

Conclusion: 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 non-obese 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.

Disclosure of Interest: None declared.

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MICROBIOME AND METABOLOME-RELATED BIOMARKERS OF MOOD ALTERATIONS IN OBESE PATIENTS

Q. Leyrolle^{*1}, R. Cserjesi², R. Demeure¹, A.M. Neyrinck¹, J. Rodriguez¹, O. Karkkainen³, K. Haninheva⁴, N. Paquot⁵, M. Cnop⁶, P.D. Cani^{1,7}, J.-P. Thissen⁸, L.B. Bindels¹, O. Klein², O. Luminet⁹, N.M. Delzenne¹. ¹Metabolism and Nutrition Research Group, Louvain Drug Research Institute, UCLouvain, Belgium; ²Center for Social and Cultural Psychology, Université libre de Bruxelles, Brussels, Belgium; ³Department of Clinical Nutrition, Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio, Belgium; ⁴University of Turku, Department of Biochemistry, Food Chemistry and Food Development unit, University of Turku, Turku, Finland; ⁵Laboratory of Immunometabolism and Nutrition, GIGA-Inflammation, Infection & Immunity, University of Liege, Liege, Belgium; ⁶ULB Center for Diabetes Research, Université Libre de Bruxelles, Division of Endocrinology, Université libre de Bruxelles; ⁷WELBIO- Walloon Excellence in Life Sciences and Biotechnology, Belgium; ⁸Pole of Endocrinology, Diabetes and Nutrition, Institut de Recherche Expérimentale et Clinique IREC, Belgium; ⁹Research Institute for Psychological Sciences, UCLouvain, Brussels, Belgium

Rationale: Obesity is associated with several co-morbidities including an increased risk for neurological and behavioural alterations. The aim of the study is to find new therapeutic target to improve mood in obesity. To do so, we explored the biological, microbial and metabolomic profile of obese subject presenting with mood disturbances.

Methods: Psychological, biological characteristics (anthropometry, biological markers, gut microbiome) and nutritional habits of 94 obese subjects (BMI: 36.5±6.1) from the Food4Gut cohort were analysed to find biomarkers of mood disturbances (assessed by the Positive and Negative Affect Schedule – PANAS). Gut microbiota composition (16S rDNA sequencing, ASV method) and predicted-function (PICRUSt2) as well as plasma non-targeted metabolomics (high performance liquid chromatography-mass spectrometry) were performed in a subcohort of 86 and 39 patients respectively. Finally, a food survey (24-hours recall) was conducted to evaluate nutritional intake of obese individuals with a specific focus on amino-acids intake. Partial least square discriminant analysis followed by adjusted logistic regression were used to select the biological, microbial and metabolomics variables segregating our two groups.

Results: Obese subjects with impaired affect balance display elevated levels of *Coprococcus* and decreased levels of *Sutterella* and *Clostridium XIVa*. Metabolomics analysis revealed that these subjects display altered levels of several amino-acids derived metabolites. The main changes observed were an increased level of L-Histidine and a decreased of Phenylacetylglutamine. Regarding biological profile, we did not observe any differences between both groups.

Conclusion: Our Results revealed that gut microbiota composition and the levels of amino-acids derived metabolites are associated with alterations of mood in obese subjects.

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THE ASSOCIATION BETWEEN LEPTIN LEVEL AND LIPID PROFILE IN WOMEN WITH HASHIMOTO'S DISEASE

A. Janczy^{*1}, S. Małgorzewicz², M. Skotnicka¹, P. Gogga¹. ¹Department of Food Commodity Science, Poland; ²Department of Clinical Nutrition, Medical University of Gdańsk, Gdańsk, Poland

Rationale: Weight gain is a well-known side effect of Hashimoto's autoimmune thyroiditis [1]. As body weight increases, one can expect increased levels of circulating leptin and deleterious changes in lipid profile [2]. **The study aimed** to assess concentrations of leptin, cholesterol fractions, and triglycerides in women with Hashimoto's disease (HD) and in healthy subjects.

Methods: 26 women were recruited into the study, based on the inclusion and exclusion criteria – 12 women with Hashimoto's disease (mean age 43.6 ± 10.9) and 14 healthy ones (mean age 38.0 ± 11.1). All subjects provided an informed consent before the onset of the study, which was approved by the Independent Bioethical Committee for Scientific Research (NKBBN/348/2018). A well-trained consultant measured height, waist circumference (WC), body weight and body fat content (BF) in all participants. Based on the data on the height and the current body weight, body mass index (BMI) was calculated. Serum leptin levels were measured using immunoenzymatic test (Demeditec Diagnostics GmbH, Germany). To examine HDL, LDL, total cholesterol (TC) and triglycerides (TG) a direct method was used (Alpha Diagnostics, Poland).

Results: The study showed higher BMI and WC in the HD group (P=0.05). Median serum leptin levels were 30.1 ± 12.7 in HD patients and 12.9 ± 13.7 in the control group (P=0.05). We observed no differences in TG levels; HDL and TC were higher in healthy women (respectively P=0.05 and P=0.001), while LDL was higher in HD subjects (P=0.002). There were no significant correlations between lipid profile and leptin concentrations, while we observed statistically significant relationship between leptin levels and BMI, BF and WC in both groups (P<0.001).

Conclusion: Weight gain observed in HD patients implies rise of leptin levels and dyslipidaemia, both of which contribute to negative health outcomes.

References:

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EFFECTS OF VITAMIN D AND CHROMIUM SUPPLEMENTATION ON PREVENTION OF DIABETES TYPE-A SYSTEMATIC REVIEW

E.G. Guven¹, D.V. Popova², R.D. Stoyanova^{*2}, M.M. Robertova¹. ¹Gastroenterology, Dr. Georgi Stranski University Hospital, Pleven, Bulgaria; ²Endocrinology and Dietetics, Tsaritsa Yoanna University Hospital, Sofia, Bulgaria

Rationale: Epidemiological and interventional studies showed that altered vitamin D status may be associated with decreased insulin synthesis, increased insulin resistance and increased risk of metabolic syndrome through several mechanisms.(1)Mechanisms were defined as stimulation of pancreatic beta cell function, decreased fat tissue, inflammatory markers. However, the exact mechanism lacks supporting evidence. Chromium seems to plays a vital role in regulation of carbohydrates and lipids, hence it enhance the signalling pathway and insulin action according to current studies, yet the exact reasoning is not fully understood.(2)There is no clinically defined state of chromium deficiency but T2DM has been shown to develop in low levels of chromium picolinate. Nevertheless, diets lacking essential trace elements is interrelated to reproducible structural or biochemical changes that are irreversible according to Espen guidelines.

Methods: It has emerged to conduct a systematic-review with meta-analysis to fill the gap in evidence in literature. Selective search strategy was performed for relevant articles using 2 independent investigators with keywords using Ovid in Cochrane, Medline and CINAHL database. Our main focus was to measure the effects on prevention and therapeutic effects, therefore selected studies were extracted and tabulated with quality assessment using GRADE criteria.

Results: Combined results did not show a significant change in HbA1C(-0.27%)(95%CI=-1.03 to -2.18,p<0.001) levels of the subjects associated with Vitamin D status or supplementation. However, outcome based conclusion