

the central regulation of energy balance, but also implicates potentially wide-ranging effects of FGF21 such as in executive functions.

## Bone and Mineral Metabolism

### PARATHYROID HORMONE TRANSLATIONAL AND CLINICAL ASPECTS

#### *Correlations Between Biochemical Parameters and Trabecular Bone Score (TBS) in Primary Hyperparathyroidism (PHP) Patients*

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#### SAT-395

**Background:** Vitamin D deficiency is common among PHP patients. While data are limited, some studies suggest that vitamin D deficiency may exacerbates skeletal disease in PHP. TBS is a software-based method for assessment of trabecular bone structure of the spine, based on analysis of pixels obtained in dual energy x-ray absorptiometry (DXA) images. The aim of this study was to evaluate TBS, vitamin D status, clinical and laboratorial measurements in a PHP group of patients in a search for a more accurate bone fragility test for risk assessment in this group of patients.

**Methods:** From June/2017 to January/2019, patients who met the criteria for PHP diagnosis were included in this study. Control group was composed by age and sex-matched healthy individuals. Overall, 64 PHP and 63 controls were enrolled. Bone mineral density (BMD) measured by DXA (Hologic QDR 4500) at the lumbar spine, total hip, femoral neck, and TBS values (InSight™) were determined in both groups. Total and ionized calcium, PTH, 25-hydroxyvitamin D (25(OH)D), creatinine, alkaline phosphatase, P1NP and CTX were measured. None were in use of Vitamin D supplementation.

**Results:** As expected, PHP patients had lower BMD values than controls in all sites ( $p < 0.0001$ ). TBS measurements were also reduced in PHP patients compared to controls (1233 vs 1280,  $p = 0.0444$ ). TBS values were inversely correlated with total calcium (CaT) and phosphorus measurements were positively correlated in the PHP patients. 25(OH)D measurements didn't differ between groups (PHP 22.5 vs. controls 19.8 ng/mL,  $p = 0.1699$ ). There was a positive correlation between 25(OH)D and TBS in both PHP and controls ( $r = 0.3088$ ,  $p = 0.0138$  and  $r = 0.3708$ ,  $p = 0.003$  respectively). Considering individuals with vitamin D deficiency (25(OH)D levels  $\leq 20$  ng/mL), a negative correlation between TBS and CaT measurements among PHP patients ( $r = -0.4391$ ,  $p = 0.0172$ ) was observed, while in controls there was a positive correlation between TBS and 25(OH)D ( $r = 0.3504$ ,  $p = 0.0362$ ).

**Conclusion:** Serum total calcium presents negative correlation and phosphorus a positive one with TBS in PHP patients. We also found a correlation between TBS and 25(OH)D, both in PHP and in controls. 25(OH)D  $\leq 20$  ng/mL is an independent risk factor determining degraded TBS among PHP patients and controls.

## Tumor Biology

### ENDOCRINE NEOPLASIA CASE REPORTS I

#### *Peptide Receptor Radionuclide Therapy for an Inoperable Small Cell Neuroendocrine Tumor in the Philippines*

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#### SUN-914

**Background:** Peptide Receptor Radionuclide Therapy treatment for neuroendocrine tumors is a well-tolerated treatment option for patients not amenable to receiving chemotherapy and radiotherapy. **Clinical Case:** A 42-year-old female was evaluated by a cardiologist for complaints of new onset recurrent throat discomfort, chest pain and palpitations. Two-Dimensional echo showed a large extra-cardiac mass compressing the main pulmonary artery. Chest CT with contrast reveal a 5.8 x 6.0 x 7.2 cm enhancing lobulated anterior mediastinal mass. Attempts to excise the mass failed due to the proximity to major blood vessels. Biopsy revealed a Carcinoid Tumor that was Chromogranin A positive but was asymptomatic for carcinoid syndrome. Everolimus treatment was given but was halted due to stomatitis. The patient remained fully functional. Re-evaluation of the mass with FDG PET show an increase in tumor size. Biopsy tissue re-testing showed small cell neuroendocrine carcinoma. Urine 5-hydroxyindoleacetic acid, plasma 5-hydroxyindoleacetic acid, and serum Chromogranin A were normal. A  $^{68}\text{Ga}$ -DOTATATE PET/CT scan reveal a slight increase in the mass that was intensely DOTATATE-avid. Two sessions of Peptide Receptor Radionuclide Therapy (PRRT) Lutetium-177 DOTATATE given at an 8-month interval were given. SPECT/CT re-evaluation showed good response and no evidence of metastases. A  $^{68}\text{Ga}$ -DOTA-octreotate PET-CT scan was done and showed good response to treatment. According to treatment guidelines, small cell neuroendocrine carcinoma that are non-resectable are treated with radiotherapy plus chemotherapy. But since the patient is fully functional and has minimal symptoms, other means of treatment such as PRRT may be well suited due to good tolerability and good treatment outcomes. **Conclusion:** PRRT is a promising treatment for NETs that is well tolerated giving better functionality and quality of life for patients opting not to undergo chemotherapy and radiotherapy. **Reference:** Cadiot, G. (2019). French and European Neuroendocrine Tumor Society consensus guidelines. *Annales d'Endocrinologie*, 80(3), p.174.

## Diabetes Mellitus and Glucose Metabolism

### GESTATIONAL DIABETES, DIABETES IN PREGNANCY, AND IN UTERO EXPOSURES

#### *Perinatal DDE Exposure Disrupts Thermogenesis Early in Development*

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