospitalized patients (in 13.7% of those aged 80 years and older). None of the reports were supported by the use of a formal appetite assessment questionnaire. Nutritional intervention was implemented in 34.1% of patients with anorexia of aging. Of the interviewed staff 41.2% reported that they did not have sufficient knowledge about anorexia of aging and its treatment.

Key conclusions: Appetite disorders are rarely reported and treated in clinical practice. Information about appetite was noted in hospital medical records in only one out of six old patients. Only one third of those diagnosed with anorexia of aging were given nutritional support. Almost half of medical staff working with old patients declared insufficient knowledge on anorexia of aging.

Abstract # 860**AREA: Nutrition****MNA-SF as a screening tool in the diagnosis of malnutrition according to GLIM in community-dwelling older adults**

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Introduction: Up to 28% of elderly residents of Europe are at risk of malnutrition. As uniform diagnostic criteria for malnutrition have not been formulated, in autumn 2018 the Global Leadership Initiative on Malnutrition (GLIM) presented a consensus on its diagnostics. According to the consensus, the diagnosis of malnutrition requires a positive result of a screening test for the risk of malnutrition and a presence of at least one etiologic and at least one phenotypic criterion. This study aimed to assess the diagnostic performance and accuracy of the Mini Nutritional Assessment-Short Form (MNA-SF) against GLIM criteria.

Methods: The analysis involved 273 community-dwelling volunteers aged ≥ 60. All participants were screened for malnutrition with the

MNA-SF questionnaire. Next, the GLIM phenotypic and etiologic criteria were assessed in all subjects.

Results: Based on the presence of at least one phenotypic and etiologic criterion, malnutrition was diagnosed in more than one-third of participants (n = 103, 37.7%). According to the MNA-SF, only 7.3% of subjects had malnutrition, and 28.2% were at risk of malnutrition. The agreement between the MNA-SF score and GLIM criteria was observed in only 22.3% of the population. The sensitivity and specificity of MNA-SF against GLIM criteria were just fair (59.2% and 78.8%, respectively). The area under the curve (AUC) was 0.77, indicating a fair value of MNA-SF to diagnose malnutrition.

Conclusions: Based on the present study results, the best solution could be an optional replacement of a screening tool in the first step of the GLIM algorithm with clinical suspicion of malnutrition.

Abstract # 861**AREA: Nutrition****Improving fluid management using “FAM” protocol by involving multidisciplinary team members at Enaya specialized care center**

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¹HMC

Introduction: Enaya Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility to residents who have multiple comorbidities and behavioral problems, all are high risk of dehydration. On artificial feeding, IV fluids may need to be given urgently and fluid intake through feeding tube will need to be appropriately amended as per the requirements. If managed improperly then it is associated with increased risk of mortality and morbidity.

Methods: A multidisciplinary team was formed to conduct a quality Improvement project to improve fluid management using “Plan-Do-Study-Act (PDSA) quality improvement methodology”. All stakeholders were involved and interventions were carried out in three steps. First step was to establish a FAM (Fluid Assessment & Management) protocol which outlined use of a standard fluid deficit calculator and accordingly manage with appropriate fluid and quantity (1st PDSA). Second step was to educate physicians and early involvement of dietitians and monitoring by nurses (2nd PDSA) and Final step was directed towards family who were also involved in feeding (3rd PDSA).

Results: Following multimodal multifaceted intervention by the interdisciplinary team members (Physicians, Nursing, Dieticians) showed compliance with use of a standard protocol from 0 to 35% within 1 month and subsequently increased to 100%, dieticians were involved in all cases started on IV fluid and establishing a guideline on management of fluids.

Conclusion: Multidisciplinary approach using standard tools in calculating fluid deficits and managing it with appropriate quantity of fluid replacement has led to better outcomes with no iatrogenic complications.

Abstract # 862**AREA: Nutrition****Nutrition and dementia care: developing an evidence – based model for nutritional care at Enaya specialized care center**

ALAnoud Ali ALFehaidi¹

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Introduction: Enaya Specialized Care Centre provides care for people who are Diagnosed with Dementia. Currently there are 23 patients diagnosed as Dementia (13 on oral Intake, 8 on NGT and 3 on PEG). Elderly suffering from dementia are at increased risk of malnutrition due to various nutritional problems, and the question arises which interventions are effective in maintaining adequate nutritional intake and nutritional status in the course of the disease.

Methods: A quality Improvement project is conducted by using “Plan-Do-Study-Act (PDSA) quality improvement methodology”. All stakeholders were involved and interventions were carried out in three steps. First step was to establish Management of Weight Loss in the Elderly protocol (1st PDSA), Second step to Provide Provision of adequate food according to individual Dysphagia Levels and needs with respect to personal preferences (2nd PDSA), Third step was use of Oral Nutrition Supplement to improve nutritional status.

Results: Following WHO multimodal improvement strategy (build it, teach it, check it, sell it and live it) showed all patients gaining weight after Dietitian Intervention by increase calorie, Protein and add Oral Dietary Supplement, there is significant improvement of oral intake comparing 6 months ago to present. This resulted to progressive increase in BMI and improve albumin level.

Conclusion: Nutrition intervention is important in order to address the feeding concerns that are present in different stages of Dementia. This is to ensure that patient is adequately fed and to achieve a healthy weight. However, this project has shown prevent weight loss is possible if early interventions are implemented by Dietitian.

Abstract # 863

AREA: Nutrition

An unsolved challenge: poor energy and protein intake amongst patients hospitalised within a geriatric rehabilitation setting

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Introduction: Malnourishment is known to increase in the geriatric setting and has significant impact on rehabilitation and frailty [1, 2]. Inadequate calorie and protein intake leads to decline in muscle mass resulting in reduced independence and quality of life, increased morbidity, mortality, and health care costs [3, 4]. The aim of this audit was to ascertain adequacy of energy and protein intake amongst patients in a geriatric rehabilitation setting.

Methods: Nutritional intake of 39 patients (20 male, 19 female, mean age 85 ± 7 years) was assessed over a 24 h period between December 2020 and January 2021. Energy and protein content of weighed dietary intake was calculated and compared to individual requirements as informed by the Parenteral and Enteral Nutritional Guidelines [5]. Patients were considered as meeting requirements if intake was 100% ± 10% of requirements. Data was analysed using Excel. Ethical approval was not required; however, this audit was registered with the hospital audit department.

Results: Compared with individually calculated requirements only 38% of patients were meeting calorie requirements and 21% meeting protein requirements. Patients consumed a median of 0.61 g (0.35–0.84) protein per kg of body weight within the 24 h period whilst recommendations are for a minimum of 1 g/kg body weight.

Key conclusions: Lack of nutritional intake remains a key concern within the geriatric rehabilitation setting. Consideration should be given to catering provision, practice and dietetic involvement within geriatric settings to ensure optimal nutrition for rehabilitation.

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Abstract # 864

AREA: Nutrition

Assessment of nutritional and functional status of older adults admitted in the geriatric unit

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Introduction: The problem of population ageing is affecting health-care systems worldwide. Studies have shown that undernourished older people require more hospitalisation and prolonged hospital stays as compared to well-nourished individuals. Adequate nutritional support would help to strengthen their functional capacity, reduce morbidity and improve patient outcomes.

Methods: A cross-sectional study of the nutritional status of 106 patients > 60 years at the admission in the Geriatric Unit, from November 2020 to April 2021. Mini Nutritional Assessment-Short Form (MNA-SF) tool (scores 12–14 points: normal nutritional status, 8–11 points: at risk of malnutrition, 0–7 points: malnourished), Barthel Index (BI) for an assessment of the functional status (scores ranged from 0 to 100) and routinely performed biochemical parameters: Hemoglobin (g/dL), Albumin (g/L) were used. The association between sociodemographic variables and the primary outcome (MNA-SF score) was evaluated as well as the correlation between MNA-SF and BI, haemoglobin and albumin values.

Results: 106 patients were enrolled, 86 females, 20 males, with mean age 78.58 ± 7.24 years. MNA-SF score and values for the other variables were: normal nutritional status 28 (26.4%, 17.0% females, 9.4% males), at risk of malnutrition 61 (57.5%, 50.0% females, 7.5% males), malnourished 17 (16.1%, 14.2% females, 1.9% males); mean MNA-SF 9.54 ± 2.93; BI 23.25 ± 8.07; Hgb 12.31 ± 1.35, Albumin 37.46 ± 4.58. All parameters had a statistically significant correlation with MNA score (p-value < 0.05).

Key conclusions: A high percentage of the patients (73.6%), were at risk of/or malnourished at the admission. Female patients were more malnourished (OR 3.77, CI 1.36–10.46, p = 0.0106). Poor nutritional status was correlated with lower functional score and lower haemoglobin and albumin level.

Abstract # 865**AREA: Nutrition****Diet and susceptibility to genetic damage in elderly – preliminary results from a case–control study**Aleksander Galas¹, Justyna Miszczyk²

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Introduction: Healthy diet has been postulated as one of main factors responsible for good health and functioning through the whole life, especially in elderly. Several studies, however, failed to show clear relationship, and the body of evidence on the role of diet on the genomic integrity is limited. The purpose of the study was to evaluate the association between the level of genetic damage after exposure to radiation and fruit and vegetable consumption, in the group of colorectal cancer cases and healthy controls aged 60+.

Methods: The case–control study included 35 subjects. Dietary habits were assessed by food frequency questionnaire. All the information was gathered during face-to-face recall by trained interviewers. Study subject agreed to provide blood samples. Blood lymphocytes were irradiated and chromosome aberrations were scored.

Results: There were 17 men and 18 women, mean age 65.8 years (SD = 4.1). The mean vegetable consumption was 1.4 servings/day, for fruits: 1.2 servings/day. The average proportion of aberrant cells after irradiation was 48.8% (SD = 10.3%). After adjustment for key covariates, fruit consumption have been observed as protective factor (regression coefficient: – 4.8, $p = 0.004$).

Conclusion: The study provides some evidence for the protective effect of fruit consumption of genomic resistance to damage. Due to limited sample size the results require further investigations.

Acknowledgements: This work was supported by the grant “Behavioral and genetic determinants in colorectal cancer patients” number N41/DBS/000447, at the Jagiellonian University Medical College, financed by the subsidy from Ministry of Science and Higher Education for the research in period 2020–2021.

Abstract # 866**AREA: Nutrition****Socio-economic factors associated with malnutrition in the Polish elderly population – results of the PolSenior 2 study**Roma Krzysińska-Siemaszkó¹, Aleksandra Kaluźniak-Szymanowska¹, Sylwia Małgorzewicz², Jerzy Chudek³, Hanna Kujawska-Danecka⁴, Katarzyna Wieczorowska-Tobis¹

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Introduction: The aim of this study was to evaluate the prevalence of malnutrition in Polish elderly population and analyze its correlates based on the data from the PolSenior2 project (nationwide, performed on the representative group of Polish seniors).

Methods: Nutritional status was assessed in 5916 community-dwelling individuals of at least 60 years old with the Mini Nutritional Assessment – Short Form (MNA). We evaluated the effect of age, sex, level of education, marital status, place of residence, living conditions, and economic status on the nutritional status of studied subjects.

Results: Among studied subjects 3.2% were malnourished and 23.6% had the risk of malnutrition. Age had a strong impact on the frequency of malnutrition. In subjects from the oldest cohort, the malnutrition was 8 times more frequently than in the youngest (age 90 + : 16.0%; age 60–64: 1.9%). Subjects with lower than primary education were malnourished 5.5 times more frequently than those with at least primary education (15.7% vs. 2.8%). Married individuals were less frequently malnourished compared to single ones (2.2% vs. 4.6%). There was no difference of malnutrition frequency in those living in the cities and in the country (3.0 vs. 3.3.) However, the frequency of malnutrition was increasing with the declining of financial status.

Conclusions: Our data showed low prevalence of malnutrition but high prevalence of its risk in the community-dwelling elderly people in Poland. Screening with MNA-SF should focus in particular on unmarried subjects in advanced age, who are poorly educated and self-report poor financial status.

Abstract # 867**AREA: Nutrition****Relief from constipation without laxatives by using fructooligosaccharides (FOS) at Enaya Specialized care center**ALAnoud Ali ALFehaidi¹¹HMC

Introduction: Enaya Specialized Care Center in Hamad Medical Corporation in Qatar is a 200-bedded long-term care facility to residents who have multiple comorbidities and behavioral problems. Constipation is widely considered to be a common problem among the elderly, as evidenced by the high rate of laxative use in this group. Chronic use of laxatives in elderly has been associated with numerous complications, including diarrhea, fecal soiling, hypoalbuminemia, and high serum levels of magnesium and phosphorus.

Methods: A quality Improvement project is conduct by using “Plan-Do-Study-Act (PDSA) quality improvement methodology”. All stakeholders were involved and interventions were carried out in three steps. First step was to establish a nutrition management protocol which outlined use of fructooligosaccharides (1st PDSA), Second step to stop all laxatives and assess by dietitian to prescribe liquid fructooligosaccharides and increase fluid (2nd PDSA), Third step was to monitor bowel motion every shift by using Bristol stool chart assessment tool (3rd PDSA).

Results: Following multimodal multifaceted intervention by the interdisciplinary team members (Physicians, Nursing and Dieticians) showed patients passing stool every day without laxatives administration, frequency from 2 to 3 time/day, and type of stool between 3 and 4 as Bristol stool scale, also no more gases, fullness, distention and bloating present with patients.

Conclusion: Prevention of constipation in the long-term care facilities is really challenging due to the complexity of the medical conditions. However, this project has shown constipation treatment and prevention is possible if interventions are implemented by dietitian and also decreasing using of the laxatives which reduce the cost.

Abstract # 868

AREA: Nutrition

Animal protein intake is inversely associated with mortality in community-dwelling older adults: the InCHIANTI study

Massimiliano Fedecostante¹, Barbara Carrieri¹, Tomas Merono², Raul Zamora-Ros², Nicole Hidalgo-Liberona², Montserrat Rabassa², Stefania Bandinelli³, Luigi Ferrucci⁴, Cristina Andres-Lacueva², Antonio Cherubini¹

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Introduction: The long-term association between animal or plant protein intake and all-cause and cause-specific mortality among older adults is not clear. The aim of the study was to evaluate the long-term associations of animal and plant protein intake with all-cause and cause-specific mortality.

Methods: A prospective cohort study including 1139 community-dwelling older adults (mean age 75 years, 56% women) living in Tuscany, Italy, followed for 20 years (InCHIANTI study) was conducted. Dietary intake by food frequency questionnaires and clinical information were assessed five times during the follow-up (baseline, 3, 6, 9 and 15 years). Protein intakes were expressed as percentages of total energy. Hazard ratios (HRs) and 95% confidence intervals (CIs) for all-cause and cause-specific mortality were estimated using time-dependent Cox regression models adjusted for confounders, including diet quality.

Results: Animal protein intake was inversely associated with all-cause (HR per 1% increase, 95% CI 0.96, 0.93–0.99) and cardiovascular mortality (HR per 1% increase, 95% CI 0.93, 0.87–0.98). Plant protein intake showed no association with any of the mortality outcomes. Among participants without hypertension, there was a marginally significant, inverse association between plant protein and CVD mortality (HR per 1% increase, 95% CI 0.79, 0.62–1.01).

Key conclusions: Higher intake of animal protein was associated with lower risk for all-cause and cardiovascular mortality in older adults. The differences in long-term associations between animal or plant protein intake and mortality in older adults should be considered in future dietary recommendations.

Abstract # 869

AREA: Nutrition

Effects of lifestyle interventions on functional status in older people with obesity – a systematic review with network-meta-analyses

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Medicine, University of North Carolina at Chapel Hill; Department of Nutrition, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, ⁹Division of Endocrinology, Diabetes and Metabolism, Baylor College of Medicine, Houston, ¹⁰Department of Nutritional Psychology, Institute of Nutritional Medicine, University of Hohenheim

Introduction: Obesity is associated with decreased functional status (FS) in older adults. We conducted a systematic review with network meta-analysis (NMA) to evaluate the effects of lifestyle interventions (LSI) on FS in this population.

Methods: After searching six databases, two independent reviewers screened titles/abstracts/full-texts, extracted data and rated risk of bias (Cochrane RoB 2.0). We included RCTs of community-dwelling adults aged ≥ 60 and mean ≥ 65 years with obesity. Network nodes were defined as: calorie restriction, high protein, aerobic (AE) or resistance exercise (RE), behaviour change intervention, any combination of these, or control. Random-effects NMA was applied to calculate pooled effects (SMD [95% CI]) of LSI on FS measured by performance batteries.

Results: Nine trials ($n = 1070$; mean age 70.3 years, 11 treatments, 24 pairwise comparisons) were included, with 5 trials enrolling people with mild-to-moderate functional impairment. Seven/eleven treatments improved FS compared to control. Combining all components but high protein achieved the greatest effect (4.40 [3.34–5.46]) followed by calorie restriction + behaviour change intervention including either AE or RE (both 2.85 [1.75–3.95]) and RE + behaviour change intervention (2.65 [1.26–4.05]). Exercise alone had smaller effects (AE 1.00 [0.69–1.30], RE 1.18 [0.85–1.51], AE + RE 1.53 [1.22–1.88]). Any other component combinations did not show significant effects. Direct and indirect evidence did not differ significantly. Trials had ‘low’ ($n = 4$), ‘some concerns’ ($n = 2$), ‘high’ ($n = 3$) RoB.

Key conclusions: LSI, combining calorie restriction, exercise and behaviour change intervention are effective whereas calorie restriction alone is not sufficient to improve FS in older people with obesity.

Abstract # 870

AREA: Nutrition

Towards developing a core outcome set for malnutrition intervention studies in older adults: a scoping review

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Introduction: Despite increasing scientific interest in the topic of malnutrition in older adults over the last decades, many uncertainties remain regarding the effectiveness of nutritional interventions. A scoping review of the literature was conducted to provide an overview

of outcomes used in nutritional intervention studies focused on the treatment of protein-energy malnutrition in older adults.

Methods: Randomized controlled trials (RCTs) that evaluated the effect of nutritional interventions to treat protein-energy malnutrition in malnourished older adults and those at risk were searched in Medline, EMBASE, CINAHL and CENTRAL databases from the earliest possible date through March 9, 2020. Two authors independently screened titles/abstracts/full-texts and extracted the data. All methods were prespecified and all steps were piloted.

Results: Sixty-three articles reporting 60 RCTs were included. Most frequently used outcome domains included body weight/body mass index (78% of RCTs), dietary intake (62%), handgrip strength (47%) and activities of daily living limitations (45%). The most frequently used primary outcome domains differed by setting (community, hospital and long-term care). Furthermore, there was a large heterogeneity in the methods used to assess these outcomes.

Key conclusions: A large variation in used (primary) outcomes and assessment methods was observed in malnutrition intervention studies in older adults, not only across but also within settings. Our results highlight the need for developing a Core Outcome Set for malnutrition intervention studies in older adults to maximise the potential for future meta-analyses to increase our understanding on the effectiveness of treatment.

Abstract # 871

AREA: Nutrition

Nutritional status of patients admitted to an Acute Geriatric Unit

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Aim: To describe the nutritional status of patients admitted to the Geriatric acute unit.

Methods: Prospective at 1- and 3-months follow-up study, including patients admitted to the acute geriatric Unit between November 2018 to January 2019. Variables: baseline characteristics, comorbidity (CIRS-G, Charlson-Index), functional status (Barthel index-BI); nutritional status according to Mini Nutritional Assessment®-Short Form (MNA®-SF) dividing: malnutrition (MNA®-SF = 0–7), malnutrition risk (MNA®-SF = 8–11) well nourished (MNA®-SF = 12–14); Anthropometric parameters, Analytical parameters: Hemoglobin, Lymphocytes, Creatinine, C reactive protein (CRP), Albumin, Cholesterol; Demographic variables: visits to the emergency room and hospitalizations in the previous year; Cognitive impairment (GDS), delirium; Frailty syndrome (VIG-Frail index); Mortality at 1 month and at 3 months; dysphagia, pressure ulcers (PU). Statistical analysis: Pearson Chi 2, Kruskal–Wallis, Stata 15.0.

Results: n = 258, age 88.8 (SD 5.9), women 67.4%, 89.1% were malnourished or at malnutrition risk, malnourished 36.65%, well nourished 21.91%, BI 64 (IQR 30–84), CIRS-G 21 (IQR 17–25), 32.4% dysphagia, 49.6% dementia, 47% delirium, 85.8% had frailty and 33, 9% advanced frailty. There was statistical association between malnutrition and being a woman, age, number of hospitalizations in the previous year, functional status, comorbidity-CIRS-G, dementia and delirium, frailty, mortality at 3 months, chronic kidney disease, dysphagia, PU, anemia, hypoalbuminemia.

Conclusion: The elderly with malnutrition or malnutrition risk according to MNA®-SF have a worse functional and cognitive status, greater comorbidity, frailty, anemia, hypoalbuminemia, use of

resources, dysphagia, pressure ulcers, higher risk of mortality at 3 months.

Abstract # 872

AREA: Nutrition

The impact of nutrition and malnutrition on the prevention of frailty in the elderly population receiving homecare

Eirini Stratidaki¹, Ioannis Savvakis¹, Eirini Makraki¹, Evridiki Patelarou¹, Athina Patelarou¹, Theodula Adamakidou²

¹Hellenic Mediterranean University, ²University of West Attica

Introduction: Nutrition is a factor closely related to the frailty syndrome. All frailty criteria are more or less affected by poor eating habits, whereas frailty itself may have a negative effect on eating and, thus, on the nutritional status. The aim of this review is to assess how nutrition influences both the risk of developing frailty and its treatment.

Methods: We searched two databases, PubMed and Scopus. We included epidemiologic studies and clinical trials carried out on people aged over 65 years. We included 15 studies with a total of over 30,000 participants.

Results: The findings showed that a good nutritional status, as well as supplementation with macronutrients and micronutrients as needed, reduces the risk of developing frailty. Three studies provided data on macronutrients and frailty, among those studies, four revealed that a higher protein intake was associated with a lower risk of frailty. Two studies examined the relationship between diet quality and frailty. They showed that the quality of the diet is inversely associated with the risk of being frail. Finally, six studies evaluated the relationship between scores on both the Mini Nutritional Assessment (MNA) and frailty, and revealed an association between malnutrition and/or the risk of malnutrition and frailty.

Key conclusions: Poor nutritional status is associated with the onset of frailty. Screening and early diagnosis of malnutrition and frailty in elderly people will help to prevent the onset of disability.

Abstract # 873

AREA: Nutrition

The impact of nutrition and malnutrition on the prevention of frailty in the elderly population receiving homecare

Eirini Stratidaki¹, Ioannis Savvakis¹, Eirini Makraki¹, Evridiki Patelarou¹, Athina Patelarou¹, Theodula Adamakidou², Christos Kleisiaris¹

¹Hellenic Mediterranean University, ²University of West Attica

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Abstract # 874

AREA: Old age psychiatry

Ekbom syndrome exacerbated after COVID-19 pandemic

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An 88-year-old woman without cognitive impairment, depressive syndrome and functional dependence due to morbid obesity with inability to walk (IB mod 23/100). During admission presence of visual hallucinations in the form of insects stood out. The study was completed with laboratory tests, brain CT and chest X-ray without findings. He referred to a delusional idea of an infestation of which he did not make any criticism or was permeable to confrontation. She presented visual and kinesthetic sensory-perceptual alterations. There was no delirium. The patient suffered from pneumonia due to COVID-19 in April 2020 with social isolation and deprivation of visits, from which the hallucinations had worsened until they became daily. She was diagnosed with Ekbom syndrome. Ekbom syndrome is a somatic delirium disorder in which the patient is convinced that he or she is infested (usually by insects). Patients generally refuse referral to psychiatry, but are frequently seen by primary care, dermatology, or ophthalmology due to perceived symptoms. COVID-19 has been a challenge for global health: patients have suffered distortion in their routines, reduction of physical activities, sleep pattern along with the closure of different services (day hospitals, rehabilitation ...) with greater affectation among the more vulnerable people such as the elderly population.

Abstract # 875

AREA: Old age psychiatry

Anxiety, depression and quality of life of elderly patients with cardiovascular disease

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Introduction: Cardiovascular disease is one of the most important health problems affecting people physically, emotionally and socially. The purpose of this study is to determine the effect of socio-demographic factors on the level of anxiety, depression and quality of life of elderly people with cardiovascular disease.

Method–material: Convenience sampling of 80 elderly patients with cardiovascular diseases was applied. The questionnaires include the Hospital Anxiety and Depression Scale (HADS) and the World Health Organization QOL-BREF (WHOQOL-BREF).

Results: The mean age of the participants was 72.8 years. Regarding the Total Quality of Life and General Health, the statistical indicators of the sample recorded a moderate level (48.8%). Prices for the Physical Health also indicate a moderate level (47.8%). Prices for the Psychological Health indicate a moderate, marginally positive, level (54.8%). The Social Relations values indicate a moderate, marginally positive, level (55.9%). Finally, the statistical indicators indicate a marginally positive level in the feeling of security from external risks (59.3%). It was found that gender ($p = 0.006$) and exercise ($p = 0.007$) affect quality of life. Stress was found to be statistically significantly associated with depression ($p < 0.001$). Gender was found to be statistically significantly associated with anxiety ($p = 0.004$) and depression ($p = 0.001$).

Conclusions: The results, regarding quality of life, physical and psychological health, social relationships and the feeling of security from external dangers, showed a moderate level with a tendency, even marginal, in a positive direction. Gender seem to affect quality of life, anxiety and depression.

Abstract # 876

AREA: Old age psychiatry

RTMS in geriatric day hospitals: the example of Charles Foix

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Introduction: Depression in the elderly is a frequent pathology, and yet it is sometimes ignored, and treatment is often limited or inadequate. The response of elderly patients with cognitive impairment to drug therapy is decreased, and they are prone to iatrogenic conditions. This is why non-drug treatments are implemented. Transcranial stimulation (RTMS) is one of those innovative treatments.

Methodology: Patients receiving care in the geriatric day hospital at Charles Foix hospital and either presenting with symptoms of depression that barely or do not respond to drug treatments or developing an iatrogenic condition were included over a period of 2 years (February 2019–May 2021). They were able to benefit from RTMS 5 days a week over a period of three consecutive weeks. The Geriatric Depression Scale (GDS) was used to assess depression before the procedure and 1 month after.

Results: 24 patients, including 21 with major cognitive impairment (16), or mild impairment (5 MCI) were included—3 men and 21 women. The average age was 79, with an average GDS of 9.2/15. 5 patients were unable to complete therapy (anxiety, pain, tremors). The average GDS after the intervention was 4.6 (average decrease of 5 points). Prospects: RTMS appears to be a relevant treatment for the future to support the management of treatment-resistant depression in elderly patients, in particular those who are cognitively dependent and/or those who have an iatrogenic condition. It would be beneficial to pursue this original treatment to improve patient well-being.

Abstract # 877**AREA: Old age psychiatry****External validation of the nursing homes short depression inventory in cognitively impaired patients living in long-term care centres**

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Background: Depression is frequent among cognitively impaired elderly patients living in nursing homes and its early detection and treatment are important to prevent adverse events and further deterioration of the patient's condition. However, existing depression assessment scales have limited utility in this population as they rely on self-reported symptoms. In 2011, a team of investigators in France developed and internally validated a nurse-assessed depression instrument, the Nursing Home Short Depression Inventory (NH-SDI), but whether this instrument is externally valid is unknown.

Objective: To assess the external validity of the NH-SDI among nursing home residents.

Methods: A validation study will be conducted among cognitively impaired elderly patients living in a large nursing home located in the Canadian province of Quebec. Over a 6-month period in 2021–2022, trained nurse clinicians (n = 4) will assess each resident (n = 100) using the NH-SDI and will capture patient's demographic (e.g., age, sex) and clinical characteristics (e.g., Mini Mental State Examination). Then, a psychiatrist blind to the patients' NH-SDI scores will perform depression diagnosis using DSM-V criteria, which will serve as our reference standard. The accuracy of the NH-SDI will be assessed in comparison with the reference standard, and estimates of sensitivity, specificity, positive and negative predictive values will be generated, along with their 95% CI.

Anticipated results: Establishing the external validity of the NH-SDI should allow nurses to assess signs of depression among cognitively impaired elderly patients in nursing homes more efficiently and implement effective therapeutic interventions regarding it, which will minimize its impacts.

Abstract # 878**AREA: Old age psychiatry****Diabetes mellitus and depression in frail elderly patients referred for fall and syncope**

Jeske Walgers¹, Suat Simsek¹, Raphael Schulte¹, René Jansen¹

¹MD

Introduction: Type 2 diabetes (T2DM) is an established risk factor for depressive disorders in adult patients. The data in frail elderly patients is scarce. We hypothesized that the prevalence of depressive symptoms is higher in frail elderly patients with T2DM in comparison to those without that diagnosis.

Methods: This real-world observational cohort study included patients aged 65 years or older who were evaluated at a fall and syncope day clinic. Outcomes were the 15-item Geriatric Depression

Scale (15GDS) score and the answers to the 2-item Patient Health Questionnaire (PHQ2). Analysis was adjusted for age, gender, frailty, cognitive impairment and alcohol use.

Results: Of the 672 patients with a mean age of 80.0 (standard deviation (SD) 6.5) years, 151 patients had a history of T2DM. After adjusting for confounding factors patients with T2DM had no longer a higher 15GDS score than patients without T2DM (crude analysis β 0.99 (95% confidence interval (CI) 0.3–1.7); adjusted β 0.3 (95% CI – 0.4–0.98), $P = 0.420$). The same effect of adjusting was found for prevalence of sadness and anhedonia. Furthermore, there was no difference in prevalence of a positive screen for depression with the 15GDS score of 6 or more (53.6% vs. 53.4%, $P = 0.951$) or the PHQ2 (30.2% vs. 25.6%, $P = 0.278$).

Conclusions: Diabetes mellitus is not a significant risk factor for depression in frail elderly patients with falls or syncope after adjusting for confounding factors. We hypothesize that the multitude of other risk factors obscures in our sample the effect of diabetes mellitus which is found in younger adults.

Abstract # 879**AREA: Old age psychiatry****Serotonergic syndrome induced by multiple medications**

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Introduction: Serotonin is a neurotransmitter with excitatory and inhibitory functions. We aimed to describe a very interesting case of serotonergic pathways over-stimulation related to polypharmacy.

Case report: Woman aged 95, personal history of cardiovascular diseases, chronic kidney injury, chronic pain due to osteoporosis, severe depression and cognitive dysfunction, insomnia and moderate dependence in activities of daily living (ADL). Furthermore, an episode of serotonergic syndrome had been recorded in her medical history. Patient was admitted at Emergencies for acute functional impairment, fever (38.9 °C), tachypnea, dysphagia, diarrhea, insomnia, irritability, aggressiveness, mood disorder, confusion, myoclonus, hyperreflexia and hypertonicity. Chronic treatment: anti-hypertensive drugs, statin, acenocoumarol, opioids, lorazepam 2 mg/day, risperidone 4 mg/day, quetiapine 50 mg/day and sertraline 50 mg/day. Laboratory tests showed low creatinine clearance, leukocytosis, hyponatremia; creatine phosphokinase and C—reactive protein levels were normal. Imaging tests, microbiological tests and electroencephalogram were normal. Neuroleptic malignant syndrome and Anticholinergic syndrome were excluded in differential diagnosis. Patient was diagnosed with serotonergic syndrome (SS) and treated with fluids, antipyretic and benzodiazepines; nevertheless she died fifth day after admission.

Conclusions: This case showed several geriatric syndromes: functional impairment, delirium, mood and sleep disorders, polypharmacy, frailty and, remarkable, two SS episodes in the same patient. Consequently, negative outcomes were highly expected due to complications depends on half-life of drugs, severity of symptoms and pre-existing conditions (comorbidity and risk of pharmacological interactions); although SS mortality fluctuates between 2 and 12%.

We aimed to emphasize the importance of appropriate prescription in aged people, particularly in high risk older patients.

