MON-649
Recently a cluster-based classification of disease phenotypes has been developed as a tool to aid in improved characterization and management of diabetes. The majority of these studies have been completed in European populations, but it is unclear if these are applicable to other populations. Using these cohorts, we categorized patients in a South Texas VA diabetes clinic to evaluate if these phenotypes apply to that population. A retrospective cohort study was completed from August 2019 through October 2019, in which 120 patients’ records in the Audie Murphy VA Diabetes Clinic were reviewed for presence of macro and microvascular complications, type of anti-diabetic medication, lipid profile and HbA1c levels, and fasting C-peptide and GADab status. 86 patients who had anti-GADab and C-Peptide levels measured were then stratified into diabetic phenotype cohorts as defined by Ahlqvist et al. 2018, based on presence of diabetes associated autoantibodies, fasting C-peptide level, insulin use >200 U/day, BMI, and age >65. Six subjects belonged to the Severe Autoimmune Diabetes (SAID) cohort, with average GADab 713±301 IU; 66% of the cohort had nephropathy, 33% had retinopathy. The Severe Insulin Deficiency (SIDD) cohort had 9 patients, with average fasting C-peptide of 0.58±0.08ng/ml, 44% of the cohort had retinopathy, nephropathy and CAD as complications. The Severe Insulin Resistant (SIRD) cohort had 26 patients; fasting C-peptide was 4.9±4±0.43ng/ml, 73% had nephropathy, 38% retinopathy and 46% CAD. The Mild Obesity Related (MOD) cohort had 35 patients with average BMI of 35±0.6 kg/m² and average A1c 7.9±0.2%. Nephropathy was the most prevalent complication, present in 49% of the cohort. The Mild Age Related (MARD) cohort had 10 patients, with average age of 71±1.0 years, with nephropathy and CAD present in 66% of the cohort. The highest gross prevalence of nephropathy was in the SIRD cohort, whereas highest prevalence of retinopathy was in the SIDD cohort, both of which are concordant with the recently reported study, although not statistically significant (p=0.28 and 0.65, respectively). There was no difference in prevalence of CAD between the different categories of diabetes. These findings in a South Texas VA diabetes clinic population reflect agreement in diabetes associated complications in clusters of diabetes based on insulin resistance and insulin deficiency. Targeted intensification of therapy based on the major underlying pathophysiologic abnormalities may delay or prevent micro and macrovascular complications.

1. Ahlqvist E, et al. Novel Subgroups of Adult-onset diabetes and their association with outcomes: a data-driven cluster analysis of six variables. Lancet Endocrinology and Diabetes. 2018;6: 361-369.

MON-510
Introduction: Despite the current state of evidence suggesting that thyroid nodules’ size should not be the sole criterion for the decision to undergo thyroidectomy, many patients are still operated for large, or growing nodules. In order to ascertain whether this is a justifiable approach, we performed the present study.

Methods/ Subjects: We reviewed the data from two prospectively collected databases of patients undergoing thyroid surgery in two tertiary referral centers, one in the USA (A) and the other one in Greece (B) over 14 consecutive years. We collected data on the preoperative surgical indication, FNA cytology and surgical pathology. We included subjects with multinodular goiters, operated solely for large or growing thyroid nodules, who did not have any known or presumed thyroid cancer, or indications of high risk for malignancy (FNA suspicious for thyroid cancer, follicular neoplasm, suspicious for follicular neoplasm, FLUS/ AUS, cellular specimen), family history of thyroid cancer or prior neck radiation exposure.

Results: We reviewed 5523 consecutive cases of thyroid surgery (A:2711, B:2812). After excluding n=3059 subjects, we included n=2464 subjects in the present analysis. Overall 553 thyroid cancers were identified (21.7%): 349 (65.2%) were microcarcinomas (<1cm), 161 (30.0%) were macronodular carcinomas (≥1cm) and 25 of undetermined size. The histology was consistent with papillary cancer (PTC) n=500, follicular cancer (FTC) n=14, Hurthle cell cancer (HCC) n=9, medullary cancer (MTC) n=4, thyroid lymphoma n=1 and mixed histology cancers n=4. In n=68 (2.75%) cases, a thyroid cancer was found in the large or growing thyroid nodule, which was the original indication for surgery. The cancers were multifocal in n=165 subjects; there was extrathyroidal extension in n=61, capsular invasion was present in n=80, lymph node involvement in n=35 and bone metastasis in n=2 subjects.

Conclusions: Although the likelihood of identifying a clinically relevant thyroid cancer in a large or growing nodule, in the absence of risk enhancing features, is low; the risk of synchronous, clinically important, thyroid cancers is high in patients with large multinodular goiters. Therefore, more precise screening strategies are urgently needed to identify the patients, who would clearly benefit from thyroid surgery and protect those who do not need to be operated on.

Thyroid
THYROID NEOPLASIA AND CANCER

Patients with Large Multinodular Goiters Operated for Presumed Benign - Large or Growing Thyroid Nodules, Have a High Likelihood of Significant Synchronous Thyroid Cancers.

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Diabetes Mellitus and Glucose Metabolism

TYPE 1 DIABETES MELLITUS

Unusual Presentation of Diabetic Ketoacidosis Associated with Hypernatremia in Adult Patient

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SAT-682
Diabetic ketoacidosis (DKA) is an acute, life threatening complication of diabetes characterized by hyperglycemia, ketonemia and acidosis. It is known to commonly present

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with hyponatremia and rarely with hypernatremia. DKA can present with hyponatremia in pediatric population which carries poor prognosis when present.

