been performed since 2008. Those who fall under certain criteria need to receive a medical treatment guidance from doctor, public health nurse or dietitian. Those who received health guidance receives a reassessment of improvement of their life-style 3-6 months later. However, the efficacy of this approach has not been elucidated. In addition, many persons who have metabolic syndrome do not receive this instruction. Recently, the image analysis technology using the artificial intelligence (AI) progresses rapidly. The smart device application “AskEn” has an AI-powered photo analysis system which analyzes the photo of the entire meal, and delivers individualized messages and dietary feedbacks. In this study, we utilized the Internet of Things (IoT) device which includes AskEn app, body composition analyzer and sphygmomanometer that can connect wirelessly. Objective: Our aim is to assess the efficacy of specific health guidance adding on IoT device. This is a multicenter, unblinded, non-randomized controlled study. Results: At the end of January 2020, we recruited 219 participants including 105 participants with IoT devices. We used 48 participants (32 with IoT and 16 without IoT) who had finished a reassessment 3 to 6 months after initial guidance. Results: Age, body weight (BW), body mass index (BMI), blood pressure (BP), fasting plasma glucose (FPG), hemoglobin A1c (HbA1c), total cholesterol (T-Chol), high density lipoprotein cholesterol (HDL), low density lipoprotein cholesterol (LDL), non-HDL cholesterol (n-HDL), and triglyceride (TG), did not differ between IoT-use and control group. 6 months after initial guidance, the quantity of decrease of BW in IoT-use group was significantly larger than control (-2.5 ± 4.1 kg vs. 0.62±4.4, p = 0.03). In addition, the quantities of decrease of both T-Chol and n-HDL in IoT-use group were also significantly larger than control (T-Chol, -5.9 ± 32.0 vs. 14.3 ± 31.6, p = 0.02; n-HDL, -7.6 ± 29.0 vs. 9.4 ± 27.5, p = 0.01). Conclusion: Using IoT device might be useful for body weight loss and the improvement of mild hypercholesterolemia in those with metabolic syndrome.

Thyroid

THYROID DISORDERS CASE REPORTS IV

**Riedel's Thyroiditis: A Diagnostic and Therapeutic Challenge**

*Alesandra Sliwinska, MD, Fatima Jalil, MD,MPH,
Danielle Millar, MSN,APRN, Carl D. Malchoff, MD,PhD.
University of Connecticut, Farmington, CT, USA.*

**SUN-LB84**

**Background:** Riedel's thyroiditis is a rare thyroid pathology which presents a challenge for clinicians to diagnose and treat. Etiology remains largely unknown, although data suggests an association with Hashimoto thyroiditis, systemic fibrosis, and IgG-4 related systemic disease. Presentation of Riedel's thyroiditis can mimic malignant thyroid neoplasm, lymphoma, or a fibrous variant of Hashimoto thyroiditis. Due to its rarity, there is no consensus on the treatment. **Clinical case:** A 36-year old woman presented with a two-month history of gradually progressing neck swelling. She developed associated neck pain, decreased range of motion, hoarseness, and dysphagia, without difficulty breathing. One year prior to presentation, she had been diagnosed with hypothyroidism. She did not have a family or personal history of thyroid malignancy, however, she lived near Chernobyl during her childhood. On exam, the anterior and lateral neck was hard and enlarged, but nontender. The neck range of motion was diminished. The initial ultrasound of the thyroid demonstrated asymmetrically enlarged heterogeneous diffusely nodular right thyroid and isthmus measuring 1.9cm. A CT of the chest with contrast showed diffusely enlarged thyroid extending superiorly beyond the image with mild tracheal displacement. Initial laboratory results included TSH of 17.40 uU/ml (ref: 0.35-4.94 uU/ml), free T4 of 1.06 ng/dl (ref: 0.61-1.82 ng/dl). She had a significantly increased thyroid autoantibodies (Anti-TPO >700 IU/ml with ref: 0.0-9.0 IU/ml, Anti-TG >2000 IU/ml with ref: 0.0-4.0 IU/ml). PTH and calcium were normal, and calcitonin was low. In the interim, the patient was evaluated by ENT without evidence of airway compromise. She underwent a core biopsy of the right thyroid lobe which demonstrated dense fibrous connective tissue mixed with mature lymphocytes. Pathology and immunostaining results were suggestive of Riedel's thyroiditis. The patient was started on prednisone 60mg daily, which she tolerated for 6 weeks. Due to side effects, prednisone dose was titrated down and tamoxifen was added. Over the following 6 months, compressive symptoms resolved, and the ultrasound showed a significant decrease in the thyroid size. TSH normalized with thyroid hormone replacement. To date, she is asymptomatic and continues on tamoxifen and low dose prednisone without evidence of progression. **Conclusion:** Riedel's thyroiditis is a rare condition that can progress into a medical emergency and should be suspected in patients presenting with a thyroid mass. Clinical awareness of Riedel's symptomatology and laboratory findings should enhance our ability to distinguish and make the diagnosis. Instituting effective treatment that results in the improvement of symptoms and reduction in thyroid size can be challenging due to possible poor response or development of side effects.