Abstract # 880

AREA: Old age psychiatry

Assessment of the severity of symptoms of anxiety disorders related to COVID-19 among students of the Universities of the Third Age in Poland

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Introduction: It has been 14 months since the first confirmed case of coronavirus disease 2019 (COVID-19) in Poland, and people now have a more complete picture of the extent of the pandemic. As of 30 May, 2021, the number of all diagnosed cases of SARS-CoV-2 infections in Poland was 2,871,950, of which 73,738 people died as a result of the infection. Psychosocial responses to infectious disease outbreaks are variable and can include feelings of anxiety or weakness, an overestimation of the likelihood of infection, the excessive and inappropriate adoption of precautionary measures and an increased demand for health care services in a time of shortage.

Aim: This study was aimed to assess the perceived anxiety of COVID-19 and its sociodemographic factors among actively aging people in Poland.

Methods: The study included a group of the Third Age University program participants from Poland. A total of 296 persons were enrolled, among them 258 women and 38 men. The study was carried out as a diagnostic survey, using the following validated psychometric scales: State-Trait Anxiety Inventory (STAI), Short Health Anxiety Inventory (SHAI), Hamilton Anxiety Rating Scale (HAM-A) and Generalized Anxiety Disorder 7 (GAD-7).

Results: The mean results obtained in the STAI questionnaire showed an average severity of symptoms of anxiety disorders, while in the other scales the mean results did not indicate the occurrence of anxiety disorders. A strong, positive correlation was demonstrated between the severity of anxiety symptoms in all analyzed scales. There was no significant relationship between age and sex and the severity of anxiety symptoms. Women and men did not differ significantly in terms of the severity of depressive symptoms measured with SHAI, HAM-A and GAD-7. Men had significantly lower values of STAI X-1 and STAI X-2 compared to women.

Conclusions: Our findings suggested that COVID-19 did not significantly affect individuals' mental health. Further investigations assessing the mental health of older adults are needed to gain a more complete picture of the psychological implications of COVID-19 infections.

Abstract # 881

AREA: Old age psychiatry

At-risk drinking in older adults

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Introduction: Studies examining secular trends in alcohol consumption of older adults are scarce. This study aims to compare rates of at-risk drinking in two independent urban cohorts of older adults 12 years apart.

Methods: Identical postal questionnaire surveys were conducted in 2007 and 2019 collecting data on demographics, health, and alcohol consumption in a random sample of 75–84-year-old and 85 years or older people living in the Helsinki metropolitan area (2007 cohort, n = 820, 2019 cohort, n = 1589). At-risk drinking was defined as follows: (1) > 7 drinks per week, or (2) > 5 drinks on a typical drinking day, or (3) having > 3 drinks several times per week. In Finland, the usual amount of alcohol in one drink is 14 g.

Results: The cohorts were comparable in demographic and health characteristics. In the 2007 cohort, 18% and 3% of men and women, respectively, were classified as at-risk drinkers. In the 2019 cohort the corresponding figures were 18% in men and 5% in women. There tended to be a small increase in the proportion of at-risk drinkers among 75–84-year-old women in the 2019 cohort (p = 0.06). In multivariate analysis predictors of at-risk drinking were younger age, male gender, higher education, smoking, and having friends.

Conclusions: At-risk drinking among urban-dwelling older adults has not significantly increased in 12 years. However, 18% of older men and 5% of older women are at-risk drinkers potentially predisposing them to adverse events, such as falls or delirium.

Abstract # 882

AREA: Old age psychiatry

Use of antidepressant medications among older adults in European long-term care facilities: a cross-sectional analysis from the SHELTER study

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Background: Late-life depression is common among older adults living in nursing homes (NHs). Over the last 30 years there has been an increase in the rates of prescription of antidepressant medications across all ages, with the largest rise reported in older adults. This study aimed to describe the pattern of antidepressant medication use among NH residents from 7 European countries and Israel and to examine patient and facilities characteristics that may account for it. **Methods:** We conducted a cross-sectional analysis of data from the SHELTER study, an observational longitudinal cohort study that collected comprehensive resident data using the interRAI Long-Term Care Facility instrument in 7 European Countries and Israel. Descriptive statistics were used to examine sample characteristics. Potential correlates of antidepressant medication use were identified using multiple logistic regression modeling.

Results: Among 4023 residents entering the study, 32% had depressive symptoms and nearly half of these individuals used

antidepressants. Antidepressant medication use varied by country, with a prevalence in the overall sample of 35.6% ($n = 1431$). Among antidepressant users, 59.9% were receiving selective serotonin reuptake inhibitors (SSRI). The strongest correlates of antidepressant use included reported diagnosis of anxiety, depression, bipolar disorder, pain, falls and high level of social engagement. Age over 85 years, living in facilities located in rural areas and a diagnosis of schizophrenia reduced the likelihood of being prescribed with an antidepressant.

Conclusions: A large proportion of residents in European long-term care facilities receive antidepressant medications. The decision to prescribe antidepressants to NH residents seems to be influenced by both patient and facility characteristics. Future longitudinal studies should evaluate the efficacy and safety of antidepressant use in NHs thus providing evidence for recommendations for clinical practice.

Keywords: Antidepressants; nursing homes; older adults.

Abstract # 883

AREA: Old age psychiatry

Hippotherapy: practical example: assertiveness workshop

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Introduction: Hippotherapy offers accompaniment of patients in an environment where the horse is a pretext to start a discussion and bring out emotions. Hippotherapy does not claim to replace conventional medicine, it is an alternative approach, a complementary non-drug therapy adapted to geriatric patients often polypathological and polymedicated.

Methods: example of the workshop of hippotherapy Faced with a powerful animal, impressive but trained, the patient, with the help of the hippotherapist must assert himself and take the upper hand by reproducing the behavior of a dominant horse in a herd. The principle is to advance towards the horse and take its place by requiring it to move away from the patient. Subsequently the patient takes control and sets the horse in motion.

Results: The discussion that follows the exercise allows the patient to express his feelings, his emotions. The hippotherapist accompanies the patient and makes the link between the experience of this experience and the situations to which it refers in the patient's life. Hippotherapy makes it possible to identify moments, situations, emotions that may have generated behaviors, suffering and accompanies the patient in a journey that will allow him to review, understand and change and especially improve his quality of life.

Conclusion: The "assertiveness" workshop is just one example in the panel of hippotherapy offerings. The human relation that is created, based on trust between the therapist and the patient is fundamental in this approach. In the context of geriatric management this participates in the holistic accompaniment of the patient.

Abstract # 884

AREA: Perioperative care

Using New Mobility Score (NMS) and transdisciplinary team work to improve patient rate of return to original residence and reduce hospital length of stay following hip fracture admission

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A key point indicator on the UK National Hip Fracture Database is return to original residence within 120 days. In 2018, Guy's and St Thomas' Trust underperformed in rate of return to original residence (ROR) and hospital length of stay (LoS) among hip fracture patients in comparison to other trusts nationally. Our trans-disciplinary quality improvement programme aimed to reduce LoS and improve ROR using 4 key cross-speciality interventions. We established a trans-disciplinary focus group including physiotherapists (PT), occupational therapists (OT), orthopaedic surgeons, ortho-geriatricians, nursing staff and a transfer care navigator (TCN), which co-designed and implemented 4 key interventions. First, we identified and trialled the New Mobility Score (NMS) as a pre-operative screening tool to predict post-operative function and stratify estimated LoS. Second, we implemented pre-operative OT screening to identify patient and family expectations, including discharge destination; assessing functional and cognitive baseline; and facilitate early goal setting. Third, we hired a TCN to streamline the discharge process by establishing a daily email communication tool among team members to ensure early identification and proactive management of potential delays to care and discharge. Fourth, we ensured senior orthogeriatrician presence at the daily board round on the ward. Following interventions, the average overall LOS and acute hospital LOS fell by 31.7%, from 21.6 to 14.8 days, and 20.0%, from 19.6 to 15.7 days respectively. Simultaneously, the rate of ROR within 120 days increased considerably to 86.4% from 70.2%, reflecting a positive change of 21.9%. The innovative use of pre-operative NMS and trans-disciplinary teamwork reduce LOS and improve rate of ROR of patients following hip fracture. It contributes to less excess bed days, which translate into cost saving, and higher patient satisfaction rate. Our approach further highlights the importance of co-ownership of service development and distributed leadership in facilitating organisational change.

Abstract # 885

AREA: Perioperative care

Iatrogenic enterovesical fistula after urinary catheterization

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88-Year-old woman with a pertrochanteric fracture operated by nail fixation gamma resulting in subsequent bedding, appearance of grade III sacral pressure ulcer and secondary functional worsening (modified Barthel index 16/100, being previous 55/100 intervention), debuted with urinary sepsis, had purulent urine with intermittent obstruction of the bladder catheter, so it was performed an ultrasound study with pyelocalyceal ectasia of the right kidney and bladder containing intermediate echogenicity that was mobilized with postural changes without apparent dependence on the bladder wall, corresponding to areas of thick sediment. During the process, fecal content appeared from inside the catheter, so it was requested a CT image, where the existence of an enterovesical fistula with distal end of urinary catheter housed in adjacent small bowel loop. After valuation jointly with the surgery and urology services, a laparotomy surgery was performed with intestinal resection and suture bladder, being its posterior pathological anatomy without malignancy data. Finally, she was discharged with follow-up for geriatric care at home,

being able to remove urinary catheter without the appearance of subsequent urinary retention. Enterovesical fistulas are usually the consequence of intestinal inflammatory processes (mainly diverticulitis or Crohn's disease). They tend to have a lower incidence in women due to the interposition of the uterus and the annexes between the bladder and colon.

Abstract # 886

AREA: Perioperative care

A systematic review of nonvalvular atrial fibrillation perioperative management of patients on long-term oral anticoagulation therapy

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Introduction: The aim of this systematic review was to assess the perioperative management of nonvalvular atrial fibrillation (AF) patients on long-term oral anticoagulation therapy in a Primary Care setting.

Methods: A comprehensive search strategy was performed on varying databases including, EMBASE, Pubmed, NIH clinical trials and Cochrane database of systematic reviews for clinical trials, cohort studies, randomised control trials, meta-analysis, systematic reviews relating to 'perioperative management', 'Nonvalvular Atrial fibrillation', 'bridging', 'Primary Care', 'General Practitioner' and 'anticoagulation'. The identified studies from the literature search were then further evaluated using our strict inclusion and exclusion criteria. The Critical Appraisal Skills Programme (CASP) tools (1) and Cochrane database of systematic reviews was used for critical appraisal and evaluate for possible bias of the selected papers.

Results: Studies analysed, in this systematic review, suggest that further research is warranted to investigate perioperative management of nonvalvular AF patients on long-term anticoagulation therapy in a Primary Care setting. From the results gathered, it could be argued that GPs should consider an individualised approach to the administration of treatment for these patients' optimal perioperative care.

Conclusion: Standardised protocols and larger studies may help to further evaluate the clinical significance of patient and procedure specific perioperative management of nonvalvular AF patients on long-term oral anticoagulation therapy in a Primary Care setting. Key words. Perioperative management, nonvalvular atrial fibrillation, atrial fibrillation (AF), General Practitioners (GP), Primary Care, bridging, anticoagulation, anticoagulants.

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Abstract # 887

AREA: Perioperative care

Preoperative assessment of internal risk factors affecting the healing of surgical wounds in hospitalized older patients

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Introduction: A preoperative assessment is useful to identify factors associated with increased risks of complications and to recommend a management plan that minimizes the risks. The aim is to evaluate internal risk factors affecting the healing of surgical wounds in hospitalized older patients.

Methods: The survey was conducted in Surgical Unit in 2020 November–2021 March. Questionnaire was developed by authors; nutritional status was assessed using Mini Nutritional Assessment (MNA). In total, 247 patients participated in the study. The study protocol was approved by the Centre of Bioethics at the Lithuanian University of Health Sciences (No. BEC-SL (M)-11).

Results: Patients ≥ 60 years. group had more frequent than younger patients' diagnosis of cardiovascular diseases (respectively, 90.7% and 34.3%), $p < 0.001$, diabetes (respectively, 37.3% and 25.0%), $p = 0.001$, cancer diagnosis (respectively, 37.3% and 2.9%), $p < 0.001$, uraemia (respectively, 44.0% and 24.4%), $p = 0.002$. Normal nutritional status had 72.1% < 60 years. group and 38.7% of ≥ 60 years. group patients, malnourished were more elderly patients than younger (respectively 21.3% and 1.7%), $p < 0.001$. 61.0% of younger patients and 41.3% of ≥ 60 years. group patients were smokers, $p = 0.004$.

Conclusions: Elderly patients had more internal risk factors affecting the healing of surgical wounds than younger patients, although smoking more prevalent for younger patients. Risk factors could begin to be managed before surgery in primary health care.

Abstract # 888

AREA: Perioperative care

Leg amputation and advance care planning

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Background: Half of people (48.3%) have died 1 year after leg amputation associated with peripheral vascular disease [1]. Advance care planning (ACP) may assist with shared decision making around surgery, reduce days in hospital in the last year of life, and increase the likelihood of death in a preferred location [2].

Method: We undertook a retrospective observational cohort study at a vascular network. ACP was reviewed in patients undergoing leg amputation secondary to critical limb ischaemia between January 2019 and January 2020. Data were collected on the presence of ACP including Do Not Attempt Cardiopulmonary Resuscitation (DNACPR), ceilings of treatment, and palliative services referral.

Results: Of 116 patients records reviewed, 37.1% had some form of ACP. Patients without a DNACPR did not have any other type of ACP. DNACPR was more likely to be in place in emergency cases than elective (46.1% vs 18.9%), in older people (70 years old [IQR 64–76] vs 67 years old [IQR 59–72]), with more comorbidities (Charlson Comorbidity Index 6 [IQR 5–8] vs 5 [IQR 4.6]). Physicians completed most ACP (81.4%) with two thirds (62.8%) during the amputation admission. 6.9% of patients were referred to palliative services within 90 days, of which all were emergency admissions. 1-year mortality was 22.2%.

Conclusion: These results suggest a lack of ACP with people undergoing leg amputation. Additional time in the elective period is not being used to address ACP. Despite high mortality rates, there are few referrals to palliative services. Future work should explore

patients' and clinicians' preferences in ACP in the perioperative period.

Abstract # 889

AREA: Perioperative care

Leg amputation and advance care planning

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Results: Of 116 patients records reviewed, 40.5% had some form of ACP, of which all included a DNACPR decision. Patients that had ACP were older (mean average 7.5 years older, 95% CI 3.52–11.36, $p < 0.001$) and had more comorbidities (mean average Charlson Comorbidity Index 1.81 greater, 95% CI 1.05–2.57, $p < 0.001$). ACP was more likely to occur in the emergency than elective setting (OR 3.53, 95% CI 1.44–8.68, $p = 0.006$). Physicians completed most ACP (78.7%) with most during the amputation admission (59.6%). Referral to palliative services within 90 days of amputation occurred in 4.3% of patients. 1-year mortality was 22.2%.

Conclusion: These results suggest a lack of ACP with people undergoing amputation. Additional time in elective surgery is not being used to address ACP. Despite high mortality rates few referrals to palliative services occur. Future work should explore patients' and clinicians' preferences for perioperative ACP.

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Abstract # 890

AREA: Perioperative care

Epidemiology of polypharmacy in older surgical patients

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Introduction: Increasingly, individuals of advanced age, with complex comorbidities and increased frailty, are being offered surgical care. These patients are likely to have a higher prevalence of polypharmacy and risk of medication-related harm. The study aimed to determine the prevalence of preoperative and incidence of postoperative polypharmacy/hyper-polypharmacy, associated patient- and procedural variables and postoperative outcomes.

Methods: Retrospective, population-based cohort study that included all patients ≥ 65 years undergoing first surgery at, The National University Hospital of Iceland between 2006 and 2018. Participants were categorized pre-and postoperatively based on the number of medications filled in the year, both pre-and post-surgery; categories were non-polypharmacy (< 5), polypharmacy (5–10) and hyper-polypharmacy (> 10).

Results: Amongst 18 278 patients (54% male; mean age 75 ± 7.5 years) the prevalence of preoperative polypharmacy was 35.2% (95% CI 34.6–36.0) and hyper-polypharmacy was 43.2% (42.5–49.9). Those patients were older, had a higher burden of comorbidities and frailty. Thirty-day mortality was higher for patients with preoperative polypharmacy (2.6%) and hyper-polypharmacy (3.5%) compared with those with non-polypharmacy (1.9%, $p < 0.001$). Thirty-day incidence of readmission was higher for patients with hyper-polypharmacy (11.4%) compared with polypharmacy (7.6%) and non-polypharmacy (7.2%, $p < 0.001$). Out of 3934 patients with no preoperative polypharmacy, the incidence of postoperative polypharmacy/hyperpolypharmacy was 47.1% (45.4–48.6), and for 6445 patients with preoperative polypharmacy, the incidence of postoperative hyperpolypharmacy was 37.9% (36.7–39.1).

Key conclusions: Preoperative polypharmacy and postoperative new polypharmacy/hyperpolypharmacy is common among older surgical patients and associated with risk of readmission. An increased focus on optimizing medication usage in older surgical patients throughout the perioperative period could reduce the risk of potentially harmful outcomes.

Abstract # 891

AREA: Perioperative care

A survey to determine urological surgeons' ability and attitudes in frailty assessment at NBT

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Introduction: The Clinical Frailty Scale (CFS) [1] is increasingly used in the assessment of older adults presenting with acute surgical pathology. It is predictive of postoperative complications across surgical specialties [2–4]. Despite this, limited data exist on the abilities and attitudes of surgeons in frailty assessment.

Method: Urologists working within an English tertiary surgical centre were invited to participate in a two-stage survey with aims (1) to assess surgeons' attitudes towards frailty assessment, (2) to assess their ability to assess for frailty. The survey consisted of open ended and Likert scale questions. Geriatrician-graded clinical case vignettes were created as a gold standard.

Results: 81% of respondents felt frailty assessment should be done for all patients. 100% of respondents believe frailty assessment should play a role in planning perioperative care, 81% use it. One quarter (27%) reported facing barriers including: lack of knowledge about frailty and assessment tools, time constraints, and a perception that senior doctors prioritised other clinical assessments. Half (55%) felt under-confident in using a frailty assessment tool, and 90% felt they would benefit from further training. The interrater reliabilities from the complete case of nine raters were typically fair (combined Kappa across all raters = 0.34).

Conclusion: This study highlights that frailty assessment in urology is regarded as important. However, training is needed to improve accuracy of assessment. This study will inform a larger survey to identify if these early signals are prevalent across multiple sites and surgical specialties and will inform the design of educational resources for surgeons.

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Abstract # 892

AREA: Perioperative care

Standardising perioperative pain management for patients with

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Introduction: In the UK, over 65,000 patients are admitted to hospital with a hip fracture annually. The majority are older, frail individuals with multi-morbidity and poly-pharmacy who are at risk of hospital-associated functional and cognitive decline. Effective pain management leads to improved outcomes including early mobilisation, shorter hospital stays, and reduction in hospital-related illness.

The absence of a recommended pain management protocol following hip fracture means there is variation in prescribing practice within and between trusts. We aimed to develop a local standardised pain management pathway for hip fracture patients.

Method: A retrospective review of adults aged over 65 admitted to St Thomas' Hospital, London, with a hip fracture was undertaken during a 4-month period in 2019 (n = 50). Data were collected about pre-operative, intra-operative, and post-operative pain management (drug choice, form and frequency, use of nerve blocks, dose adjustments, and side effects).

Results: Regular paracetamol (n = 49; 98%) with a regular (n = 49; 98%) or as required opioid (n = 40; 80%) was the most prescribed combination. Opioid prescribing varied, including the use of five different drugs with multiple preparations. Opioid doses were increased for 20% of patients post-operatively.

Conclusion: In our trust analgesia prescribing practices in hip fracture patients varied, potentially leading to under-treatment of pain. An analgesia prescribing protocol was developed with involvement of the relevant stakeholders, which has been implemented into clinical practice. This will be reassessed after 6 months to establish whether using the new protocol leads to earlier mobilisation, reduction in hospital-related illness, and reduces under-treatment of pain.

Abstract # 893

AREA: Perioperative care

Using population health management to clinically prioritise patients for early preoperative review

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Background: The Covid pandemic has meant thousands of patients have waited over 52 weeks for elective surgery with deterioration in their physical health. Increasing morbidity and complexity is leading to increased numbers of cancellations either on the day or within a few days of surgery resulting in inefficient use of scarce theatre resource. We used population management data to interrogate our waiting lists to identify if there was a cohort of patients who most benefit from early multidisciplinary specialist review to highlight modifiable and non-modifiable risk factors, allow patients and relatives to be counselled, and optimization for successful surgery. Patient level data was used and identified that the electronic frailty index (eFI) was an indicator of patients who may benefit from intervention.

Results: Waiting over 52 weeks severely frail on eFI. 26 patients in total. 23% of these Surgery cancelled or procedure changed as unfit. 27% of the cohort were likely clinically unfit for surgery—42% of these had an emergency admission or attendance in previous 6 months. 38% of total group had at least one Emergency admission in preceding 6 months and 57% cancelled surgery group 18–52 weeks severely frail (26 patients) 32% significant comorbidities 36% housebound 32% no concerns 32% inpatient admission within last 6 months.

Conclusion: Population health data may be a tool to help identify patients requiring early multidisciplinary specialist assessment pre surgery, by identifying patients with an eFI of severely frail, housebound and emergency admission within 12 months. Further work is required.

Abstract # 894**AREA: Perioperative care****Orthogeriatric blood testing panel: a quality improvement project**

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Aim: To assess the rate of vitamin D level and corrected calcium level testing in patients with proximal femur fractures under orthogeriatric care at Mater Dei Hospital. To assess whether the rate of testing of vitamin D and calcium levels improved with the introduction of an orthogeriatric blood test panel on iSoft Clinical Manager.

Background: The British orthopaedic association guidance on ‘The Care of Patients with Fragility Fracture’ recommends secondary prevention in this group of patients including supplementation with vitamin D and calcium. Vitamin D and calcium levels are checked before prescribing these supplements. The patient cohort included in this study are patients seen by the orthogeriatric team with neck of femur fractures aged 70 and over.

Method: The orthogeriatric handover census was used to collect the list of patients included in this study. iSoft Clinical Manager was used to collect data for the number of patients who had vitamin D levels and corrected calcium levels tested during their admission at Mater Dei Hospital. The orthogeriatric blood test panel was then implemented online on 1st February 2021, and junior doctors, as well as the orthogeriatric team, were informed via email of the update. Following the implementation of the blood test panel, the second cycle of the audit was performed. Quality improvement project A blood test panel was introduced on 1st February 2021 on iSoft Clinical Manager. This panel includes the following blood tests; full blood count, renal profile, c-reactive protein, liver function tests, protein and albumin, vitamin B12 and folate, calcium and phosphate, and vitamin D levels. The blood panel system allows the user to book this panel of bloods by entering “orthogeriatric bundle” on the iSoft Clinical Manager interface.

Results: The first cycle of the audit included 78 patients admitted after 1st October 2020 and discharged before the introduction of the blood test panel on 1st February 2021. This group shall be known as Cohort 1. The second cycle of the audit included 55 patients who were all in-patients after the panel was introduced. This group shall be known as Cohort 2. The audit showed that in Cohort 1, in-patient vitamin D levels were checked in 31% (n = 24) of cases, while this increased dramatically to 79.6% (n = 43) in Cohort 2. This was shown to be statistically significant with $P < 0.0001$ using Chi square testing. The audit showed that 59% (n = 46) of patients in Cohort 1 had calcium levels tested while in-patients, while this increased to 94.4% (n = 51) in Cohort 2. This was shown to be statistically significant with $P = 0.023$ using Chi square testing. In Cohort 1, of the patients who had calcium checked as in-patient, 56% of these (n = 26) had a corrected calcium result. In Cohort 2, of the patients who had calcium checked as in-patient, 94% of these (n = 48) had a corrected calcium result.

Conclusion: This audit showed that the blood test panel known as the “orthogeriatric bundle” significantly increased the rate of in-patient testing of vitamin D and calcium levels, as well as increased checking of corrected calcium. This simple measure therefore allows for the appropriate prescription of calcium and vitamin D supplements, and ultimately improves the quality of care provided. Limitations The increased use of vitamin D testing that was recorded may be affected by the bias of the novelty effect, as the second cycle of audit performed immediately after the introduction of the orthogeriatric bundle. A second limitation is that, as junior doctors rotate quarterly

in orthopaedics, access to the blood panel needs to be granted to each new doctor when they join orthopaedics, thus an administrator needs to keep up with applying for access for junior doctors to use the bundle. While short term efficacy has been proven in this audit, we recommend re-auditing at a later stage to confirm long term efficacy of this intervention.

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1. British Orthopaedic Association, British Geriatrics Society. The blue book: the care of patients with fragility fracture. Sep 2007. <http://www.fractures.com/pdf/BOA-BGS-Blue-Book.pdf> Conflicts of interest Nothing to disclose Funding Nothing to disclose Data protection Data was handled confidentially. Data collection was limited to the documented purposes of the study. Appropriate security measures are in place to protect data

Abstract # 895**AREA: Perioperative care****A multimodal prehabilitation program before elective knee and hip arthroplasties in older patients: protocol of a French multicentre feasibility study (PRE4OS)**

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Introduction: Osteoarthritis, which is highly prevalent in older patients, is associated with poor functional status and an increase in elective knee and hip arthroplasties. Multimodal prehabilitation programs (MPP) could reduce postoperative complications and improve functional prognosis of these patients, but this remains a very rare care offer. In this context, we have created a MPP for older patients with scheduled knee and hip arthroplasties and our main objective will be to assess its feasibility.

Methods: A multicenter interventional study will start in June 2021 in Paris area. Patients over 75, without major cognitive disorders, will be included if they undergo elective hip or knee arthroplasties within 8 weeks. The MPP will be divided into two parallel parts over 6 weeks. The first inpatient part will consist of six 1-day hospitalization sessions (one per week) with an initial geriatric evaluation followed by multimodal interventions (psychological, nutritional, functional and cognitive). The second outpatient part will include one medical consultation by phone and one physiotherapist intervention per week. The main outcome will be the achievement of at least 80% of this program by at least 80% of the participants. Secondary outcomes will be the evaluation of this program by participating professionals, patients and families. We will perform quantitative and qualitative analyzes.

Results: We anticipate the inclusion of fifty patients in 1 year. We will outline key points of protocol implementation.

Conclusion: If this MPP is assessed as feasible, we will set up a randomized controlled trial to evaluate its impact on mortality, rehospitalization, length of stay and functional status.

Abstract # 896

AREA: Perioperative care

Adapting a pre-operative clinic for older people in response to the COVID-19 pandemic

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Introduction: As a consequence of the COVID-19 pandemic, our multidisciplinary pre-operative clinic for older patients undergoing elective surgery was adapted to comply with social distancing measures, utilising telephone and video consultations. This evaluation aims to review how the pandemic affected service delivery.

Methods: Retrospective review and comparison of clinical records of patients seen in the clinic for the first year of the pandemic (March 2020 to March 2021) versus the previous 12 months, focusing on modality of review, clinical frailty score (CFS), referring specialty and interval between clinic appointment and operation.

Results: In the year prior to the pandemic, 426 patients were seen, all by face to face appointments. During the following 12 months, 87 patients were seen, 37% by telephone, 26% by video and 37% face-to-face consultation. Frailty scores were comparable (mean CFS 4.71 pre-pandemic, 4.68 in the year after); mean interval between clinic assessment and surgery was 61 days pre-pandemic versus 51 days for the next 12 month period. Most frequent specialties pre-pandemic were Orthopaedics (31%), Urology (25%), Ophthalmology (6%) versus Urology (33%), Gynaecology (16%), Colorectal (10%) in the following 12 months.

Key conclusions: Access to our pre-operative assessment clinic was greatly reduced during the pandemic, reflecting the reduction in elective surgery during that time. New modalities were introduced to allow for the need for social distancing. A future quality improvement project is planned to evaluate patient and staff experience of a virtual preoperative clinic and review clinical outcomes.

Abstract # 897

AREA: Perioperative care

Frailty and multimorbidity are associated with longer length of stay in older urology patients

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Introduction: Frailty and geriatric syndromes are becoming common place in surgical services. In general surgery, frailty has been associated with longer length of hospital stay. The effect of frailty on outcomes in Urology patients is not well described. We aimed to evaluate the effect of frailty and multimorbidity on length of stay in older patients admitted for emergency Urology care.

Methods: Adults aged 65 years and older admitted as an emergency to the Urology service during 4 months of 2020/21 were included. The primary outcome was time to discharge; analyses were adjusted

for Clinical Frailty Scale (CFS), Charlson Comorbidity Index (CCI), age, gender, and surgical procedure (yes/no).

Results: 142 patients were included, of these 60 (42.3%) were living with frailty (CFS ≥ 5), 32 (22.5%) were multimorbid and 59 (41.5%) underwent a surgical procedure. Longer length of stay was associated with frailty (adjusted-HR 0.560; 95% CI 0.376–0.835; p 0.004) and multimorbidity (adjusted-HR 0.556; 95% CI 0.367–0.842; p 0.006).

Conclusion: In this single-centre study we found frailty and multimorbidity to be associated with longer length of stay in patients admitted for emergency Urology care. Geriatric perioperative care interventions in other surgical specialties have been shown to reduce length of stay, the effect of such services within urology has yet to be established. Identification of frail and multimorbid patients could help to develop targeted strategies to improve outcomes, and ultimately reduce hospital stay for older adults in Urology services.

Abstract # 898

AREA: Perioperative care

Correlation between functional status and infectious risk in 443 patients undergone transcatheter aortic valve replacement

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Introduction: Incidence and prevalence of aortic stenosis increases with age; in patients over 80 prevalence reaches 9.8%. Patients undergoing TAVI (Transcatheter Aortic Valve Replacement) are usually very old, frail, and functionally impaired and high is their risk of periprocedural adverse events. Aim of this study is to evaluate the characteristics of patients undergoing TAVI who had infection events.

Methods: Between January 2017 and April 2021, 503 patients candidates for TAVI procedure were evaluated in our hospital (Fondazione Poliambulanza, Brescia). Of them, 443 patients (88.1%) undergone to TAVI; clinical characteristics (somatic, functional, and psychic) were assessed before, and adverse events after the procedure.

Results: Mean age was 82.9 (SD 6.2) years; MMSE 24.2 (5.9), IADL lost functions 2.4 (2.5), BADL lost functions 1.01 (1.4), TUG-Time and Up Go test 13.2 (7.2) and Handgrip Test 18.3 (9.7SD). In the post-operative period infections were detected in 58 patients (13.1%). Of these 60.3% were functionally impaired at least in one BADL function.

Conclusions: Patients with aortic stenosis are frequently functionally impaired and so have an increased risk of developing a peri-procedural TAVI (Transcatheter Aortic Valve Replacement) adverse events. Among them infections are those to be taken into consideration with the aim of a timely and effective approach. Functional status assessment (and MGA) should be performed in all TAVI patients.

Abstract # 899

AREA: Perioperative care

Geriatric perioperative care is associated with reduced length of stay in urology patients

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Introduction: Comprehensive Geriatric Assessment (CGA) is associated with reduced length of stay and perioperative complications in older orthopaedic, gastrointestinal and vascular surgical patients [1–3]. Limited published data from a single UK centre [4] reports reproducing these outcomes in a urological setting. It is unclear whether these outcomes can be repeated in other urological centres.

Method: We piloted a Geriatric Perioperative Care service delivering CGA to older emergency urology patients admitted to within a tertiary centre. The aim of the service was to reduce length of hospital stay (LOS). We evaluated it using quality improvement methodology. Patients for review were identified using age ≥ 65 and the Clinical Frailty Scale. Patients that were transferred to another hospital team prior to discharge were excluded.

Results: 101 patients were included: 35 in the pre-intervention group and 66 in the post-intervention group. Mean LOS in the pre-intervention group was 7 days. In the post-intervention group, mean LOS was reduced to 3.5 days, 6 days and 5.5 days in the first, second and third months respectively.

Conclusion: We found that perioperative geriatric care was associated with reduced length of stay in older urology patients. These data would support the need for larger and/or multicentre studies to evaluate the relationship between geriatric intervention in urological inpatients and length of hospital stay.

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Abstract # 900

AREA: Perioperative care

Impact of comorbidity on the clinical evolution of colorectal cancer surgery in the elderly

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Aim: to know the impact of the preoperative comorbidity on the clinical evolution of patients scheduled for colorectal cancer (CRC) surgery.

