showed that 3-5% of adult patients with ACC presented germline variants in DNA mismatch repair genes such as *MSH2* and *MSH6,* the cause of Lynch syndrome (LS). The prevalence of these alterations in pediatric ACC is unknown. We aimed to investigate the prevalence of germline alterations in DNA mismatch repair genes among pediatric and adult patients with adrenocortical tumors (benign and malignant) carriers of the germline *TP53* p.R337H mutation. **Methods**: 35 patients selected (30 pediatric and 5 adult) with functional tumors. ACC was diagnosed in 4 pediatric and in all adult patients. NGS was performed in 35 DNA blood samples by HNPCC MASTR Plus for the identification of SNV in 4 genes (*MLH1*, *MSH2*, *MSH6*, and *PMS2*) and 3' UTR of *EPCAM*. Copy number variation (CNV) analyses were done by Copy Number Targeted Resequencing Analysis (CONTRA) and MLPA. The variants were classified, according to ACMG (American College Medical Genome) by Varsome platform. The protein expression was evaluated by Immunohistochemistry (IHC): MLH1 (clone ES05), MSH2 (FE11), MSH6 (EP49), and PMS2 (EP51). All patients were evaluated for variants in *TP53*. **Results**: NGS: 2 children presented 2 pathogenic allelic variants associated with LS (2/30, 6.6%), both patients with benign outcome and follow up of 4 years: 1 deletion in *MLH1* (c.1500_1502del) and 1 nonsense in the *MSH6* gene (c.328C>T p.Arg110X. CNV: MLPA specific for MLH1/MSH2 showed a normal copy number. ICH: the loss of expression in MLH1/PMS2 was identified in only one case without allelic variants. **Discussion**: Although our cohort is small, we observed 2 allelic pathogenic variants associated with LS among pediatric with adrenocortical tumors. It is higher than the prevalence of colorectal and endometrial cancer (3.2%) in LS. A personal and family history of LS tumors should be strongly considered for genetic risk assessment in pediatric patients with ACT. If the association with *TP53* alteration can influence the tumor's behavior with early clinical presentation, as seen in hereditary nonpolyposis colorectal cancer, it needs to be investigated. The patients with both alterations must be followed with surveillance, according to the US Multi-Society task force guideline for Lynch syndrome and for Li-Fraumeni syndrome.

Diabetes Mellitus and Glucose Metabolism

DIABETES COMPLICATIONS II

EDKA and MALA in the Setting of Severe Heart Failure and Acute Renal Failure, Due to SGLT2-i

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MON-694

Background: EDKA is a reported potential side effect of SGLT-2i that presents a unique challenge for diagnosis and management in the setting of HF and concurrent AKI. Literature encourages wide use of SGLT-2i's, however this case demonstrates the need of proper evaluation before initiating therapy.

Case: A 53 year old male with PMH of T2DM, Atrial fibrillation, HFrEF, presented to the Emergency Dept after a week of confusion, nausea, vomiting, and diarrhea. These symptoms were presumed due to gastroenteritis and our patient continued working on his farm in the summer heat. Following 3 days of intractable vomiting, he began to develop confusion, took his medications and presented to the ED. He was on metformin and had recently started empagliflozin following a heart failure exacerbation. Upon arrival the patient was noted to have a severe AKI with Cr of 15, hyperkalemia with potassium of 7.7, Anion gap of 45, bicarbonate of 4. Lactic acid was noted to be 7.7 and BHB was later noted to be 10.5 with a serum blood glucose of 155.

Pt was determined to have Euglycemic Diabetic Ketoacidosis with an additional Metformin associated lactic acidosis. He was started on an insulin drip with a concurrent D20 infusion to minimize fluid intake. Dextrose was titrated up to maintain a goal BG of 150-180 while on a stable insulin rate of 5u/hour, while monitoring serum ketones to resolution of DKA. Due to excess fluid intake he required intubation and later, hemodialysis due to metformin associated lactic acidosis and acute renal failure. Following 3 days of dialysis he was able to successfully wean from vent and pressors, making a complete recovery.

Conclusion:

We present a patient with EDKA likely resulting from dehydration induced AKI compounded by SGLT2i induced diuresis. As he developed his kidney injury, metformin was able to build up to toxic levels inducing lactic acidosis. Treatment in this patient was based on the underlying physiology providing glucose to allow resolution of ketosis. Treatment is not well studied, but given the origin of the pathology should resemble a standard DKA protocol with glucose repletion. SGLT2i and metformin combinations have shown an increased risk of metabolic acidosis[1] and lactic acidosis[2.] This case highlights a potential risk of the combination in the setting of renal insufficiency and tenuous fluid states.