Adrenal

ADRENAL CASE REPORTS I

**Allgrove's: A Syndrome for the “A”ges**

*Richard Bailey, B.S., MD Candidate1, Alexandra Nyquist, DPM2, David Tyler Broome, MD3, Robert S. Zimmerman, MD4, Vinni Makin, MD3.*

1Case Western Reserve University School of Medicine, Cleveland, OH, USA, 2Mercy Regional Medical Center, Lorain, OH, USA, 3Cleveland Clinic Foundation, Cleveland, OH, USA.

**SAT-LB43**

Allgrove’s syndrome is an inherited condition caused by mutations in the AAAS gene (encoding the protein ALADIN) and is inherited in an autosomal recessive pattern (1). It classically is characterized by three specific features: achalasia, Addison’s disease, and alacrima (reduced or absent ability to secrete tears). This has led to the name “Triple A syndrome”, and some have suggested a 4th ‘A’ of autonomic disturbance (2). It is important to note that the phenotype of this condition is variable, and some patients may have all three (or four) of the manifestations at initial presentation, and that other patients may develop or have worsening of the ‘As’ over time. In this
Diabetes Mellitus and Glucose Metabolism

DIABETES COMPLICATIONS II

New Onset Insulin Dependent Diabetes Mellitus Secondary to Treatment With Immune Checkpoint Inhibitor:

Syed Rabha Bitat, MRCP (UK),
University College London Hospital, North Central London
Deanery, London, United Kingdom.

MON-LB121

New onset Insulin dependent Diabetes Mellitus secondary to treatment with immune checkpoint inhibitor

Authors - S Bitat & U Srirangalingam University College London Hospitals NHS Trust

Background: Checkpoint inhibitors, immunomodulatory antibodies that are used to enhance the immune system, have substantially improved the prognosis for patients with advanced malignancy like melanoma and lung cancer. Despite important clinical benefits, checkpoint inhibition is associated with a unique spectrum of side effects termed immune-related adverse events (irAEs). IrAEs include dermatologic, gastrointestinal, hepatic, endocrine, and other less common inflammatory events. Among them is endocrine toxicity, most commonly targeting the thyroid, pituitary, or adrenal glands. New-onset diabetes mellitus has been reported in only around 1% of patients in a recent study.

Although rare, fulminant and even fatal toxicities may occur with immune checkpoint inhibitors, and therefore, prompt recognition and management is important. Here we are going to present a patient with new onset Insulin dependent Diabetes mellitus secondary to immunotherapy. It usually presents with diabetic ketoacidosis (DKA) and follows a rapid course. Awareness and prompt management are therefore key.

History and investigations: 62 year old lady diagnosed with Right Uveal melanoma more than 2 years ago and was treated with Enucleation followed by Rt prosthetic eye. Subsequently patient developed metastatic melanoma with subcutaneous lesion in right paravertebral region, right humoral head and right gluteal muscle. It was unclear whether patient had metastatic uveal or cutaneous melanoma. Other PMH includes were Hypertension and Anxiety. Patient was started on Ipilimumab (CTLA-4 inhibitor) and Nivolumab (PD1 inhibitor) 6 months ago, and Ipilimumab was stopped 8 weeks ago due to side effects but continued with Nivolumab. Other current medications were Amlodipine 10 mg once daily and Amitriptyline.

Patient was complaining of extreme fatigue last one week and was diagnosed with Hypothyroidism with TSH >100 mIU/L (Normal 0.27-4.2) and FT4 5.4 pmol/L (Normal 12.0-22.0), subsequently patient was started on Levothyroxine 50 mcg once daily.

Patient presented to emergency department with polyuria and polydipsia last 5 days and also blurred vision for last 3 weeks. Patient did not notice any recent other investigations showed-Venous blood gas-Blood Glucose - Hi (mmol/L out of range), later 22.7 mmol/L (Normal 3.8-6.1), PCO2 6.14 kPa, HCO3 19.3 mmol/L, Lactate 2.2 mmol/L (Normal 0.27-4.2) and FT4 5.4 pmol/L (Normal 12.0-22.0), subsequently patient was started on Levothyroxine 50 mcg once daily.

Patient was current smoker with more than 40 pack year history and was taking 25 units of Alcohol per week for many years. Patient did not have any significant family history including any history diabetes in the family. On examination, patient was clinically dry with capillary refill time was 5 seconds.

Patient responded well to treatment and biochemical profile improved with initial treatment, subsequently patient was started on...