for primary hyperparathyroidism, increases cure rate and reduces perioperative complications. The two most commonly deployed preoperative localization studies are ultrasonography (US) and parathyroid scintigraphy using 99m-technetium sestamibi (RN). Patients who have concordant results between the two studies (most studies report concordance rate of 60%) usually undergo minimally invasive surgery whilst those with non-concordance scan results often need bilateral open neck surgery. Objectives: We did a retrospective assessment of the clinical, biochemical and imaging parameters of patients who had parathyroid surgery in our hospital to assess (a) the sensitivity and positive predictive value (PPV) of US and RN scans (b) the frequency of concordance between the two imaging studies (c) the clinical and laboratory predictors of concordance and (d) the impact of concordance on the cure rate. Method: 155 patients who were operated for PHPT between January 2011 and January 2019 were included. All patients underwent preoperative localization with US and RN imaging. The sensitivity and PPV of the 2 imaging procedures in detecting a parathyroid adenoma were determined by correlating the imaging findings of both scans with the composite information obtained from surgical findings and post-operative biochemical results to indicate cure. The patients with concordant and non-concordant imaging findings were compared for surgical cure rate, serum calcium and parathormone level, and the volume and weight of the adenoma. Results: The sensitivity and PPV of US were 80.9% and 82.8% and for RN scan 78.7% and 87.8% respectively. There was no statistically significant difference in the accuracy between the two modalities. 93(60%) patients had concordant and 62(40%) patients had non-concordant scan results, which included true discordance and non-localization by one or both scans. Cure rate in concordant and non-concordant scans were 96.8% and 83.7% respectively ($p=0.02$, chi-square). In comparison to patients with non-concordant imaging, patients with concordant imaging had higher level of serum calcium (mean 3.02 vs 2.86, $p=0.04$), the resected adenoma was larger in volume (mean 3109 mm$^3$ vs 2083 mm$^3$, $p=0.05$) and was heavier (mean 1.59 vs 1.10 $p=ns$). However there was no difference in the age or serum PTH level between the 2 groups of patients. Conclusion: Both US and RN imaging have similarly high sensitivity and PPV in identifying a parathyroid adenoma and our figures were comparable to the published literature. When the two studies are concordant a significantly higher surgical success rate is obtained. Patients with higher serum calcium and larger adenomas are more likely to demonstrate concordant imaging.

Diabetes Mellitus and Glucose Metabolism

**TYPE 1 DIABETES MELLITUS**

*Liver Function Test in Type 1 Diabetes Mellitus and Prevalence of Other Autoimmune Disease in Type 1 Diabetes Mellitus*

Nadig Anusha, Dr, DM$^1$, sree divya, DM$^1$, alok sachan, DM$^1$, v s suresh, DM$^2$, ASHOK VENKATANARASU, DM$^2$.

$^1$Sri Venkateswara institute of medical science, Tirupati, India, $^2$sri ventakeswara institute of medical science, tirupati, India.

ABSTRACT

**Title:** Liver function test in type 1 diabetes mellitus and prevalence of other autoimmune disease in type 1 Diabetes Mellitus

**Background**

Recent studies suggest that non-alcoholic fatty liver disease (NAFLD) may be more common in type 1 diabetes. The pathogenesis of NAFLD has been hypothesized that, hepatic fat accumulation may be due to hyperglycemia induced activation of the transcription factors.

**Type 1 DM inducing autoimmune process can also affect other organs. So screening for celiac disease, Hashimoto's thyroiditis and other autoimmune disorders is necessary.**

**Aims:**

1. To evaluate the prevalence of NAFLD in type 1 DM. And to correlate glycosylated hemoglobin (HbA1c) with aspartate transaminase (AST) and alanine transaminase (ALT).
2. To determine the prevalence of autoimmune disease like hypothyroidism, celiac disease, vitamin B12 deficiency and Vitiligo in type 1 DM.
3. To study the prevalence of microvascular complications and correlate it with HBA1c.

**Study design**

Cross sectional study

**Methods:**

Eighty patients with type 1 DM were taken, liver function test, HbA1c and TSH was sent. BMI was calculated. We calculated prevalence of elevated AST and ALT in all patients and correlated with HbA1c.

All patients were screened for other autoimmune disorders. Screening for celiac disease was done by celiac antibodies and antibodies positive patients underwent duodenal biopsy. Thyroid screening was done by TSH and anti TPO antibodies. Vitamin B12 levels were also measured.

Patients also underwent screening for microvascular complications to see its prevalence.

**Statistical Analysis**

Categorical data was represented in the form of frequencies and proportions. Chi square test was used as test of significance for qualitative data. Continuous data was represented as mean and standard deviation.

Pearson correlation or Spearman's correlation was done to find the correlation between two quantitative variables and qualitative variables and quantitative variables respectively.

**Results:**

Mean age of subjects was 21.38 ± 6.16 years, 57.6% were females and 42.4% were males, mean HBA1c was 10.45 ± 2.54, mean AST was 24.71 ± 15.85 and mean ALT was 22.08 ± 15.13. In the study significant positive correlation was observed between HbA1c and ALT, i.e. With increase in HbA1c there was increase in ALT and vice versa. There was no significant correlation between HbA1c and AST.

In the study 21.2% were hypothyroid, 29.4% had Celiac disease, 1.2% had Vitiligo and 23.5% had B12 deficiency.

In the study 3.5% had nephropathy, 7% had retinopathy, 4.7% had nephropathy.
Conclusion:
Elevated ALT can be associated with NAFLD related risk factors. Type 1 diabetics with elevated ALT should be evaluated. And patients with type 1 DM should undergo screening for other autoimmune disease.

