PT03.05
VALIDATION OF GLIM MALNUTRITION CRITERIA WITH SGA AND FFMI MEASUREMENT IN 150 HOSPITALIZED PATIENTS

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Rationale: Subjective Global Assessment (SGA) is a recognized and validated method for malnutrition diagnosis. However, recently a global consensus of numerous clinical nutrition societies has proposed the Global Leadership Initiative on Malnutrition (GLIM) criteria for diagnosis and identification of malnutrition in clinical settings. The aim of this study was to compare SGA assessment and GLIM malnutrition criteria and to evaluate the measurement of FFMI (Fat Free Mass Index) alone as a useful tool for malnutrition diagnosis
Methods: 150 (74 male and 76 female) hospitalized patients were assessed for SGA, and GLIM criteria including FFMI, using BodyStat 4000, UK (N = 117 from the 150). Phase Angle (PA) was also obtained. Statistical analysis used Pearson correlation and Stepwise multiple Regression. The study was approved by local IRB.
Results: Mean age was 58 ± 18 years, mean BMI was 27.8 ± 6.7 kg/m^2. Diagnosis included 69.8% Mild and moderate malnutrition (SGA A and B) and severe malnutrition was found in 30.2% patients. GLIM malnutrition criteria was correlated with SGA assessment ($R = 0.353$, $p \leq 0.001$). GLIM was better correlated with low FFMI alone ($R = 0.566$ $p \leq 0.001$), but not with PA ($R = -0.316$, $p < 0.44$). SGA had a poor correlation with PA ($R = -0.315$, $p = 0.45$). A stepwise multiple regression was conducted to evaluate whether SGA, low FFMI scores and Dry Lean Body Mass (DLBM) are necessary to predict GLIM malnutrition criteria. The multiple correlation coefficient was $R^2 = 0.782$, ($p < 0.0001$) indicating approximately that most of the variance (78.2%,) could be accounted by low FFMI ($R^2 = 0.591$, $p \leq 0.001$), scores SGA ($R^2 = 0.742$, $p \leq 0.00$), and DLBM ($R^2 = 0.782$, $p \leq 0.01$).
Conclusions: In hospitalized patients, the GLIM malnutrition criteria are significantly correlated to SGA, low FFMI, and DLBM. GLIM malnutrition criteria can assess malnutrition. GLIM is highly correlated to FFMI.

Disclosure of Interest: None declared.

PT03.06
MALNUTRITION IN CHILDREN AND ADOLESCENTS WITH MALIGNANT NEOPLASMS: A NEW PARAMETER FOR CLASSIFICATION AND EARLY IDENTIFICATION?

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Rationale: Malnutrition in cancer is a frequent finding, occurring both by the biochemistry of malignant tumor cells and by treatment toxicity. To date, no simple instrument has been proposed worldwide that best identifies the state of malnutrition in this population, since BMI has several limitations. The main objective of this work was to identify cutoff values of calf circumference (CC) for malnutrition in children and adolescents with malignant neoplasms.
Methods: A cross-sectional study that assessed patients from 0 to 19 years old at a Pediatric Oncology Specialized Institute between October 2015 and April 2017. Measurements of weight (kg), height (cm), CC (cm) were evaluated, and BMI were calculated. ROC curves were performed, with sensitivity and specificity analysis, considering the gold standard BMI z-score, to identify cutoff points of CC for malnutrition. Statistical significance was $p < 0.05$.
Results: Among the 1794 assessments, 56,3% (n = 1011) were male. Taking into consideration the best sensibility and specificity, area under the curve, and confidence interval 95% (CI95%) the cutoff values of CC, in centimeters to identify undernutrition, according to the age range, in years (y), for males, were: 0–1 y: ≤17,2 cm; 2–5 y: ≤18,8 cm; 6–9 y: ≤23,9 cm; 10–12 y: ≤25,3 cm; 13–15 y:≤28,2 cm; 16–19 y: ≤32,0 cm; and for females:0–1 y: ≤15,4 cm; 2–5 y: ≤18,9 cm; 6–9 y: ≤24,1 cm; 10–12 y: ≤24,4 cm; 13–15 y: ≤29,1 cm; 16–19 y: ≤30,2 cm; ($p < 0{,}001$). Malnutrition was observed in 30.14% of the sample, considering the classification by CC, and in 13.3%, considering the BMI z-score.
Conclusions: It is concluded that CC is a good parameter of malnutrition in children and adolescents with malignant neoplasms, better than BMI, besides being simple and easy to apply.

Disclosure of Interest: None declared.

Nutrition and cancer/Obesity and the metabolic syndrome

PT04.1
EVALUATION OF SYNERGIC POTENTIAL EFFECTS BETWEEN INULIN AND VOLUNTARY EXERCISE DURING OBESITY

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Rationale: The gut microbiota can be influenced by dietary prebiotics, which have been proposed as modulators of behavior and metabolism in obesity. Here we tested the hypothesis of the interest to combine physical exercise and prebiotics in a model of diet-induced obesity.
Methods: 45 male C57BL/6J mice were randomized in: 1) Control diet; 2) High-fat diet (HFD, 45% kcal from fat); 3) HFD + Inulin (0.2 g/day/mice) (HFD + I); 4) HFD + exercise using a voluntary running wheel (HFD + Ex); 5) HFD + Inulin + Exercise (HFD + I + Ex). Mice were individually housed (n = 9 per group), a locked wheel was placed in the cage of sedentary mice and the experiment lasted for eight weeks. Behavioral testing using a light/dark box and an oral glucose tolerance test (OGTT) were performed respectively during the 6th and the 7th week.
Results: After eight weeks, physical activity was similar between the two groups of mice submitted to running wheel. All mice gained a similar body weight upon HFD. Only voluntary exercise limited the increased of subcutaneous adipose tissue weight ($p < 0.05$). Interestingly, inulin supplementation improved the glucose tolerance and this effect was higher when combined with voluntary exercise. Moreover, we found that only inulin reduced the anxiety-like behavior, associated with a lower level of plasma corticosterone ($p < 0.05$ for inulin treatment). In addition, the increase of cecal content – signing gut fermentation- was found in inulin groups but the fermentation seems to be higher in active mice. Finally, inulin increased *Bifidobacterium* species independent on exercise, but further expanded *Roseburia* and *Lactobacillus* species when combined with exercise.
Conclusions: Our work highlighted a synergic effect of inulin supplementation and physical activity on glucose tolerance, both treatment exerting differential effect on adiposity and anxiety. Future efforts will focus on correlations existing between the changes in gut microbiota and the beneficial consequences of both inulin and exercise during obesity.

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