Methods: All patients aged 80 years or older admitted due to elective surgery for CRC were included in a tertiary hospital from October 1st 2018 to March 31st 2021. A Comprehensive Geriatric Assessment was conducted, with special attention to comorbidity using the Cumulative Illness Rating Scale for Geriatrics (CIRS-G). High comorbidity was considered in those patients who had a score of 3 in

two or more systems. The presence of medical and surgical complications and length of stay were reported. In-hospital and 6 months mortality were recorded.

Results: Sixty-six patients were included. The mean age was of 83.5 ± 4.1 years and 59.1% were men. Of them, 21.2% had high comorbidity. Patients with high comorbidity had higher rates of medical complications (71.4% vs 25%, $p = 0.001$), mainly of respiratory infections (14.3% vs 0%, $p = 0.006$), higher rates of surgical complications (21.4% vs 13.5%), longer hospital stays (9.4 ± 6.8 vs 8.7 ± 4.4) and higher mortality at 6 months (9.1% vs 2.3%) compared to patients with low comorbidity.

Conclusions: The high comorbidity in patients undergoing to CRC elective surgery is associated with higher rates of medical and surgical complications, longer hospital stays and rates of mortality. These patients can benefit from a multidisciplinary approach and geriatric prehabilitation to detect clinical conditions and optimize them prior to surgery.

Abstract # 901

AREA: Perioperative care

Does the prevalence of delirium and length of stay (LOS) increase, when specialist wards are temporarily relocated?

Catherine Louise Ashton¹, Katherine Woodward¹, Boncey Katy¹, Shvaita Ralhan¹, Joanne Hardwick¹

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Delirium is common amongst the older trauma inpatient population. Its prevention and management requires specialist multidisciplinary care. During the COVID-19 pandemic our trauma patients were relocated to a different area of the hospital. The doctors remained the same, however the patients care was provided by a different surgical nursing and therapy team, who were not familiar with caring for this comorbid, often frail, cohort of patients. Our project was to determine if ward relocation to an area of differing specialist skillset, altered the prevalence of delirium or length of stay (LOS). We conducted a point prevalence of delirium rates amongst trauma inpatients aged 65 or over, when they were located on the usual Trauma Ward and again after ward relocation. A 4AT score > 4 established a diagnosis of delirium. LOS was calculated retrospectively, following discharge from hospital. In November 2020, 12 of 21 patients had delirium compared to February 2021 with 9 of 24 patients (prevalence of 57% v 38%). Average LOS decreased (27 days to 25 days). The number of patients who had not been recognised to have delirium by the surgical team remained the same ($n = 3$). Despite concerns that relocating trauma patients during the COVID-19 pandemic would result in higher rates of delirium and consequent LOS, this was not demonstrated. Reduced LOS may be due to increased efforts to discharge patients from hospital due to concerns of nosocomial COVID-19 infection. This supports the requirement for all healthcare professionals, trained in adult medicine, to complete mandatory training in delirium.

Abstract # 902

AREA: Perioperative care

Are consent forms requiring intact decision-making capacity being used appropriately in older acute surgical patients?

Katherine Woodward¹, Catherine Ashton¹, Mary Clements¹, Deborah Linsky¹, Katy Boncey¹, Shvaita Ralhan¹, Sarah T Pendlebury¹

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Introduction: Cognitive impairment in older patients may impact their capacity to give informed consent. Following a previous audit in Oxford University Hospitals Trust (OUHT), and in line with UK General Medical Council guidance, the standard Consent Form (Consent Form 1-CF1) was modified to include a tick-box to document decision-making capacity in patients with cognitive impairment. We undertook an audit to determine whether the modified CF1s were being used appropriately.

Methods: In the OUHT, cognitive screening, including Abbreviated Mental Test Score (AMTS, < 9/10 = abnormal), is mandated for patients aged > 70 years. In consecutive patients admitted to acute surgery (March–April 2021), we recorded the number with CF1s, and completion of the capacity tick-box. We defined inappropriate use of CF1 as documentation peri-operatively that the patient lacked ability to understand, retain or weigh relevant information.

Results: Among 78 patients (mean/SD age = 80/2 years, 60% male, dementia = 2, delirium = 11), 23 (29%) had no AMTS, 44 (56%) had AMTS $\geq$ 9 and 11 (14%) had AMTS $\leq$ 8. Forty-five (58%) had the box to document decision-making capacity ticked, of whom seven were cognitively impaired. Three patients had a CF1 completed inappropriately although two of them had the capacity box ticked. Of these three, one had pre-operative AMTS $\leq$ 8, one had delirium and one had no AMTS completed.

Conclusion: Less than 5% of CF1 forms in older patients appeared to have been completed inappropriately. Inclusion of a capacity tick-box on consent forms together with a pre-operative cognitive screen can help prompt careful consideration of a patient's capacity to consent for a procedure.

Abstract # 903

AREA: Perioperative care

Cognitive screening by surgical specialty in older patients at Oxford University Hospitals NHS Foundation Trust (OUHFT)

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Introduction: Cognitive impairment, including dementia and delirium, affects 30–70% of older acute surgical patients and is associated with longer hospital stay and higher mortality. UK guidelines recommend routine cognitive screening for older patients but limited data is available on compliance in surgical cohorts. We therefore determined rates of cognitive impairment and screening across different surgical specialties.

Methods: In Oxford University Hospitals, cognitive screening (10-point abbreviated mental test score (AMTS), confusion assessment method-CAM and documentation of dementia) is mandatory on admission in patients aged > 70 years. In consecutive surgical patients aged > 70 years with unplanned admission (March–April 2021) we extracted cognitive screening data by surgical specialty retrospectively from medical records.

Results: Among 91 included patients (mean/SD age = 80.9/7.4 years), 27 (30%) had a documented cognitive syndrome: 7 dementia only, 7 both dementia/delirium, 13 delirium only. Overall, 58/91 (64%) had a recorded AMTS pre-operatively or were deemed un-testable and 10 untested patients had documentation of a cognitive syndrome (n = 4, dementia; n = 3 dementia and delirium; n = 3 delirium). Rates of AMTS non-completion varied significantly by specialty: trauma = 3/36 (8%), general surgery = 4/17 (24%), neurosurgery = 2/5 (40%), vascular = 20/28 (71%), spinal = 4/4 (100%), p < 0.001.

Key conclusions: Despite high rates of cognitive impairment overall, screening by different surgical specialties varied widely. Trauma performed best probably because cognitive screening is included in the UK national hip fracture audit, and is financially incentivised and advocated by orthogeriatricians. Similar interventions should be considered in other surgical specialties to facilitate optimal care in those with cognitive comorbidity.

Abstract # 904

AREA: Perioperative care

Unfavorable short-term outcomes after hip arthroplasty in elderly patients using data from the Polish National Health Fund

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Introduction: Hip arthroplasty (HA) may carry significant risks, especially in older patients. Pre-operative status may be important to minimize risks. The aim of the study was to determine preventable risk factors of complications after HA in an elderly population.

Methods: Data from the Polish National Health Fund (NHF) about patients aged 54 years and older undergoing hip surgery in 2017 were analyzed. The obtained set contained pre-surgical pharmacotherapy and rehabilitation, type of surgical procedure performed, hospitalization data and 120 days of follow-up. Combined endpoints for complications were defined as consisting of death, infection, transfer to an intensive care unit, re-hospitalization, and necessity for chronic nursing care after discharge.

Results: The analysis was performed in 50 013 people over 54 years of age. Polypharmacy was observed in half of the study population, while rehabilitation before surgery was performed in about 5% of patients. Multivariate analysis showed that the risk of combined endpoints increased with age, up to 9 times in those over 84 years of age compared to the youngest group (aged 55–64). Emergency surgery increased the risk by about 4.5 times. Polypharmacy increased the risk by approximately 30%, as did treatment for cancer, neurological diseases, and hematological problems. Female gender, preoperative rehabilitation and therapy used for musculoskeletal diseases played a protective role.

Key conclusions: Preventable risk factors for postoperative complications following HA are polypharmacy, treatment of hematological, neurological and musculoskeletal diseases, and rehabilitation prior to surgical procedures.

Abstract # 905**AREA: Perioperative care****Effects of elective hip arthroplasty in very old patients using data from the Polish National Health Fund**

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Introduction: Hip arthroplasty (HA), even as an elective procedure, may carry significant risks in very old patients. The aim of the study was to identify preventable risk factors of complications following elective HA in this population.

Methods: Data from the Polish National Health Fund (NHF) about patients older than 74 years of age undergoing elective hip surgery in 2017 were analyzed. The obtained data set contained pre-surgical pharmacotherapy and rehabilitation, surgical procedure performed, hospitalization data and 120 days of follow-up. Combined endpoints for complications were defined as consisting of death, infection, transfer to an intensive care unit, re-hospitalization, and necessity of chronic nursing care after discharge.

Results: The analysis was performed in 7430 patients over 74 years of age. Prior to surgery, polypharmacy was observed in 63.6% of the study population, while rehabilitation was performed in only 5% of patients. About 84% of patients were treated for cardiovascular diseases, while 68% and 56% of patients received treatment for musculoskeletal and neurological diseases, respectively. Multivariate analysis showed that the risk of combined endpoints insignificantly increased with age, by 34% in 80–84 years old and 84% over 84 years old compared to the youngest group (aged 75–79). Complication risk was significantly increased by treatment for neurological diseases (by 93%), hematological problems (by 71%) and hospitalization longer than 7 days (by 81%).

Key conclusions: Elective hip arthroplasty is relatively safe, even in the oldest of old patients. Preventable risk factors for postoperative complications include treatment of neurological and hematological diseases, and duration of hospital stay.

Abstract # 906**AREA: Perioperative care****Reduction in pre-operative fasting in orthotraumaeriatrics – implementation of a quality improvement programme**

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¹Hospital Beatriz Ângelo

Introduction: Hip fracture is one of the most common orthopedic injuries in the elderly. Its surgical correction is still too often delayed beyond the recommended timeline (24–36 h). Prolonged and recurrent fasting is associated with increased morbidity and mortality. This

quality improvement programme aims to overcome complications associated with pre-operative fasting.

Methods: A retrospective observational analysis was made of all clinical data from patients admitted to our Orthotraumaeriatrics Unit from January to May of 2019. Data such as number of fasting days until surgical correction, highest pre-operative serum creatinine level, delirium, intra-operative hypotension and post-operative complications was collected. Statistical analysis was performed in Microsoft Excel.

Results: Data was collected from 128 patients. Mean age was 82.9 years. With respect to the American Society of Anesthesiologists (ASA) Classification, 59% were classified as ASA III. The median number of fasting days until surgical correction (missing ≥ 1 meals) was 4.1. In the peri-operative period, the following events were registered: Acute kidney injury – 27%; Delirium – 34%; Intra-operative hypotension – 34%; Pneumonia – 6%; In-hospital mortality – 4%.

Discussion: The collected data raised awareness to the need to implement measures to diminish fasting times and their consequences. We now encourage the ingestion of a gelatine at 7 am in the morning of surgery, as well as sips of water until the patient is called to the Operating Room. We aim to collect similar data within 6 months of implementation of the programme in hope to find that its implementation has led to improved outcomes and patient satisfaction.

Abstract # 907**AREA: Pharmacology****The effectiveness of a multidisciplinary frailty team in reducing anticholinergic burden in frail older patients: a quantitative service evaluation**

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Medications such as psychotropic and antimuscarinic drugs have anticholinergic properties, a paramount safety concern in frail older people. Cumulative side effects are associated with cognitive/functional decline and mortality. Reducing anticholinergic drug burden (DBAC) may therefore be beneficial. This study evaluated whether an Emergency Department multidisciplinary team can reduce DBAC using a targeted medication review. Consecutive patients were assessed by the frailty team and those with a Rockwood Clinical Frailty Score (CFS) ≥ 5 were analysed. 129 people, mean $\pm$ SD age 86 ± 6.7 years (range 70–101) were included. The Anticholinergic Cognitive Burden score (ACB) was calculated before and after frailty team assessment. 59.7% ($n = 77$) were prescribed at least one anticholinergic drug. Overall, a statistically significant reduction in ACB was achieved ($p = 0.001$). Subgroup analysis revealed a reduction with mild (CFS = 5) ($p = 0.013$) and moderate (CFS = 6) ($p = 0.003$) frailty and borderline non-statistical significance in severe (CFS = 7–9) frailty ($p = 0.066$). A multidisciplinary specialist frailty team in the Emergency Department can reduce ACB.

Abstract # 908

AREA: Pharmacology

Differences in deprescribing among geriatricians across Europe, an international EuGMS survey of the SIG on pharmacology

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Background: Over recent decades, the number of medications prescribed to older adults has increased considerably. Beside the positive health effects induced by appropriate prescribing, this has also contributed to inappropriate polypharmacy. Inappropriate polypharmacy leads to negative medical, economic and social consequences, such as adverse drug events and drug-related hospitalizations. In this context, structured medication reviewing and deprescribing has emerged as an effective strategy. Medication reviews have been shown to reduce inappropriate polypharmacy and medication-related adverse events. However, the actual practice of deprescribing is not well-established yet and both practice and attitudes vary within and between countries and regions in Europe. Also, agreed guidelines for deprescribing are lacking across Europe.

Methods: In an effort to capture the needs of geriatricians across Europe and identify key areas of improvement for safe deprescribing, an online questionnaire has been distributed to European geriatricians and specialists in the care of older adults, and their respective trainees. The questionnaire includes questions on geriatricians' current deprescribing practices and attitudes, knowledge and needs/wishes for future deprescribing activities.

Results: Data are currently being collected and analyses will include descriptive statistics on participant characteristics and distribution of Likert scale responses. Potential differences between counties (or regions) will be explored by chi-square (χ^2), ANOVA and/or Kruskal–Wallis testing. Associations between factors will be tested through ANCOVA or regression analysis. Data analysis will be finalized by September, 2021.

Conclusion: Based on the findings of the currently conducted European survey, the EuGMS SIG on Pharmacology will formulate and publish recommendations for preferred deprescribing practices and approaches among European geriatricians. Our efforts will thus

contribute to the alignment and optimization of European geriatricians' deprescribing approaches.

Abstract # 909

AREA: Pharmacology

Computerized clinical decision support system (CCDSS) alerts omission of gastroprotective agents indicated for prevention of NSAID or salicylate induced gastropathy

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Introduction: Patients using anti-inflammatory drugs (NSAIDs) and/or (low-dose) salicylates have an increased risk of gastro-intestinal (GI) complications. Therefore guidelines recommend prescribing gastroprotective agents (GA) to these patients if they have additional risk factors for GI complications [1–3]. A computerized clinical decision support system (CCDSS) is used in the Catharina Hospital Eindhoven, Netherlands, to detect patients lacking an indicated GA.

Methods: We analysed 762 notifications concerning patients aged ≥ 60 generated by the CCDSS in 2019 to determine which additional risk factors lead to notifications. Additionally we performed this analysis for various medical specialties separately. We also determined what share of notifications led to GA prescription and if not, what arguments had been noted to disregard notifications.

Results: For our patients using NSAIDs, high dose (59%), age ≥ 70 (12%) and comedication (antiplatelet drugs 9%, anticoagulants 7%) most often led to notifications, especially on urology, orthopaedics and surgery wards. For patients using salicylates, age ≥ 70 combined with dual antiplatelet therapy (38%) and age ≥ 80 years (32%) most often led to notifications, especially on the cardiology ward. 81% of the notifications led to GA addition. The most frequently noted reason to disregard a notification was discharge of the patient from hospital before the notification was processed by the pharmacist's assistant. Only 0.5% of notifications had been disregarded without a documented reason.

Conclusion: CCDSS on gastroprotection leads to less omission of indicated GA. Forwarding the notification to the patient's local pharmacist or GP after discharge could further improve the benefit of this CCDSS.

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Abstract # 910**AREA: Pharmacology****Potentially inappropriate medication in elderly patients admitted in palliative care units**

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Introduction: Most patients in a palliative care treatment have multimorbidity and these lead to polypharmacy and potentially inappropriate medication (PIM). The aim of this study was to describe the frequency of PIM in older patients admitted in two palliative care units.

Methods: A retrospective observational study was carried out. It included a cohort of patients over 75 years admitted in a palliative care unit of La Paz and Severo Ochoa hospitals between January to December 2018. The variables: gender, age, diagnostic, Barthel index (BI), number of prescribed drugs at admission and discharge, and presence of PIM according to screening Tool of Older Person's Prescriptions (STOPP) criteria were analyzed.

Results: A total of 202 patients with a mean age of 83.8 ± 5.5 years were included, of which 97 (47%) were women. The 53.2% of patients had a mild dependence according to the BI. The mean hospital stay was 8.6 ± 6.3 days. The 86.6% patients had PIM at the time of admission; the mean number of medications was 8.8 ± 3.8 . The prevalence of Polypharmacy in elderly patients admitted in 2018 was 172 (85.5%). At discharge, the patients were prescribed a mean of 9.7 ± 3.9 drugs, and the 82.7% elderly patients showed PIM. The number of drugs both at admission and at discharge was related to PIM, this relationship being statistically significant in both cases.

Conclusions: In the field of palliative care, it is found that PIM is frequent and could be prevented with a multidisciplinary team with doctors and pharmacists.

Abstract # 911**AREA: Pharmacology****Factors associated with inappropriate prescriptions in community-dwelling older people**

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Introduction: Medication management in the elderly is a global concern.

Main objectives: To detect inappropriate prescriptions (IP) through the application of the Patient-Centred Prescription (PCP) model. And to evaluate the factors that are most associated.

Methods: Prospective, descriptive, observational study, carried out from June 2019 to October 2020, on patients ≥ 65 years with multimorbidity who lived in the community. Demographic, clinical and pharmacological data were assessed. The degree of frailty was analyzed (Frail-VIG index). It was determined polypharmacy and

excessive polypharmacy. Therapeutic complexity and anticholinergic and sedative burden were also assessed. Finally, a medication review was carried out through the application of the PCP model [1]. **Results:** 428 patients (mean age 85.52 (SD: 7.7); 66.6% female). Mean Frail-VIG index was 0.39 (SD: 0.13). Mean drug use per patient was 8.13 (SD: 3.9), mean therapeutic complexity (measured by MRCI) was 30.74 (SD: 16.26) and mean anticholinergic burden (measured by DBI) was 1.17 (SD: 0.84). 90.0% had 1 or more IP. In descriptive analysis, an increase in IP prevalence was detected when the VIG-Frail index increased ($p < 0.05$). Univariate analysis identified six variables related to PIMs: T2DM, suffering five or more morbidities, VIG-Frail index, moderate and excessive polypharmacy, MRCI and DBI. Multivariate analysis highlighted specially the relationship between polypharmacy and PIMs, both moderate (2.80 (1.36–5.77)) and excessive polypharmacy (4.55 (1.87–11.11)).

Key conclusions: Up to 90% of older people with multimorbidity presented at least one IP and the application of the PCP model enabled to detect them. Frailty had a positive association with the IP detection and polypharmacy was the factor with more involvement in the IP detection.

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Abstract # 912**AREA: Pharmacology****The application of a patient centred prescription model improves pharmacological outcomes of an elderly community-dwelling cohort**

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Introduction: Polypharmacy, therapeutic complexity and, anticholinergic and/or sedative burden are related to poor health outcomes. Our purpose is to assess if application of patient-centred prescription (PCP) model (based on a shared decision-making process including patient) reduces these pharmacological outcomes.

Methods: Quasi-experimental study (pre-post study, assessment at 3 months), carried out from June 2019 to October 2020, on patients ≥ 65 years with multimorbidity who lived in the community. Each patient's pharmacotherapeutic plan was reviewed by an interdisciplinary healthcare team (primary care team -physician, nurse- and a consultant team-geriatrician, clinical pharmacist- applying a PCP model. Pharmacological outcomes were recorded: polypharmacy, medication complexity (MRCI) and anticholinergic and/or sedative burden (DBI). Paired Samples T-Test or Mc-Nemar's Test were used to compare paired data.

Results: 428 patients (mean age 85.52 (SD 7.7); 66.6% female; 50.9% nursing home residents). Mean Frail-VIG index was 0.39 (SD 0.13). 17.7% ($n = 76$) mortality at 3 months. Pre-intervention mean drug use per patient was 8.12 (SD 3.94) and decreased to 6.67 (SD 3.72) at 3 months ($p < 0.001$). Medication complexity mean was 31.00 (SD 16.2) at the beginning and decreased down to 25.1 (SD 15.1) at follow-up ($p < 0.001$). Anticholinergic and/or sedative burden mean decreased from 1.19 (SD 0.82) to 1.09 (SD 0.82) at 3 months ($p < 0.001$). Percentage of patients with high level of polypharmacy (≥ 10 drugs), MRCI (≥ 40) and DBI (≥ 2) decreased

from 33.0 to 21.6%, from 25.2 to 16.5% and from 16.4 to 11.6% respectively ($p < 0.001$).

Key conclusions: PCP model is successful in decreasing polypharmacy, medication complexity and anticholinergic and/or sedative burden.

Abstract # 913

AREA: Pharmacology

Improving prescribing for older adults during a hospitalization on a geriatric ward in General La Rioja's Hospital

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Objective: To evaluate the impact of Pharmacy Intervention (PI) on the evolution of potentially inappropriate prescribing (PPI) and Drug Related Problems (DRP) as well as to estimate their prevalence in an acute geriatric ward.

Materials and methods: Quasi-experimental, interventional, prospective study in polymedicated patients (≥ 6 drugs), older than 65 years, was carried out between April 2018 and August 2019. PPI were analyzed based on STOPP/START 2014 criteria and PRM on the Third Consensus of Granada. PI were sent to the responsible physician and the effect of the intervention was analyzed at hospital discharge. Statistical analysis was carried out with SPSS v.25.

Results: 218 patients were included: 87, 7 ± 6 , 1 years old, 65.3% women, 76.5% residence for the elderly, with high comorbidity and receiving between 6 and 15 drugs. A total of 2449 prescriptions were analyzed and 1637 interventions were performed. PPI was identified in 91.1% and DRP in 98.6%. STOPP criteria were found in 53.6%, START criteria in 10% and in 27.5% both criteria. In 88.3% they had at least one chronic treatment with anticholinergic properties (2 drugs per patient). The most frequently found were: furosemide (17.7%), trazodone (7.9%), lorazepam (7.4%), quetiapine (6.7%), escitalopram (5%), mirtazapine (4.8%) and risperidone (4.6%). Moderate correlation was observed between the number of drugs and the number of interventions ($r = 0.53$; $p < 0.001$). Institutionalized patients have more prescribed drugs (9.1 ± 2.3 versus 8.2 ± 2.0 ; $p = 0.01$).

Conclusions: The pharmacist, collaborating with the patient's physician, helps in the detection and decrease of PPI and DRP.

Abstract # 914

AREA: Pharmacology

Impact of the intervention of a pharmacy student in carrying out the initial drug assessment in two geriatric post emergency wards

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Introduction: The iatrogenic risk is particularly high at hospital admission for elderly patients. The presence of a pharmacist helps optimizing the performance of the initial drug assessment in the medical wards. We hypothesized that the intervention of a pharmacy student may improve medication histories (first step of the medication reconciliation) of patients admitted to geriatric ward.

Method: All consecutive patients aged 75 years and over transferred from the emergency room to two distinct geriatric units (total of 23 beds) were prospectively enrolled in the study between May 2018 and June 2019 with an initial medication review within 72 h of admission carried out by the pharmacy student in addition to the geriatrician usual care. We compared and established the number of discrepancies between the two initial medication reviews. We determined the profile of patients at risk of medication discrepancies, drugs mostly concerned by the discrepancies, and their clinical impact.

Results: A total of 299 patients were enrolled, 341 discrepancies were found in 137 (46%) of them. They were considered as major ($n = 49$, 14.3%), significant (79, 23.2%) and minor (213, 62.5%). The most common type of discrepancy was omission. Age and number of medications taken daily were significantly associated with the presence of discrepancies. Being referred by his general practitioner to the emergency ward was a protective factor. The average time to complete the initial medication review were 23 min (± 6 min) and 8.5 min for pharmacy student and geriatricians respectively. Pain killers, anti-hypertensive and systemic antimicrobial treatments were the most common sources of major discrepancies.

Conclusion: The presence of a pharmacy student improves the quality of the initial medication review in geriatrics.

Abstract # 915

AREA: Pharmacology

The role of the geriatric day hospital in medication optimisation

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Background: The geriatric day hospital (GDH) provides outpatient geriatric medical, nursing and rehabilitation care to older adults. The aim of this study was to assess whether medication optimisation occurs in this setting.

Methods: Medical records of patients' ≥ 65 years referred to the GDH over a 3-month period were reviewed. Potentially inappropriate prescriptions (PIPs) and potentially prescribing omissions (PPOs) were identified using the STOPP/START prescribing tool.

Results: One-hundred and sixty-seven patient records were reviewed; mean age 80.8 (SD 6.5) years, 62.9% female, median clinical frailty scale score 6 (IQR 5–6), mean conditions 5.79 (SD 3), mean medications 7.57 (SD 3.7). Patients had a median of 4 (IQR 2–7) consultations. The number of patients prescribed at least 1 STOPP-

PIP reduced by 10%; 42.4% vs 38%, $p < 0.001$. Vasodilator drugs in patients with orthostatic hypotension were deprescribed most frequently; 6.5% vs 3%, $p < 0.001$. PPOs were reduced by 36%; 47.5% vs 30.6%, $p < 0.001$. The largest improvement was identified in the prescription of vitamin d in patients experiencing falls; 17.4% vs 13.8%, $p < 0.001$. Logistic regression was performed to ascertain the influence of age, gender, falls, dementia, co-morbidity number and medication number on the likelihood of a patient experiencing a PIP or PPO. For every medication prescribed, the odds of experiencing a PIP increased by 11.8% (OR 1.187, 95% CI 1.052–1.339). Being female increased the odds of experiencing a PPO by 21.7% (OR 2.17, 95% CI 10.53–4.468).

Conclusion: The frequency of patient attendances coupled with geriatricians' expertise makes the GDH an ideal setting for medication optimisation in multi-morbid frail community-dwelling older adults.

Abstract # 916

AREA: Pharmacology

Drug optimization for the prevention of pharmacological iatrogenia in older adults: development of a specific multiprofesional clinic

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Introduction: Pharmacotherapy management in the older adults presents many challenges due to several factors that increase the risk of drug-related problems (DRPs) and limit their effectiveness. Polypharmacy is often presented in older adults and use of inappropriate medications have been linked to increased risk of falls, hospitalizations, and cognitive impairment. Drug prescription optimization is a key quality element in reduce DRPs, as well as detecting untreated indications.

Objective: To evaluate the effect of drug prescription optimization in older adults with polypharmacy (> 5 drugs) by a multidisciplinary team (clinical pharmacist, nurse, and geriatrician) in the geriatric outpatient setting of the Complejo Hospitalario de Navarra (CHN).

Methods: The present observational prospective study will analyse an intervention, accompanied by subsequent follow-up, based on a clinical interview, and structured medication review within a comprehensive geriatric assessment in a group of at least 100 older adults. The main outcome measure will be the change in number of medications. Secondary outcomes will be the number and classification of identified DRPs and subsequent clinical interventions, variation in drug anticholinergic burden, number of hospital admissions and emergency department visits before and after the medication review, and quality of life, functional and cognitive evolution.

Key conclusions: Drug prescription optimization by a multidisciplinary outpatient team could be effective in preventing pharmacological iatrogenia in older adults with polypharmacy by improving medication appropriateness and reducing DRPs, as well as by detecting untreated conditions. The trajectory in the use of health-related resources could also be modified.

Abstract # 917

AREA: Pharmacology

Anticholinergic medication burden in older hospitalised patients

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Introduction: Older and frailer adults experience more adverse effects from anticholinergic (Ach) medications, including cognitive decline, falls and increased mortality. Despite this, Ach medications are commonly prescribed in older people. This audit assessed the Anticholinergic Burden (ACB) in patients discharged from two geriatric wards.

Methods: A structured questionnaire was employed to collect data on prescribed medications on patients aged ≥ 65 years admitted consecutively to two geriatric wards in a UK teaching hospital. The ACB calculator was used to assess the ACB potency score (high = 3, moderate = 2, low = 1).

Results: 199 patients (54.8% women), mean age = 85.5 (range = 69–104) years were studied. Mean no. medications/patient on admission was 7.6, with 80.4% ($n = 160$) prescribed 5 + medications. 65.3% had ≥ 1 Ach medication (s) and 18.1% took regular potent Ach medication (score 2–3). On admission, mean Ach medication no. was 1.2 and mean ACB score was 1.4. Cognitive decline were noted in 20.1% over last 6-months, and 72.5% of these were taking Ach medications. On discharge, 56.7% had ≥ 1 Ach medication (s) and the mean no. Ach medication was 0.95. The no. of Ach medications were increased, unchanged or decreased in 20.2%, 38.8% and 41.1% respectively. The commonest high and moderate potent Ach medications prescribed were amitriptyline (4%) and sertraline (2.5%) whereas commonest lower ACB medications included furosemide (23.6%), codeine (10.5%) and morphine (8.5%).

Conclusions: Despite known adverse effects, the use of Ach medications in older people admitted to geriatric wards remains high. Overall use of medications with Ach properties can be reduced during hospital stay by appropriate de-prescribing.

Abstract # 918

AREA: Pharmacology

Anticholinergic burden of geriatric inpatients

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Introduction: Anticholinergic drug use in the pharmacotherapy of elderly persons is common despite the associated increased risk of cognitive dysfunction, dementia and falls in this population. We examined the prevalence of anticholinergic drug use and total anticholinergic drug burden among patients admitted to an acute care geriatric ward.

Methods: Cross-sectional study of 329 subjects hospitalized at the geriatric ward. Patient condition was assessed with a comprehensive

geriatric assessment. The Anticholinergic Cognitive Burden (ACB) Scale was used to estimate the total anticholinergic load.

Results: Mean patient age was 79.61 ± 6.82 years. 40.73% of them were burdened with at least one anticholinergic drug. The most commonly taken medications were: quetiapine, metoprolol, furosemide, trazodone, diazepam and hydroxyzine. The clinically significant anticholinergic burden was observed in 13.98% of subjects. Patients with dementia and risk of falls showed a significantly higher anticholinergic burden ($p < 0.01$). Dementia was associated with anticholinergic antipsychotics, antidepressants and anxiolytics ($p < 0.05$). An increased risk of falls was associated with medications with anticholinergic activity used in the treatment of cardiovascular and antipsychotic conditions ($p < 0.05$).

Key conclusions: These results suggest that anticholinergic medications remain common treatment modalities among elderly persons despite evidence against their use in the elderly. As expected, patients with dementia were more likely to use certain anticholinergic drug classes such as antipsychotics and antidepressants. The significance of these specific pharmacological classes on elderly demented patient clinical outcome should be addressed in future studies.

Abstract # 919

AREA: Pharmacology

Functional status associated with the anticholinergic burden of hospitalized geriatric inpatients

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Introduction: Decreased functional status among the elderly results in loss of independence which negatively impacts caregivers and results in the straining of social services. We examined the association of pharmacological anticholinergic burden and the functional status of patients admitted to an acute care geriatric ward.

Methods: Cross-sectional study of 322 subjects. A comprehensive geriatric assessment was used to assess patient condition, Anticholinergic Cognitive Burden (ACB) Scale was used to estimate the total anticholinergic load.

Results: Mean patient age was 80.00 ± 6.74 years. 50% of patients had a functional status below normal. 14% of patients were burdened with at least one drug with anticholinergic activity. Instrumental Activities of Daily Living (IADL) and Barthel Index results were negatively correlated with total ACB scores ($R = -0.27$, $p < 0.001$) ($R = -0.26$, $p < 0.001$) respectively. Severe disabilities were associated both with dementia (OR = 3.63, 95% CI 1.14–11.58, $p < 0.05$) and taking medications with a significant impact on cognition by ACB scale (OR = 3.30, 95% CI 1.22–8.95, $p < 0.05$).

Key conclusions: Increased anticholinergic burden is associated with decreased functional capacity among hospitalized elderly patients.

