respectively. The percentage of glucose readings below target (<4mmol/L) improved from 8%, 58%, 4%, and 47% to 1%, 39%, 0%, and 0%, respectively. The mean glucose was 5.9, 3.9, 7.8, and 4.4 mmol/L, which improved to 10.9, 5.0, 7.9, and 7.5 mmol/L respectively. The lowest average glucose was nocturnal (22:00-06:00) (5.8, 3.3, 6.5, and 4.1 mmol/L) which showed significant improvement after adjustment of medications (11.3, 4.2, 7.2, and 5.7 mmol/L). At least 2 of these 4 patients had well documented impaired awareness of hypoglycaemia based on diminished classical adrenergic symptoms. Among the two patients who had only one 2-week FGS assessment, one went on to have curative successful surgery and the second patient who had Hirata's syndrome did not have significant detectable hypoglycaemia.

Conclusion:

FGS is a convenient tool that may be used to monitor and adjust therapy in patients with endogenous hyperinsulinism. In carefully selected patients, FGS may allow domiciliary glycaemic management avoiding the need for hospital admission for monitoring purposes.

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Thyroid

THYROID AUTOIMMUNITY AND BENIGN THYROID DISEASE

Thyroid Hormone Use and Survival among Older Adults - Longitudinal Analysis of the Baltimore Longitudinal Study of Aging (BLSA)

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OR18-05

Abstract: **Introduction:** Thyrotropin (TSH) levels on average are higher and vary more widely among older adults.[1] Large meta-analyses and treatment trials for isolated elevated TSH in older adults did not demonstrate harm from no treatment or benefit from treatment in this population.[2] Isolated, elevated TSH can result from adaptations to aging, rather than primary thyroid disease, suggesting that thyroid hormone treatment could actually cause harm.[3]

Objective: To determine if there is a survival effect from thyroid hormone treatment in adults aged 65+.

Methodology: Thyroid functional status and thyroid hormone exposure were analyzed for 1,258 participants of the BLSA aged 65+ through death or end of follow up. We analyzed exposures by visit and also compared survival between individuals with consistently elevated, euthyroid or low TSH both on and off of therapy.Incident rate ratios (IRR) were calculated using time-dependent Poisson regression models. Covariates included age, sex, race, walking index (measure of physical function), self-rated health (SF-12), body mass index (BMI), smoking and comorbidity score.

Results: Average follow-up was 9 years, with 169 deaths over the study period. The cohort comprised 49.5% women, with average age in the study being 78 years (SD ±8.2). Thyroid hormone use trended towards harm analyzed at each visit with an IRR=1.40 (95% CI 0.93–2.12) after adjusting for other covariates. Among 'treated-to-target'versus euthyroid individuals, thyroid hormone use was associated with a significantly increased mortality rate with an IRR=1.80 (95% CI 1.09–2.96) in multivariable analysis.

Conclusion: Thyroid hormone replacement among older adults,even when treated-to-target, is associated with a significantly increased mortality risk compared to euthyroid individuals with no history of thyroid hormone exposure. This suggests that treating isolated elevated TSH when changes are aging adaptations rather than primary thyroid disease could adversely affect health by altering key homeostatic adaptation. We recommend clinicians consider the underlying physiology of aging and employ age specific reference ranges when deciding on treatment for elevated TSH in older adults.[4]**References** 1. Surks et al., J Clin Endo. Met. 2007;92(12):4575–4582. 2. Stott et al., NEJM. 2017;376(26):2534–2544. 3. Mammen et al., Thyroid. 2017;27(11):1370–1377. 4. Surks et al., J Clin Endo. Met. 2010:95(2):496-502

Diabetes Mellitus and Glucose Metabolism

DIABETES COMPLICATIONS II

Insulin Autoimmune Syndrome as a Rare Cause of Hypoglycemia

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MON-686

Background:

Insulin Autoimmune Syndrome (IAS) or Hirata disease is reported more in Asians. We report the case of a patient with acute onset hypoglycemia secondary to IAS.

Case Presentation:

A 64 year old ARAB male physician presented with 2 weeks history of episodic hypoglycaemia with blood glucose (BG) 40–60 mg/dl, unrelated to food and occurring throughout the day. His attacks were associated with sweating, dizziness and palpitations, relieved by intake of juice. He reported 3 kg weight gain since the beginning of his symptoms.

Past medical history revealed hypertension, past HCV infection with negative PCR and history of allergy to sulfa drugs. His medications included bisoprolol 2.5 mg daily.

