index was 1%. After 12 months endoscopic reoperation was performed. The extent of operation was larger but not total. After 12 month the tumor mass increased (50x50x45mm). Imaging of somatostatin receptors by SPECT-CT was performed. It showed a heterogeneous radiolabel accumulation in the pituitary tumor. In 2010, 2 doses of 200mCi 90-Y-DOTATATE were administered with good effect. Tumor size was reduced to 20x23x25mm. The patient has had no headache for that
time. Since 2011 he has also been treated with octreotide30 mg/month, with good therapy tolerance.
Conclusion:
This is probably the first description of a 12-year history of complicated but successful treatment of pituitary silent macroadenoma. It was also probably the first use of PRRT in the pituitary tumor with excellent effect. The patient remains in a very good condition, without neurological symptoms and no disorders of pituitary function.

Adrenal

ADRENAL - CORTISOL EXCESS AND DEFICIENCIES

The Diagnostic Value of DHEAS in Subtyping Patients with Cushing Syndrome

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MON-188

The diagnostic value of DHEAS in subtyping patients with Cushing Syndrome
Objective: Serum dehydroepiandrosterone sulfate (DHEAS) can be used to assess the integrity of the hypothalamic-pituitary-adrenal (HPA) axis. The aim of this study was to evaluate the clinical value of DHEAS in differentiating adrenal Cushing syndrome (ACS) from Cushing' disease (CD). **Methods:** We recruited 100 patients with Cushing syndrome, 36 with CD and 64 with ACS. 72 sex-, age- and BMI-matched nonfunctional adrenal adenomas (NFAAs) were served as controls. Clinical and laboratory data were collected. DHEAS levels were measured and DHEAS ratio was calculated by dividing the measured DHEAS by the lower limit of the respective reference range (age- and sex-matched). **Results:** 1) No significant differences in age, sex, or BMI were detected among the NFAAs, ACS and CD groups. **C**ompared to NFAAs group, ACS patients had lower plasma ACTH levels [1.11(1.11,1.74) vs 5.0 ± 2.9 pmol/L, P<0.01], lower DHEAS levels (24.00 ± 20.72 vs 189.05 ± 82.03 ug/dL, P < 0.01) and lower DHEAS ratio [0.58(0.27,0.98) vs 5.34 ± 3.0]; Plasma ACTH (22.12 ± 14.22 pmol/L), DHEAS (309.4 ± 201.1 ug/dL) and DHEAS ratio (10.51 ± 7.65) in CD patients were significantly higher compared to those in NFAAs and ACS patients (all P<0.01). 2) In ACS patients, there were 53 patients with suppressed ACTH level of <2.0 pmol/L, 11 patients without plasma ACTH suppression (≥2.0pmol/L). Compared to NFAAs, lower DHEAS and DHEAS ratio were detected in these two groups, and no significant differences were found in the DHEAS [15(15, 23.5) vs 23.8 ± 14.4 ug/dL, P=0.86] and DHEAS ratio [0.58(0.27, 0.80) vs 1.0(0.25,2.09) ug/dL, P=0.40] between the two groups. 3) ROC analysis showed that the area under the curve (AUC) of plasma ACTH, serum DHEAS and DHEAS ratio in diagnosing 0.954, 0.997 and 0.990 respectively. The optimal cut-off values for DHEAS and its ratio were 79.1ug/dL, and 2.09, respectively. The diagnostic sensitivity and specificity of plasma ACTH (<2.0pmol/L) were 84.1 and 100%, those of DHEAS were 97.5% and 100%, and those of DHEAS ratio were 95% and 100%, respectively. **Conclusions:** Patients with different subtype of Cushing syndrome showed distinctive DHEAS levels and DHEAS ratio. DHEAS and DHEAS ratio are useful in differential diagnosis of Cushing syndrome. Especially, when the plasma ACTH level is not conclusive. The measurement of DHEAS may offer a supplementary test to diagnosis ACS from CD.
Keywords: Adrenal Cushing syndrome; Cushing disease; Adrenocorticotropic hormone; Dehydroepiandrosterone sulfate

Pediatric Endocrinology

PEDIATRIC OBESITY, THYROID, AND CANCER

Serum Concentrations of FT4 and TSH in the First Six Months of L-Thyroxine Treatment in Infants with Congenital Hypothyroidism: Target Attainment Rates Should Be Improved

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MON-102

Levo-Thyroxine (L-T4) is the medication of choice for treating congenital hypothyroidism (CH). Adequate L-T4 treatment is essential for early neurodevelopment in affected patients. Both under- and overtreatment with L-T4 were associated with long-term adverse neurological outcomes. Based on clinical experience, initial L-T4 dosing does not always result in optimal TSH and FT4 concentrations in all CH patients. The purposes of this study were 1) to quantify FT4 and TSH target attainment rates (TAR) in the first six months of L-T4 treatment in infants with CH, 2) to compare characteristics of patients with FT4 concentrations "OUT of" *versus* "IN" the target range at first time of monitoring.
A multicenter retrospective analysis was conducted in infants born between 1995 and 2018. TSH and FT4 TARs were defined according to the most recent guidelines of the European Society for Paediatric Endocrinology (ESPE), as the percentage of concentrations "in" and "in the upper half" of the corresponding laboratory age-specific reference range for TSH and FT4, respectively.
We analyzed a total of 208 TSH and 186 FT4 serum concentrations from 60 patients during the first 6 months