Abstract # 920

AREA: Pharmacology

Development of a checklist to optimize pharmaceutical validation for geriatric inpatients

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Introduction: Approximately one fourth of older inpatients experience an adverse drug event (ADE) during hospital stay, and half of them are preventable. Clinical pharmacy on acute geriatric units (AGU) can significantly contribute to risk reduction, but is not fully implemented in Europe due to limited resources. Back-office prescription validation is a first step for ADE prevention, but a structured approach is required to ensure consistency and homogeneity when performed by multiple pharmacists. We aimed to develop and implement a structured checklist to guide hospital pharmacists of a 3-site hospital in the daily validation of prescription for frail older inpatients.

Method: The checklist was developed by clinical pharmacists using recommendations from the literature, existing guidelines, and observational data on frequent types of errors. The initial checklist was pilot-tested for 2 months by 10 pharmacists and revised based on feedback.

Results: The checklist has 3 main sections: (1) overall assessment of prescriptions including adequate coding, dose, frequency and timing, drug interactions and allergies, (2) renal function assessment and dose adaptation, and (3) specific recommendations for high risk medications (HRM) including potassium, opioids, methotrexate, insulins and anticoagulants. During the pilot test, an average of 20 patients per day was validated in approximately 80 min. A pharmaceutical intervention was made for 395 drugs among which 100 were HRM.

Conclusion: We developed and implemented a checklist to perform pharmaceutical validation prescriptions for older inpatients. The list allows back-office validation, is well framed and easily used in practice, even by hospital pharmacists without clinical pharmacy practice.

Abstract # 921

AREA: Pharmacology

Determination of prescribing cascades in geriatric outpatient clinic

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Introduction: Prescribing-cascades occur when patients are prescribed medications to treat the side-effects of previously prescribed medications. Aim of this study was determination of prescribing-cascade frequency in geriatric outpatient-clinic.

Methods: Patients ≥ 60 years old who admit to the geriatric outpatient-clinic of a university hospital between 1 and 31 January 2020

using at least two-medications were included (approved by local Ethics-Committee). The prescribing-cascades were assessed from patients' entire previous outpatient-clinic visit (s) medical records by two clinical-pharmacists retrospectively.

Results: Total of 190 patients were included (67.4% male). The median (range) age was 75 (60–97) years, follow-up period was 9.5 (0–83) months and total number of medications was 8.34 (2–18). Comorbidity was high (≥ 2 score) in all patients according to Charlson-Comorbidity Index (CCI). A total of 160 conditions with 71 (44.37%) proven-cascade (written evidence in patients' records), 41 (25.62%) potential-cascade (assumption for cascade by clinical pharmacist) and 48 (30%) cascade-risk (side-effect (s) occurred without any prescribing to treat) were detected. Most-common medication groups caused cascade were blood-glucose lowering agents (13 [8.12%]), calcium-channel blockers (13 [8.12%]) and lipid-modifying agents (11 [6.87%]). The medications associated with proven cascade either continued, discontinued, changed or dose-altered (84.5%, 9.9%, 2.8%, 1.4%, respectively). With T-test, statistical relationships were detected between prescription-cascade (proven, potential, cascade-risk) and admission to geriatric outpatient-clinics) and between proven-cascades and CCI ($p < 0.05$).

Key conclusions: Due to almost half of the detected-cascades were proven-cascades in this study, older adults are prone to prescribing-cascades and clinicians should be aware of it. Contribution of clinical-pharmacists might have positive impact on detection of potential-cascades to improve rational drug use.

Abstract # 922

AREA: Pharmacology

Utility of the COM-B model of behaviour change to explain non-adherence to medicines in older adults

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Introduction: In older adults up to 75% of patients are non-adherent to their medicines [1], increasing their risk of adverse events. The reasons are often multifactorial and complex. Two studies were conducted to review the utility of the COM-B model of behaviour change [2] to explain non-adherence to medicines in older adults.

Methods: Study (1) Systematic review of studies reporting the barriers and enablers to adherence in community-dwelling older adults living with multimorbidity. Study (2) retrospective analysis of medication review consultations (conducted August 2016–October 2017) of adults ≥ 65 years old under the care of an Integrated Care Pharmacy team Barriers and enablers were extracted and mapped onto the COM-B model.

Results: (1) Ten studies met the inclusion criteria and reported equal numbers of barriers and enablers ($n = 47$). Barriers were dominated by Capability (40.4%): Opportunity (27.7%) and Motivation (32.0%). Enablers covered all domains similarly: Capability (36.2%), Opportunity (32%), Motivation (32%). (2) In the cohort study, 322 consultations were reviewed. 66.8% ($n = 215$) were non-adherent, despite 70.4% using a compliance aid. Opportunity was the most common domain (42.9%) from the 21 themes identified. Motivation and Capability accounted for 34.1% and 23.0% respectively.

Conclusion: Despite the extensive use of multicomponent compliance aids, the findings suggest that whilst Capability issues are being addressed, barriers driven by Opportunity and Motivation require more attention. Application of the COM-B model may

improve adherence interventions through better understanding of the mechanisms involved in changing the behaviours that drive non-adherence.

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Abstract # 923

AREA: Pharmacology

EURO-FORTA Project 2021: consensus validation of the FORTA (Fit FOR the aged) list in several European countries/regions

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Numerous studies have demonstrated that drug treatment in older people is often inappropriate. Unfortunately, for most of the drugs there is no evidence for efficacy and safety in older adults. This problem is intensified by the presence of multimorbidity and therefore polypharmacy in this vulnerable group. To increase the appropriateness of pharmacotherapy in older adults the FORTA list was developed. FORTA was originally developed by Wehling et al. and validated and expanded by experts from Germany and Austria in a Delphi Consensus procedure. Besides, FORTA's utility was assessed in a pilot clinical trial as well as in a controlled prospective study. Both confirmed that FORTA significantly improves the quality of drug treatment as well as relevant clinical outcomes such as activities of daily living or the occurrence of adverse drug reactions. Encouraged by these findings, the FORTA list was validated in several European countries to address national habits and drug availabilities in other regions and therefore increase the applicability of FORTA. Based on the new evidence in the field of geriatric pharmacology and experiences with the previous versions, we aimed to update the existing country-specific FORTA lists for 8 European countries/regions as well as the EURO-FORTA list using the same two-step Delphi process employed to create the first versions. All former participants were invited to participate in this study. If needed, additional experts were chosen using our previously developed algorithm. The aim of this ongoing project is to promote the usage of FORTA in practice internationally.

Abstract # 924

AREA: Pharmacology

Detection of adverse drug reactions in older people with polypharmacy admitted to the geriatric ward through the emergency department

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Introduction: Adverse drug reactions (ADRs) account for 10% of acute hospital admissions in older people and are often not recognized by physicians at the emergency department (ED) [1, 2]. The Dutch geriatric guideline recommends the use of an ADR trigger tool to improve ADR recognition in older people with polypharmacy acutely admitted to the hospital [3]. The aim of this study was to evaluate the positive predictive value (PPV) of this tool in detecting ADRs and their recognition by usual care.

Methods: This retrospective cross-sectional study was performed among patients ≥ 70 years with polypharmacy admitted to the geriatric ward through the ED of the University Medical Center Utrecht between 2011 and 2017. Electronic health records (EHRs) were screened for ten events and associated drugs according to the trigger tool. The drug-event combinations were considered ADRs if two assessors independently scored the causality likelihood as possible, probable or certain using the WHO-UMC algorithm. In addition, EHRs were screened for ADR recognition by usual care. Descriptive data analysis was performed and inter-rater agreement was determined by Cohen's kappa test statistic.

Results: In total, 941 drug-event combinations were detected in 253/345 (73%) of the patients. 41.8% (PPV) of these drug-event combinations were ADRs according to the two appraisers ($\kappa = 0.76$). Usual care recognized 83.5% of these ADRs, increasing to 97.1% when only ADRs were included that were categorized as probable or certain.

Conclusion: The PPV of the national Dutch trigger tool to detect ADRs was only 41.8% in older people with polypharmacy and the vast majority was already recognized by usual care. Implementation of this trigger tool at the ED will not be of value to recognize ADRs in older patients with an acute hospital admission.

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Abstract # 925

AREA: Pharmacology

Impact of a multidisciplinary team polypharmacy review in an elderly care hospital ward to improve safety and efficiency

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Introduction: Older patients admitted to acute hospital wards often have multiple, chronic conditions and are receiving complex treatment regimens. Polypharmacy and medication errors are common [1].

The quality of medication reviews is limited by capacity across disciplines from doctors to pharmacists to carry out comprehensive polypharmacy reviews as part of comprehensive geriatric assessment. The purpose of this project was to undertake a Multidisciplinary Team (MDT) Structured Medication Review (SMR) to reduce inappropriate medications prescribing in older patients.

Methods: The project was undertaken in acute hospital elderly care wards between July 2019 and January 2020. The SMRs were carried out involving the patient, alone or with a family member, hospital records and from primary care records.

Results: In total 32 patients undergone MDT SMR. A mean of 1.8 (SD 1.8) inappropriate medications were stopped and mean 0.8 (SD 2.2) beneficial medications were added per patient. On average 3.1 (SD 2.2) recommendations were made to the General Practitioner for future medication changes. 2 (6.3%) transcribing errors were identified and rectified.

Conclusion: Future direction of this initiative is to focus on hospital wide implementation to promote a more considered and united decision-making strategy on MDT polypharmacy approach for hospital inpatients.

Reference:

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Abstract # 926

AREA: Pharmacology

Benzodiazepine use and treatment changes in older patients admitted to a geriatric unit

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Introduction: Chronic use of benzodiazepines (BZDs) is widespread among older adults. Its correct use is essential to provide good medical care.

Objectives: To study prevalence and BZD justification use among the elderly hospitalized into an acute geriatric unit. To analyze changes made to that treatment at discharge and to check its reintroduction 3 months later.

Material and methods: Descriptive and prospective study of patients admitted to a geriatric unit for a year. Readmissions < 3 months were excluded. Sociodemographic data was collected. BZD indication was studied according to clinical criteria and STOPP-START. Changes to prescription were verified 3 months after discharge.

Results: 366 patients. 91 patients (24.9%) were taking BZDs previously. 93.4% of them had no justification for its use. At discharge, BZDs were removed in 40.7% of the patients and there was dose reduction in 57.4%. Only 18.5% had justification to continue with BZDs at discharge. Of those discharged without BZDs, 10.8% of the patients took them again at 3 months, reintroduction being justified in only 2.7%. Of those discharged with BZDs, 74.1% were still using them 3 months later, none with justification.

Conclusions: Nearly all patients hospitalized who used BZD chronically had no clinical justification for its use. There is a suspension or dose reduction in most of them at discharge. This withdrawal does not continue in the outpatient setting 3 months after, where there is hardly any justification for its use.

Abstract # 927**AREA: Pharmacology****Medication therapy management programs in US and Poland: lessons learned**

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Introduction: Pharmaceutical care is an integral, but elusive part of any healthcare system, especially for older adults. The aim of this session is to explore lessons learned about models of pharmaceutical care and implementation, resulting from demonstration projects in Poland and the US.

Methods: Panel discussants from Poland and the US will discuss landmark interventional studies. One in Poland, "Pharmaceutical care in geriatrics" (OF-Senior, Grant N N405674340, and the other in the US, "Part D Enhanced MTM Model" (US CMS 1.9 million > 65 years; MTM beneficiaries).

Results: The results on two continents identified successes and barriers to providing team-based medication management. The benefits of team-based models of care were demonstrated, and implementation barriers identified.

Key conclusions: The study and analysis confirms the utility of team-based models of pharmaceutical care accessible to the public. These innovative models of care may be recommended as a basis for introducing pharmaceutical care for elderly patients as part of the healthcare system in Poland and the US, with attention to potential barriers to implementation.

Abstract # 928**AREA: Pharmacology****Overuse of quinolones, a public health problem**

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Fluoroquinolones (FQs) broad spectrum antibiotics (ABs) used for large number of infections. 2018, Pharmacovigilance Risk Assessment Committee evaluated the disabling and potentially irreversible adverse reactions recommending not to prescribe these ABs in mild or self-limited infections. AB resistance, public health problem, main factor the consumption of ABs. Know prevalence, characteristics, effects and incidences of FQ prescription in our hospital, analyzing adequacy and safety, results, improvements for a more adequate prescription. Prospective observational study, patients March–June 2019. Studied type of FQ, place of initiation, infection, sample collection, time and route of administration, side effects and its subsequent adequacy-safety. 108 patients, 68% women, mean age 87.69 levofloxacin, 18 ciprofloxacin, no moxifloxacin. Median treatment days 7.64% respiratory infections, 16% urinary, 14% dermal, 5% abdominal and 1% osteoarticular. 68% mild. 66.7% not allergic to beta-lactams, 77% had FQ alternatives. AB began during hospital stay 65%. 31% emergency service, 3% home, 1% residence. 35 hadn't any sample collected, most frequent: blood cultures, wound smears, blood and urine culture. 22 modified ATB after result. 19 no contraindication, 32 atherosclerosis, 22 arrhythmia.

64 no side effect, most frequent delirium 0.97% safe, 34 adequate. 19 of whom beta-lactams allergy. Overuse of FQ, public health problem because of resistance increase. Be to avoid its continuity. Alternatives in serious infections without allergy to BL. Greater use in respiratory infections, less in urinary (more resistance). ABs well tolerated, side effects difficult to attribute directly. Lot of geriatric patients with beta-lactams allergy predisposes to excessive use of quinolones.

Abstract # 929**AREA: Pharmacology****Pharmacist-led medication review in hospitalized patients: The 10 most common drugs mentioned - a cross-sectional study**

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Introduction: Inappropriate drug prescriptions and polypharmacy increase the risk of adverse events and are a threat to patient safety. Medication review is the responsibility of physicians; however, other health care professionals may contribute. The aim of this study was to identify the 10 most common drugs mentioned in hospitalized patients in clinical pharmacist led medication reviews.

Methods: This was a cross-sectional study investigating medication reviews (March 2019–March 2021) at the Department of Internal Medicine, Randers Regional Hospital, Denmark, by trained clinical pharmacists. Inclusion criteria were high-risk patients (Medication Risk Score, MERIS-score ≥ 26) eligible for medication review after journal audits performed by clinical pharmacists. A database was constructed based on PCNE's Classification of Drug-Related Problems and interviews with clinical pharmacists. The entries in the database included Drug-Related problems, and discrepancies between Shared Medication Record and Computerized Medical Records.

Results: A total of 400 medication reviews were included. Mean age was 76.7 (SD 11.1) years and 187 (46.8%) were female. The 10 most common drugs mentioned with the following ranked order and main drug-related problem were: Pantoprazole (high dosage), Piperacillin/tazobactam (high dosage due to kidney function), acetylsalicylic acid (bleeding risk), paracetamol (high dosage), calcium and vitamin D (suggested supplement), morphine (interactions), potassium chloride (kidney function and intoxication), gabapentin (kidney function), furosemide (low dosage due to kidney function) and metoclopramide (duration of treatment).

Key conclusions: Pharmacist-led medication reviews provide important details on potentially inappropriate drug prescription. This study describes the 10 most common drugs mentioned.

Abstract # 930**AREA: Pharmacology****Deprescription of potentially inappropriate medications in an Orthogeriatric Unit**

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Older patients admitted for treatment of hip fracture are at increased risk for morbidity and mortality. Potentially inappropriate medication (PIMs) increase the risk for complications during treatment in

hospital as well as after discharge and should be deprescribed as soon as possible. The aim of this study was to characterize the most frequent PIMs identified at admission and at discharge in older patients with hip fracture at an Orthogeriatric Unit, considering that deprescription according to Beers and STOPP and START criteria is a common practice in the daily clinical routine. We conducted a retrospective study, including patients with 65 years and older with hip fracture admitted in a Orthogeriatric Unit for 2 months. The discharge medical reports where reviewed and the STOPP/START criteria by O'Mahoney et al. where applied to identify the PIMs, and also omitted START medication, at admission and discharge. Descriptive statistical analysis was used. A total of 32 patients were included in this study, 26 were female, with an average age of 83.2 years. At admission 78% patients had at least one PIM on their daily ambulatory therapeutic plan, average of 1.4 PIMs per patient, whereas at discharge it occurred in 56% of patients, average of 0.9 PIMs per patient. Considering the START criteria, the average of omissions in medication at admittance was 3.6 per patient and 2.9 at discharge. The study acknowledged a positive impact in deprescription of PIMs in the patients included, which also identified the pharmacological groups that need additional attention in the future.

Abstract # 931

AREA: Pharmacology

Factors affecting polypharmacy in older people

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Introduction: Polypharmacy is a continuing concern in older people and has several sources. Aim of the study was to identify specific patterns of factors favouring polypharmacy in elderly.

Material and methods: We carried out a retrospective, observational, analytic, case-control study. A total of 368 subjects, age-range 48–94 years, were included. They were divided into two groups: 174 adults (44–64 years) 136 and 194 older people (75–94 years). Beers criteria for polypharmacy have been used.

Results: Highest prevalence of polypharmacy was identified in older women. The most frequent source of this problem was OTC medicines (patients learned about them mainly from friends and relatives). One significant situation was generated by the fact that older patients attended various specialists without informing them about previous therapeutic schemes. The number of medicines used by patients was significantly higher ($p < 0.01$) in those with over 5 comorbidities, especially in older women. Prevalence of depression was significantly higher ($p < 0.01$) in older women with over 10 medications administered daily. A significant ($p < 0.01$) higher prevalence of patients using at least 4 antihypertensives was identified in older women. A significantly ($p < 0.001$) higher percentage of older people received at least 8 medicines daily. HTA, osteoporosis and hypothyroidism have been the most frequently encountered conditions in older people that received at least 9 medicines daily.

Conclusions: Polypharmacy continues to represent an important issue in older patients. It has significant consequences and some specific patterns in older people that have to be monitored constantly in order to avoid future complications.

Abstract # 932

AREA: Pharmacology

A narrative review of definitions, epidemiology and clinical outcomes of polypharmacy in older people

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Worldwide, the number of older people has been continuously increasing. Hence, multimorbidity and related polypharmacy have become an increasing issue. Since there is no agreement on the definition of polypharmacy, data on its prevalence in various studies are not easily comparable. Moreover, the evidence on the potential adverse clinical outcomes related to polypharmacy is limited though polypharmacy has been linked to numerous adverse clinical outcomes. In this narrative review, we aimed to find and summarize recent papers on definitions, epidemiology and clinical consequences of polypharmacy by using the MEDLINE database. In total, one hundred and forty-three definitions of polypharmacy and associated terms were found. Many of them were numerical definitions. Its prevalence ranged from 4% in community-dwelling older adults to about 95% in hospitalized patients. Besides, various adverse clinical outcomes were associated with polypharmacy. In this review, we confirmed that the term polypharmacy is imprecise. The clinically oriented definitions of polypharmacy found here are more useful and relevant. Regardless of the definition, polypharmacy is highly prevalent in older people, especially in nursing home residents and hospitalized patients. Approaches to improve the appropriateness of polypharmacy can improve relevant clinical outcomes in older people.

Abstract # 933

AREA: Pharmacology

Assessment of sarcopenia in patients newly diagnosed with overt and subclinical hyperthyroidism

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Introduction: Sarcopenia is a progressive and generalized skeletal muscle disease associated with adverse health outcomes. Thyroid dysfunctions have been shown to affect skeletal muscle physiology. In the present study, we aimed to evaluate the association between hyperthyroidism and sarcopenia.

Methods: Thirteen patients with overt hyperthyroidism and 13 patients with subclinical hyperthyroidism presenting to Marmara University Internal Medicine outpatient clinic between February 2020 and August 2020 were included in the study. Thirty people without thyroid dysfunction were selected as the control group. Written informed consent was obtained from all participants. Patients with an active infection, rheumatological/inflammatory disease, diabetes mellitus, drug use affecting body composition and thyroid functions, pacemaker, limb disability, prosthesis, and pregnancy were excluded

from the study. Overt hyperthyroidism was defined as TSH < 0.34 while fT4 > 1.12 ng/dL and/or fT3 > 4.37 ng/L. Subclinical hyperthyroidism was defined as TSH < 0.34, while fT4 and fT3 were within the normal reference range (0.61–1.12 ng/dL for fT4; 2.6–4.37 ng/L for fT3). Gender, age, current diseases, medications, habits, height, and weight of the participants were recorded. SARC-F questionnaire was used for sarcopenia risk assessment. Handgrip strength measurement and chair stand test were used for the assessment of muscle strength. SMMI measurement with bioelectrical impedance analysis and calf circumference measurement were for the evaluation of muscle mass. 4-m gait speed test was performed for the assessment of physical performance.

Results: Twenty-six patients with hyperthyroidism were included in the study. The median age of the patients was 44.9 (21–76); 16 patients (61.5%) were female and 10 (39.5%) were male. Handgrip strength and calf circumference were found to be significantly lower in the overt and subclinical hyperthyroidism group, compared to the control group ($p = 0.007$; $p = 0.008$, respectively). The presence of sarcopenia was significantly higher in the overt and subclinical hyperthyroidism group compared to the control group ($p = 0.007$). The probability of sarcopenia was increased in the overt hyperthyroidism group compared to the subclinical hyperthyroid group (OR: 2.44, 95% CI 0.26–31.87). Higher levels of fT4 increased the likelihood of sarcopenia in hyperthyroid patients (OR: 6.0, 95% CI 0.59–79.23). 88.2% of the patients with normal fT4 values had no sarcopenia (95% CI 63.6–98.5%).

Conclusion: There is a significant association between sarcopenia and hyperthyroidism, which is a common endocrine disorder.

Abstract # 934

AREA: Sarcopenia

Awareness regarding frailty and sarcopenia among healthcare professionals at a District General Hospital in South East United Kingdom

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Background: Frailty and muscle strength are a critical component of walking ability and presence of these can result in high prevalence of falls. It also results in increased morbidity and mortality among the elderly. Despite sarcopenia being very common and a reversible condition in its early stage it is a frequently overlooked and under-treated geriatric syndrome. A greater understanding of sarcopenia and frailty among healthcare professionals could have a dramatic impact on outcome and quality of life of the elderly.

Objectives: This study aimed to assess the current knowledge about the concept of sarcopenia and frailty among the healthcare professionals working in an NHS District General Hospital in Surrey.

Material and methods: This longitudinal study included NHS healthcare professionals ($n = 50$) who were asked to complete a questionnaire regarding awareness of concept, risk, diagnostic strategy and management of frailty and sarcopenia.

Results: 63.27% of healthcare professionals stated to know the concept of sarcopenia, 20% indicated to know how to diagnose sarcopenia and 20% had seen patients with suspected sarcopenia in the last one month. Only 20% knew the risk associated with sarcopenia. 83.33% used SARC F questionnaire as diagnostic method for

sarcopenia. 100 percent of the cohort experienced bottle necks during the implementation of diagnostic strategy. Lack of awareness and time (41.76%) was the main reason for this. 0.97.96 percent heard the term frailty and 76.16% knew that sarcopenia and frailty is not the same. 0.77.55 percent was aware of the scoring methods for the frailty and 76.32% used clinical frailty score as the method. 65.31% was aware of the frailty pathway but only 53.06% knew whom to contact regarding managing frailty. 57.14% heard the term comprehensive geriatric assessment. Only 24.49% was aware of key recommendations of managing frailty in the acute settings.

Conclusion: Although concept of sarcopenia and frailty is familiar to most NHS healthcare professionals, the practical and clinical application is limited due to a lack of awareness regarding the diagnostic methodology, risks as well as time constraints. As such the benefits and potential treatment options may be overlooked and we aim to improve awareness so that these measures can improve outcomes for patients.

Abstract # 935

AREA: Sarcopenia

Myogenic and stress factors are differentially expressed in skeletal muscle of older adults with low muscle strength

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Introduction: Sarcopenia is a growing concern in the ageing population. This study aimed to compare protein expression profiles relevant in the context of muscle ageing, such as myogenic, catabolic and stress-related pathways between older adults with low compared to preserved muscle strength.

Methods: Through m. vastus lateralis biopsies, muscle protein expression profiles from 11 older adults that exhibited low muscle strength (6♀ and 5♂) were compared with those of 13 with preserved muscle strength (8♀ and 5♂), using western blots. Low muscle strength was defined according to EWG SOP2 diagnostic criteria, e.g. chair stand test > 15 s or grip strength < 27 kg (male) or < 16 kg (females).

Results: Low strength participants were older (mean $\pm$ SD; 78.0 ± 5.0 vs. 71.5 ± 2.6 years; $p < 0.001$), but BMI (26.7 ± 2.5 vs. 27.2 ± 6.0 kg/m²; $p = 0.782$) was not different from the preserved strength group. Performance significantly differed between the low vs. preserved strength group for the chair stand test (17.5 ± 4.9 vs. 9.1 ± 1.5 s; $p < 0.01$), gait speed (1.0 ± 0.2 vs. 1.4 ± 0.1 m/s; $p < 0.001$) and SPPB test (median 9 [5–12] vs. 12 [10–12]; $p < 0.01$). Catabolic pathways like ubiquitin–proteasome system (i.e. FOXO1/3a) and autophagy (i.e. LC3b) were not differentially expressed between both groups, whereas myogenic factors (i.e. Pax7) were systemically upregulated ($\sim$ twofold), in the low strength group. Stress markers CHOP and p-ERK1/2 were higher expressed ($\sim$ 1.5-fold) in the low strength group. Surprisingly, inflammatory marker p-65NF- κ B expression was higher ($\sim$ sevenfold) in muscle of normal-strength older adults.

Conclusion: Older adults with low muscle strength differ in muscle expression profile, characterized by higher expression of myogenic and stress factors. These data might provide valuable insights in the processes that underlie sarcopenia.

Abstract # 936

AREA: Sarcopenia

Effect of leucine supplementation on physical performance, muscle mass and quality of life in older people with sarcopenia: results from the LACE randomised controlled trial

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Introduction: Leucine supplementation improves muscle protein synthesis in physiological studies and has been proposed as a treatment to improve muscle mass and physical performance. We tested the effects of leucine supplementation in a randomised controlled trial enrolling patients with sarcopenia.

Methods: Placebo-controlled, parallel group, double-blind, randomised two-by-two factorial trial. Participants aged 70 and over with sarcopenia were randomised to perindopril 4 mg once daily or placebo, and to leucine powder 2.5 g three times a day or placebo. The primary outcome was the between-group difference in the Short Physical Performance Battery, measured at baseline, 6 and 12 months, analysed using repeated-measures mixed models. Secondary outcomes included grip strength, quadriceps strength, six-minute walk distance, appendicular muscle mass and quality of life.

Results: We screened 320 people and randomised 145 participants, mean age 79 (SD 6) years; 78 (54%) were women and the mean SPPB was 7.0 (SD 2.4). 72 were randomised to leucine and 73 to placebo. Median adherence was the same in both groups (76% vs 76%; $p < 0.001$). Leucine had no significant effect on the primary outcome (adjusted treatment effect 0.1 points [95% CI -1.0 to 1.1]). No significant treatment effect was seen for any secondary outcome. There were similar numbers of adverse events in both groups (leucine 187, placebo 196) and falls rates were similar (leucine 1.9 [95% CI 0.9–2.9] per year; placebo 2.9 [95% CI 0.8–5.0] per year).

Conclusion: Leucine did not improve measures of physical performance, muscle mass or quality of life in older people with sarcopenia.

Abstract # 937

AREA: Sarcopenia

Diagnostic accuracy of the SarQoL[®] questionnaire in screening for sarcopenia

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Introduction: Diagnosing sarcopenia with the EWGSOP2 criteria can be a resource-intensive process. Therefore, it can be beneficial to screen potential candidates, to increase the ratio of sarcopenic people in the sample. The objective of this study was to investigate whether the SarQoL questionnaire, a 55-item QoL instrument, could be used to identify older people with a high likelihood of being sarcopenic, and to compare its performance to the SARC-F tool.

Methods: We performed a secondary analysis of data from older, community-dwelling participants of the SarcoPhAge study. Sarcopenia was diagnosed with the EWGSOP2 criteria. The optimal threshold between sarcopenic and non-sarcopenic was determined with the Youden index. Diagnostic performance was evaluated with the area under the ROC curve (AUC) and by calculating sensitivity (Se) and specificity (Sp).

Results: A total of 309 participants, with a median age of 74 (70–79) years and mostly women ($n = 180$; 58.3%), were included. The prevalence of sarcopenia was 5.5% ($n = 17$). An optimal threshold value of ≤ 52.4 points was found for the SarQoL questionnaire, with a sensitivity of 64.7%, a specificity of 80.5% and an AUC of 0.771 (0.652–0.889). Compared to the SARC-F, the SarQoL has greater sensitivity (64.7% vs 52.39%), but slightly lower specificity (80.5% vs. 86.6%). The AUC of the SARC-F was 0.802 (0.696–0.909), which was not significantly different from the SarQoL questionnaire ($p = 0.606$).

Key conclusion: The SarQoL could be useful in screening for sarcopenia, while providing a measurement of quality of life at the same time.

Abstract # 938

AREA: Sarcopenia

Late-onset neuromuscular disorders in the differential diagnosis of sarcopenia

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Background: Sarcopenia is the age-related loss of muscle mass and strength. Undiagnosed late-onset neuromuscular disorders need to be considered in the differential diagnosis of sarcopenia.

Aim: Based on emblematic case reports and current neuromuscular diagnostic guidelines for three common late-onset neuromuscular disorders, a differential diagnostic approach for geriatric patients presenting with a sarcopenic phenotype is given.

Methods: Patients over 65 years of age with sarcopenia, amyotrophic lateral sclerosis, inclusion body myositis and myotonic dystrophy type 2 were recruited. All patients were assessed for sarcopenia based on the revised European consensus definition. Patients with neuromuscular diseases were diagnosed according to the revised El Escorial criteria and the European neuromuscular centre criteria. Phenotypes and diagnostic criteria for all patients were summarized including their specific histopathological findings.

Results: All patients with neuromuscular diseases were positively screened for sarcopenia and classified as severe sarcopenic by means of assessment. The clinical phenotype, the evolution pattern of weakness and muscle atrophy combined with laboratory finding including electromyography could unquestionably distinguish the diseases.

Discussion: Neuromuscular disorders can manifest beyond the age of 65 years and misdiagnosed as sarcopenia. The most common diseases are inclusion body myositis, amyotrophic lateral sclerosis and myotonic dystrophy type 2. A diagnostic work-up for neuromuscular diseases ensures their correct diagnosis by clinical-, electrophysiological, histopathological, and genetic work-up.

Conclusions: In geriatric patients with a focal or asymmetrical muscular weakness and atrophy, sarcopenia assessment should be extended with patient's history of disease course. Furthermore, concomitant diseases, analysis of serum creatine kinase, electrophysiological examination, and in selected patients muscle biopsy and gene analysis is needed to rule out a late-onset neuromuscular disorder.

Abstract # 939

AREA: Sarcopenia

Sarcopenic obesity versus sarcopenia alone: associations with frailty and physical performance measures

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Introduction: Sarcopenia (S) has a well-known relationship with physical frailty and decreased physical performance. However, whether the same applies to sarcopenic obesity (SO) is an issue that needs to be clarified. This study aims to reveal the associations of sarcopenic obesity with frailty and physical performance in comparison with sarcopenia alone.

Methods: This retrospective-cross sectional study included outpatients ≥ 60 years admitted to a tertiary hospital between 2012 and 2020. Frailty status, physical performance, body composition and handgrip strength were evaluated. Low muscle mass (LMM) was defined using adjustment by body mass index (BMI). S was defined as probable or confirmed S, in accordance with EWGSOP 2. SO was defined as obesity + sarcopenia (probable) and obesity + sarcopenia (confirmed). Univariate and multivariate analyses were performed in order to find out the associations of SO and S alone with frailty and physical performance.

Results: 1366 patients were enrolled (median age 75, 68.3% female). Based on the definitions probable and confirmed, prevalences of SO were 2.9% and 2.7%, respectively. In comparison to Non-S Non-Obese groups, SO had a lower odds ratio (OR) for frailty than S alone group when S was defined as probable (5.9 vs 6.1) ($p < 0.001$ for both); but opposite was true when S was confirmed (4.7 vs 2.7) ($p < 0.001$ and $= 0.003$, respectively). When S was defined as probable, SO had lower OR than S alone for higher TUG (3.9 vs 4.4) ($p = 0.004$ and < 0.001 , respectively), but opposite was true for confirmed (3.4 vs 2.9) ($p = 0.009$ and 0.006 , respectively).