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Diabetes Mellitus and Glucose Metabolism

LIPIDS, OBESITY AND METABOLIC DISEASE

Novel Insights into the Entero-Insular Axis in Fibrocalcific Pancreatic Diabetes: An Isoglycemic Intravenous Glucose Infusion (IIGI) Study from India

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SAT-650

Abstract: In tropical countries including India, one of the common causes for young onset diabetes mellitus (DM) is "Fibro Calcific Pancreatic Diabetes" (FCPD) characterized

by progressive pancreatic destruction. Despite this, glucagon has been found to be elevated in FCPD **(1,2)**. The L-Cells in gut produce glucagon like peptide- 1 (GLP-1) and oxyntomodulin which are products of glucagon gene, thus raising probability of extra-pancreatic glucagon in FCPD. To test this hypothesis we performed 75grams oral glucose tolerance test (OGTT) followed by IIGI on separate days on nine FCPD and six healthy subjects. The latter procedure ensured matched glucose levels achieved during OGTT. Glucagon and incretins were measured at nine pre-specified time points. We found an increase in L-Cell products: GLP-1 (44.5±9.2pM vs. 12.4±4.5pM, p=0.02) and Oxyntomodulin (1252±350pg/ml vs. 859.8±165pg/ml, p=0.43) along with significant rise in glucagon during OGTT (98.8±13pg/ml vs. 63.4±7pg/ml, p=0.03) despite flat basal & stimulated C-peptide (0.43±0.14ng/ml and 1.09±0.3ng/ml, respectively) and Pancreatic polypeptide (12.3±0.0pg/ml and 14.7±1.7pg/ml, respectively) levels.

Paradoxically, gastric inhibitory polypeptide (GIP) levels were low in FCPD (106.8±40.3pg/ml vs. 557.8±96.4pg/ml, p=0.003). We speculate that the hyperglucagonemia is extra-pancreatic (L-Cell) in origin and may also contribute to the dichotomous incretin response in FCPD.

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Adrenal

ADRENAL PHYSIOLOGY AND DISEASE

Interference in Serum Androstenedione Measured by LC-MS/MS in Newborns Samples

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SUN-212

Introduction: Liquid chromatography followed by mass spectrometry (LC-MS/MS) is considered the gold standard method to measure steroids. Newborn screening for congenital adrenal hyperplasia (CAH) involves measurement of 17α-hydroxyprogesterone (17-OHP) in blood dried spots by immunoassay. Because this testing has high false-positive rates, serum samples to measure 17-OHP, androstenedione, 21-desoxicortisol and cortisol simultaneously by liquid chromatography-tandem mass spectrometry (LC-MS/MS) are used for confirmatory test in our laboratory. **Objective**: To report an interference in androstenedione levels measured by LC-MS/MS assay in serum samples from newborns. **Patients and methods:** The method for androstenedione measurements was based on protein precipitation followed by a semi-automated and multiplexed on-line solid phase extraction coupled reverse phase separation and detection of underivatized analyte by tandem mass spectrometry. Among 312 samples 82 presented unexpected androstenedione results considering that 17OHP levels were <5 ng/mL. These samples presented a high variability among 4 replicates (CV ranged from 20 to 133%). These samples also showed an inadequate ion ratio resulting in pseudo-elevated androstenedione, indicating a coeluition of an isobaric interferent. In routine samples from other patients this problem was not observed. **Results:** Since this fact suggests a possible interference in LC-MS/MS measurements and modification in chromatographic method was unable to resolve from the interference, alternative method for sample preparation was developed. Liquid-liquid extraction with diethyl ether was performed and eliminated the interference and provided substantial decrease in androstenedione values (9.3+12.94 ng/mL vs 5.2+9.59 ng/mL after extraction) with ion ration normalization and CV less 10% between replicates. The identity of this compound is still unknown. Therefore, it will be necessary additional studies to clarify this artifact. **Conclusions:** Although the measurement of androstenedione by reverse phase chromatography without derivatization followed by tandem mass spectrometry is the simplest and commonest approach to determine androstenedione, it is susceptible to interferences causing falsely elevated androstenedione levels in newborns.

Diabetes Mellitus and Glucose Metabolism

TYPE 1 DIABETES MELLITUS

CD40 Ligand Gene Mutation in Type 1 Diabetes Mellitus in a Saudi Consanguineous Family

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SAT-669

Introduction:

Type 1 Diabetes Mellitus (T1D) is a common autoimmune disorder. Investigating genetic factors that could turn the immune cells to auto-reactive are critical to our understanding of T1D. In this study genetic factors and the affected autoimmunity related molecular mechanisms in familial T1D with parental consanguinity were studied.

Materials and Method:

Whole Exome Sequencing (WES) was performed in a family with familial T1D. Sanger Sequencing was done to analyze