of L-T4 treatment. The pretreatment FT4 and TSH serum concentrations (mean±SD) were 8.3±5.7 pmol/L and 338±248 mU/L, respectively. CH severity according to ESPE guidelines was severe, moderate and mild for 32%, 27% and 32% of the patients. Postnatal age (PNA) (mean±SD) at start of treatment was 10±12 days. Starting dose of L-T4 (mean±SD) for severe, moderate and mild CH were 10±4, 10±3, and 7±4 µg/kg/day, respectively. Over the study period, TSH TARs of 63% did not further improve between the first monitoring (mean at 17 days of treatment) and fourth monitoring (mean at 4 months of treatment), while FT4 TARs increased from 22% to 45% paralleled with a decrease of too high FT4 values from 55% to 21%.
Comparing patients with FT4 concentrations "OUT of" *versus* "IN" the target range at first time monitoring (16 *versus* 18 days after starting treatment; p=0.45), they did not differ in pretreatment FT4 concentrations (p=0.2). In contrast, patients who had FT4 concentrations "OUT of" *versus* "IN" the target range received first dose of L-T4 at an earlier median PNA (7 *versus* 16 days; p=0.008), had higher pretreatment mean TSH concentrations (364 *versus* 181 mU/L; p=0.02) and received a higher mean initial L-T4 dose (10.3 *versus* 7.1 µg/kg/day; p=0.01).
First, our results show that FT4 and TSH target ranges were not reached in all patients in the first six months of treatment. Second, our data suggest that TARs could be improved by individualizing initial L-T4 dosing not only according to pretreatment FT4 but also to pretreatment TSH concentrations. L-T4 dosing optimization is needed in this population.

Reproductive Endocrinology

HYPERANDROGENISM

Age-Specific Multiples of the Median Level of Serum Anti-Mullerian Hormone Is a Potential Marker for Diagnosis of Polycystic Ovary Syndrome

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SUN-021

Serum anti-Mullerian hormone (AMH) levels are significantly higher in women with polycystic ovary syndrome (PCOS) than in normal ovulatory women. Different diagnostic cut-off values of AMH for discriminating women with PCOS from normal controls have been proposed. This is attributed partly to the different assay methods used with different calibration, as well as the age-related changes in serum AMH levels. We propose that it may be more appropriate to use age-specific multiples of the median (MoM) of AMH value instead of a "one for all ages" cut-off as a diagnostic threshold. Hence, we conducted a retrospective study to validate the performance of age-specific MoM of AMH value in the diagnosis of PCOS. We studied on a cohort of 751 women presented to the clinic for menstrual disorders or fertility treatment, including 473 women diagnosed with polycystic ovary syndrome by the Rotterdam criteria and 278 normal ovulatory controls. Their archived serum samples, collected at the early follicular phase, were retrieved and assayed for AMH by the automated Access AMH assay. The MOM AMH of each subject was calculated based on the age-specific reference ranges recently established by our group. Our results showed that MOM AMH was significantly higher in women with PCOS compared to controls ($p<0.0001$). When stratified into five-yearly age groups, there was no significant difference in MOM AMH ($p>0.05$) among women with PCOS aged 21-25, 26-30 and 31-35 years, but those aged 36-40 years had significantly higher MOM AMH ($p<0.05$) compared to the other younger age groups. Among the ovulatory controls, no significant difference was observed in MOM AMH among all the age groups ($p>0.05$). The area under the receiver-operator characteristic curve was 0.852 (95% CI 0.825-0.877) ($p<0.0001$) for discriminating women with PCOS from ovulatory controls by MOM AMH. The best cut-off value of MOM AMH was 1.44, and the corresponding sensitivity and specificity were 76% and 79% respectively. At the fixed specificity of 80% and the corresponding sensitivity of 73% (with positive and negative likelihood ratios of 3.8 and 0.33 respectively), the cut-off value of MOM AMH was 1.5. In conclusion, age-specific MOM AMH is a promising surrogate of antral follicle count in the diagnosis of PCOS.

Neuroendocrinology and Pituitary

CASE REPORTS IN SECRETORY PITUITARY PATHOLOGIES, THEIR TREATMENTS AND OUTCOMES

Case of Mistaken Identity?

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SAT-273

Introduction Pituitary adenomas occur in 10-15% of patients and the majority are benign. Prolactinomas are the most common form of secretory pituitary adenoma. Pituitary apoplexy, a medical emergency with resulting visual loss and hormonal hyposecretion, requires rapid surgical intervention. We present a case of pituitary macroadenoma that underwent pituitary resection for acute visual disturbance which was later discovered to be caused by undiagnosed demyelinating disease.
Clinical Case Patient is a 32-year-old male who presented initially with complain of fatigue and decreased libido. Work up revealed elevated prolactin level and low testosterone. MRI showed a 2x3cm pituitary macroadenoma. At moment of diagnosis, patient was otherwise asymptomatic. He was started on bromocriptine. During follow up visits, patient reported visual disturbance. First MRI in our clinic showed no suprasellar extension, no impingement of optic chiasm and nonspecific white matter disease. At that time, visual field testing showed left temporal defect in superior quadrant. Follow up MRI 1 year later continued to show a stable macroadenoma without impingement of the optic chiasm, but patient reported progressive left vision disturbance and new right vision loss. He was evaluated in