Conclusion: Our study suggests that SO may have protective effects for frailty and physical performance when low muscle strength is not accompanied by LMM. At the advanced stages of S, accompanying obesity may have more detrimental effects on frailty status and physical performance, rather than S alone.

Abstract # 940

AREA: Sarcopenia

Down syndrome: an accelerated undiagnosed musculoskeletal aging

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Introduction: Down Syndrome is characterized by an accelerated aging. Although special attention is paid to cognitive deficits, musculoskeletal aging is often undiagnosed and under-treated. The aim of this study was to evaluate the prevalence of low bone mass density and low muscle mass in adults with Down Syndrome (DS).

Methods: 20 adults with DS (mean age 38 years old) were referred to our day hospital of the Geriatric Department of Galliera Hospital, Genoa, from October 2020 to April 2021. Information about nutritional status, comorbid conditions and pharmacological treatment were collected. Body mass density (BMI) was calculated. Bone metabolism parameters were assessed by the laboratory. Strength was measured using the handgrip test. Body composition was estimated by Bioelectrical impedance analysis (BIA). Bone mineral density (BMD) was assessed by dual X-ray absorptiometry (DXA) at the femoral neck and at the lumbar spine. X-rays were performed in patients with low back pain.

Results: Almost all patients were overweight (17 out of 20) with $BMI = 28 \pm 2.3 \text{ kg/m}^2$ and 16 of them had vitamin D deficiency (media 15.5 ng/ml). DXA revealed a low BMD in all of them with a z-score -1.5 ± 0.6 and a T-score -2.5 ± 0.6 . They all presented low strength in Hand-grip test; $6.7 \pm 0.5 \text{ kg}$ for the women and $12.4 \pm 0.7 \text{ kg}$ for the men. Skeletal muscle mass index (SMI) was $9.4 \pm 1.2 \text{ kg/m}^2$ in men and $7.86 \pm 0.7 \text{ kg/m}^2$ in women. X-rays revealed vertebral fractures due to fragility in three of them.

Key conclusions: DS adult individuals present low bone mineral density, and dinamopenia rather than sarcopenia. Low muscle mass indexes were not strictly associated with reduced handgrip strength. The assessment of muscle mass and bone density should be included in the routine evaluation of this population so as to prevent fragility fractures and loss of autonomy in DS population.

Abstract # 941

AREA: Sarcopenia

Comparative analyses of single- and multi- frequency bioelectrical impedance analyzers for determining body composition in young versus older adults

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Introduction: Age related dermatological changes might potentially affect the conductivity, which might result in differences in body composition analyses between devices with different modalities, such as single- and multi-frequency bioelectrical impedance analyzers. The aim of this study is to compare single- and multi-frequency

bioelectrical impedance analyzers for determining body composition in young versus older adults.

Methods: 42 healthy subjects aged between 18 and 60 and 40 geriatric patients aged 60 and over, were included in the study. Body composition was measured by both single-frequency 50 kHz BIA (Tanita BC 418) and multifrequency BIA (InBody S10) with different frequencies between 5 and 1000 kHz, consecutively. Fat free mass (FFM), fat mass (FM) of the participants were assessed.

Results: In the young population, there were no significant differences between analyses obtained from the single- and multifrequency BIA devices, in terms of FFM, FM. However, in the older adults' group, results obtained from the single-frequency BIA device differed significantly from the multi-frequency one. Fat mass analyzed by single-frequency BIA device was significantly lower than measured by multi-frequency device. In contrast, fat-free mass measured by single frequency device was significantly higher compared to analyses obtained from multi-frequency BIA device.

Conclusions: Body composition analyses might significantly vary in older adults depending on the device used. Therefore, modality of the device used, i.e. single- or multi-frequency BIA, might influence sarcopenia categorization of an older adult. Absence of differences between devices in young adults suggest that age-related changes might be responsible for obtaining different results depending on the modality. Further studies are needed to investigate if this is due to age-related dermatological changes resulting in altered conductivity.

Abstract # 942

AREA: Sarcopenia

Falls in osteoporosis: sarcopenia, a risk factor to be considered

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Introduction: The aim of the present study is to investigate the presence of sarcopenia and the sarcopenia-related parameters in women with osteoporosis who had 3 or more falls during the last year.

Methods: 20 women (mean age 77 ± 10 years old) who referred to our Bone Unit from December 2019 to February 2020 were examined. They all were under treatment for osteoporosis and had 3 or more falls during the last year. Strength was measured using the handgrip dynamometer (HD). Body composition was estimated by Bioelectrical Impedance Analysis (BIA). The physical performance was valued by Short Physical Performance Battery (SPPB) and by timed up and go test (TUG). Frailty was evaluated using the Selfy Multidimensional Prognostic Index (Selfy-MPI) that includes information about cognitive and functional status, nutrition, comorbidity, number of drugs and social factors; MPI 1 is for low, MPI 2 is for moderate and MPI 3 is for high risk of frailty. Only women with Selfy-MPI 1 were included.

Results: They all presented strength below 16 kg with a media of 7.3 kg (dinamopenia). The body mass index was 20.6 kg/m^2 (range $14\text{--}25.6 \text{ kg/m}^2$) and the skeletal muscle mass index (SMI), as revealed by BIA, was under 6 kg/m^2 in all of them (sarcopenia). No correlation between strength, muscle mass (SMI) and BMI was found. Only 3 of them presented SPPB > 8 , whereas TUG was over 12 s in only one subject.

Conclusions: The assessment of sarcopenia should be included in the evaluation of the risk of falls in osteoporotic patients in order to prevent fractures, physical disability and functional impairment.

Abstract # 943

AREA: Sarcopenia

Musculo-skeletal health in androgen deprivation therapy (ADT) for prostate cancer

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Objective: In this study we aimed to quantify the prevalence of osteoporosis and sarcopenia in ADT-treated men (> 12 weeks) for prostate cancer.

Material and methods: 49 ADT-treated men (mean age 77 years old, range 58–92) who referred to our Bone Disease Clinic of Galliera Hospital were recruited. Bone metabolism parameters, before anti-fracture treatment, were assessed by the laboratory. Bone mineral density (BMD) was performed by dual emission X-ray absorptiometry (DXA). Body mass density (BMI) was calculated. Muscle strength was measured using handgrip dynamometry (HD). Body composition was estimated by Bioelectrical impedance analysis (BIA). X-rays of thoracic and lumbar spine were performed.

Results: 33 patients, were already under cholecalciferol supplementation at the first visit and presented a range of $21\text{--}43.4 \text{ ng/ml}$ of serum 25-OH vitamin D. "Naïve" patients, who didn't take cholecalciferol presented a range of $4\text{--}16.9 \text{ ng/mg}$. Even with low 25-OH vitamin D levels, only 2 cases of secondary hyperparathyroidism were noted. Carboxy-terminal collagen crosslinks (CTX) in serum were high in all of them, with a media of 768.4 pg/ml . All patients were overweight ($\text{BMI} = 27.5 \pm 2$). HD revealed relatively low muscle strenght: $20.8 \pm 10 \text{ kg}$. Muscle mass as Skeletal Muscle Mass Index (SMI) estimated by BIA was between 8.2 kg/m^2 and 11.2 kg/m^2 with a media of 9.41 kg/m^2 . Only 11 of them had a normal T-score in DXA, 11 of them were osteoporotic and the 27 were osteopenic. Five of them had vertebral fractures due to fragility, as detected by X-rays.

Conclusions: ADT treatment can compromise bone and muscle health with physical function consequences and lose of autonomy. The assessment of muscle mass, muscle strenght and bone density should be included in the routine evaluation of this population. A straight collaboration between bone health specialists, urologists and radiotherapists is necessary.

Abstract # 944**AREA: Sarcopenia****Respiratory muscle strength is related to handgrip performance in community-dwelling persons aged 80+**

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Background and objectives: Limited research has been done regarding the relationship between respiratory muscle strength and sarcopenia in the elderly. Respiratory muscle strength can be measured using maximum inspiratory pressures (MIPs) and maximum expiratory pressures (MEPs). This study aimed to evaluate the association of MIPs and MEPS with sarcopenia and its indicators in the oldest old.

Methods: In this cross-sectional study, respiratory muscle strength (MIPs and MEPS), and sarcopenia related factors (hand grip strength, appendicular lean mass (ALM) through bioelectrical impedance analysis and gait speed), were evaluated in a cohort of non-frail, community-dwelling elderly aged 80 years and over.

Results: The sample consisted of 305 participants with a mean age of 83.6 ± 3.0 years and an overall prevalence of sarcopenia of 30.2%. Female participants presented a lower mean MIP (48.9 ± 19.7 cmH₂O) and MEP (67.2 ± 21.7 cmH₂O) compared to men (64.1 ± 24.3 cmH₂O and 91.4 ± 31.2 cmH₂O, respectively). MIPs/MEPs were not significantly different in the sarcopenic group when compared to the non-sarcopenic group. This, despite the positive correlation between grip strength and MIPs ($r = 0.177$ for male and $r = 0.230$ for female participants, $p < 0.05$) as well as MEPS ($r = 0.201$ for male and $r = 0.180$ for female participants, $p < 0.05$). Higher ALM was significantly correlated to higher MIPs ($r = 0.253$, $p < 0.01$) and MEPS ($r = 0.343$, $p < 0.01$) in female, whereas this association was not found in male. In multiple regression analysis, grip strength and ALM were the only significant parameters related to MEPS ($r^2 = 0.214$, $p < 0.05$), while MIP was related to age, sex and grip strength ($r^2 = 0.176$, $p < 0.05$).

Conclusion: This study confirmed the relationship between peripheral muscle strength and respiratory muscle strength in well-functioning, community-dwelling persons aged 80 + . Measurement of MIP and MEP is feasible in this population. Although this needs to be further investigated in prospective studies, this might create an indication for prescribing respiratory muscle training for elderly with a low hand grip strength.

Keywords: Sarcopenia, respiratory muscle strength, peripheral muscle strength, elderly.

Abstract # 945**AREA: Sarcopenia****Ultrasound measurements of biceps brachii in healthy subjects**

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Introduction: Ultrasound seems a promising technique to quantify muscle mass (MM) and quality in individuals with sarcopenia, but the absence of standardized measurement techniques and reference values from healthy subjects limit its use in clinical practice. The aims of this study were to define reference values of the biceps brachii muscle (BBM) in subjects of all ages using ultrasound, and to compare these parameters to one of the golden standards of MM measurement—bioelectrical impedance analysis (BIA).

Methods: Using ultrasound, BBM of the dominant arm was examined for muscle thickness (MT) and pennation angle (PA), at 50% and 75% of the distance between the acromioclavicular joint and elbow crease. Subjects lay supine, with their arm in a neutral position. Afterwards, MM was measured using BIA. Correlations between ultrasound and BIA measurements were calculated.

Results: In total, fifty-three subjects (16 males, 37 females), aged 21–61, were included. Both in males and females, MM measured by BIA correlated strongly with MT measured by ultrasound at 50% (males: $p = 0.024$, $PCC = 0.560$; females: $p < 0.001$, $PCC = 0.546$). In the female group, PA at 75% correlated significantly with MM measured by BIA ($p = 0.003$, $PCC = 0.471$).

Key conclusions: MT and PA of BBM measured by ultrasound is positively correlated with whole-body MM, which makes this technique promising in the light of implementing a quick and cheap diagnostic tool for sarcopenia. The variation of ultrasound parameters depending on the location where they are performed helps to define a standardized ultrasonographic measurement protocol.

Abstract # 946**AREA: Sarcopenia****The prevalence of dysphagia and presbyphagia in older patients acutely hospitalized at a general medicine department**

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Introduction: Estimated prevalence of presbyphagia in healthy older people is 40%. Older patients with presbyphagia may easily develop sarcopenic dysphagia during hospitalization. Aim of this study was to evaluate the prevalence of presbyphagia and dysphagia in patients 65 years and older admitted to hospital with non-gastroenterology disease.

Methods: The prevalence of presbyphagia and dysphagia was tested using the 10-item Eating Assessment Tool (EAT-10) questionnaire. The questionnaire was administered to a random sample of hospitalized women and men aged 65 years and above at our general internal medicine department between May 1st, 2020 and September 30th, 2020.

Results: We investigated 101 patients (42 men and 59 women) in the ages of 65 and above. In 59 patients (58.4%) we found some sort of an issue with swallowing (presbyphagia in 23 patients, 22.8%, and dysphagia in 36 patients, 35.6%). Slightly higher occurrence of problems with swallowing was in men than in women (64.3% vs 54.2%, $P = 0.31$) and in the 65–74 age group in comparison to 75 + (65.0% vs 54.1%, $P = 0.28$). The most common problem was the sticking of food in the throat while swallowing (29.0% of responders). Extra effort during swallowing pills applied to 27.7% responders, swallowing liquids 11.8% responders and swallowing solids 10.9% responders.

Conclusions: Prevalence of presbyphagia or dysphagia in our cohort was 58.4%. Hospitalized people older than 65 years are in increased risk of choking, aspiration pneumonia, dehydration, and malnutrition also due to swallowing problems.

Abstract # 947

AREA: Sarcopenia

Ultrasound of biceps brachii: intra-and interrater reliability

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Introduction: Ultrasound is a promising tool in the evaluation of muscle and the diagnosis of sarcopenia. It could be an easily accessible and cheap alternative to computed tomography, magnetic resonance imaging, dual-energy X-ray absorptiometry and bioelectrical impedance analysis. It can assess both quantitative and qualitative parameters. Hardly any ultrasonographic data is available on biceps brachii (BB) measurements. This study aims to determine intra-and interrater reliability of architectural parameters of BB.

Methods: Two investigators measured cross-sectional area (CSA), muscle thickness (MT), pennation angle (PA) and muscle stiffness (MS) of BB following a strict protocol. All measurements were performed three times by both investigators. Intraclass correlation coefficient (ICC) was measured to determine intra- and interrater reliability.

Results: Thirty persons aged 20–35 years were included. Both investigators had a very good to excellent intrarater reliability for CSA, MT and MS (ICC > 0.96, > 0.94 and > 0.84 respectively). PA had poor to moderate intrarater correlation (ICC 0.42–0.79). Interrater reliability was excellent for both CSA and MT (ICC > 0.97 and > 0.87), moderate to good for MS (ICC 0.53–0.78) and poor to moderate for PA (ICC 0.39–0.77).

Key conclusions: Muscle ultrasound is very reliable to assess CSA, MT and MS of BB with very high intra- and interrater reliability. Measurements of PA are less accurate due to PA variability in human muscle. Ultrasound could therefore be a solid technique to assess sarcopenia once reference values have been established.

Abstract # 948

AREA: Sarcopenia

Ultrasound of biceps brachii: effect of arm and subject position

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Introduction: Interest is rising for the use of ultrasound to investigate muscle, since it is an easily available and cheap tool that can assess both quantitative data and muscle architecture. It could be used in the evaluation of sarcopenia. No clear guidelines are yet available on biceps brachii (BB) measurements. The aim of this study is to evaluate the effect of arm and subject position on the reliability of ultrasonographic measurements of BB.

Methods: Two investigators measured muscle thickness (MT), cross-sectional area (CSA), pennation angle (PA) and muscle stiffness (MS) of BB using ultrasound. All measurements were performed in two arm positions (supination/neutral position) and two subject positions (supine/sitting). Both investigators performed all measurements three times. Intraclass correlation coefficient (ICC) was calculated to determine the effect of position.

Results: Thirty persons aged 20–35 years were included. Arm position did not influence the measurements of MT or CSA (ICC 0.99 and 0.96 respectively). Measurements of PA (ICC 0.49–0.55) and MS (ICC 0.54) with the arm in supination however were only moderate to poorly correlated to the corresponding values with the arm in neutral position. Subject position did not affect CSA (ICC 0.96) or MT (ICC 0.77–0.87), but gave unreliable results for PA (ICC 0.18–0.69) and MS (ICC 0.05).

Key conclusions: Consequent patient positioning is important when performing muscle ultrasound, especially when measuring PA and MS. Therefore clear guidelines should be established for patient positioning for each muscle.

Abstract # 949

AREA: Sarcopenia

Frequency of sarcopenia in portuguese heart failure outpatients – a cross-sectional study

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Introduction: sarcopenia is prevalent in heart failure (HF) patients, contributing to its poor prognosis, and is considered one of the leading causes of reduced cardiorespiratory fitness and poor physical performance. The aim of this study is to describe sarcopenia and its associated clinical and nutritional factors in HF patients in Portugal. **Methods:** a sample of HF patients was recruited from an HF outpatients' clinic of a University Hospital in Portugal. Sarcopenia was defined according to the European Working Group on Sarcopenia in Older People 2 guidelines [1], using anthropometric measurements to assess muscle mass, which included calf and mid-upper arm muscle circumference [2].

Results: 136 patients (aged 57.3 ± 12.6 , 33.8% women) integrated this study. A total of 25 (18.4%) individuals were categorized as sarcopenic, ranging from 12.2% in younger (< 65 years) participants vs. 30.4% in older ones ($p = 0.009$) and from 3.3% in men vs. 47.8% in women ($p < 0.001$). Severe sarcopenia accounted for 7.4% of the sample and sarcopenic obesity was present in 5.1% of the participants. Patients with higher estimated body fat, physical inactivity, frailty phenotype and hypertrophic cardiomyopathy as HF aetiology, were more likely to be sarcopenic.

Conclusions: Frequency of sarcopenia in this sample is in line with the global prevalence for HF ambulatory patients [3], when considering the mean age of our sample. While sarcopenia seems to be more frequent in older adults and women, present results suggest that all HF patients, including the younger ones, should be monitored for the presence or evolution of sarcopenia.

Keywords: Sarcopenia; heart failure; nutritional status; frailty.

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Abstract # 950

AREA: Sarcopenia

Acceptance and effects of a machine-based exercise training in older adults

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Introduction: Machine-based exercise training has a great potential to prevent sarcopenia and loss of mobility in older adults by applying targeted training stimuli in combination with controlled movement execution. Nevertheless, machine-based training is rarely offered in retirement homes and little is known about its effects among residents.

Methods: In this pilot study a supervised, machine-based strength, balance and endurance training (2x/week, 45 min) in small groups (4–6 participants) was offered to residents in two retirement homes. The acceptance of the machine-based training was analyzed by a non-

standardized in-person interview after 6 months, including various questions with 5 answer options from “very good” to “not good at all”. Training effects were determined by changes in chair-stand-test (CST) after 6 months.

Results: Of the 77 starting residents (mean age: 85.6 ± 6.6 years, 78% female), 8 participants dropped out because of death, illness or other reasons. 62–65 participants answered the questions regarding training acceptance. The usability and the usefulness of the training machines was rated “good” or “very good” by 87% of the participants ($n = 54$ out of 62 and $n = 55$ out of 63 participants, respectively). The training concept has been evaluated as “good” or “very good” by 92% ($n = 60$ out of 65 participants). Performance in CST significantly improved after 6 months ($n = 57$; median value at baseline: 14.4 s, median value after 6 months: 12.7 s, $p = 0.022$).

Key conclusions: Machine-based exercise training was well accepted by older adults. The positive results in CST indicate good training effects regarding leg strength after 6 months.

Abstract # 951

AREA: Sarcopenia

Association between handgrip strength and muscle biomarkers in older patients with probable sarcopenia hospitalized with COVID-19

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Introduction: COVID-19 hospitalized patients show changes in blood biochemistry associated with muscle damage. Our aim was to find whether such changes are related with changes in handgrip strength (HGS).

Methods: Subanalysis of a prospective observational study of patients 60 years of age or older admitted with COVID-19 and cared by a geriatrician in a university hospital between October and December 2020. Patients with probable sarcopenia (low HGS) at admission were included. Sociodemographic variables, clinical, analytical parameters, HGS at admission and discharge, corticosteroid treatment, length of stay and 6-month mortality, were collected. Patients who presented HGS decline between admission and discharge were compared with those with no change or improvement.

Results: 27 patients (mean age 81.5 years, 55.6% women) had probable sarcopenia. 81.5% received corticosteroid treatment during hospitalization. The mean length of stay was 8.2 ± 4.8 days and 6-month mortality was 14.8%. Mean grip strength in males was 21.1 ± 10.8 kg at admission and 19.6 ± 11 kg at discharge; in women 9.7 ± 5.1 kg and 9.8 ± 5.4 kg, respectively. 44.4% presented HGS decline during hospitalization. Those who developed handgrip strength decline during hospitalization had higher CK levels on admission (125.7 ± 143 vs 55.6 ± 36 , $p = 0.026$). No other biochemical differences (GOT, GPT, CRP) were found between groups, nor in other baseline data, length of stay or 6-month mortality. A weak positive correlation was observed between CK at admission and length of stay ($r = 0.391$; $p = 0.027$).

Key conclusions: High level of CK at admission in older COVID-19 patients is associated with a decline in handgrip strength during hospitalization and a longer hospital stay.

Abstract # 952

AREA: Sarcopenia

Determinants of muscle density (MD) in older people: findings from the hertfordshire cohort study (HCS)

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Introduction: Lower calf MD (CMD), assessed by peripheral quantitative computed tomography (pQCT) has been associated with greater hip fracture risk, independent of FRAX, falls and bone mineral density. We examine the lifestyle and anthropometric determinants of future MD in the HCS.

Methods: 197 men and 178 women aged 59–70 years were recruited. A lifestyle questionnaire reported physical activity, smoking, alcohol consumption and dietary patterns. Weight, and height were measured. pQCT (radius and tibia) was performed a median of 11.5 (IQR 10.9, 12.3) years later. MD was measured at calf and forearm using standard methodology. Sex, baseline age and follow-up time were included as covariates in linear regression models.

Results: Mean (SD) age at baseline was 64.7 (2.7) years; mean (SD) forearm MD (FMD) and CMD values (mg/cm³) were: men 79.9 (3.1), women 77.2 (3.2) and men 80.7 (2.6), women 78.5 (2.6), respectively. Baseline correlates ($p < 0.05$) of lower FMD and CMD at follow-up included female sex, lower weight, and lower BMI, while of lower CMD alone included older age and shorter stature. SD difference in CMD (women vs men), per SD lower weight and BMI were -0.84 [95% CI $-1.13, -0.54$], -0.37 [$-0.46, -0.27$] and -0.31 [$-0.40, -0.23$] respectively. MD and age were stronger at the calf ($p < 0.001$) than the forearm ($p = 0.08$). Lifestyle measures were not associated with MD.

Conclusion: Female sex, older age, and lower BMI were associated with lower MD in older community dwelling adults highlighting the need for sustained muscle conditioning. Further studies in larger cohorts are needed.

Abstract # 953

AREA: Sarcopenia

Does physical inactivity induce muscle ageing? High-definition surface electromyography study

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Introduction: Physical inactivity is suspected to accelerate motor decline with ageing, leading to sarcopenia. The aim of this study is to detect muscle ageing related to physical inactivity, using high-definition surface electromyography (HD-sEMG), a non-invasive technology.

Methods: Healthy, physically active volunteers ($n = 82$, IPAQ categories 2 and 3) divided in decades from 25 to 75 years of age, and a group of healthy subjects aged 45–54 years, sedentary subjects ($n = 9$, IPAQ category 1) underwent handgrip strength measure (Jamar[®]), Short Physical Performance Battery (SPPB), 6-min walking distance, nutritional assessment, Dual-energy X-ray absorptiometry (DXA), rectus femoris muscle assessment using ultrasound and HD-sEMG recording during chair stand (Muscle contraction intensity MCI and muscle contraction dynamics MCD).

Results: The 91 volunteers did not differ in their BMI, dietary intake, DXA skeletal muscle mass index, handgrip and walking distance according to age and physical activity. The HD-sEMG scores discriminated significantly (MCI, $p < 0.01$; MCD $p < 0.001$) between the age categories of the 82 active subjects, and they correlated with age. They significantly discriminated sedentary subjects from active subjects aged 45–54 years (MCI, $p < 0.01$ and MCD $p < 0.0001$), but they were not significantly different from those of older active subjects (> 55 years). Muscle thickness assessed by ultrasound was significantly different between the age decades ($p < 0.001$), but showed no significant difference with physical activity.

Conclusion: The EMGs-HD technique can assess muscle ageing and 'early ageing' related to physical inactivity. It is potentially more sensitive than DXA, muscle ultrasound or other classical measures for sarcopenia. Funding by EIT Health BP2018.

Abstract # 954

AREA: Sarcopenia

Inflammatory markers are associated with quality of life, physical activity & gait speed but not sarcopenia in aged men (40–79 years)

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Introduction: Age-related chronic low-grade inflammation (inflammaging) is one of the proposed mechanisms behind sarcopenia. We aimed to determine associations between inflammatory markers, prevalent as well as incident sarcopenia, sarcopenia-defining parameters, quality of life (QoL) and physical activity in middle-aged and older men.

Methods: Men aged 40–79 years (mean 59.66 ± 11.00 years) were recruited from population registers in eight European centres for the European Male Aging study (EMAS). Subjects were assessed at baseline (2003–2005) and again after a median follow-up of 4.29 years. In 2577 participants, associations between baseline inflammatory markers (hs-CRP, white blood cell count (WBC), albumin) and baseline physical activity (PASE) and QoL (SF-36) were analysed. In the Leuven and Manchester cohort ($n = 447$), data were available on muscle mass (DXA) and strength. Thus, associations between baseline inflammatory markers and sarcopenia-defining parameters (handgrip strength, chair stand test, appendicular lean mass, gait speed) as well as knee extensor strength were examined. Predictive value of baseline inflammation on functional decline, physical activity, QoL and incident sarcopenia was also examined. Linear and logistic regression were used, adjusted for putative confounders.

Results: Baseline hs-CRP and WBC were negatively associated with PASE score (hs-CRP: $\beta = -7.920$, $p < 0.001$; WBC: $\beta = -4.552$, $p < 0.001$) and the physical component score of SF-36 (hs-CRP: $\beta = -1.025$, $p < 0.001$; WBC: $\beta = -0.364$, $p < 0.001$). Baseline WBC levels were negatively associated with gait speed and knee extensor strength. Baseline prevalence of sarcopenia was 18.1% ($n = 81$). Of those without sarcopenia at baseline, 64 (18.6%) developed sarcopenia at follow-up.

Conclusion: In middle-aged and older men, inflammatory markers (hs-CRP and WBC) were associated with measures of QoL, physical activity and gait speed, but not with other sarcopenia-defining parameters. None of the inflammatory markers in this study could predict functional decline, decline in physical activity, decline in QoL or incident sarcopenia.

Abstract # 955

AREA: Sarcopenia

Comparison of different sarcopenia screening questionnaires in community-dwelling older adults from Poland using two sets of international diagnostic criteria of sarcopenia

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Introduction: Older adults should be routinely screened for sarcopenia, which threatens healthy, independent aging. There are five sarcopenia screening questionnaires: the most popular SARC-F, its two modifications: SARC-CalF (including calf circumference) and SARC-F + EBM (assessing additionally age and BMI), Mini Sarcopenia Risk Assessment: MSRA-5 and MSRA-7. To unambiguously determine which of them is the best screening tool, we performed the diagnostic accuracy study, which aimed to analyze the sensitivity (Se), specificity (Sp), accuracy, and area under the curve (AUC) of different sarcopenia questionnaires and compare their psychometric properties against two criterion standards (EWGSOP1 and EWGSOP2 criteria).

Methods: We included 160 community-dwelling volunteers ≥ 60 years (men: 44.4%). The performance of five screening questionnaires was described using Se, Sp, accuracy, and AUC. Ideal screening tools should have reasonably high Se, Sp, accuracy, and an AUC value at least above 0.7.

Results: Sarcopenia was identified in 20.6% by the EWGSOP1 criteria and in 11.3% by the EWGSOP2 criteria. With respect to the two criterion standards used, the sensitivity of SARC-F, SARC-CalF, SARC-F + EBM, MSRA-5, and MSRA-7 ranged 33.3–50.0%, 60.6–72.2%, 57.6–72.2%, 84.9–94.4% and 84.9–88.9% respectively, whereas the specificity ranged 85.0–85.2%, 86.6–90.6%, 76.1–78.0%, 45.1–47.2% and 33.1–34.7% respectively. The range of results for accuracy varied from 39.4% (for MSRA-7 against EWGSOP2) to 85% (for SARC-CalF against EWGSOP2). The AUCs of SARC-F, SARC-CalF, SARC-F + EBM, MSRA-5, and MSRA-7 ranged from 0.652 to 0.711, 0.796–0.829, 0.771–0.803, 0.711–0.739 and 0.649–0.655 respectively.

Conclusion: Among the five screening questionnaires, it appears that SARC-CalF is the best choice for screening sarcopenia in community-dwelling older adults.

Abstract # 956

AREA: Sarcopenia

Prediction of reduced function and physical performance in older adults with low grip strength

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Introduction: EWGSOP2 suggested the use of handgrip strength (HGS) cut-offs lower than 2.5 standard-deviations from the mean of the young-adult population. We aimed to document the impairment in function, physical performance and frailty in individuals with low HGS, defined by the EWGSOP2 suggested cut-offs and population-specific cut-offs, comparatively.

Methods: This is a retrospective longitudinal, follow-up study. We recruited two-hundred twenty-five community-dwelling older adults applied to outpatient clinic between 2012 and 2020. We evaluated HGS, physical performance [timed-up-and-go-test (TUG) and usual gait speed (UGS)], functional status [activities-of-daily-living (ADL) and instrumental-activities-of daily-living (IADL)] and frailty (FRAIL-scale). Changes in functional and physical performance measures were defined by i) any change and ii) minimal important change (MIC). Primary outcome was deterioration in performance measure. Secondary outcomes were deterioration in functional and frailty scores.

Results: Mean age was 75.2 ± 6.2 years (73.8% females). There were 5.3% and 32.0% low HGS by the EWGSOP2 recommended (27/16 kg) and population-specific cut-offs (35/20 kg), respectively ($p < 0.001$). Median follow-up time was 17 months. Impairments in TUG, UGS, ADL and IADL performances, and frailty occurred in 40%, 53.8%, 6.3%, 28.3%, and 27.1%, respectively. While low HGS (27/16) was not associated with any markers of future deterioration, low HGS (35/20) was associated with decreased ADL and IADL by definition of any change in scores ($p = 0.03$ and 0.001 , respectively); and decreased IADL ($p = 0.01$) by definition of MIC.

Key conclusions: We suggest that population-specific cut-offs for HGS shall be used to define low HGS if available. This is to identify the individuals at risk of future adverse functional outcomes.

Abstract # 957**AREA: Sarcopenia****Evaluation of swallowing function and aspiration risk with EAT-10 scale in healthy elderly patients admitted to primary care**Zeynep Kas¹, Hilal Özkaya²¹University of Health Sciences. Haydarpaşa Numune Education and Training Hospital. Family Medicine Dept, ²Başakşehir Çam ve Sakura City Hosp. Family Medicine Dept

Introduction: Our study was conducted to determine the frequency of dysphagia and the risk of aspiration in individuals aged 65 and over who applied to the primary health care service, and to determine whether dysphagia is associated with sarcopenia, cognitive function, malnutrition and the other etiologies.

Methods: Our study was conducted with elderly patients who applied to Family Medicine Polyclinics between 01.01.21 and 30.01.21. EAT-10 questionnaire is applied for dysphagia risk, the Mini-Cog test for cognitive function, the 5 times chair-stand-up test to evaluate sarcopenia, and the hand grip strength were measured with hand dynamometry. For nutritional assessment, calf circumference was measured and the MNA-SF questionnaire was applied.

Results: The study was conducted with a total of 95 subjects. According to the EAT-10 questionnaire, it was observed that there was a risk of dysphagia in 20% (n = 19) of the cases. It was observed that 11.6% of sarcopenia cases had sarcopenia in the lower extremities according to the time to get up from chair. Sarcopenia was observed in hand gripping in 55.8% of the cases. In cases with sarcopenia the rate of dysphagia risk was found to be statistically significantly higher than in cases without sarcopenia.

Key conclusions: One of the most important findings of our study is that the patients with dysphagia risk and sarcopenia associated with it did not have any malnutrition, on the contrary, they consisted of normal weight, even overweight and obese patients. Early diagnosis, intervention rehabilitation are of great importance for dysphagia, sarcopenia and obesity in the elderly.

