

started on ceftriaxone and metronidazole which were continued for a total of 10 days with clinical improvement. **Discussion:** EG results from disruption in gastric mucosa which facilitates translocation of gas-producing bacteria commonly *Klebsiella pneumoniae*, *Escherichia coli*, *Pseudomonas aeruginosa*, and *Enterobacter* subspecies. Immunosuppression with diabetes is an important underlying factor and patients are at risk even with controlled diabetes. Additionally, patients with diabetic complications like gastroparesis with frequent retching are at increased risk. Considering variable and non-specific symptoms of presentation, a high index of clinical suspicion is required for recognition as it may have a fulminant course with high mortality risk. CT scan is the imaging of choice for diagnosis. Management primarily consists of bowel rest, antibiotics and monitoring for signs of peritonitis. In the absence of complications including rupture or stricture formation, surgery is not recommended. In our case, possible gastroenteritis with subsequent vomiting and retching in the setting of underlying diabetes predisposed to the development of emphysematous gastritis. Although air in the portal venous system is associated with higher mortality, our patient was successfully managed conservatively. As the diagnosis carries a high mortality risk, early recognition is imperative for a successful outcome.

## Thyroid

### THYROID CANCER CASE REPORTS II

#### *Graves' Disease and Papillary Thyroid Cancer: A Rare Clinical Case?*

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#### MON-439

**Background:** Nodules on the background of Graves' disease are less common among men than among women, but more than one in three patients have carcinoma. Despite the improvement of diagnostic methods, most often thyroid cancer is a random histological finding after thyroidectomy for Graves' disease. **Clinical case:** A 55-year woman complained of discomfort in the neck, sweating, irritability, palpitation. From anamnesis: in 2012 she was diagnosed with thyrotoxicosis syndrome. For 5 years, the patient was treated with thyrostatics, but when trying to reduce the dose, the syndrome of thyrotoxicosis recurred. In March 2017, the patient's condition worsened, at the time of treatment she took Thyrosol 30 mg/day. Objectively: hypersthenic body type, BMI 33 kg/m<sup>2</sup>. Thyroid gland visually was increased in volume, dense with palpation, homogeneous, mobile. Elevated titer of antibodies to the TSH receptor was discovered, according to the ultrasound - increase thyroid gland 30.2 cm<sup>3</sup>, hyperechogenic formation of the left lobe 10x10x9 mm with hypoechoic rim, clear smooth contours, intranodular blood flow. As a result, the Graves' disease, goiter grade 2, manifest thyrotoxicosis was verified, surgical treatment was recommended. Thyroidectomy, histological examination was performed: Graves' disease was

confirmed, papillary microcarcinoma with metastasis to 1 regional lymph node was revealed. Diagnosed: papillary thyroid cancer I st (pT1aN1aM0x), 2 clinical group. The patient was prescribed suppressive therapy with L-thyroxine 100 µg/day, against which after 3 months TSH reached the target values (0.2–0.5 Mm/l). Taking into account the histological characteristics of the tumor, the nature and volume of the lesion, age, the patient belongs to the group of intermediate cancer risk of progression of cancer. According to scintigraphy residual functioning thyroid tissue (20x15 mm) was detected. Radioiodine therapy was carried out in a specialized hospital. Suppressive therapy of L-thyroxine 150 µg/day, target values of TSH 0.1 - 0.5 Mm/l was recommended. After 6 months, TSH reached target values, and according to the results of ultrasound of thyroid gland no data for structural relapse was found. **Conclusion:** Patients with long-existing, often recurrent Graves' disease and questionable effect of conservative therapy, in the presence of nodular formation should be assigned to the risk group for the presence of thyroid cancer and carefully examined, because the need for further surgery depends on it.

## Cardiovascular Endocrinology

### ENDOCRINE HYPERTENSION AND ALDOSTERONE EXCESS

#### *Epigenetic Regulation of 11beta-Hydroxysteroid Dehydrogenase 1 and 2 Gene in Salt-Sensitive Hypertensive Rats*

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#### SAT-552

##### ENDO 2020

Epigenetic regulation of 11beta-hydroxysteroid dehydrogenase 1 and 2 gene in salt-sensitive hypertensive rats [Objective]11Beta-hydroxysteroid dehydrogenase type1 (11-HSD1) is the modulator of glucocorticoid hormone and type2 (11-HSD2) is the modulator of mineralocorticoid hormone. We investigated the effect of high salt diet on the methylation of both enzyme gene in salt-sensitive hypertensive (SSH) rats [Methods]SSH rats were fed a high (7% NaCl) or normal (0.45%) salt chow for 4 weeks. Body weight, blood pressure, plasma and urinary aldosterone concentration and PRA were measured. DNA was extracted from kidneys and visceral fats. Bisulfite sequencing and Pyrosequencing were done for the analysis of methylation status of 11-HSD1 and 2 gene. [Results] High salt diet significantly decreased methylation ratio of 11-HSD1 gene in the visceral fats of SSH rats compared with controls (p<0.05). The methylation ratio of 11-HSD2 gene in the kidney of SSH rats was not influenced by high salt diet. [Discussion and Conclusion]11-HSD1 overexpression in visceral fats in mice was reported to show SSH. We reported decreased 11-HSD2 activity in the artery in SSH rats. In this study

high salt diet affected methylation status of 11-HSD1 in the adipose tissue but not 11-HSD2 gene in the kidney in SSH. Food intake such as salt may influence the epigenesis of 11-HSD and induce hypertension.

