Findings: From January 2016 to November 2018, 60 patients were randomly assigned (30 participants per group). In the whole study population, the average volume of nodules was 25 ml. The two groups were similar in terms of basal nodule volume, thyroid function, histology, symptoms/cosmetic score and procedure time. At six months, participants in the RFA group showed a reduction volume of 64·3% (95% CI: 57·5% - 71·2%) compared to 53·2% (95% CI: 47·2% - 59·2%) in the LA group (p= 0·015) and this difference was also confirmed in a linear regression model adjusted for age, baseline volume and proportion of cellular component (Laser vs. RFA percent change Delta= -12·8, P=0·018).We have not recorded any significant difference in terms of successful rate at six months after treatment between the two groups (86·7% in the RFA vs 66·7% in the LA, p=0·127). At six months, both symptoms and cosmetic scores improved (compressive symptom score: 2·13 vs 3·9 for RFA, p < 0·001; 2·4 vs. 3·87 for LA, p < 0·001; cosmetic score: 1·65 vs 2·2 for RFA p <0·001, 1·85 vs 2·2 for LA p <0·001) without any statistically significant difference between the two groups. No statistical difference between the two groups was detected at six months as regards the TSH level. High rate of cellularity negatively affects the volume reduction in RFA group (r coefficient -0·41, p=0·034) while histological features did not affect the efficacy of the LA. The adverse event rates were 37% and 43% for RFA and LA, respectively, with no requirement for hospitalization.
Interpretation: Both techniques are very effective in reducing the volume of thyroid nodules. RFA appears to be more effective than LA, but both techniques showed no difference in terms of success rate six months after treatment. The safety of the two techniques is very satisfactory.

Reproductive Endocrinology

OVARIAN FUNCTION — FROM OLIGOMENORRHEA TO AMENORRHEA

Diagnostic Criteria for Polycystic Ovary Syndrome in Adolescents: Impact on Prevalence and Longitudinal Body Mass Index Trajectories

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OR31-02

Background: Polycystic ovary syndrome (PCOS) is characterised by oligo-anovulation (OA), hyperandrogenism (HA) and polycystic ovary morphology (PCO). While the Rotterdam criteria (defined as 2 out of 3 features) are the most widely used criteria in adults, controversy remains for the diagnostic criteria in adolescents as many PCOS features overlap with normal pubertal physiological changes. The 2018 international evidence-based PCOS guideline recommends modified Rotterdam criteria (OA and HA) in adolescents based on expert consensus. We aimed to 1) compare the prevalence of PCOS using original and modified Rotterdam criteria in an unselected adolescent cohort and 2) explore the association between diagnostic phenotypes and long-term body mass index (BMI) trajectories. Methods: 227 adolescent females of the Western Australian Pregnancy Cohort (Raine) Study undertook detailed PCOS assessment at the mean age of 15.3 years (mean age of menarche 12.4 years). Detailed anthropometric measurements were collected from birth until age 22 years. T-test was used for group BMI comparisons and longitudinal BMI was analysed using Generalised Estimating Equations with PCOS by time and PCOS phenotypes by time as interaction terms. Results: PCOS was diagnosed in 66 (29.1%) participants using original Rotterdam criteria versus 37 (16.3%) participants using modified Rotterdam criteria. Using modified Rotterdam criteria, participants with PCOS had higher mean group BMI than participants without PCOS from age 5 years onwards. Significant interaction was detected between PCOS and time (p<0.001) on longitudinal BMI gain where higher BMI gain was observed in participants with PCOS from age 14 years onwards. Only the modified criteria phenotype was significantly associated wth long-term BMI gain whereas other PCOS phenotypes had similar BMI trajectories as participants without PCOS (p<0.001). Conclusions: Our findings validate the PCOS guideline recommendation as modified Rotterdam criteria reduce overdiagnosis of PCOS in adolescents and accurately identify the phenotype at risk of long-term weight gain. The BMI trajectories of females with and without PCOS diverge from early childhood suggesting that metabolic dysfunction in PCOS commences early in the pre-pubertal period. Disclosures: Nothing to disclose. Funding: PCOS CRE scholarship and Research Training Program Scholarship awarded to CT; NHMRC Medical Research Future fund awarded to HT; National Heart Foundation Future Leader Fellowship awarded to LM; NHMRC early career fellowship awarded to AJ.