Keywords: Community elder, EAT-10, Dysphagia, Sarcopenia.

Abstract # 958**AREA: Sarcopenia****Sarcopenia as potential biological substrate of long COVID-19 syndrome: prevalence, clinical features and risk factors**Francesca Ciciarello¹, Cristina Pais¹, Maria Beatrice Zazzara¹, Vincenzo Galluzzo¹, Anna Martone Martone¹, Francesco Landi¹, Matteo Tosato¹, on behalf of Gemelli Against COVID-19 (2)¹Department of Gerontology, Neuroscience and Orthopedics, Fondazione Universitaria Policlinico Gemelli, IRCCS, Rome, Italy, ²Post-Acute Care Team

Introduction: Severe clinical pictures and sequelae of COVID19 disease are immune-mediated and characterized by a “cytokine storm”. Skeletal muscle has emerged as a potent regulator of immune system function. The aim of the present study is to define the prevalence of sarcopenia among COVID-19 survivors, the negative impact of sarcopenia on the post-acute COVID-19 syndrome and its related risk factors.

Materials and methods: 541 subjects recovered from COVID-19 disease were enrolled in the Gemelli Against COVID19 Post-Acute care between April 2020 and February 2021. They underwent a

multidisciplinary clinical evaluation and muscle strength and physical performance assessment.

Results: Mean age was 53.1 years (SD 15.2, range from 18 to 86 years) and 274 (51%) were women. The prevalence of sarcopenia was 19.5% and it was higher in patients with a longer hospital stay and lower in patients who were more physically active and had higher levels of serum albumin. Patients with sarcopenia had a higher number of persistent symptoms than non- sarcopenic patients (3.8–2.9 versus 3.2–2.8, respectively, p = 0.06), in particular fatigue, dyspnea and joint pain.

Conclusions: Sarcopenia identified according to the EWGSOP2 criteria is high in patients recovered from COVID-19 acute illness, particularly in those who had experienced the worst clinical picture reported the persistence of fatigue and dyspnea. Our data suggest that sarcopenia, through the persistence of inflammation, could be the biological substrate of long COVID-19 syndrome. Physical activity, especially if associated with adequate nutrition, seems to be an important protective factor.

Abstract # 959**AREA: Sarcopenia****Six-month mortality performance of postoperative phase angle and sarcopenia measurements after hip fracture surgery in UPOG**Bastien Genet¹, Juliette Vernant¹, Sara Thietart¹, Margaux Baqué¹, Judith Cohen-Bittan¹, Lorène Zerah¹, Jacques Boddaert¹¹Assistance Publique Hôpitaux de Paris (APHP), Hôpital la Pitié-Salpêtrière, Service de Gériatrie Aigue, Unité Péri-Opératoire Gériatrique, Paris, France

Introduction: Sarcopenia and phase angle (PhA, measured by impedancemetry (BIA)) are associated with functional decline, denutrition and mortality. Our study aims to investigate the prognostic impact of PhA measurement on mortality in patients with hip fracture (HF).

Methods: Since 2018, muscular and sarcopenia assessments (MSA) are integrated to usual care in our Unit of PeriOperative Geriatric (UPOG) care, to improve nutritional and physiotherapist support. Between 2018 and 2020, all patients admitted in UPOG with a HF with MSA within 7 days after admission were included. The primary objective was to analyze the 6-month all-cause mortality rate of HF patients according to PhA values measured by BIA.

Results: 157 patients (86 ± 6 years, 81% female) were included, with a 17% 6 month mortality, a median CIRS of 10 [6–12], a number of drugs per days of 6 [4–8], an ADL of 5.5 [4–6] and an albumin rate of 29 g/l (± 4). The mean PhA value was 5.1 ± 2.6°, with 10% of patients below 3°. According to EWGSOP criteria, 15% of our patients suffered from sarcopenia. In multivariate analysis, a PhA < 3° (HR 3.61, 95% CI 1.13–11.5), but not sarcopenia (HR 1.49, 95% CI 0.45–4.86), was independently associated with 6-month mortality, after adjustment for age, sex, polymedication, Dindo-Clavien score, CIRS, ADL < 5.5, albumin, and preoperative hemoglobin.

Conclusion: unlike sarcopenia, a PhA below 3° was independently associated with 6 month mortality after HF surgery. Further studies are needed to elaborate underlying mechanisms and analyze considering PhA should be performed.

Abstract # 960**AREA: Sarcopenia****Ectopic fat deposition in subjects with sarcopenic obesity**

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Introduction: The aim of the present study was to determine ectopic fat content of liver and pancreas, body fat distribution, fat intake and in obese men and women with and without sarcopenia.

Methods: 80 obese subjects with mean age 51.6 ± 11.8 years and mean BMI 34.7 ± 3.7 kg/m² were studied. Weight, height, BMI, waist circumference, as well as HOMA index, cholesterol, triglycerides, high-density lipoprotein cholesterol, high sensitivity C-reactive protein, daily energy intake and macronutrient distribution. Fat mass and appendicular lean mass were assessed by dual energy X-ray absorptiometry (DXA), and ALM/BMI was calculated according to FNIH definition for sarcopenia. Magnetic resonance was used to evaluate visceral (VAT), subcutaneous adipose tissue (SCAT) as well as liver, pancreas and psoas lipid content using in-phase and out-of-phase magnetic resonance imaging (MRI) sequence. Psoas muscle area was also calculated.

Results: Subjects with sarcopenic obesity were defined according to FNIH proposed cutoff for ALM/BMI, < 0.789 for men and < 0.512 for women. Subjects with sarcopenic obesity had significantly higher BMI, waist circumference, FM, FM%, SCAT, Deep SCAT, VAT, liver, pancreatic and psoas lipid content than non sarcopenic subjects and lower psoas muscle area. Moreover, higher level of glycemia, HOMA index, hs-CRP, triglycerides and lipid intake and lower protein intake were observed in subjects with sarcopenic obesity.

Key conclusions: Subjects with sarcopenic obesity show higher ectopic fat deposition as compared to non sarcopenic. This condition can be determined by lower protein intake and higher lipid consumption and lead to unfavorable metabolic profile with diabetes, hypertriglyceridemia and subclinical inflammation.

Abstract # 961**AREA: Sarcopenia****Resistance exercise and nutritional supplementation in community-dwelling older people with sarcopenia: systematic review and meta-analysis**

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Background: Sarcopenia is a progressive and generalized disorder of the musculoskeletal system affecting older people. Resistance exercise and nutritional supplementation have been recommended for its treatment.

Objective: To assess the effect of resistance exercise, nutritional supplementation, or their combination on muscle strength, muscle mass, and physical performance in community-dwelling older people with sarcopenia.

Methods: PubMed/Medline, Embase and the Cochrane Library were searched up to March 2021 for randomised clinical trials using the Cochrane Collaboration tool to assess risk of bias; the GRADE approach was employed to assess the certainty of evidence.

Results: Eight trials were included from 916 retrieved articles which comprised a total of 970 participants (average age of 74.5 years). Five studies evaluated resistance exercises, four studies evaluated nutritional supplementations, and other five studies evaluated combined resistance exercise and nutritional supplementation. Amino acid supplementation alone or combined with exercise improved walking speed (alone mean difference [md] = 0.14 m/s; combined md = 0.21 m/s). Protein supplementation with vitamin-D combined with exercise improved walking speed (median df = - 0.37 s) and appendicular muscle mass (median df = 0.51 kg). Tea catechin and exercise improved walking speed (md = 0.13 m/s) and grip strength (md = 2.22 kg). In the meta-analysis for resistance exercise, walking speed (md = 0.21 m/s), appendicular muscle mass (md = 0.45 kg), and grip strength (md = 4.23 kg) improved in comparison to the control group.

Conclusions: Although the certainty of the evidence was low or very low, exercise or combined exercise with supplementation interventions suggests an improvement on strength, appendicular muscle mass, and walking speed in people with sarcopenia.

Abstract # 962**AREA: Sarcopenia****The prevalence of sarcopenia in older patients with localized colorectal cancer**

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Introduction: The incidence of colorectal cancer (CRC) increases with age. The mainstay in treatment for localized CRC is surgery. Older patients with cancer are heterogeneous ranging from fit to frail. Sarcopenia and low muscle mass are potentially modifiable risk factors of a negative surgical outcome. We aimed to investigate the

prevalence of preoperative sarcopenia in older (≥ 65) patients with CRC.

Methods: Patients in the ongoing randomized controlled trial “Geriatric assessment and intervention in older vulnerable patients undergoing surgery for colorectal cancer” were screened for sarcopenia prior to randomization and surgery. Sarcopenia was defined according to European Guidelines (EWGSOP2) with probable sarcopenia based on low ($< 16/27$ kg female/male) handgrip-strength (HGS) or slow (> 15 s) 5xChair-Stand-Test (CST). Sarcopenia was subsequently confirmed by Dual-energy X-ray absorptiometry with Appendicular Skeletal Muscle mass (ASM) assessment verifying low muscle quantity ($< \text{females } 6.0/\text{males } 7.0 \text{ kg/m}^2$).

Results: Forty-seven patients (mean age 78.6 years, 24 females) were assessed. Mean (SD) CST was 11.3 (4.4) seconds and mean HGS was 22.2/37.3 (4.7/10.8.1) kg for female/male. Mean ASM/m² was 6.35/7.72 (0.82/0.87) kg/m². Low muscle strength was found in 13 (28%) patients (6 females). Low ASM was found in 15 (32%) patients (9 females). In total, for patients with low muscle strength, sarcopenia was confirmed in 4 patients (9%, 2 females) with ASM/m² below cut-off points.

Conclusions: Our findings support that older patients with CRC are heterogeneous ranging from fit to frail. Notably, a majority of patients with low muscle mass had normal muscle strength which underlines the difference between primary and secondary sarcopenia.

Abstract # 963

AREA: Sarcopenia

Comparison of measurements by analog–digital Jamar dynamometers and Takei digital dynamometer in older individuals

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Aim: As measurement of grip strength has become critical for geriatric research areas, reproducibility and comparability of the grip strength measurements need to be determined. Different types and models of grip strength dynamometers are available where protocols are also variable. Studies comparing grip strength measurement values with different types and models of dynamometers are scarce in geriatric population. So, to investigate the effect of different dynamometers, the purpose of this study was to compare hand grip strength measurements with three different [(Jamar digital (JDD)-analog (JAD), and Takei digital (TDD)] dynamometers in older individuals.

Materials and methods: We evaluated 125 patients over 60 years of age admitted to the Internal Medicine Outpatient Clinic. Hand grip measurements were performed by Jamar analog and digital dynamometers, and Takei digital dynamometer. The reliability between the measurements taken by the three dynamometers was evaluated using intraclass correlation coefficients (ICC) and 95% confidence interval (CI 95%).

Results: In the whole group (52% women, 48% men) there was excellent reliability between the three dynamometers (ICC 0.966, $p < 0.001$). In women, measurements for TDD were significantly higher than JAD values ($p < 0.001$; 0.748–2.655), and in men; measurements for JDD were higher than TDD where the other comparisons were similar. Only TDD and JAD correlated with Basic Activities of Daily Living ($r = 0.194$, $p = 0.03$, and $r = 0.180$, $p = 0.044$).

Conclusion: Considering the whole group, there was excellent reliability between the three dynamometers. However, there was a strong

impact of gender on measurement s of grip strength by different dynamometers.

Abstract # 964

AREA: Sarcopenia

Point-of-care assessment of sarcopenia in very old patients using portable ultrasonography

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Introduction: Sarcopenia is a syndrome characterized by progressive and generalized loss of skeletal muscle mass and strength with a risk of adverse outcomes such as physical disability, poor quality of life and death. The EWGSOP (European Working Group on Sarcopenia in Older People) recommended using the presence of both low muscle mass and low muscle function (strength or performance) for the diagnosis of sarcopenia. Several methods of assessment of muscle mass have been proposed (DEXA, CT, MRI, Echography) and the densitometry of total body is actually the gold standard.

Methods: The main objective of this study is to validate the bedside echography as a method of screening and diagnosis of muscle mass loss and sarcopenia in elderly patients. Ultrasound images will be acquired at the midpoint between the anterosuperior iliac spine and the superior margin of the patella, measuring the thickness of the rectus femoris muscle and vastus intermedius below. We will then calculate the amount of total muscle mass using total body densitometry (DEXA) and compare the measurements obtained with the two procedures.

Results: The study is still ongoing, having started in April 2021 at the Charles Foix Hospital in Ivry sur Seine (France). The end of data collection is planned for September 2021.

Key conclusions: We expect to find a significant relationship between the values of thickness of the quadriceps femoris measured with the echography and the total muscle mass defined by DEXA.

Abstract # 965

AREA: Sarcopenia

Association of chronic heart failure with frailty and sarcopenia in geriatric hospitalized patients – a cross-sectional study

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Introduction: We assessed factors independently associated with cardiac failure in geriatric inpatients and the association between the NYHA classification, frailty, sarcopenia, and malnutrition.

Methods: Patients consecutively admitted to the geriatric ward were included in the study. Based on the comprehensive geriatric

assessment (CGA), data on functional, mental, nutritional status, and comorbidities were collected, including diagnosis of heart failure and NYHA classification. Frailty was diagnosed with Fried criteria and Clinical Frailty Scale. Muscle strength and performance were measured according to EWGSOP2 cut-off points of sarcopenia.

Results: 416 people were hospitalized in the geriatric ward in the study period, 162 (38.9%) with chronic cardiac failure. 82 cases were classified as NYHA I/II, and 80 cases as NYHA III/IV. CHF patients were significantly more often burdened with multimorbidity (88.3% versus 37.8%), polypharmacy (90.0% versus 72.1%), and more often classified as obese and having abdominal obesity. The median value of MNA-SF was similar in CHF and non-CHF groups. The median value of handgrip strength and the median value of gait speed were significantly lower in the CHF group; a considerably higher percentage of CHF patients were sarcopenic. More often, CHF patients were classified as frail and severely frail, had higher POMA and TUG scores, and increased risk of falls. They had lower scores in the Barthel Index and IADL scale and were physically non-active.

Conclusions: Heart failure in geriatric patients is associated with multimorbidity, polypharmacy, and functional disability. CHF patients are significantly more often diagnosed with sarcopenia and frailty.

Abstract # 966

AREA: Urinary incontinence

Prevalence of acute urinary retention in elderly patients cared for in a geriatric home care unit: benefits of using a portable volumetric ultrasound scanner

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Introduction: Acute urinary retention (AUR) is common in the geriatric population (25–50% of hospitalized patients). It is related to immobility, polypharmacy, faecal impaction or urinary tract infections.

Methods: A retrospective study of patients attended in a Geriatric Home Care Unit (May 2019–March 2021) was conducted. Sociodemographic variables were collected: age and sex, cognitive and functional status (Barthel Index (BI) and Mental Red Cross Scale (MRC) (≥ 2 dementia). Also, AUR detection, amount of diuresis, urine culture collection (result and microbiological isolation), use of portable volumetric ultrasound (PVS) and avoided bladder catheterization were recorded.

Results: A total of 175 patients were registered, after excluding 13 with permanent bladder catheterization. Finally, 162 individuals with indication for bladder catheterization were analyzed to rule out RAO (mean age 88.6 ± 5.28 years; 60.5% women). Mean BI 26.41 ± 23.91 and mean MRC 2.62 ± 1.32 (79% ≥ 2). We detected 27.2% AURs (144) [73.5% < 200 ml; 14.2% 200–499 ml; 9.3% 500–1000 ml and 3.1% > 1000 ml], no association with gender (54.5% women, 45.5% men; $p = 0.34$) or age, but with greater functional decline (BI 20.18 ± 22.01 vs 28.73 ± 24.26 ; $p = 0.04$). Urinary tract infection was observed in 48%: 86% monomicrobial, 14% polymicrobial. AUR was not associated with increased urine culture collection (84% vs 73%; $p = 0.16$) or with positive result (44% vs 40%; $p = 0.70$). PVS was used in 32% (52), avoiding 39 catheterizations (75%; $p = 0.000$) and in 68% (110) the traditional method.

Conclusions: AUR is a prevalent problem in individuals with established moderate-severe functional impairment. The use of PVS in patients with suspected AUR avoid bladder catheterization and could reduce complications: urinary tract infection, reduction of health care costs and discomfort.

Abstract # 967

AREA: Urinary incontinence

Benign prostate hypertrophy and urinary incontinence in older people

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Introduction: Both benign prostate hypertrophy and urinary incontinence have a high prevalence in older people and are accompanied by altered quality of life and complications. Aim of the study was to highlight some specific aspects of urinary incontinence in older men with benign prostate hypertrophy.

Material and methods: A retrospective, observational, analytic, case-control study was carried out on 260 randomly selected older men previously diagnosed with benign prostate hypertrophy, divided into 2 equal groups: adults—controls (50–64 years), older people—cases ($> / = 75$ years). Presence and type of urinary incontinence have been evaluated.

Results: A significant ($p < 0.01$) higher prevalence of urinary incontinence was noticed in older men with at least 3 other comorbidities. Older men with benign prostate hypertrophy from urban area had a significantly ($p < 0.05$) higher prevalence of urinary incontinence. Significantly ($p < 0.05$) higher prevalence of urinary incontinence was identified in older men with benign prostate hypertrophy that were smoker and in those with chronic daily alcohol consumption and at least 3 drinks daily. Prevalence of urinary incontinence was significantly ($p < 0.05$) in older men that had professions with a high level of physical effort and those with jobs that compelled them to sit longer periods (drivers). Older men with obesity had a significantly ($p < 0.05$) higher prevalence of urinary incontinence. Prevalence of urinary incontinence was significantly higher ($p < 0.01$) in men with benign prostate hypertrophy and diabetes mellitus, irrespective of age. Older men with benign prostate hypertrophy and heart failure had a significantly ($p < 0.05$) higher prevalence of urge urinary incontinence.

Conclusions: Older men with benign prostate hypertrophy present some specific patterns and risk factors for urinary incontinence. Their identification and management are very important in order to avoid complications.

Abstract # 968

AREA: Urinary incontinence

Is there any association between nocturia and cognitive frailty risk?

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Introduction: Nocturia, defined as the act of waking to void during the hours of intended sleep, is one of the most frequent and disturbing lower urinary tract symptoms (LUTS). Nocturia and other LUTS, like urinary incontinence, were linked to frailty. Recently, nocturia has been associated with cognitive impairment in older adults. The objective of this study is to evaluate the association between cognitive frailty risk and nocturia.

Methods: In this cross-sectional multicentre study conducted in nursing home residents, the association between cognitive frailty risk and nocturia was assessed using logistic regression analysis. Cognitive frailty risk was determined by the CFAI-Plus (Comprehensive Frailty Assessment Instrument) score. Cognitive frailty risk was considered as “not-to-low” if the total score was between 0 and 3.13; “low-to-medium” if the total score was between 4.69 and 9.38; “medium-to-high” if the total score was ≥ 10.94 . Nocturia was defined by at least 2 nocturnal awakenings to void, using the ICIQ-F/M LUTS questionnaire (International Consultation on Incontinence Modular Questionnaire for Male/Female Lower Urinary Tract Symptoms).

Results: A total of 80 participants were included (mean age of 88 ± 7 years, 77% were women). Among the LUTS, nocturia was the most frequent, with 56% of participants affected. The majority of residents (44%) had a low-to-medium risk of cognitive frailty, followed by not-to-low (37%) and then by medium-to-high (19%). In univariate analysis, there was no association between nocturia and cognitive frailty risk. Using not-to-low risk as the reference, the OR (CI 95) for the association between nocturia and low-to-medium risk or medium-to-high risk were of 0.70 (0.26; 1.89) or 1.00 (0.28; 3.54) respectively.

Conclusion: In this preliminary study, no statistically significant associations were found between cognitive frailty risk and the presence of nocturia. Nevertheless, this association remains plausible and needs to be assessed with a more appropriate tool and in a population that could be the target of prevention actions.

Abstract # 969

AREA: Vaccines

COVID-19 vaccine hesitancy in the frail population and their caregivers

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Background: At present April 30th 2021 in Italy 5.7 million people have completed COVID-19 vaccine (the two scheduled doses). Vaccine hesitancy, classified by WHO in 2019 among the “ten global health threats”, has increased in Western countries, despite the high social perception of the pandemic risk. Frail subjects, affected by cognitive impairment (CI) or Down syndrome (DS), have a different perception of pandemic risk and acceptance of preventive measures.

Aim: The aim of the study is to identify the factors that affect vaccination hesitancy in outpatient frail population with or without cognitive impairment, compared to general population, during coronavirus vaccine campaign.

Methods: From January 2021, 231 frail outpatients (mean age 61 ± 19 years, 61.5% females) were included and stratified into three groups. Group A: 117 frail older subjects (mean age 73 ± 15 years, 65.8% females) with CI and their caregivers afferent to the geriatric Cognitive Disorders and Dementia Center; Group B: 50 frail adult subjects with DS and their caregivers (mean age 53 ± 19 years, 56% females); Group C: 64 adult frail subjects (mean age 47 ± 12 years, 57.8% females), afferent to the ambulatory of microcitemia. Frailty was evaluated by means of the Comprehensive Geriatric Assessment (CGA)-based Multidimensional Prognostic Index (MPI) that include information on functional, cognitive, nutrition, motility, co-morbidity, number of drugs, co-habitation status and stratify accordingly into three classes: MPI-1 (low-), MPI-2 (moderate-), MPI-3 (severe-risk of frailty). Only subjects of classes MPI-2 and MPI-3 were included in the study. All participants underwent a specific survey in order to explore the COVID-19 vaccine decision, i.e. adhesion vs refusal vs hesitancy. Moreover, anti-flu and anti-pneumococcus vaccine adherence in the years 2019 and 2020, presence of formal\informal care, education, and other psycho-socio-cultural and demo-economic determinants of vaccine hesitancy were recorded.

Results: 22% of the participants were undecided or refused COVID-19 vaccination, and 78% accepted COVID-19 vaccine. Reasons for vaccine hesitancy were the absence of enough clinical trials (52%) and fear of side effects of the vaccine (38%). We observed a higher hesitancy of COVID-19 vaccine among the older frail individuals (Group A) ($p = 0.026$) and a low acceptance in their formal caregiver ($p = 0.127$). In Group B we observed that vaccine hesitancy was significantly higher in older than younger subjects (66 vs 50 years, $p = 0.04$). Moreover, in Group A, 71% of patients who accepted COVID-19 vaccine, showed an increased adhesion to anti-flu vaccine 2020 compared to anti-flu vaccine 2019 (67% vs 55%, respectively). The participants revealed a low mean level of concern for COVID-19 vaccines' function (31%).

Conclusion: Despite the COVID-19 pandemic, COVID-19 vaccine hesitancy is high among frail people with CI. COVID-19 vaccine acceptance is associated with anti-flu vaccination adherence during 2020 year. Formal caregivers' low vaccine acceptance suggest the need for tailored educational programs to promote the COVID-19 vaccination.

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Abstract # 970**AREA: Vaccines****Evaluation of the vaccination campaign against COVID-19 in a nursing home in Madrid, Spain**

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Introduction: Vaccination is one of the most important cost-effective strategies for the primary prevention of infectious diseases in Public Health. COVID-19 has severely affected elderly people. This study reflects the impact that vaccination has had on mortality from all causes.

Objectives: To observe mortality impact after vaccination campaign against COVID-19 in early 2021.

Methods: Restrospective comparative study of institutionalized patients at the “Los Balcones” nursing home in Leganés, Madrid. Mortality data were obtained for the year 2019 (pre-pandemic), 2020 (pandemic) and 2021 to date (post-pandemic). First dose of vaccination was given on January 12, 13. Second dose was given on February 2, 3.

Results: On 2019 this nursing home had 120 residents. This was the pre-covid phase, with 39 deaths by non-covid disease (32.5% of the nursing home population). Mean age 88.8 years. (71.79% female). On 2020, with 126 residents, 22 death by COVID-19 and 29 by non-covid disease (total deaths 51), (39.68% in total). Mean age 86.00 years (66.6% female). The time until 30 april of 2021, with 101 residents, no one of them died by COVID-19 and only 5 because non-covid pathologies. We estimated 15 death along the year. This means 4.95% during the first 4 months of the year, and 14.85% with the annual estimated data. Mean age 87.6 (80% female).

Conclusions: A drastic reduction in mortality has been observed, both in covid and non-covid patients. Both vaccination and hygienic measures should be kept as a standard protocol in the management of nursing home residents. These data encourage us to continue studying this phenomenon.

Abstract # 971**AREA: Vaccines****Do epidemiological features of pertussis among older adults in Europe need improvement? A descriptive review of data from 2010 to 2019**

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Introduction: Since 2011, European countries have reported a growing number of pertussis cases, including in adults. Nevertheless, pertussis is still under-diagnosed and under-reported in adults, as shown by seroprevalence data. Understanding the epidemiology of pertussis is crucial to develop strategies to reduce its incidence. We reviewed pertussis-related epidemiological features in older adults (OA) aged ≥ 50 years in Denmark/England/Finland/Germany/Netherlands/Norway/Sweden.

Methods: This descriptive review focused on the following epidemiological features: reported pertussis incidence rates (IR) and proportion of cases in OA, surveillance systems, case definitions, diagnostic methods and vaccination guidelines in the above-mentioned seven European countries, between 2010 and 2019.

Results: Across countries, during the review period, the reported IR ranged between 0.4 (England, 2010) and 54.5 (Norway, 2011) per 100,000 OA. The proportion of pertussis cases in OA ranged between 8.9% (Denmark, 2010) and 45.2% (England, 2017) of total pertussis cases. All countries have similar surveillance systems for pertussis (case-/population-based, passive, mandatory) except Finland (non-mandatory), follow WHO's pertussis case definition except Finland/Denmark, and all require laboratory confirmation for notified cases except Germany. PCR and serology testing are the main diagnostic methods used across all countries for suspected OA cases, however protocols differ. Only Germany, Norway and Finland have pertussis vaccination recommendations covering OA.

Conclusions: Our review showed a heterogeneous and, in some cases high, pertussis burden among ≥ 50 -year-olds between 2010 and 2019 in the assessed countries, highlighting the susceptibility of this age group to pertussis infection. Epidemiological features (e.g. surveillance/diagnostics/vaccination) were mostly comparable across countries but need improvement/standardisation.

Funding: GlaxoSmithKline Biologicals SA.

Abstract # 972**AREA: Vaccines****Leukocytoclastic vasculitis in a possible association with COVID-19 vaccine**

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Introduction: Leukocytoclastic vasculitis is an inflammation in small blood vessels, such as arterioles, capillaries and postcapillary venules [1]. Approximately 50% of cases are associated with immunocomplexes and/or a systemic disease while the other half are usually due to idiopathic causes or induced by infections, cancer or drugs. Numerous cases of post-immunisation vasculitis have been described, being more frequent in the paediatric population and less frequent in > 65 years old, with a greater association described after immunisation with influenza vaccine compared to pneumococcal vaccine [2]. Despite this, no conclusive causal association has been found for any of them [3, 4].

Case report: A 91-year-old woman was admitted to the acute geriatric unit for palpable purpuric lesions on the lower limbs. Hypertension, diabetes mellitus and dementia. No history of autoimmune diseases. No recent changes in pharmacological treatment. Four days before the appearance of the dermatological lesions She had received the second dose of COVID-19 vaccine. Autoimmunity tests, oncological markers and total body scanner were negative. Serological tests without significant alterations, with only the elevated erythrocyte sedimentation rate. Blood and urine cultures were negative. Echocardiography: no evidence of endocardial

vegetations. Biopsy of the lesions: leukocytoclastic vasculitis of the dermis. Treatment with systemic corticosteroids was started, with subsequent resolution of the lesions and no recurrence later.

Key conclusions: Following the development of vaccines to deal with COVID-19 and case reports of immunisation-associated vasculitis, there is a possibility that the spectrum of autoimmune reactions with the new vaccines may expand beyond thromboembolic disease.

Abstract # 973

AREA: Vaccines

ZOE-50 and ZOE-70 placebo groups data shows that burden of pain associated with herpes zoster interferes with activities of daily living

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Introduction: We assessed burden of pain associated with herpes zoster (HZ) and interference with activities of daily living (ADL) in patients ≥ 50 years of age (YOA).

Methods: ZOE-50 (NCT01165177) and ZOE-70 (NCT01165229) were phase III, observer-blind, placebo-controlled, randomized (1:1) studies in adults ≥ 50 YOA (ZOE-50) and ≥ 70 YOA (ZOE-70) who received 2 doses of the adjuvanted recombinant zoster vaccine or placebo, 2 months apart. This analysis was performed on placebo recipients' data ≥ 50 YOA (ZOE-50) and ≥ 70 YOA (pooled from ZOE-50/ZOE-70) with HZ-confirmed cases. HZ pain and interference with ADL was assessed by Zoster Brief Pain Inventory (ZBPI) instrument. Time to clinically significant pain resolution was analyzed (Kaplan Meier method). We estimated the cumulative area under curve (AUC) of ZBPI worst pain/ZBPI ADL scores, 182 days post-HZ rash onset.

Results: 254 (≥ 50 YOA) and 284 (≥ 70 YOA) patients had HZ-confirmed cases. In ≥ 50 YOA patients, 94.6% reported any pain (ZBPI pain score > 0), 87.6% clinically significant pain (ZBPI pain score ≥ 3) and 65.1% severe pain (ZBPI pain score ≥ 7). Similarly, in ≥ 70 YOA patients, 93.2% reported any pain, 90.9% clinically significant pain and 68.4% severe pain. 11.6% (≥ 50 YOA) and 18.3% (≥ 70 YOA) of patients had clinically significant pain 3 months post-HZ rash onset. Mean AUC at 182 days was 137.24 (≥ 50 YOA) and 190.68 (≥ 70 YOA) for ZBPI worst pain score and 92.75 (≥ 50 YOA) and 130.89 (≥ 70 YOA) for ZBPI ADL score.

Conclusions: Burden of HZ pain is high and interferes with patients' ADL. Funding: GlaxoSmithKline Biologicals SA.

Abstract # 974

AREA: Vaccines

Is there a correlation between reactogenicity and immune responses of the adjuvanted recombinant zoster vaccine (RZV)? A post-hoc analysis

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Introduction: To evaluate potential correlations between RZV's reactogenicity and immunogenicity in adults aged ≥ 50 years, a post-hoc analysis was conducted using data from 2 large phase 3 studies (NCT01165177, NCT01165229).

Methods: Reactogenicity was calculated as a single score per symptom (maximum grade recorded over 7 days post-vaccination). A global score obtained by adding each maximum severity for all reported symptoms (multivariate models) and a score for each reactogenicity symptom (univariate models) were estimated.

Results: The analysis included 904 and 147 RZV recipients with completed post-vaccination symptom diary cards and with anti-glycoprotein E (gE) antibody results or cell-mediated immunity (CMI) results, respectively. The global score of reactogenicity post-dose 2 was significantly associated with anti-gE antibody response ($p < 0.001$, estimate 0.112) although the absolute antibody increase associated with reactogenicity was minimal (1.29-fold increase), while the association with CMI response was not statistically significant ($p = 0.073$, estimate 0.230). There was a weak, but statistically significant association between gE-specific immune responses and the maximum pain post-dose 2 score ($p = 0.001$, estimate 0.041), irrespective of post-vaccination time. Nevertheless, there are observations of immune responses in participants for whom pain was not reported.

Conclusions: A weak but statistically significant correlation was found between injection site pain intensity and immune responses in adult RZV recipients aged ≥ 50 years. However, participants reporting no pain were also able to mount a strong immune response, therefore pain cannot be a surrogate marker to inform on the level of immune response or on likelihood of being protected against herpes zoster.

Funding: GlaxoSmithKline Biologicals SA.

Abstract # 975

AREA: Vaccines

Concomitant administration of the adjuvanted recombinant zoster vaccine (RZV) with 13-valent pneumococcal conjugate vaccine (PCV13) is safe and does not interfere with the immunogenicity of either vaccine in adults aged ≥ 50 years

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Introduction: We assessed immunogenicity and reactogenicity/safety of RZV when the first dose was co-administered with PCV13 in adults aged ≥ 50 -years-old compared to sequential administration.