## Diabetes Mellitus and Glucose Metabolism

### LIPIDS, OBESITY AND METABOLIC DISEASE

**Associations of Serum and CSF Kisspeptin Levels with Metabolic and Reproductive Parameters in Men**  
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### SAT-658

Action of kisspeptin in the central nervous system (CNS) is well known on reproductive regulation; however, its peripheral action is not well understood. Recent studies have shown that peripheral kisspeptin might be related to obesity and/or metabolic parameters in humans [1]; however, these associations are still inconclusive. This study aimed to 1) compare serum or cerebrospinal fluid (CSF) kisspeptin levels between different body mass index (BMI) groups 2) compare levels of kisspeptin between serum and CSF, and 3) determine correlations between serum or CSF kisspeptin levels with clinical, metabolic, and reproductive parameters. There were 40 male subjects who underwent an operation with lumbar puncture anesthesia. Subgroup analysis was performed to compare between the lean-normal group (n=13) which included lean and normal weight subjects, the overweight group (n=10), and the obese group (n=17) according to BMI. Blood samples were collected after at least 8-hour fasting before intravenous cannulation prior to the operation while CSF samples were obtained by lumbar puncture before administration of the spinal anesthesia. Serum kisspeptin and leptin levels were significantly higher in the obese group when compared to the lean-normal and overweight groups even after adjusted to age while CSF kisspeptin levels were comparable between different BMI groups ( $p < 0.05$  all). Serum kisspeptin levels were significantly higher than CSF kisspeptin levels ( $p < 0.001$ ). Serum kisspeptin was significantly positively correlated with body weight ( $R = 0.351$ ), BMI ( $R = 0.549$ ), plasma insulin ( $R = 0.393$ ), and serum leptin ( $R = 0.45$ ) ( $p < 0.05$  all), and tended to have a positive correlation with the Homeostatic Model Assessment of Insulin Resistance (HOMA-IR) ( $R = 0.29$ ,  $p = 0.77$ ) but was significantly negatively correlated with plasma LH ( $R = -0.37$ ) ( $p < 0.05$ ). CSF kisspeptin was significantly positively correlated with plasma LH ( $R = 0.452$ ,  $p < 0.05$ ). These results suggest that serum kisspeptin levels were related to increased obesity, leptin, insulin, and insulin resistance while CSF kisspeptin levels were related to reproductive parameters. In summary, central kisspeptin might have a role on reproductive regulation while peripheral kisspeptin might have a role on metabolic regulation. **Reference:** (1) Izzi-Engbeaya, C., et al.,

The effects of kisspeptin on beta-cell function, serum metabolites and appetite in humans. *Diabetes Obes Metab*, 2018. 20(12): p. 2800–2810.

## Neuroendocrinology and Pituitary NEUROENDOCRINE & PITUITARY PATHOLOGIES

### Central Adrenal Insufficiency Is Rare in Adults with Prader-Willi Syndrome

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### SUN-308

**Introduction:** Prader-Willi syndrome (PWS) is associated with several hypothalamic-pituitary hormone deficiencies. There is no agreement on the prevalence of central adrenal insufficiency (CAI) in adults with PWS. This is partly due to the variable results of the synacthen test, compared with the more robust metyrapone test (MTP) and insulin tolerance test (ITT). In some countries, patients with PWS receive stress-dose corticosteroids during physical or psychological stress. Side effects of frequent corticosteroids use are weight gain, osteoporosis, diabetes mellitus and hypertension, already major problems in adults with PWS. However, undertreatment of CAI can cause significant morbidity or even mortality. To prevent over- and undertreatment with corticosteroids, we assessed the prevalence of CAI in a large international cohort of adults with this rare disorder.

**Methods:** The hypothalamic-pituitary-adrenal axis was tested in 81 adult subjects (55 Dutch, 10 British, 10 French, 6 Swedish) with genetically confirmed PWS. For multiple-dose MTP, 11-deoxycortisol  $> 230$  nmol/L (7.6 g/dL) was considered sufficient. For Dutch, French and Swedish patients who underwent ITT, cortisol  $> 500$  nmol/L (18.1 µg/dL) was considered sufficient. For British patients cortisol  $> 450$  nmol/L (16.3 µg/dL) was considered sufficient, as this center used a different assay. Additionally, we reviewed medical files of 645 adults with PWS from Italy (240), France (110), the Netherlands (110), Australia (60), Spain (45), Sweden (38) and the United Kingdom (42) for symptoms of hypocortisolism/adrenal crisis during surgery. **Results:** Data on 81 adult subjects (46 males and 35 females), median age (range) 25.2 yr (18.0 – 55.5), median BMI (range) 29.1 kg/m<sup>2</sup> (20.0 – 62.0), with genetically confirmed PWS were collected. 33 subjects (41%) were using GH treatment since childhood. Multiple-dose MTP was performed in 45 subjects and ITT in 36 subjects. Both tests