SUN-124

Background: Multiple endocrine neoplasia type 1 (MEN1) is a rare inherited disorder in which patients develop multiple simultaneous hormone-secreting tumors. Most common tumors include: anterior pituitary adenomas (50%), multi-gland parathyroid adenomas (95%), and gastroenteropancreatic neuroendocrine tumors (40-80%). Only rare MEN1 associated glucagonomas (<1%), and ACTH-producing neuroendocrine tumors (<5%) are known to increase risk of hypercoagulability. It is unknown if patients with MEN1 syndrome have increased risk of venous thrombolytic events (VTE), defined as a deep-vein thrombosis and/or pulmonary embolism.

Methods: We queried a prospective natural history study of MEN1 patients who tested positive for germline *MEN1* mutations (n=287) between 1991-2019 (54 patients on our current protocol were followed before 1991; the earliest was 1971). All lifetime events of VTE were included. Search terms included: DVT, thromb, embol, PE, pulmonary embolism, clot, hematology consult, anticoagulant, coumadin, lovenox, xarelto, warfarin, aspirin, rivaroxaban and apixaban. After initial screening, 10 patients were removed due to insufficient clinical data. Kaplan-Meier analysis was performed to compare age of death between the two cohorts. Results were expressed as mean ± standard deviation.

Results: Thirty-four subjects (mean 57.5 years-old, 17 women) were identified with any VTE, yielding a prevalence rate of 13.4%. The incidence of VTE corresponded to 264 events per 100,000 patient-years, which was ~2-fold higher than the estimated annual incidence rate in the general population (104-183/100,000 patient years).[1] Kaplan-Meier analysis revealed no significant difference in survival between the two groups (non-VTE cohort mean 81.1 years ± 2.23; VTE cohort mean 77.4 years ± 3.45; p = 0.96). Thirty-two events occurred during the surveillance period at our institution; 9 individuals had more than one VTE. At the time of VTE, 80% had hyperparathyroidism (mean PTH ± SD; 97.56 pg/mL ± 90.76), 21% had hyperprolactinemia (prolactin 25.7µg/L ± 43.41), 62.5% had hypergastrinemia (mean gastrin 1100.9 pg/mL ± 3127.8), and 84.6% had non-functional pancreatic neuroendocrine tumors. One patient was identified to have a Factor V Leiden mutation, 3 patients had lupus anti-coagulant. Eleven patients experienced events within a post-surgical period of 3 months.

Conclusions: Hypercoagulability in MEN1 has been previously unidentified. Our cohort data suggests a two-fold increase in the incidence of VTE as compared to the general population, with a high risk occurring within the perioperative period. Further mechanistic investigation and validation from other cohorts are needed to confirm the increased prevalence of VTE in this population.

[1]Heit, John A., et al. Epidemiology of venous thromboembolism. *Nat Rev Cardiol* 2015 Aug;12(8): 464-474.

Cardiovascular Endocrinology

PATHOPHYSIOLOGY OF CARDIOMETABOLIC DISEASE

Levels of Nesfatin-1 in Adolescents, and Its Association with Body Mass Index and Risk of Cardiovascular Disease

Karla Paola Gutierrez, MD[1], Carlos Kornhauser, MD,PhD[1], Armando Gómez, PhD[1], Claudia Luevano-Contreras, PhD[1], Mary Fafutis-Morris, PhD[2], Alejandro Gugliucci, MD,PhD[3], Ma Eugenia Garay-Sevilla, MD,PHD[1].

[1]University of Guanajuato, León, GTO, Mexico, [2]University of Guadalajara, Guadalajara, Jalisco, Mexico, [3]Touro University, Vallejo, CA, USA.

SUN-575

Nesfastin-1 is a recently discovered anorexigenic neuropeptide, which seems to follow the signaling pathway of melanocortin, and is involved in cardiovascular regulation (1). It is expressed in several tissues, including pancreatic islet cells, the central nervous system, In subcutaneous and visceral fat tissue, among others (2). There are few and controversial data that assess the levels of nesfatin-1 and its relationship with the cardiovascular disease. The aim of this study was to evaluate the serum levels of nesfatin-1 in adolescents with different metabolic status and BMI and its association with cardiovascular risk factors (glucose, lipid profile).

Material and methods: This cross-sectional study included adolescents between 15 and 19 years old, classified in 3 groups according to BMI and HOMA-IR: adolescents with normal weight without metabolic alterations (n = 30), metabolically healthy obese (MHO) n = 30 and metabolically unhealthy obese adolescents (MUO) n = 42. Anthropometric measurements were performed, a fasting blood sample was taken to quantify glucose, lipid profile and creatinine. Insulin and nesfatin-1 concentrations were measured by ELISA. Statistical tests employed were Kruskal Wallis, Spearman correlation.

Results: the group of adolescents MUO had higher levels of total-C ($p<0.0002$); triglycerides ($p<0.00001$) compared to the control and MHO; higher levels of nesfatin-1 ($p=0.0002$) and lower levels of HDL-C ($p<0.002$) compared to the control group. A positive correlation was between nesfatin-1 and BMI ($p<0.001$), triglycerides ($p<0.027$), and HOMA-IR ($p<0.025$) and negative correlation with HDL-C ($p<0.026$)

Conclusion: Our results show that metabolically unhealthy obese adolescents have higher concentrations of nesfatin-1, showing an association with traditional cardiovascular risk factors, which could lead to the development of cardiovascular disease.

Nothing to disclose GK, KC, GOA, LCC, FMM, GA, GSME

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References: (1) Oh-I et al., Nature. 2006; 443:709–712. (2) Stengel A et al., Regulatory Peptides. 2010; 163:18–23

Neuroendocrinology and Pituitary

CASE REPORTS IN SECRETORY PITUITARY PATHOLOGIES, THEIR TREATMENTS AND OUTCOMES

Co-Secreting TSH and Growth Hormone Pituitary Adenoma

Hatem Eid, MRCP.

St Georges hospital, London, United Kingdom.

SAT-276

Introduction: Secreting pituitary adenoma is exceedingly rare. Less than 15 cases having been reported. Its clinical presentation and diagnosis is challenging. We report a case of pituitary