Adrenal
ADRENAL PHYSIOLOGY AND DISEASE
Investigating the Role of the Liver X Receptor in Potentiating Mitotane Therapy in Adrenocortical Carcinoma
Kate Warde, BSc1, Erik Schoenmakers, PhD2, Maeve Leonard, MSc1, Rebecca Maunsells, MSc1, Constanze Hantel, PhD1, Mark Gurnell, MBBS, MA (Med Ed), PhD, FRCP4, Michael Connall Denney, MD, PhD, FRCP1
1Discipline of Pharmacology & Therapeutics, NUI Galway, Galway, Ireland, 2Wellcome Trust–MRC Institute of Metabolic Science–Metabolic Research Laboratories, University of Cambridge and National Institute for Health Research Cambridge Biomedical Research Centre, Addenbrooke’s Hospital, Cambridges, United Kingdom, 3Klinik für Endokrinologie, Diabetologie und Klinische Ernährung, UniversitätsSpital Zürich, Zurich, Switzerland, 4University of Cambridge, Wellcome Trust-MRC Institute of Metabolic Science & School of Clinical Medi, Cambridgeshire, United Kingdom, 5National University of Ireland, Galway, Galway, Ireland.

SUN-216
Introduction: Adrenocortical Carcinoma is a rare aggressive cancer which carries a poor prognosis. Adjuvant mitotane improves survival but is limited by a narrow therapeutic window and severe adverse effects. Liver X receptors (LXRs), part of the nuclear receptor superfamily are highly expressed in adrenal tissue and mediate transcellular and intracellular cholesterol homeostasis. We hypothesise that LXRα inhibition increases toxic lipid accumulation in adrenocortical cancer cells and potentiates the adrenolytic effect of mitotane. Methodology: ATCC-H295R and MUC1 ACC cells and were pre-treated with the LXRα inverse agonist SR9243 5µM and antagonist GSK2033 5µM followed by mitotane treatment (20, 40, 50µM) for 6 hours. Cholesterol-methyl-β-cyclodextrin treatment was carried out 1hr prior to mitotane. H295R cells were transfected with a LXRα dominant negative construct using lipofectamine. Cell death was assessed using annexin/PI staining and proliferation using MTT assay. Free cholesterol (FC) levels were assessed using filipin staining and lipid droplets via BODIPY® and analysed on the Amnis ImageStream® imaging cytometer. Downstream targets ABCA1 and ABCG1 were evaluated by qRT-PCR. Lipid droplet associated proteins PLIN 1-4 and hormone sensitive lipase (HSL) expression were evaluated using western blotting. Results: Downstream reduction of ABCA1 and ABCG1 expression confirmed LXRα blockade. Mitotane effectively induced dose-dependent H295R apoptotic cell death which was potentiated pharmacologically and genetically by LXRα inhibition. In line with these findings, cholesterol-methyl-β-cyclodextrin treatment increased cell death in H295R and MUC1 cells. In addition to inducing cell death, LXRα inhibition decreased proliferation of both cell lines. An increase in FC and a decrease in cholesterol esters was observed following mitotane treatment in H295R cells. This was accompanied by decreased lipid droplet numbers confirmed by lower expression of lipid droplet associated proteins, PLIN1-3. These effects were potentiated when mitotane was combined with LXRs inhibition. We demonstrate increased HSL activity, which was associated with higher SOAT-1 expression and increasing toxic FC accumulation. Investigation of lipid droplet content BODIPY® of both cell lines showed H295R cells preferentially store cholesterol esters and MUC1 cells store triacylglycerides.

Conclusion: We propose a mechanism for enhancing mitotane’s efficacy as an adrenolytic through increased free cholesterol via LXRα inhibition. Targeting the LXRα, its putative ligands, or associated lipid mediators may present a novel therapeutic approach in the setting of primary and metastatic ACC.

Adrenal
ADRENAL - HYPERTENSION
Developing a Research Database About Primary Aldosteronism: Rationale and Baseline Characteristics
Wen Wang, PhD, Yan Ren, MD.
West China Hospital, Chengdu, China.

MON-197
Introduction There were limited evidence supporting the management of PA, primarily due to lack of high quality of data. Developing a research database through integrative both retrospective and prospective collected data regarding clinical care and outcomes of patients with PA may provide valuable evidence on management of PA. Methods The establishment of PA research database involved two steps. Firstly, patients with confirmation of PA between 1 Jan 2009 to 31 Aug 2019 were identified and data were extracted from EMR. Secondly, patients who have positive confirmatory testing for PA and agree to participant a prospective cohort will be enrolled. Data regarding clinical care and long-term outcomes will be prospectively collected based on the case report forms since 1 Sep 2019. We evaluated the quality of research database through assessment of quality of key variables. Results Totally, 904 patients diagnosed as PA in WCH were identified, of which 507 patients had positive confirmatory testing for PA were finally included into the retrospective database. Among included patients, the mean age was 49.2 years old, and the mean BMI was 24.72 kg/m². There were 37 (7.3%) patients diagnosed as chronic kidney disease (CKD), 13 (2.6%) as coronary artery disease (CAD), 95 (18.7%) as diabetes mellitus (DM) and 77 (15.2%) as obstructive sleep apnea-hypopnea syndrome (OSA). The mean systolic blood pressure (SBP) was 155.8 mmHg, and the mean diastolic blood pressure (DBP) was 96.2 mmHg. Among included patients, the lowest serum potassium during admission was 2.96 mmol/L, and the mean serum aldosterone was 26.4 ng/dL. Validation of data extracting and linking showed the accuracy were 100%. Evaluation of missing data showed that the completeness of BMI (95.9%), SBP (1%) and DBP (1%) were high. Conclusion Through retrospective and prospective cohort of PA, a research database about PA with high quality and comprehensive data will be established. We anticipate that the research