

and 9 were followed-up for less than 3 years. Changes in hormone levels and BMD, according to HT regimen, were evaluated in 234 patients. **Results:** The mean age at transplantation was  $30.47 \pm 6.55$  years. Out of 234 patients, 170 (72.6%) patients received HT, starting treatment at a mean of  $15.1 \pm 8.2$  months after transplantation. A significant increase in estradiol level was observed in patients receiving HT ( $p < 0.001$ ); no difference was observed between the 3 different types of HT regimen ( $p = 0.534$ ). After 2 years of HT, BMD was significantly increased at all measurement sites: lumbar spine  $5.8 \pm 6.26\%$  ( $p < 0.001$ ), femoral neck  $3.4 \pm 17.78\%$  ( $p = 0.037$ ), total hip  $2.1 \pm 7.15\%$  ( $p = 0.001$ ). Again, there was no difference in changes between the HT regimens ( $p = 0.646$  for lumbar spine,  $p = 0.840$  for femoral neck, and  $p = 0.855$  for total hip). These changes were significant even in patients with graft versus host disease (GVHD) or steroid exposure. **Conclusion:** In patients with premature ovarian failure following allogeneic HSCT, HT effectively lowered serum FSH and increased serum estradiol levels. HT significantly increased BMD regardless of the history of GVHD or steroid exposure. These changes in hormones and BMD were independent of the HT regimen.

## Pediatric Endocrinology

### PEDIATRIC ENDOCRINE CASE REPORTS II

#### *Prepubertal Gynecomastia Secondary to Excessive Soy Consumption*

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#### MON-079

Enlargement of breast tissue in males, or gynecomastia, is a rare condition in prepubescent boys. While the majority of cases are idiopathic, we describe an 8-year-old patient who developed unilateral gynecomastia secondary to marked dietary soy consumption. Soy products, particularly those consumed by our patient, contain high levels of phytoestrogens which have been documented in limited case studies to contribute to abnormal development of breast tissue in adolescent and adult males. To our knowledge, this is the first documented case of gynecomastia occurring in a prepubescent patient resulting from excessive intake of dietary soy. Importantly, we also report a complete resolution of gynecomastia upon exclusion of dietary products containing significant amounts of soy. While soybeans and soy-derived products can be an important source of nutrition for some, those with abnormal sensitivity to phytoestrogens may benefit from limiting dietary soy consumption to avoid potential adverse effects, including gynecomastia.

## Thyroid

### THYROID NEOPLASIA AND CANCER

#### *Characterization of the Angiogenic Factor SFRP2 in Papillary Thyroid Carcinoma*

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#### MON-532

Over the last decade, there has been an average annual increase of 3.1% in thyroid cancer diagnosis in the U.S. Papillary thyroid carcinoma (PTC) accounts for 80% of all thyroid cancer diagnoses. However, few molecular markers exist to identify clinically aggressive phenotypes. The angiogenic factor, secreted frizzled-related protein 2 (SFRP2), is associated with a poor prognosis in several malignancies including breast cancer and melanoma. The role of SFRP2 in PTC has yet to be investigated. The aims of this study were to determine the differential expression of SFRP2 in PTC, benign thyroid adenomas, normal thyroid tissue (from patients without cancer), and normal adjacent tissue (NAT) (non-cancerous tissue from patients with PTC) and investigate the role of SFRP2 in tumor development in two PTC cell lines, PTC classical variant (PTC-CV) and PTC follicular variant (PTC-FV), upon treatment with a humanized anti-SFRP2 monoclonal antibody (hSFRP2 mAb). Immunohistochemistry (IHC) was performed using human tissue protein microarrays including 226 PTC, 79 benign adenomas, 112 NAT, and 30 normal thyroid tissue samples. *In-vitro* proliferation and apoptosis experiments were performed on MDA-T41 (PTC-CV) and MDA-T68 (PTC-FV) cell lines by treating with hSFRP2 mAb, Xolair IgG control, and a vehicle control. SFRP2 expression was significantly higher in PTC compared with benign adenomas and normal thyroid (mean expression scores 9, 6, and 1, respectively;  $p < 0.05$ ). SFRP2 expression was significantly higher in NAT than normal thyroid (mean expression score 4 and 0, respectively,  $p < 0.05$ ). Apoptotic rates were increased by 40% and 62% in the PTC-CV hSFRP2 mAb treatment group compared with the Xolair and vehicle treatment groups, respectively ( $p < 0.05$ ). Apoptotic rates were increased by 126% and 59% in the PTC-FV hSFRP2 mAb treatment group compared with the Xolair and vehicle treatment groups, respectively ( $p < 0.05$ ). Treatment with hSFRP2 mAb had no significant effect on proliferation in either cell line. In conclusion, SFRP2 expression is significantly higher in PTC than in benign adenomas and normal thyroid tissue. SFRP2 expression in NAT is significantly higher than in normal thyroid tissue and not significantly different from benign adenomas. SFRP2 expression in nonmalignant tissue adjacent to PTC could be due to expression in the tumor microenvironment. Treatment with a novel hSFRP2 mAb increases apoptotic rates in two different PTC cell lines. These data suggest that SFRP2 is involved in tumorigenesis of PTC.

## Reproductive Endocrinology

### HYPERANDROGENISM

#### *No Difference in Breastfeeding Rates in Women with Polycystic Ovary Syndrome*

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#### SUN-018

No Difference in Breastfeeding Rates in Women with Polycystic Ovary Syndrome

*Objective:* Women with PCOS have increased rates of obesity and gestational weight gain compared to women