Physical exam showed no acanthosis nigericans. Laboratory investigations: Normal hepatic, renal and thyroid

functions. 72 Hours fasting test was performed. at hour 3, the BG was 2.27 mmol (40.86 mg/dl), insulin > 1000 mU/ml (N: 2.6–24.9), c- peptide 15 ng/ml (N: 1.1–4.4), negative beta-hydroxybutyrate, with good glycemia response to glucagon 1mg. Urine sulfonylurea (SU) screen was negative. Insulin antibodies titre was high 8.9 nmol/L (N: 0–0.02) and Proinsulin >700 pmol/L (N: 3.6–22). MRI Abdomen showed only 3 mm lesion in the pancreatic head, likely a cyst.
During hospitalization, the patient continued to have episodic hypoglycaemia and received dextrose 10% and octreotide injection. Bisoprolol was changed to amlodipine as it may mask his symptoms.
Episodes of hypoglycaemia improved with octreotide but did not resolve completely. Prednisolone 30 mg daily was started with improvement and was tapered slowly after 16 weeks after mild hyperglycemia developed. Repeat work up showed reduction in insulin 67.4 mcunit/ml, C- peptide 2.66 ng/ml and insulin antibody titres to 0.24 nmol/L and remission of hypoglycemia.
Discussion:
Autoimmune hypoglycaemia is rare resulting from insulin antibodies(IAS), or anti-insulin receptor antibodies (Type B insulin Resistance). IAS can be triggered by drugs or viruses including hepatitis C and is associated with autoimmune diseases and hematologic malignancies. the differential diagnosis of hyperinsulinemic hypoglycemia include insulinoma, the presence of extreme levels of insulin, c-peptide and proinsulin and insulin antibodies is diagnostic of AIS. Short-term treatment with steroids was effective in treating hypoglycaemia and careful follow-up is ongoing. If the patient recurs, rituximab will be employed.
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Adrenal

ADRENAL CASE REPORTS II

Isolated Primary Pigmented Micronodular Adrenal Disease. Unilateral or Bilateral Adrenalectomy? Two Cases Report.

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SUN-162

Background: Isolated primary pigmented nodular adrenal disease (i-PPNAD) is a particular case of micronodular bilateral hyperplasia (MiBAH) leading to Cushing syndrome (CS). We present two patients with i-PPNAD who undergone unilateral adrenalectomy with different disease outcomes.
Case 1: A 56 yo man presented with typical signs and symptoms of CS, including central weight gain, proximal muscle weakness, hypertension and marked osteoporosis. A biochemical investigation showed an assessment of late-night salivary cortisol - 23 nmol/l (n <9), 24h urinary free cortisol (UFC)- 1206 nmol/24h (n-60–413). The 1 mg DST showed post-DST cortisol 617 nmol/l (n<50). ACTH concentration was suppressed at 1.1 pg/ml (n-7–66). Adrenal CT-scan was normal. PPNAD was assumed and the screening for Carney complex components was negative. After left adrenalectomy, histological examination confirmed the diagnosis of PPNAD. However, biochemical remission wasn't achieved: postoperative UFC-860 nmol/24h. Thus, the right adrenalectomy was conducted.
Case 2: A 40 yo female presented with long term drug-corrected (beta-blockers, ACE inhibitor) arterial hypertension, menstrual dysfunction and clinical features of CS (central obesity, proximal muscle weakness, hirsutism), without osteoporosis. Baseline hormonal evaluation documented slightly increased level of salivary cortisol-9,8 nmol/l (n <9), post 1 mg DST cortisol - 470 nmol/l (n<50) and ACTH-concentration below detection <1 pg/ml (n-7–66). However, UFC was normal – 215 nmol/l (n-60–413). Abdominal CT-scan revealed micronodular hyperplasia of the left adrenal and was suggestive of possible right adrenal gland hyperplasia. We performed left adrenalectomy. In the early postoperative period, adrenal insufficiency was diagnosed and thus it required hydrocortisone replacement.
Discussion: We obtained two opposite results: in case 1, an expected remission after unilateral adrenalectomy was not achieved, while patient No.2 developed adrenal insufficiency, which was a more favourable prognostic sign and attested to the successful outcome of surgical treatment. A possible explanation of the ineffectiveness of surgical intervention in patient No.1 was primary more severe hypercortisolism. It is also necessary to take into account that according to the CT data of the patient No.1, both adrenal glands were within normal ranges and did not differ from one another, while in the patient No.2, the lesion was more prominent on the right side.
Conclusion: Diagnostic of i-PPNAD and choice of intervention can be precarious, consequently more studies are needed to define to which patients unilateral adrenalectomy could be an efficient treatment modality. It is possible to perform unilateral adrenalectomy with subsequent assessment of cortisol levels, in case of lack of remission the contralateral adrenalectomy is required.

Bone and Mineral Metabolism

BONE DISEASE FROM BENCH TO BEDSIDE

Patients with Fibrodysplasia Ossificans Progressiva Have an Increased Prevalence of Cardiac Conduction Abnormalities

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