We present a 27 year-old Ethiopian lady, previously healthy who was brought to emergency department (ED) with decreased level of consciousness. She had polyuria and polydipsia associated with weight loss for 1 month and flu like symptoms for 3 days prior to admission. On day of presentation, she was found to be confused, sleepy and not able to recognize people around her. In ED, patient was confused, GCS 8 severely dehydrated with poor skin turgor and marked delay in capillary refill >3s. Patient was afebrile, with HR 115 bpm, BP 95/60mmHg, and BMI 20kg/m2.

Initial labs revealed; severe acidosis pH 6.8, blood glucose (BG) >38 mmol/l and corrected Na 155 mmol/l. Calculated serum osmolality 357mOsm/kg, lactic acid 5 mmol/l and HCO3 3 mmol/l. Further labs revealed K 4.4 mmol/l, Urea 10 mmol/l, Cr 150 micromole/l, WBC 26 and Ketones 3+ in urine. DKA was diagnosed and treated in ED with 4L IVF (2L bolus NaCl and other 2L of 0.23% NaCl given at 15 ml/hr) and NaHCO3 150 mmol. Continuous insulin regular infusion at rate of 0.1U/Kg/hr as per protocol was initiated.

Patient was admitted to ICU for close monitoring of BG, GCS and electrolytes. After 9 hours of management, patient GCS improved to 13-14. Repeated labs revealed; improvement in PH 7.17, BG 22mmol/l, HCO3 5 mmol/l and lactic acid 1 mmol/l. There was worsening of Na 159 mmol/l and K dropped to 2.6 mmol/l. IV KCL bolus 20mmol followed by 40mmol IV continuous in IVF was initiated. IVF was changed from NaCl to D5W at 125ml/hr. Electrolytes were repeated after 7 hours and showed improvement in and Na and k levels. During her stay in ICU, patient recovered to baseline GCS 15 with no residual symptoms. IV insulin infusion was stopped on 3rd day and commenced on Insulin glargine and insulin Aspart boluses. Further investigations confirmed DM type 1; Hba1c 15%, C-peptide 0.08 nmol/l, IA2Ab of >400 and GAD Ab >250. Patient had an uneventful hospital course, she stayed in ICU for 3 days and then shifted to medical floor. She was discharged on basal bolus insulin regimen. In patients with uncontrolled DM/DKA, serum Na level is variable, reflecting the balance between the hyperglycaemia induced water movement out of the cells that lowers serum Na level, and the glycosuria induced osmotic diuresis, which tends to raise serum Na. When there is marked osmotic diuresis, DKA may present with a normal or even elevated serum Na concentration, despite a markedly elevated serum BG.

To best of our knowledge, this is the second case to report an unusual DKA presenting with hypernatremia in adult patient.

Diabetes Mellitus and Glucose Metabolism

TYPE 1 DIABETES MELLITUS

The Impact of Anxiety on the Successful Management of a Type 1 Diabetic Patient

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SAT-663

Background: Patients with both type 1 diabetes mellitus (T1DM) and generalized anxiety disorder (GAD) are known to be at increased risk for hypoglycemic events, long-term hyperglycemia, weight gain and vascular disease. However, little research has been conducted regarding management of anxiety in patients with T1DM.

Clinical case: A 27 year old female with T1DM (controlled on an insulin pump), GAD, PTSD, and history of benzodiazepine abuse presented to the emergency department after experiencing multiple panic attacks the day of admission. Recently, patient had multiple bouts of emesis in addition to decreased oral intake. On admission, blood sugar was 54, which increased to 164 after administration of 1 amp of dextrose-50. Patient was obtunded and unable to provide much history. Overnight, insulin was not given due to patient’s poor oral intake. The following morning, patient had one cup of juice for breakfast. Accu-check shortly after revealed a blood glucose level over 500 and patient developed diabetic ketoacidosis (DKA) and was admitted to the ICU on our hospital DKA protocol. Once anion gap closed, patient was transferred out of the ICU for continued management of her diabetes. Patient went on to have multiple panic attacks for the duration of her hospitalization which were controlled with scheduled diazepam, valproic acid, lorazepam and quetiapine. Psychiatry was consulted and found that a major contributing factor to her developing recurrent DKA was her struggle with anxiety surrounding the responsibilities of managing her diabetes and its associated complications including gastroparesis and neuropathy. Further conversation revealed that her psychiatrist had passed away a few months prior to admission and that she had not established care with a new psychiatrist yet.

Discussion: Given the life changing nature of T1DM, it is not uncommon for these patients to have difficulty coping with the daily challenges required to optimally treat their condition. It can be frustrating when the slightest shift in caloric intake or exogenous insulin leads to life-threatening situations such as DKA. The above case sheds light on the profound medical consequences and setbacks that poorly controlled anxiety can have on diabetic patients. Therefore, recognizing the impact of anxiety on our patients with diabetes is critical in preventing further complications, especially microvascular, macrovascular and potentially other life-threatening events.

Pediatric Endocrinology

PEdiATriC GROWTH AND ADRENAL DISORDERS

Factors Affecting IGF-1 Level and Correlation with Growth Response During Growth Hormone Treatment in LGS Patients

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