can stimulate the growth of a thyrotroph adenoma. Long-term biochemical and radiological monitoring is therefore recommended until resolution. This case highlights the physiologic responses manifested in severe primary hypothyroidism and the fact that these changes improve with adequate replacement.

Pediatric Endocrinology

PEDIATRIC PUBERTY, TRANSGENDER HEALTH, AND GENERAL ENDOCRINE

Endocrine and Metabolic Complications in 16 Taiwanese Patients with Thalassaemia Major

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SUN-058

Backgrounds: Endocrine and metabolic abnormalities are quite common in patients with thalassaemia major, attributable, at least in part, to chronic iron overload. Endocrine and metabolic abnormalities are quite common in patients with thalassaemia major. Determining the prevalence of endocrine complications is difficult because of differences in the age of first exposure to chelation therapy, and the continuing improvement in survival in well-chelated patients.**Patients and Methods:** We performed a retrospective study of endocrine and metabolic data of 16 Taiwanese children (10 females and 6 males, 21.42±4.82 years) who attended in our patient clinics from Oct 2002 to Jan 2012. We analyzed height, weight, BMI, serum fasting glucose, thyroid function, growth hormone, adrenal, and gonadal functions. **Results:**These patients had very high serum ferritin levels with 4737.79±4572.03 ng/ml (482.8-12639). Auxological data show growth retardation (height SDS -1.05±1.34, weight SDS -0.67±0.52, BMI -0.37±0.49). Endocrine data reveal hypogonadism (n = 11, 69%), hypothyroidism (n=8, 50%), growth hormone deficiency (n=3, 19%), and adrenal insufficiency (n=3, 19%). Metabolic data show impaired fasting glucose (n=4, 25%) and diabetes (n=6, 37%). **Conclusions:** Patients with thalassemia major are at risk for a number of endocrine (growth hormone deficiency, hypothyroidism, adrenal insufficiency and hypogonadism) and metabolic problems (impaired fasting glucose and diabetes). It is necessary for endocrinologists to become skilled in these complications and provide long-term comprehensive care through the life of these patients.

Reproductive Endocrinology

FEMALE REPRODUCTION: BASIC MECHANISMS

Dissecting the Interplay Between Diet and PCOS Pathology on Gut Microbiota in a PCOS Mouse Model

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The gut microbiome has been implicated in the development of metabolic disorders such as obesity and type-2 diabetes, and more recently polycystic ovary syndrome (PCOS). PCOS is a heterogeneous disorder with reproductive, endocrine and metabolic irregularities, and clinical and animal studies have reported that PCOS causes a decrease in microbial diversity and composition. Diet is an important regulator of the gut microbiome, and a recent study identified that alterations in macronutrient balance impact gut microbial communities which correlate with different metabolic health outcomes (1). We have identified that macronutrient balance impacts the development of PCOS traits. Therefore, to investigate the interplay between macronutrient balance and a PCOS environment on the gut microbiome, we analyzed the intestinal microbiome from fecal pellets of control and DHT-induced PCOS mice exposed to 10 different diets that varied systematically in protein (P), carbohydrate (C) and fat (F) content. The amount of dietary P, C and F consumed significantly altered alpha and beta diversity of the gut microbiota of pooled control and PCOS mice ($P<0.0001$). Alpha diversity between control and PCOS mice on the same diet did not differ significantly, and hence was only affected by diet composition. However, beta diversity was significantly altered between control and PCOS mice ($P<0.05$). We performed DESeq2 analysis and identified an operational taxonomic unit (OTU) within *Bacteroides* (OTU3) to be the most differentially abundant OTU between control and PCOS mice, with a significant decrease in PCOS mice compared to controls (control: 7.88 and PCOS: 5.38; fold change = 1.464; $P<0.0001$). The consensus sequence of *Bacteroides* OTU3 was found to share 99.2% similarity to *Bacteroides acidifaciens*. *B. acidifaciens* is associated with obesity with elevated levels reported to prevent the onset of obesity (2). Thus, we then investigated the influence of P, C and F on the relative abundance of *Bacteroides* OTU3 and revealed an association with C consumption, with increasing levels of C leading to increased levels of *Bacteroides* OTU3 (Carb: r= 0.22, p=0.0028, q=0.015). These findings demonstrate that diet exerts a stronger influence over the gut microbiome than PCOS pathology. However, the hyperandrogenic PCOS environment does lead to changes in gut microbiota beta diversity, with a specific decrease in an obesity-associated (2) *Bacteroides* species in PCOS mice that is also responsive to levels of C consumption. **Reference**: (1) Holmes et al., Cell Metabolism. 2017; 25(1): 140-151. (2) Yang et al., Mucosal Immunology. 2017, 10 (1), 104-116.

Adrenal

ADRENAL CASE REPORTS II

A Case of Cushing's Syndrome Caused by Epidural Corticoidsteroid Injection

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SUN-193

Introduction: Cushing's syndrome (CS) is a collection of signs and symptoms caused by hypercortisolism that results from endogenous or exogenous glucocorticoid excess. It is associated with increased morbidity and mortality from