Methods: In this phase 3b, open-label study (NCT03439657) adults were randomized (1:1) to receive RZV and PCV13 at day (D)1 and RZV at month (M)2 (Co-Ad group) or PCV13 at D1, RZV at M2 and M4 (Control group). We assessed vaccine response rate (VRR) for anti-glycoprotein E antibody concentrations (1 month [1 M] post-dose 2) in Co-Ad; non-inferiority of humoral responses to RZV (1 M post-RZV dose 2) and PCV13 (1 M post-PCV13) in Co-Ad vs

Control. We recorded solicited adverse events (AEs) until D7 and unsolicited AEs until D30 post-vaccination and serious AEs (SAEs)/potential immune-mediated diseases (pIMDs) through 12 M post-RZV dose 2.

Results: Of 912 vaccinated adults, 863 (Co-Ad: 427; Control: 436) were included in the per-protocol immunogenicity assessments. VRR was 99.1% (Co-Ad group). Non-inferiority criteria for the humoral immune responses to RZV and PCV13 were met. Solicited local AEs after RZV and PCV13 occurred with similar overall frequency in Co-Ad and Control groups. Frequency of general AEs was similar for the first RZV dose when co-administered with PCV13 or alone (57.4% vs 54.6%). Frequency/nature of unsolicited AEs were balanced between groups. None of the reported (fatal) SAEs or pIMDs were vaccine-related.

Conclusions: Co-administration of first RZV dose with PCV13 showed non-inferior immune responses to sequential administration and had not impacted reactogenicity/safety of RZV. RZV with PCV13 co-administration may improve vaccination rates in ≥ 50 -years-old. Funding: GlaxoSmithKline Biologicals SA.

Abstract # 976

AREA: Vaccines

Validation and implementation of a frailty index in a large zoster vaccine clinical study

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Introduction: Older adults' health and quality of life can be negatively impacted by herpes zoster (HZ). Given that frailty is strongly associated with vulnerability to illness, we assessed the validity of a Clinical Trial-Frailty Index (CT-FI, post-hoc analysis) and explored how frailty impacts the adjuvanted recombinant zoster vaccine (RZV) clinical outcomes.

Methods: In the ZOE-50 and ZOE-70 pivotal Phase 3 efficacy studies, 29,305 participants aged 50–96 years were randomized (1:1) to receive 2 RZV doses or placebo. In this analysis (NCT03563183), a baseline CT-FI was retrospectively created following previously validated methods using pre-existing comorbidities and patient reported outcomes. Participants were categorized as non-frail, pre-frail or frail.

Results: CT-FI was calculated for 99.8% of participants included in the analysis ($n = 26,976$) and was balanced between RZV and placebo groups. Frailty increased with chronological age and was higher for females. Multivariate Cox regression survival analysis showed

that CT-FI, chronological age and gender were all significant predictors of mortality. Jackknife and Bootstrap re-sampling methods highlighted the robustness of the CT-FI. 45.6% of participants were pre-frail and 11.3% frail. RZV efficacy against HZ was $> 90\%$ for all frailty categories [non-frail: 95.8% (95% CI 91.6–98.2), pre-frail: 90.4% (84.4–94.4), frail: 90.2% (75.4–97.0)]. Unsolicited medically attended visits and serious adverse events increased with frailty and were balanced between RZV and placebo groups.

Conclusions: We developed an easy-to-implement and robust CT-FI with potential retrospective/prospective application in clinical trials. The ZOE studies included older adults who were frail/pre-frail, and RZV was safe and efficacious across frailty categories. Funding: GlaxoSmithKline Biologicals SA.

Abstract # 977

AREA: Vaccines

Influenza and pneumococcal vaccination: assessing coverage rate among ≥ 60 -year-old population and high-risk subgroups In São Paulo City from 2006–2015

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Introduction: Disease prevention is a key element for healthy aging [1]. This study aims to describe Influenza and Pneumococcal Vaccination Coverage Rates (VCR) in older adults and at-risk population from 2006 to 2015 included in Health, Well-Being, and Aging Survey (SABE) project.

Methods: Retrospective cohort study among subjects ≥ 60 years old in São Paulo city using data extracted from the 2006, 2010 and 2015 SABE database, as it represents older adult population in this city and includes vaccination data. VCR was calculated based on the number of participants who received the dose of each vaccine divided by the number of individuals in the target group. Information on vaccination was extracted from immunization records or self-reported. The results were stratified by age groups and risk factors.

Results: The proportion of females, population aged ≥ 80 years and people with multimorbidity have increased over the years in the studied cohort. In 2006, 2010 and 2015, influenza VCR was 73.6%, 80.0% and 86.8% and pneumococcal VCR was 30.4%, 39.1% and 34.1%, respectively. Pneumococcal VCR was higher in older adult men, those with multimorbidity, and increased with age. Influenza VCR was high in all subgroups analyzed. The differences noted between Influenza and Pneumococcal VCRs occurred in all at-risk subgroups and persisted over time.

Key conclusions: Influenza prevention is well established in older adults and at-risk subgroups and contrasts with poor pneumococcal vaccination. It may reflect differences in vaccination policies for these two vaccine-preventable diseases. Causes of under-vaccination and limited access to pneumococcal vaccine should be explored in future studies.

References:

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Abstract # 978

AREA: Vaccines

Vaccination coverage and associated factors among the elderly: a cross-sectional study from Turkey

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Introduction: The study was conducted to determine the vaccination rates and related factors among the elderly.

Materials and method: This cross-sectional study was conducted with 984 elderly people living in a province in western Turkey. The single-stage cluster sampling method was used in the sample selection. The data were collected using the face-to-face interview method through a questionnaire prepared by the researchers. Approval was obtained from the ethics committee and the participants for the study. The descriptive statistics, the chi-square analysis, the Mann–Whitney U test and the logistic regression analysis for the multivariate analysis were used to evaluate the data. Significance was accepted as $p < 0.05$.

Results: It was determined that 45.6% of the elderly were vaccinated after the age of 65 and the most frequently administered vaccines were influenza (41.3%), pneumococcal (10.9%) and tetanus (5.5%) vaccines. It was determined that the advice of the health personnel (39.9% by the doctor, 21.0% by the nurse) was an encouraging factor, and that the lack of knowledge of the need for vaccination (44.8%) was a hindering factor. Higher vaccination rates were determined in the following demographics, namely by 1.8-fold (95% CI, 1.4–2.4) in those living in urban areas, by 2.6-fold (95% CI, 1.8–3.9) in those with high school or higher education, by 1.5-fold (95% CI, 1.0–2.5) in those who did not work, by 1.7-fold (95% CI, 1.3–2.3) in those with chronic diseases and by twofold (95% CI, 1.1–3.4) in those who fulfilled their physical own needs themselves.

Conclusion: This study showed that more than half of the elderly did not receive any vaccinations in old age. The vaccination rates of the elderly were associated with many factors. In order to increase the vaccination rates, it may be recommended to support initiatives to encourage vaccination and to carry out studies to eliminate the identified obstacles.

Keywords: Elderly, vaccine, vaccination, rate, immunization, nurse.

Abstract # 979

AREA: Vaccines

Prevalence of respiratory disease and influenza vaccination in a population of Polish seniors based on data from the PolSenior2 study

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Introduction: The PolSenior2 study was conducted from 2017 to 2020 using a representative sample of 5987 Polish residents aged 60–106. The aim of this analysis was to assess the prevalence of respiratory disease and its relationship with influenza vaccination in this population.

Method: Data on the incidence of respiratory disease in relation to age, sex, education and place of residence, and health behaviour

(including influenza vaccination) in relation to age and sex were obtained using a questionnaire. Respondents were divided into 5-year age groups. Respondents' sampling was accounted for and post-stratification was utilized to weigh the study group against the general Polish population aged 60 and above. The results are presented as percentages with 95% confidence intervals.

Results: 840 participants were previously diagnosed with a respiratory disease (12.9% of respondents) with similar frequency in both sexes. The most common diseases were asthma (54.6%), chronic obstructive pulmonary disease (31.2%), chronic bronchitis (22%), emphysema (15.1%), and pulmonary fibrosis (9.1%). Among men, the incidence of lung disease increased with age and was more common in those with a primary or incomplete primary education. In the female cohort, conversely, respiratory disease was more frequent in women with higher education. Participants with a history of respiratory disease more frequently reported receiving an influenza vaccination (15.5%) compared to the group without respiratory diseases (10.0%).

Conclusion: Among Polish seniors, 12.9% reported the presence of respiratory illness, which was more prevalent in urbanites compared to rural areas. Influenza vaccinations were reported in 10% of seniors.

Abstract # 980

AREA: Vaccines

Long-term efficacy data for the recombinant zoster vaccine: impact on public health and cost effectiveness in Germany

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Introduction: The aim of the study was to update the previously published public health impact and cost-effectiveness analysis of the recombinant zoster vaccine (RZV), in the German population aged ≥ 50 years of age (YOA), with the latest efficacy/waning estimates against herpes zoster (HZ). The updated estimates are derived from a long-term follow-up study.

Methods: A previously published multi-cohort Markov model was used. Demographic, epidemiological, cost and utility data were based on German specific sources. Vaccine coverage was assumed to be 40%, with a second dose compliance of 70%.

Results: The estimated vaccine efficacy at time 0, post-vaccination, was 98.9% (95% confidence interval CI 94.0–100%) with an annual waning of 1.5% (95% CI 0.0–3.4%) for the age group 50–69 YOA. Corresponding values were 95.4% (95% CI 89.7–100%) and 2.3% (95% CI 0.3–4.4%) for the age group ≥ 70 YOA. It was estimated that, over the remaining lifetime since vaccination, RZV would prevent approximately 884 thousand (K), 603 K and 538 K HZ cases in three age cohorts 50–59, 60–69 and ≥ 70 , respectively. The number needed to vaccinate to prevent one HZ and one postherpetic neuralgia case was 6 and 36 (50–59 cohort), 6 and 34 (60–69 cohort), 10 and 48 (≥ 70 cohort). The incremental cost-effectiveness ratio of vaccination ranged from €26 K/quality-adjusted life year (QALY) in 60 YOA to €35 K/QALY in 70 YOA.

Conclusion: Due to the higher, sustained, vaccine efficacy of the RZV vaccine, improved public health and cost-effectiveness results were observed compared to previous analyses.

Posters Late Breaking News

Late Breaking News Abstract #1

Evaluation of diabetes mellitus in a cohort of frail older adults

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Introduction: The aim of this study was to identify the prevalence of diabetes in a cohort of frail older adults in a model 3 hospital and explore the relationship between frailty and diabetes. Prognosis and treatment of diabetes can vary greatly in the presence of frailty.

Methods: A multidisciplinary team provide liaison geriatric input to frail older adults in this hospital. Comprehensive geriatric assessments (CGAs) are carried out on identified patients. These CGAs were reviewed regarding frailty scores, social/falls history, medications and diabetes complications.

Results: CGAs were reviewed for 213 patients. 58 patients had a diagnosis of diabetes (27.2%), and all were type 2. The median age was 84. The average Clinical Frailty Scale score was 5.4 (mild to moderate frailty). Over two thirds (n = 137) were on more than 5 medications. Seventy-six patients had a history of falls, and 24 (31.5%) of those had diabetes. Twenty-one patients were prescribed either sulphonylureas and/or insulin, and 7 of these were living alone. Five patients had a documented history of hypoglycaemia, 2 of these patients were on insulin and 1 was on a sulphonylurea. The median HbA1c was 49 mmol/mol. Fifteen patients had complications, including retinopathy and neuropathy. The majority of patients were managed at primary care level (n = 48, 82.75%).

Conclusion: The management of frail older adults with diabetes is complicated by multimorbidity and increased risk of adverse effects of treatment. Frailty assessment should be incorporated into diabetes review for all older adults, and then glycaemic targets and medication choices should be adjusted accordingly.

Late Breaking News Abstract #2

Cognitive screening in older adults with cancer - experience from a dedicated geriatric oncology clinic

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Introduction: Older adults account for approximately 70% of cancer cases. Comprehensive Geriatric Assessment (CGA), including cognitive assessment, can assist with treatment decision making and improve outcomes. The prevalence of pre-morbid cognitive impairment in older cancer patients is poorly understood, yet may significantly impact patients and carers. We present findings from the cognitive screening of patients attending a dedicated Geriatric Oncology Clinic.

Method: A convenience sample of older adults with cancer (≥ 70 years) underwent CGA, including cognitive testing, prior to cancer treatment. Cognitive screening included the Mini-Cog, 6-CIT and/or Montreal Cognitive Assessment (MOCA).

Results: One hundred and sixty-eight patients underwent cognitive screening over a 3-year period. Median age was 79 years (range 70–91); median Clinical Frailty Score was 3 (range 1–7). One hundred patients (59%) screened “normal”. Of the remainder, 58 underwent MOCA testing, and 57 (33.9%) scored $< 26/30$. Median

MOCA score was 20/30 (range 5–25). The most consistently impaired domain was delayed free recall with 52 (91%) scoring ≤ 2 . Patients performed well in naming (n = 48 scored ≥ 2 , 84%); language (n = 41 scored ≥ 2 , 72%); attention (n = 45 scored ≥ 4 , 79%); and orientation (n = 45 scored ≥ 5 , 79%).

Key conclusions: Delayed recall was the most commonly and severely impaired domain in our cohort of older cancer patients without diagnosed cognitive impairment. Identification of cognitive impairment has implications for treatment and ongoing care and hence further study of prevalence, aetiology and management of cognitive impairment and dementia in older cancer patients is a priority.

Late Breaking News Abstract #3

Early benefits of a new emergency perioperative for older persons service (POPS) in an Irish Teaching Hospital

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Introduction: Older persons who undergo unscheduled surgery are at risk of uncontrolled pain, delirium, Acute Kidney Injury (AKI), and worsening frailty trajectory post-operatively. We present the initial data of our Emergency Perioperative Older Person Service (POPS). POPS aims to improve patient outcomes by engaging in proactive frailty identification/treatment of older adults considered for emergency abdominal surgery or unscheduled vascular intervention via Comprehensive Geriatric Assessment (CGA).

Methods: We obtained a whole-time equivalent geriatric registrar to facilitate establishing the POPS. Inclusion criteria: > 75 years old; admitted under emergency surgical consultants (general or vascular). A geriatrician performed CGA's on this cohort. Data collected included; demographics; diagnosis; premorbid frailty status (Clinical Frailty Scale (CFS) score 2 weeks pre-admission); Admission 4AT; delirium during admission; AKI on and during admission; procedure performed; advanced-care plan discussions; discharge destination; 30-day readmission rate; ICU admission; and 90-day mortality. Free-text identified additional geriatric interventions.

Results: POPS assessed 48 people in 7 weeks. The average age of patients was 82. 100% completed a CGA within 72 h of admission. 45% were female; 53% scored a CFS > 4 ; 18.75% were delirious on admission, 27% had delirium documented during their admission; 20.83% had an AKI on admission. 8.3% developed a worsening or new AKI on admission; 37.5% agreed to advanced care planning conversations. 53% underwent invasive procedures.

Conclusion: Although the service is evolving, the data is encouraging. Through early identification of frailty and timely CGA, we anticipate this service will develop to improve outcomes for older adults admitted for unscheduled surgical care.

Late Breaking News Abstract #4

Relationship between mandibular bone mineral density and alveolar bone resorption in geriatric patients

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Introduction: Osteoporosis may have a negative influence on the bone quantity and quality of the mandible and maxilla. This study

aimed to evaluate the relationship between mandibular bone mineral density (BMD) and the alveolar bone resorption (ABR) in Lithuanian elderly.

Methods: A total of 462 randomly selected anonymised panoramic radiographs of female ($n = 231$) and male ($n = 231$) patients treated in Zalgiris Clinic of Vilnius University Hospital, aged 65–90, mean age 81 years, were analysed by a single calibrated operator (DK) between February 2021 and June 2021. The representative sample size was calculated according to the prevalence of osteoporosis in Lithuania. Using the image analysis software the resorption of the alveolar bone of the mandible and the maxilla was evaluated measuring the distance between cemento-enamel junction and the alveolar bone crest. The mandibular BMD was evaluated using Mental index (MI). Statistical analysis of the data was performed using independent samples Student's *t*-test and Pearson's correlation coefficient. Statistical significance was set at $p < 0.05$. The study protocol was approved by the Vilnius Regional Biomedical Research Ethics Committee.

Results: There were strong significant correlations between MI and ABR of maxilla in males and females ($r = -0.721$, $p = 0.022$; $r = -0.834$, $p = 0.018$, respectively) and a moderate significant correlation between MI and ABR of mandible in females ($r = -0.519$, $p = 0.038$).

Conclusions: In the population studied the ABR may be associated with decreased mandibular BMD. The assessment of BMD from panoramic radiographs may help to screen patients for osteoporosis.

Late Breaking News Abstract #5

“Healthnet”: Integrated Wound Care For Geriatric Risk Patients

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Background: In Austria there are around 250.000 patients, suffering from chronic wounds. However, according to current medical data, only a small percentage of these patients are treated adequately. The main target criteria of the scientific study are quality of life, patient benefit and wound size.

Material and methods: Primary diagnostic and therapy planning in the wound ambulance of the Elisabethinen Hospital. Training of the family doctor and a specialized wound nurse in wound treatment. Regular treatments by the doctor and wound nurse at the patient's home. Electronic feedback of the status of the wound to the wound ambulance using an iPad. If necessary, change in therapy. Assessment of the quality of life, the importance and the benefit of the treatment for the patients.

Results: The results of the evaluation show that the wound care professionals involved and all patients have consistently positive experiences with this type of wound treatment. After a short time, the stress experienced by the patient drops significantly. The wound–pain decreases drastically. The treatment of the wound itself for the patient is less stressful. There is less frustration due to the long healing time. Fear of worsening and new wounds are significantly reduced. The subjective quality of life experienced by the patient in terms of physical, psychological, and everyday life increases significantly to a high value.

Conclusion: The treatment of chronic wounds is often most expensive at the beginning, but this ultimately leads to faster healing and is therefore also desirable from an economic point of view, in addition to the decisive advantages for the patients and their relatives.

Late Breaking News Abstract #6

Senior citizens' and informal caregivers' experiences in transitional care decision-making: a systematic review

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Background: Senior citizens often experience multiple care transitions. These are critical and stressful moments for both senior citizens and their informal caregivers and can have a negative effect on long-term outcomes.

Objective: To provide an overview of senior citizens' and their informal caregivers' experiences with decision-making when facing a transition from home to another healthcare setting or vice versa.

Methods: A systematic literature review of qualitative studies, reported according to the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) guidelines. All abstracts and full texts were screened double-blind, using specific eligibility criteria. Data extractions were performed by two independent reviewers and the quality of studies was assessed. Findings: We included a total of 22 studies. The most relevant themes from the experiences of senior citizens were: a) feelings of reduced autonomy and increased dependency, b) preferences for involvement in decision-making c) the influence of healthcare professionals, and d) support from informal caregivers. The most relevant themes from the experiences of informal caregivers were: a) informal caregivers' involvement in the decision-making process, b) the burden of responsibility, and c) barriers to decision-making.

Conclusions: When facing care transitions, senior citizens express feelings of reduced autonomy and increased dependency. Their preference regarding involvement in decision-making varies considerably and their decisions are influenced by healthcare professionals and the support from informal caregivers. Informal caregivers find it important to be involved in the decision-making process, even though they experience the burden of responsibility and report specific difficulties relating to decision-making.

Late Breaking News Abstract #7

Results of the second phase of the “GER-e-TEC COVID” Experiment concerning the telemonitoring of elderly patients affected by COVID-19 disease to detect the Exacerbation of Geriatric Syndromes

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Background: Coronavirus disease 2019 (COVID-19) has wreaked health and economic damage globally.

Objectives: The main goal of the GER-e-TEC COVID study was to evaluate the functioning and to test the ergonomics of our remote monitoring solution here the MyPrediTM platform, on elderly patients suffering from COVID-19 infection.

Methods: This study took place during the 3rd wave of the epidemic in France, between December 14th, 2020 and February 25th, 2021, conducted in Strasbourg Hospital.

Results: 30 elderly patients affected by COVID-19 disease were monitored remotely. The mean age was 85.9 years; a male/female ratio of 1.5–1. The patients used the telemedicine solution for an average of 27.3 days. After hospitalization, 12 (40%) patients returned to their homes, 6 (20%) went to nursing homes, and 1 patient was transferred to a rehabilitation center for further treatment. 11 (36.7%) died during the experiment. 140,260 measurements and a total of 1245 alerts while monitoring the geriatric syndromes of the entire patient group. For each geriatric risk, an average of 42 alerts were emitted per patient. In terms of sensitivity, positive and negative predictive values, the results were extremely satisfactory. Gender played no role in the length of the hospital stay, regardless of the reason for the hospitalization (decompensated heart failure ($p = 0.45$), deterioration of general condition ($p = 0.12$), but significant for death ($p = 0.028$)). The analyses revealed that the length of the hospital stay was not affected by the number of alerts. The results concerning the predictive nature of alerts are satisfactory. COVID-19 infection clearly impacted the experiment, eleven elderly people with COVID-19 died, whereas during the first phase, there were no deaths of elderly non-COVID patients. Physical activity measured by the pedometer, the risk of prolonged bed rest (assessed by the use of a questionnaire) and the frequency of stools were significantly lower in elderly people with COVID-19 infection and mainly in the elderly people with COVID who died.

Conclusion: The MyPrediTM telemedicine system allows for the generation of automatic, non-intrusive alerts when the health of a COVID-19 elderly patient deteriorates due to risks associated with geriatric syndromes.

Late Breaking News Abstract #8

Glycemic disorder risk remote monitoring program in the COVID-19 very elderly patients: preliminary results

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Background: The coronavirus disease 2019 (COVID-19) pandemic has necessitated the use of new technologies and new processes to care for hospitalized patients, including diabetes patients.

Objective: This was the basis for the “GER-e-TEC COVID study,” an experiment involving the use of the smart MyPrediTM e-platform to automatically detect the exacerbation of glycemic disorder risk in COVID-19 older diabetic patients.

Methods: The MyPrediTM platform is connected to a medical analysis system that receives physiological data from medical sensors in real time and analyzes this data to generate (when necessary) alerts. An experiment was conducted between December 14th, 2020 and February 25th, 2021 to test this alert system. During this time, the platform was used on COVID-19 patients being monitored in an

internal medicine COVID-19 unit at the University Hospital of Strasbourg. The alerts were compiled and analyzed in terms of sensitivity, specificity, and positive and negative predictive values with respect to clinical data.

Results: 10 older diabetic COVID-19 patients in total were monitored remotely, 6 of whom were male. The mean age of the patients was 84.1 years. The patients used the telemedicine solution for an average of 14.5 days. 142 alerts were emitted for the glycemic disorder risk indicating hyperglycemia, with an average of 20.3 alerts per patient and a standard deviation of 26.6. In our study, we did not note any hypoglycemia, so the system emitted any alerts. For the sensitivity of alerts emitted, the results were extremely satisfactory, and also in terms of positive and negative predictive values. In terms of survival analysis, the number of alerts and gender played no role in the length of the hospital stay, regardless of the reason for the hospitalization (COVID-19 management).

Conclusion: This work is a pilot study with preliminary results. To date, relatively few projects and trials in diabetic patients have been run within the “telemedicine 2.0” setting, particularly using AI, ICT and the Web 2.0 in the era of COVID-19 disease.

Late Breaking News Abstract #9

Results of the “GER-e-TEC” experiment involving the use of an automated platform to detect the exacerbation of geriatric syndromes

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Background: Telemedicine is believed to be helpful in managing patients suffering from chronic diseases, in particular elderly patients with numerous accompanying conditions.

Objective: This was the basis for the “GER-e-TEC study,” an experiment involving the use of the smart MyPrediTM e-platform to automatically detect the exacerbation of geriatric syndromes.

Methods: The MyPrediTM platform is connected to a medical analysis system that receives physiological data from medical sensors in real time and analyzes this data to generate (when necessary) alerts. These alerts are issued in the event that the health of a patient deteriorates due to an exacerbation of their chronic diseases. An experiment was conducted between September 24, 2019 and November 24, 2019 to test this alert system. During this time, the platform was used on patients being monitored in an internal medicine unit at the University Hospital of Strasbourg. The alerts were compiled and analyzed in terms of sensitivity, specificity, and positive and negative predictive values with respect to clinical data.

Results: A total of 36 patients were monitored remotely, 21 of whom were male. The mean age of the patients was 81.4 years. The patients used the telemedicine solution for an average of 22.1 days. The telemedicine solution took a total of 147,703 measurements while monitoring the geriatric risks of the entire patient group. An average of 226 measurements were taken per patient per day. The telemedicine solution generated a total of 1611 alerts while assessing the geriatric risks of the entire patient group. For each geriatric risk, an average of 45 alerts were emitted per patient, with 16 of these alerts classified as “low”, 12 as “medium”, and 20 as “critical”. In terms of sensitivity, the results were 100% for all geriatric risks and extremely satisfactory in terms of positive and negative predictive values. In

terms of survival analysis, the number of alerts had an impact on the duration of hospitalization due to decompensated heart failure, a deterioration in the general condition, and other reasons.

Conclusion: The MyPredi™ telemedicine system allows for the generation of automatic, non-intrusive alerts when the health of a patient deteriorates due to risks associated with geriatric syndromes.

Late Breaking News Abstract #10

Heart failure risk remote monitoring program in the very elderly patients. Results of the GER-e-TEC experiment

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Introduction: Telemedicine is believed to be helpful in managing patients suffering from chronic diseases, in particular elderly patients with chronic heart failure. This was the basis for the “GER-e-TEC study”, an experiment involving the use of the smart MyPredi™ e-platform to automatically detect the exacerbation of heart failure (HF) risk.

Methods: The MyPredi™ platform is connected to a medical analysis system that receives physiological data from medical sensors in real time and analyzes this data to generate (when necessary) alerts. These alerts are issued in the event that the health of a patient deteriorates due to an exacerbation of their chronic diseases. An experiment was conducted between September 24th, 2019 and November 24th, 2019 to test this alert system. During this time, the platform was used on patients being monitored in an internal medicine unit at the University Hospital of Strasbourg. The alerts were compiled and analyzed in terms of sensitivity, specificity, positive and negative predictive values with respect to clinical data. The results of the experiment are provided below.

Results: 36 patients in total were monitored remotely, 21 of whom were male. The mean age of the patients was 81.4 years. The patients used the telemedicine solution for an average of 22.1 days. 336 alerts (20.9%) were emitted for the “HF” risk, with an average of 11.2 alerts per patient and a standard deviation of 9.3. In terms of sensitivity, the results were 100% for heart failure risk, and extremely satisfactory in terms of positive and negative predictive values. In terms of survival analysis, the number of alerts had an impact on the duration of hospitalization due to decompensated heart failure.

Conclusion: The MyPredi™ telemedicine system allows for the generation of automatic, non-intrusive alerts when the health of a patient deteriorates due to heart failure risk.

Late Breaking News Abstract #11

Paraneoplastic neurological syndromes: encephalitis antibodies anti Ri

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Introduction: These syndromes usually develop before tumor diagnosis, have subacute onset, and are associated with serum or

cerebrospinal fluid antibodies. We present a case report of a 79-year-old patient with history of hypertension, Diabetes, left multinodular goiter (hemithyroidectomy) and cognitive impairment. She was admitted in July/2020 due to weakness in the right hemibody and involuntary movements in the right arm and leg and inability to ambulation. During hospitalization, she presented myoclonus in the deltoids, treatment with levetiracetam and lacosamide was started, which had to be suspended due to side effects, tolerating only clonazepam. The condition was classified as stroke mimics according to the MRI findings (chronic vascular leukoencephalopathy). At discharge, she continued with difficulty in her gait, that required a walker and rehabilitation follow-up. In december she was admitted again due to general, difficulty getting up from her bed and incoherent speech, observing myoclonic movements in both trapezius and sternocleidomastoids, predominantly on the right side. After finding positive antiRi Antibodies, an exhaustive search for a possible underlying neoplasm was carried out. All imaging tests and tumor markers were negative. A therapeutic trial has been carried out with Methylprednisolone 500 mg i.v. for 3 days, well tolerated. The myoclonus has been controlled without medication. She was evaluated by Rehabilitation, which has started treatment in the gym to re-educate the gait.

Conclusion: In elderly patients with varied neurological symptoms, it is important to consider paraneoplastic neurological syndromes.

Late Breaking News Abstract #12

Comprehensive geriatric assessment in older people: an umbrella review of health outcomes

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Background: Comprehensive geriatric assessment (CGA) is a multidisciplinary diagnostic and treatment process with different aims in older people. With this umbrella review, we aimed to summarize the current knowledge of CGA to capture the breadth of outcomes reported and assess the totality and the strength of the evidence of CGA on all health outcomes in older people.

Methods: Umbrella review of systematic reviews, with or without formal meta-analysis was performed. Pubmed, Embase, Scopus, Cochrane library and CINHAL databases were searched without language restriction, until 01 April 2021. Two independent reviewers undertook screening, data extraction, and quality appraisal. The population included older adults; the intervention considered was CGA vs. standard care in intervention studies. All health outcomes were considered eligible. The grading of evidence was carried out using the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) for intervention studies, whilst data regarding systematic reviews were reported as narrative findings. The quality of meta-analyses was rated using the AMSTAR 2 tool.

Results: Among 1683 papers initially considered, 31 systematic reviews (19 with meta-analysis) were finally included for a total of 284,411 older subjects. Among the 19 meta-analyses included, two were rated as of high quality, four of medium, seven low quality and six of very low. In intervention studies, among 53 outcomes considered, 13 were statistically significant ($p < 0.05$). A high certainty of evidence suggested that CGA is able to reduce nursing home admission (risk ratio [RR] = 0.86; 95% confidence interval [CI] 0.75–0.89), risk of falls (RR = 0.51; 95% CI 0.29–0.89), and pressure sores (RR = 0.46; 95% CI 0.24–0.89) in hospital medical setting; to

significantly decrease the risk of delirium (OR = 0.71; 95% CI 0.54–0.92) in hip fracture after a trauma; and to decrease the risk of physical frailty in community-dwelling older adults (RR = 0.77; 95% CI 0.64–0.93). Systematic reviews without meta-analysis, indicate the clinical usefulness of CGA in oncology, haematology, and in the emergency department.

Conclusion: Applying CGA in the hospital medical setting is beneficial for multiple health outcomes with a high certainty of evidence and with a less strong certainty in surgery, orthopedics and primary care settings. In older patients admitted to emergency department and affected by cancer the use of CGA-based tools seems to be promising, but further intervention research is urgently needed.

Late Breaking News Abstract #13

Action research on a community based, integrated long-term care innovative financing model, in LMIC

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Introduction: Ageing, replacement and dependency ratios in countries facing budget cuts in social care, constitute a threat as according to the OECD, in 2030 aged population will grow from 18% today to 25% in average. Their healthcare systems suffer from severe budgetary cuts with cuts in social care reaching almost 80% in the recession period. The need for policy coordination, scaling innovative solutions adapted to a regional context meeting the population's care needs, is now deemed imminent. Second priority is to reduce budgetary costs for LTC for older people at local level. Change implemented, Targeted population and stakeholders This is an innovative funding model from RoI of health related resources for social care at community scale, integrating care bundle, managed by local PPP with municipal services, including prevention, health at home and rehabilitation as opposed to in-hospital episode-based care. The targeted population is elderly population with disability.

Methodology and results: Study of all Thermal Springs Municipalities in South East Europe in Greece, Turkey, Bulgaria and Cyprus. Five Greek municipalities were shortlisted according to their assets, resources and maturity to adhere to the model. One municipality adhered. Desk review of white and grey literature of the existing situation. Desk research analysis on the local health resources Resource Asset Evaluation of the Health Tourism SPA of adhered municipality. RoI estimation. Projection to human resource needs to cover a population of 30,000 elderly population. Action research method finalization: qualitative and quantitative data collection and content analysis from structured and unstructured interviews The scope of the study was to observe the local authorities decision making process in change management and adopting innovative models of LTC. The pilot area to test this in Greece was the Municipality of Trikala—the Mayor of Trikala signed an Expression of Interest to participate to the study. Discussion Difficulty of local staff and mayors to grasp the potential of innovation, due to lack of technical knowledge of investment, asset management, integrated care and RoI reinvested in care, managed by a Civil Non Profit PPP company. Difficulty of the tourism and health municipal administration to work together on asset based income generation for public health needs. Neither department demonstrated knowledge how to exploit municipal assets for investments. Clear intention of some municipalities to let the private sector cover the unmet needs. Transferability is guaranteed since the model is based on assets and needs for LTC of a certain population. Sustainability is guaranteed by the PPP form of the management company reaching consensus at community level.