Neuroendocrinology and Pituitary

CASE REPORTS IN CLASSICAL AND UNUSUAL CAUSES OF HYPOPITUITARISM

Congenital Nephrogenic Diabetes Insipidus with First Presentation as an Adult: A Case Report

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SAT-238

Congenital Nephrogenic Diabetes Insipidus with First Presentation as an Adult: A Case Report

Background:

Congenital nephrogenic diabetes insipidus (NDI) is a rare inherited condition, usually presenting during the first year of life. It is characterized by a renal insensitivity to arginine vasopressin. About 90% of patients are males with X-linked NDI who have mutations in the vasopressin V2 receptor (AVPR2) gene encoding the vasopressin V2 receptor. Females are typically asymptomatic. Here, we report

female case of NDI initially presenting and diagnosed in an adult woman.
Clinical Case:
A previously well 47-year-old woman of Italian descent underwent an elective laparoscopic repair of an abdominal hernia. Her medical history included obesity and migraine headaches. She was not taking any medications prior to admission. She had a bowel perforation 6 days after surgery, necessitating an emergency right hemicolectomy and small bowel resection. Upon instituting bowel rest with *nil per os* (NPO), she developed severe hypernatremia (Na+ 163 mmol/L) with polyuria (>6 L/day) and dilute urine (osmolality 174 mmol/kg). Further inquiry revealed that the patient routinely drank at least 10 L/day of fluids throughout her entire adult life. Her family history was remarkable for polydipsia affecting at least additional six people across three generations (including her son, her mother, 3 maternal uncles and 1 nephew). Following administration of desmopressin 1 ug subcutaneously, her urine remained inappropriately dilute (osmolality 160 mmol/kg) with no significant change in urine output (rate 350 mL/h for 3 hours). Her arginine vasopressin level was detectable (3.2 pmol/L, reference range 0.8–3.5 pmol/L), consistent with nephrogenic diabetes insipidus. Subsequent molecular analysis of the AVPR2 gene, located on chromosome Xq28, confirmed a pathogenic mutation (c.253G>A), consistent with a p.Asp85Asn substitution resulting in decreased binding affinity between the V2 receptor and arginine vasopressin. Thus, X-linked NDI was diagnosed according to the patient's presentation, compatible family history, and genetic analysis. When she was able to eat and drink *ad lib* again, a low-salt, low-protein diet along with a trial of a thiazide diuretic were recommended. The patient remained well with 3 years of follow-up.
Conclusion:
The diagnosis of congenital NDI may be delayed until adulthood because of a relatively mild phenotype and compensatory drinking behavior, so that the disorder will not be clinically apparent until a person is deprived of free water. Men and women alike can be affected by this X-linked dominant condition which should be considered in any polyuric, hypernatremic hospitalized patient.

Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION I

Increased Occurrence of Anemia, Gastrointestinal and Liver Diseases in Women with Turner Syndrome - a Nationwide Registry Study

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SAT-025

Background: Gastrointestinal disorders, such as celiac disease, inflammatory bowel diseases and liver disease have previously been described with increased occurrence in women with Turner syndrome. However, evidence towards increased occurrence of bleeding disorders and anemia are sparse. Likewise, the impact of hormone replacement therapy on gastrointestinal disorders remains unknown. **Aim**: To investigate the risk of bleeding disorders, anemia, gastrointestinal and hepatological disease in women with TS compared with the female background population and to assess the effect of HRT on these conditions. **Design:** National cohort study **Method**: 1,156 females with TS diagnosed during 1960–2014 were identified using the Danish Cytogenetic Central Registry and linked with personal-level data from the National Patient Registry and the Medication Statistics Registry. Statistics Denmark randomly identified 115,577 age-matched female controls. Negative binomial regression was used to analyze hospital discharge diagnoses. Medical prescriptions, mortality and the effect of hormone replacement therapy were estimated using stratified Cox regression. **Results**: The risk of anemia, coagulation disorders and gastrointestinal hemorrhage were all increased three-fold in women with TS compared with controls. Gastrointestinal disorders were twice as frequent in TS individuals, with a three-fold increased risk of inflammatory bowel disease and a twelve-fold increased risk of liver disease and elevated liver enzymes. Both gastrointestinal and hepatological mortality were increased three-fold in TS women. **Conclusion:** Anemia, gastrointestinal hemorrhage, inflammatory bowel disease is more frequent in women with Turner syndrome compared with controls. The risk of liver disease may be higher than previously reported.

Tumor Biology

ENDOCRINE NEOPLASIA CASE REPORTS I

A MEN-2a Syndrome Index Case Presenting with Adrenergic Crisis and Cardiogenic Shock Due to Bilateral Pheochromocytoma

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SUN-913

Background: MEN-2A syndrome is commonly asymptomatic at diagnosis. Withal, pheochromocytoma presenting as cardiogenic shock is a recognized but exceptional occurrence. **Case:** A healthy 26-year-old female presented to the emergency department with precordial discomfort, headache and shortness of breath, starting that morning. She had a gum corrective surgery in the day before, was medicated with ibuprofen, pantoprazole and amoxicillin/clavulanic acid, and had previous history of migraine and smoking. Her blood pressure was high, and she had pulmonary edema and respiratory failure. ECG: sinus tachycardia, left axis deviation, and negative T wave in aVL. Analytically: leukocytosis, elevated myocardial necrosis markers (troponin I 1.29 ng/mL, normal < 0 ng/mL), and hyperlactacidemia. Transthoracic echocardiogram: severe left ventricular dysfunction, akinesia of the basal