Conclusions: The innovative character of the model was its main limitation. The modernization gap in policies and social care models was the reason that kept back some municipalities from expressing interest. The municipality of Trikala is one of the 20 most innovative cities in Europe, awarded for its achievements in Smart City solutions. The mayor is an exceptional forward oriented policy decision maker. His ability to grasp and adopt innovation was the reason to adhere to the model.

Late Breaking News Abstract #14

Tea-Trolley teaching: a breakthrough in hospital-wide frailty awareness and education

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Introduction: NHS England mandates all patients aged 65 and older should be assessed with a Clinical Frailty Scale (CFS) to ensure we deliver care that meets their need. In 2020, an audit of CFS scoring in our Emergency Department found that only 46% (n = 23) of patients were scored, and in 43% (n = 10) of those, the score was underestimated. In September 2021 we provided 'Tea-Trolley Teaching' on CFS scoring using the NHS Elect CFS app, a tool previously found to improve CFS scoring accuracy. We sought to ascertain if this was an effective method to deliver CFS scoring teaching.

Methods: We provided small-group training intervention by using a mobile teaching station as part of the 'Frailty Awareness Week'. Participants received 5 min of teaching, refreshments and cake. We provided a QR-code for participants to download the app, demonstrated how to use it.

Results: We delivered teaching in nine different acute clinical areas. We taught 200 staff, in groups up to 5 people. 90% were nurses, nursing assistants and allied health professionals. Virtually all attendees downloaded the app and reported how user-friendly it was.

Conclusions: Tea-Trolley Teaching is a simple and effective way of promoting key educational messages around frailty. The format flattens hierarchies, encourages discussion and engagement, and can be quickly adapted for any setting. Using a QR-code is an efficient means of providing resources such as a scoring app. We will repeat the audit cycle to assess effectiveness of the teaching, and expand it to other medical and surgical specialties.

Late Breaking News Abstract #15

Paving the way towards professionalization of the Gerontologist education, to access and exercise activities in the Ageing market

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Introduction: A degree in gerontology prepares students for careers in healthcare, social work, and occupational therapy settings. Equipped with an understanding of the aging process and its accompanying challenges, gerontology professionals offer support, understanding, and assistance to aging populations. (Grabinski, 2007). However, Gerontologists have no regulated profession activities, title or professional qualifications required to access and exercise the profession as social workers and geriatric nurses do in the EU. This is

because most of the Gerontology curricula do not offer professionalization syllabus, so as to allow the Gerontologist exercise a bundle of professionally akin activities for a new policy in Ageing, such as the social worker, who are not as well equipped as the Gerontologist to understand how to provide ageing related services to this specific segment. The new Ageing policy goal in the EU amidst the pandemic especially, is to ensure the Wellbeing status (De Pue et al. 2021) of a geriatric patient or simply an aged person over 50 years of age, based on the ICF assessment framework, as this has been proven a catalytic factor to the overall health status of people over 65 years of age. It is essential that the profession of Gerontologist tranches its niche in the Ageing Market, by concertizing what qualifications should lead to professionalizing the Gerontology curricula and by consequence, licensing and certification for the profession.

Method and results: Review of articles related to the profession of Gerontologist, education curricular, accreditation and certification programs.

Results: The essential curricula to provide the necessary qualifications for professionalization of the Gerontologist activities as per the Dir 36/05/EC, have been defined by the WHO at the curriculum of Nursing Gerontology which would render the profession of Gerontology more relevant with geriatric care, are as follows: psychological stages of development, The concept of successful ageing, Cognitive impairment and Mental Health, CGA, Ethics code of the profession, Ageism and Social Aspects of Ageing, Sources/types of information, knowledge and evidence—Qualitative and Quantitative Analysis, Physiological Change, Organization of health care, Palliative Care Management, Metabolism and ageing, Functional changes within the older person, Health promotion and health education. There are very few of these syllabuses that do exist and provide a professionalization orientation to the Gerontologist career, such as for instance to the VUB Medical School Masters of Gerontology or to the USC Leonard Davis School of Gerontology curriculae. Haley et al. 2012 mention also that the CGA, Case Management, Clinical Practice and Leadership should be included in applied Gerontology Education Curricular, to enable concretization to the accreditation guidelines for the profession of Gerontologist and this only to the academic levels that offer professional orientation such as the Bachelor Diploma of 4 years of studies and the Master Degrees, recognizing that the Doctoral Degrees offer more an academic orientation as it is the case today, even in the above mentioned Universities with a more professional curriculum. The repurposing of the Gerontologist requirements for professional qualifications, could encompass the discussion towards a Gerontology certification scheme of professional qualifications.

Conclusions: A professionalization of the current Gerontology curricula is necessary in order to establish at EU level, a certain set of professional qualifications as per the WHO Curriculum of Nursing Gerontology, to correspond to activities and the title of Gerontologist without reserve of such activities though, that could be however regulated, establishing a specialization of Geriatric Gerontologist. Other forms of Gerontology professionalization could be (Haley et al. 2012) twining in joint degree programs to partner with existent professional programs curricula, such as business management, Wellbeing counseling, healthcare public administration, some even regulated as the social work and nursing gerontology are, paving the way towards licensing and/or certification by professional associations of Geriatrics and Gerontologists in the case of Geriatric Gerontology and Wellbeing counseling as required by the International Classification of Functioning, Disability and Health to enable competence on performance and supervision of the classification of the health components of functioning and disability. In addition, social-psychological focus Gerontology curriculae, should be distinguished from the applied Gerontology programs that are oriented to professional gerontology, via certification and accreditation, or in a multidisciplinary curricula context, where Gerontology is not the

discipline with the primary appointment. (e.g. Business Management, Public Administration Management etc.). Therefore the scope of the Gerontology practice should be repurposed and established following the procedures of the Dir 36/05/EC, regulating common principles, procedures, education curricular, ethics and constitution activities, pertaining to professional qualifications of a Geriatric Gerontologist. This process could be initiated as it has been the case for other professions, by professional associations of Geriatrics and Gerontologists in all EU countries first, where the legal framework exists in the EU Law, together with Universities with Gerontology curricular, in applied gerontology either in bachelor or Masters' degrees, focusing on gerontology program administration, case management and CGA performance and care management and Wellbeing counseling.

Late Breaking News Abstract #16

COVID-19 may increase the risk of herpes zoster in adults ≥ 50 years of age

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Introduction: Several case-reports have described shingles (herpes zoster; HZ) occurring shortly after COVID-19 diagnosis, possibly due to SARS-CoV-2-induced T-cell immune dysfunction. However, these case-reports could not determine whether patients with COVID-19 have a higher risk of developing HZ. We therefore assessed this in a retrospective cohort study.

Methods: We compared the HZ incidence in individuals ≥ 50 years old with a COVID-19 diagnosis (as well as in those hospitalized with COVID-19) versus those without COVID-19. We used data from the US Truven MarketScan Commercial Claims and Encounters and Medicare Supplemental databases (3/2020–2/2021) and Optum Clinformatics Data Mart database (3–12/2020). Individuals with COVID-19 were exact-matched 1:4 to individuals without COVID-19 by age, sex, HZ risk factors and healthcare cost. Relative risks (RRs) were estimated by Poisson regression.

Results: 394,677 individuals with COVID-19 were matched to 1,577,346 individuals without COVID-19. Baseline characteristics and length of follow-up were similar in both cohorts. The observed HZ incidence per 1000 person-years was 8.16 (95% confidence interval [CI] 7.63–8.72) in the COVID-19 and 6.81 (6.57–7.05) in the non-COVID-19 cohort; the RR estimate was 1.15 (95% CI 1.07–1.24; $p < 0.001$). The HZ risk was numerically higher in individuals with COVID-19 until 183 days after COVID-19 diagnosis. The RR of HZ in individuals hospitalized with COVID-19 versus those without COVID-19 was 1.21 (1.03–1.41; $p = 0.02$).

Conclusions: We showed that ≥ 50 -year-olds with COVID-19 had a 15% higher risk of HZ than those without COVID-19, identifying COVID-19 as potential HZ risk factor and highlighting the relevance of maintaining recommended HZ immunization of ≥ 50 -year-olds.

Funding: GSK.

Late Breaking News Abstract #17

Perspectives of healthcare professionals on the implementation of four transitional care interventions to improve long-term care for older persons in Leuven, Flemish region of Belgium: a retrospective qualitative case study

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Introduction: An integrated care project was launched in 2018 to improve the quality of life for older persons with chronic diseases, and enhance care transitions from hospital to home & vice versa. Four interventions were implemented in practice (1. an intermediate care center, 2. medication reconciliation, 3. neighbourhood teams, & 4. a care program for chronic heart failure). The objective of this study was to explore the contextual factors that influenced the implementation of these interventions, and to examine if and which implementation strategies were utilized.

Methods: A retrospective qualitative case study was performed by conducting semi-structured interviews with project coordinators and stakeholders. Their perceptions and experiences regarding the implementation were discussed. Interviews were transcribed and analyzed following thematic analysis method performed in Nvivo software.

Results: Thirteen candidates (five coordinators, eight stakeholders) were interviewed. Diverse factors showed to influence the implementation of the integrated care project, mainly the availability of resources (time, staff, funding), communication and information continuity among care providers, and involvement & motivation of key players. Findings suggest that hardly any systematic implementation strategies were applied. The only prominent strategy mentioned occurred in the preparation phase by developing project plans/protocols. Moreover, some participants mentioned education/training activities as a way of facilitating the implementation.

Key conclusions: The implementation of interventions to improve care transitions and long-term care for older persons tend to still be performed in an intuitive manner (trial–error way) based on existing knowledge rather than incorporating new evidence-based methods from the implementation science world.

Late Breaking News Abstract #18

Paradoxical experiences of informal caregivers: the transition from home to a nursing home

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Introduction: The transition from home to a nursing home is a complex and emotional process. Informal caregivers often have a central role during this transition process. However, studies capturing their experiences are lacking. Therefore, this study aims to capture the experiences of informal caregivers of older persons with dementia during the transition from home to a nursing home.

Methods: A secondary data analysis was performed, using the Interpretative Phenomenological Analysis method. Semi-structured, in-depth interviews were conducted with informal caregivers of older persons with dementia who resided at a nursing home.

Results: The 24 participants experienced the transition from home to a nursing home as paradoxical. Three paradoxes emerged from the data: (1) contradicting emotions, where initially negative feelings with nursing home placement are paradoxical to the positive feelings related to a sufficient transitional care process; (2) the retrospective need for a timely transition plan versus the prospective need to postpone the transition process (3) the informal caregivers' internal struggle with the need to monitor the care process versus their need for distance as they recognize their limitations as a caregiver and realize that the care became too burdensome. These paradoxes are influenced by a fragmented healthcare system.

Key conclusions: Informal caregivers are mainly experiencing internal conflict resulting from an emotionally challenging care process. The identified paradoxes can be used to improve the transition process. Future studies should focus on identifying possibilities to reduce fragmentation and support the needs of informal caregivers throughout the transition process.

Late Breaking News Abstract #19

Percutaneous aortic prosthesis implantation in nonagenarians a good therapeutic option?

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Introduction: With the increase in life expectancy it has increased so significant is the number of nonagenarian patients who present a high incidence of severe aortic stenosis, mostly symptomatic. The implant Percutaneous Aortic Prosthesis (TAVI) is a therapeutic option.

Material and methods: Patients undergoing implantation are prospectively collected of TAVI from December 2007 to September 2019. They are divided into two groups according to their age, selecting patients over 90 years of age on the implant date. Baseline characteristics, complications are reviewed intra-procedure and mortality during follow-up.

Results: In our center, 48 TAVI implants have been performed in patients nonagenarians representing 7.11% of the total number of TAVI implants (n = 675). They have a mean global follow-up of 2.8 years (SD: 2.47). The nonagenarians compared to the rest of the patients, 85.7% vs 55% were women (p = 0.01). The maximum gradient is 92.3 vs 79.90 mmHg (p: 0.004). Without significant differences in the approach route. Regarding complications intraprocedure 34.15% vs 26.66% (p: 0.29). Mortality to the first 30 days is 8.33% vs 4.29% (p: 0.19). The global Kaplan–Meier survival analysis presents a Hazard Ratio obtained is 2.03 with a 95% CI 1.2–3.4. (p = 0.007). If we analyze only mortality during the first year, the HR obtained is 1.53 with 95% CI 0.9–2.6.

Conclusions: TAVI implantation in nonagenarians represents a non-negligible percentage of patients undergoing TAVI implantation. Echocardiographic data suggest that they present more severe and advanced valvular disease, without significant differences in intraprocedure complication rates, nor in mortality during the first year.

Late Breaking News Abstract #20

Direct-acting anticoagulants versus vitamin K antagonists in patients with atrial fibrillation and advanced chronic kidney disease

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Introduction: Atrial fibrillation (AF) is the most common arrhythmia in the elderly patient. Its incidence increases in patients with Chronic Kidney Disease (CKD). Compared to patients with normal kidney function, CKD patients have a substantially higher risk of cardiovascular morbidity and mortality. Limited data are available to guide the use of direct-acting oral anticoagulants (DOACs) in this population.

Objectives: To compare the safety of direct-acting oral anticoagulants with a vitamin K antagonist (VKA).

Methods: Prospective study includes 88 patients ≥ 75 years of age with AF receiving anticoagulation, from November 11, 2019 to April 1, 2020. Demographic and cardiological variables, comorbidity, functionality in basic activities of daily living (ABVD), mental state and complications were collected.

Results: 65.6% women with a mean age of 87.7 ± 3.7 years and a mean Barthel Index of 64.33 ± 27.4 , 32.2% had cognitive impairment. Of the comorbidities, the following stood out: CKD (62.5%), Valvular heart disease (35.2%), Hypertensive heart disease 44.5%, Ischemic heart disease 19.5%, COPD 23.4%, Peripheral arterial disease 20.3%, Anemia 32, 8%, ischemic stroke 6.3%, hemorrhagic stroke 2.4%. Among patients who received DOAC with CrCl 25–30 mL/min, anemia was observed (hazard ratio, 0.34 [95% CI, 0.14–0.80]) but no major bleeding compared with AVK.

Conclusions: Among patients with atrial fibrillation and CrCl of 25–30 mL/min, DOACs caused less anemia than warfarin, with even greater reductions than in patients with CrCl > 30 mL/min. More studies are needed to establish a better safety profile in these patients.

Late Breaking News Abstract #21

Determining reference values for muscle mass and performance in healthy Greek subjects. A step towards better assessing Sarcopenia. A study protocol

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Introduction: It is of great importance to approach sarcopenia in different countries by developing population based normative reference values for measurements that are used to define sarcopenia (muscle quantity, muscle performance).

Methods: We are going to evaluate 250 healthy male and 250 healthy female subjects between 20 and 44 years old. Muscle mass is going to be measured using dual-energy x-ray absorptiometry (DEXA), Bio-electrical Impedance Analysis (BIA) and muscle ultrasound at the level of vastus intremedius. Muscle performance and strength will be calculated by measuring grip strength, gait speed, the time to perform a Timed up and go (TUG) and the 5 times sit to stand test, and Short

Physical Performance Battery (SPPB) score. We will also measure several anthropometric variables (circumference of the arm, neck, waist, hip) and several items that concern daily habits (exercise, dietary patterns etc.).

Results: Starting December 2020, by early September 2021, we have recruited 183 subjects. The process of recruitment is difficult due to the restrictions imposed by successive COVID-19 pandemic waves.

Conclusions: Sarcopenia is a very important condition that needs to be early and precisely detected. The use of reference normative values that are population specific and potentially influenced by country specificities (dietary patterns, level of population exercise etc.) permits to construct more accurate diagnostic tools. Such studies, if performed in several countries following the same design, can also be used to perform comparisons and gain useful information concerning differences in muscle mass and performance across populations. Clinical Trial registration NCT04584944.

Late Breaking News Abstract #22

Quality of life in geriatric patients undergoing hemodialysis

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Introduction: Geriatric patients undergoing hemodialysis showed lower levels of quality of life on physical functioning, role-functioning emotional, mental health, and pain. The aim study is to evaluate quality of life and importance to geriatric patients undergoing hemodialysis.

Methods: Data of 103 maintenance hemodialysis patients aged ≥ 60 until to more than 81 years old were surveyed using the World Health Organization Quality of Life for Older Adults (WHOQOL) instruments during the 2 years. We categorized participants into three age groups (≥ 60 –70, 71–80, and ≥ 81 years) and described the summary data for the question of QOL that includes 25 questions classified into five dimensions, which are mobility, personal care, common activities, discomfort and pain, anxiety and depression. The software SPSS version 20.0, were used to analyze and evaluate the data obtain in this study and P value < 0.05 was considered statistically significant.

Results: Among the 103 geriatric patients, average age was 68.9 ± 6.7 Sdt Deviation with min age 60 and max 82 years old. The age groups ≥ 60 –69 presented the higher percentage among patients with 65.1%, 27.1% were 70–79 years old, and 7.8 were ≥ 81 years old. The most predominant sex was male 76.78% (79/103) compared to female 23.3% and 27.8% (24/103), without significant level. In our study, among geriatric haemodialysis patients is seen a significantly association scored between the QoL and ages ($p = 0.001$), BMI ($p = 0.032$). Also the age were significantly associated with the QOL for modality ($p = 0.001$) and anxiety and depression ($p = 0.041$). About the questionnaire, “How good or bad your health is today” most of the patients that answered to this question, declared to feel in status marked from 50 to 70 scale score.

Conclusion: We found the association between QoL and ages and BMI. Modality, anxiety, and depression QOL became worse in geriatric age. Therefore, novel instruments are likely needed to improvement QoL in older haemodialysis patients. We suggest that management of the adequate factors as ages and BMI and having a social support in older adults receiving haemodialysis will improve the QoL of these patients.

Conclusion: We found the association between QoL and ages and BMI. Modality, anxiety, and depression QoL became worse in geriatric age. Therefore, novel instruments are likely needed to improve QoL in older haemodialysis patients. We suggest that management of the adequate factors as ages and BMI and having a social support in older adults receiving haemodialysis will improve the QoL of these patients.

Late Breaking News Abstract #23

Baseline characteristics of ‘Characteristics of patients with SARS-COV2 hospitalized in a Geriatric service and its association with mortality and average length of stay’ study

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Introduction: The long-lived population has been the most affected during this pandemic, so focusing resources and interests on expanding our knowledge about it is interesting.

Methods: Observational and retrospective epidemiological study. It includes all patients older than 80 years hospitalized in a Geriatric Service admitted with a confirmed diagnosis of coronavirus, using PCR (Polymerase Chain Reaction) or rapid antigen test, between 1st September 2020 and 15th March 2021. The data has been collected from physical and electronic medical records. Reviewed by Research Ethics Committee of the Community of Aragon (CEICA). For this analysis, frequency measurements are made for qualitative variables and mean and standard deviation (DS) for quantitative variables.

Results: We collected 150 patients. The mean age was 88.23 (SD $\pm$ 4.58). 53.3% of them had some degree of cognitive impairment. 46.7% came from nursing homes. The typical presentation predominated in 46.7%. 48% experienced an episode of hospital delirium. We used the Barthel index to measure functionality: 82.7% had some degree of functional dependence, being 31.3% totally dependent for the basic activities of daily life. Frailty was evaluated with the Clinical Frailty Scale (CFS), seeing an incidence rate of 69.3%, with 38% being severe. In-hospital mortality was 34.7%, with a mean stay of 13 (SD $\pm$ 9.15).

Conclusion: 1. The sample is characterized by high age, female predominance and longer hospital stay. 2. Hospital mortality was higher than no covid patients. 3. Functional dependence and frailty characterize more than 2/3 of the studied population.

Late Breaking News Abstract #24

Nursing home design and COVID pandemic resilience

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Background: The disproportionately high death rate of nursing home (NH) residents from COVID-19 in many countries, including Ireland, has focussed attention on infection prevention and control, including the built environment, in nursing homes. This has been a poorly researched topic to date, and we undertook a systematic review of evidence for architectural design measures which support infection control and pandemic preparedness.

Method: Databases were screened for keywords related to NHs, built environment, infection prevention and control, and COVID-19: relevant papers uploaded onto Covidence and screened for relevance. Data extracted from included articles was tabulated under 8 specific aspects of the built environment.

Results: Of 17 papers included in the final analysis, four studies found that larger nursing homes carried an increased risk of COVID 19 infection. Crowding in NHs was also a risk factor for infection, with a high crowding index associated with COVID 19 infection in five studies. Green House care homes, which are based on small clusters of domestic dwellings, fared better than traditional NHs. Two papers found an association between the location of s and the risk of COVID 19 infection, with urban NHs and those in areas of high prevalence being more at risk. Two papers identified internal fittings as a target for infection prevention and control. Seven papers highlighted the role of adequate ventilation in NHs in the prevention of spread of COVID 19. Only one paper described easy access to the outdoors as beneficial to infection control.

Conclusion: Residents of NHs are amongst the most vulnerable to COVID-19 infection. When designing and building NHs, the role of the built environment in controlling the spread of the virus should not be underestimated. This research supported by Science Foundation Ireland.

Late Breaking News Abstract #25

Exploring salient personal beliefs of nursing home staff about stimulating psychogeriatric residents in activities of daily living: a qualitative study

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Background and objective: Although nursing home staff is in an ideal position to stimulate residents' participation in activities of daily living (ADL), care-tasks are often taken over. Understanding nurses' 'function-focused care (FFC)' behavior and its underlying determinants and beliefs is pivotal to optimize activity and self-reliance of residents. We aimed to identify salient personal beliefs of Dutch nursing home staff about stimulating psychogeriatric residents in functional and physical activity.

Method: A qualitative study using individual interviews among 15 Dutch nurses of psychogeriatric wards, conducted by telephone in spring 2021. Data were thematically analyzed using NVivo.

Results: Most nurses indicated to frequently stimulate residents in performing ADL although it was also reported that tasks were often habitually taken over. Nurses seem to show sufficient awareness reflected by knowledge of what FFC-behavior entailed and could result in, and insight in the risks of not performing FFC. Nurses' motivation to stimulate residents in ADL can be considered high, reflected by a high intention to perform FFC and the expression of multiple advantageous and few disadvantageous beliefs. The support of management was perceived ambiguous. Self-efficacy was perceived high, although little time, staffing shortages, and residents not wanting to perform ADL, seem to reduce self-efficacy. Nurses were not always able to cope with such difficult situations and expressed the need of FFC-behavior enhancing skills.

Conclusion and implications: The identified beliefs should be incorporated in a comprehensive interactive and tailored training program to optimize nurses' FFC-behavior and ultimately enhance functional and physical activity of psychogeriatric residents.

Late Breaking News Abstract #26

The relationship between physical activity and functional ability in retirement age among white-collar workers

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Physical activity is one of the keys to healthy aging; however, physical activity connected with specific domains of human activity can influence its health differently. The aim of this study was to assess the influence of physical activity performed throughout life in specific domains such as work-related physical activity, household-related physical activity, sport-related physical activity, and total physical activity on the health of retired white-collar workers. The study was conducted on 77 aged 71.32 ± 6.38 years. The Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) scale scores for each participant were obtained, and patterns of lifetime physical activity total and for each domain separately were measured by Lifetime Total Physical Activity Questionnaire (LTPAQ). In studied group lifetime physical activity was correlated with ADL ($r = 0.399$, $p = 0.039$ for sport-related physical activity and $r = 0.487$, $p = 0.010$ for total physical activity) and IADL ($r = 0.500$, $p = 0.008$ for sport-related physical activity and $r = 0.544$, $p = 0.003$ for total physical activity). Sport-related physical activity can play a most important role in maintaining functional independence than other domains of physical activity such as work— or household-related physical activity.

Late Breaking News Abstract #27

Implementation of clinical frailty scale in emergency department triage

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Introduction: Clinical frailty scale is a rapid evaluation tool to approach frailty status of older people that is increasingly used in different settings. This is the first attempt to apply Clinical Frailty Scale tool at the Emergency Department (ED) of a Tertiary hospital in Greece.

Methods: Henry Dunant Hospital Center has been offered to participate in the National Health System emergency department program, during the peak of the second wave of COVID-19 pandemics. On this occasion, we wanted to investigate the feasibility of performing a CFS screening of people over 65 years old upon arrival at emergencies. The assessment was performed by a trained Geriatrician and for this reason it was done periodically corresponding to the shifts of the assessor. Between 24/3/2021 and 9/04/2021 a CFS score was assigned to 67 people > 65 years old arriving on the emergency department. **Results:** Mean age was 78.61 years and mean CFS was 4381. 53.7% were admitted to the hospital, 28.4% arrived with ambulance. Mean hospitalization duration was 6639 days 52.2% were females. There were no difficulties faced during CFS scoring procedure.

Conclusion: The experience demonstrated that even in the case of high intensity ED CFS can be effectively administered. Larger samples are needed in order to better assess usefulness of CFS.

Late Breaking News Abstract #28

Nutritional care among orthogeriatric patients in Irish Tertiary Centre

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Background: Hip fracture is a common cause of morbidity and mortality, among older adults, with an annual incidence of over 3600 cases in Irish hospitals. (1) Malnutrition and repeated fasting during hospitalisation are associated with post-operative complications. The aim of the audit was to identify how many patients were fasted more than once for surgery and whether nutritional risk screening (NRS) was performed.

Methods: This is a cross sectional study. N = 27 and included all orthogeriatric admissions in Cork University Hospital over 2 weeks from 9/4/2021 to 23/04/2021. Demographic data was collected along with other information relevant to the nutritional status of the patients including MUST (Malnutrition Universal Screening Tool), weight during admission, number of repeated fasting prior to surgery. Laboratory data was also collected.

Results: 13 (48.1%) patients were fasting for surgery which was cancelled. Documentation of the reason of cancellation was recorded in 3 patients. The average days of fasting was 1 day. 2 patients had 3 consecutive days of fasting Documentation of nutritional assessment using MUST score was (25.9%) 7 patients. Weight documentation was recorded in (44.4%) 12 of the study population. (18.5%) 5 patients had self-reported recent weight loss. The percentage of patients who were biochemically hypoalbuminaemic on admission was 80.7%.

Conclusion: The study has identified high rates of repeated fasting preoperatively. Assessment of nutritional status was low. Integration of nutrition in the multidisciplinary care plan through systematic nutritional risk screening (NRS) according to European Society for Clinical Nutrition and Metabolism (ESPEN) is recommended².

Late Breaking News Abstract #29

Increased cognitive load, makes the sway area explode in community-dwelling older adults

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Background: Falls in older adults are a major concern worldwide. Many fall risk factors are available for predicting future falls. However, the complexity of risk factors leading to falls makes it difficult to introduce clinical measures and guidelines. Recent studies found poor executive function as a major fall risk factor. Therefore, balancing while being challenged cognitively (dual tasking) is of interest. Could a cheap and easily implementable force plate like the Wii Balance Board show the same predictive results as the well tested gait test?

Objective: We aimed to (1) determine intra-rater reliability for a static balance test using Wii Balance Board under dual-task conditions and (2) correlate these results with a standardised 6 m gait speed dual-task test in community-dwelling older adults.

Methods: We recruited 31 participants (19 (61%) females) aged 65, and above, without severe cognitive impairment. Each participant was

tested twice with a 2-week interval. The same rater conducted all tests. Three cognitive tests were used: one arithmetic and two verbal fluency tests. Static balance was measured in sway area (mm²) and sway speed (mm/s) using Wii Balance Board and 6 m gait speed (m/s) was measured using a stopwatch. Relative and absolute reliability as well as correlation was made to both single tasking, between the gait and balance test and between cognitive tests.

Results: We found an increase in gait speed under dual task conditions 31–53%, however, the sway area increased 446–534% and sway speed increased 65–72%. The relative reliability was excellent for the gait test with ICC values between 0.92 and 0.95. The Wii Balance Board displayed ICC values of 0.69–0.92 for sway area and 0.88–0.95 for sway speed under dual task condition but only 0.51 as single task. The cognitive tasks' ICC values (as single task) ranged from 0.80 to 0.93. Absolute reliability, CV, LOA, and SEM was calculated, and gait test showed CVs < 5% and SEMs < 1 s. Wii Balance Board sway area showed CVs 19–27% and SEMs 6–36 mm² and sway speed CVs 9–12% and SEMs 0.8–2 mm/s. The cognitive tests as single task showed CVs 7–18% and SEMs < 1 answer. No correlation was found between the gait test and static balance test.

Conclusion: The decrease for static balance measured as sway area under dual task conditions was much higher than the decrease in gait speed. The static balance test showed excellent relative reliability under dual task conditions, however, large values of CVs. Sway speed was a slightly better measurement than sway area in general. The gait speed results were in accordance with previous findings. A poor correlation between the gait test and the static balance test showed that they could not replace each other

Late Breaking News Abstract #30

Identifying salient personal beliefs of nursing home staff about stimulating psychogeriatric residents in activities of daily living: a qualitative study

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Background and objective: Although nursing home staff is in an ideal position to stimulate residents' participation in activities of daily living (ADL), care-tasks are often taken over. Understanding nurses' 'function-focused care (FFC)' behavior and its underlying determinants and beliefs is pivotal to optimize activity and self-reliance of residents. We aimed to identify salient personal beliefs of Dutch nursing home staff about stimulating psychogeriatric residents in functional and physical activity.

Method: A qualitative study using individual interviews among 15 Dutch nurses of psychogeriatric wards, conducted by telephone in spring 2021. Data were thematically analyzed using NVivo.

Results: Most nurses indicated to frequently stimulate residents in performing ADL although it was also reported that tasks were often habitually taken over. Nurses seem to show sufficient awareness reflected by knowledge of what FFC-behavior entailed and could result in, and insight in the risks of not performing FFC. Nurses' motivation to stimulate residents in ADL can be considered high,

reflected by a high intention to perform FFC and the expression of multiple advantageous and few disadvantageous beliefs. The support of management was perceived ambiguous. Self-efficacy was perceived high, although little time, staffing shortages, and residents not wanting to perform ADL, seem to reduce self-efficacy. Nurses were not always able to cope with such difficult situations and expressed the need of FFC-behavior enhancing skills.

Conclusion and implications: The identified beliefs should be incorporated in a comprehensive interactive and tailored training program to optimize nurses' FFC-behavior and ultimately enhance functional and physical activity of psychogeriatric residents.

Late Breaking News Abstract #31

Acute Frailty Assessment Unit in East Kent Hospitals University Foundation Trust (EKHUFT): a 6-month qualitative, observational study of lessons learned and the improvement journey

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Introduction: East Kent Hospitals is one of the largest NHS Trusts in the UK, however, has never previously invested strategically into developing acute frailty services. Acute frailty care is essential in promoting patient independence, optimising medical complexity and avoiding iatrogenic harm.

Methods: Using the Obeya model and a Plan-Do-Study-Act methodology, we have conducted a qualitative, observational study of lessons learned in the 6-months since the Acute Frailty Assessment Unit (AFAU) opened, based on our personal experiences and Key performance Indicators (KPIs).

Results: Four hundred seventy two patients received a Comprehensive Geriatric Assessment on AFAU (average length of stay 6.1 days; range: 2.4–10.1 days). AFAU's KPI targets of < 48 h stay (> 50%) and < 24 h stay (> 30%) admissions, were not achieved (average 31%, range: 15.1–43.4% and 13.5%, range: 7.0–20%, respectively). Bed pressures, ineffective bed-flow management, limited staff resources over weekends, lack of staff training on frailty care and depleted community integrated care capacity, have been identified as major limiting factors to the operational development of AFAU. We are introducing a 7-day work pattern, including Physiotherapists, enhanced frailty training, introducing a dedicated frailty Operations' Manager, co-locating a ward-attender and an acute frailty clinic in AFAU, and improving our links with the community frailty teams, so patients shall receive care closer to their homes.

Key conclusions: Acute frailty services at a District General Hospital level can be challenged by several compounding factors. Critical analysis and proactive planning are required to allow evolution to the next stage.

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