deemed to be likely dystrophic calcification. During her stay on the medical floors, patient was found to be unresponsive and hypotensive, after a bout of agitation. She had to be urgently intubated and started on stress doses of steroids (Hydrocortisone 100 mg every 8 hours) and was upgraded to the Intensive Care Unit (ICU). Patient was eventually successfully weaned off the ventilator and steroid doses were slowly tapered. During her hospital course she was noted to have gradually decreasing Calcium levels, down to a corrected Calcium level of 7.6. Further workup for the hypocalcemia revealed a Vitamin D Level of 12, and Parathyroid Hormone (PTH) level of 0. Patient was subsequently started on adequate Calcium and Vitamin D supplementation for the same. After a few days when the family was located and contacted through social work support, and a more thorough history was obtained, it was found that one out of the patient’s three sisters had a similar constellation of deficiencies. Patient had previously been diagnosed with a polyendocrine syndrome, however she was irregular with her medication compliance and follow-up outpatient with her endocrinologist due to her persistent psychiatric issues and poor social support. APS-1 is an autosomal recessive disorder caused by mutation in AIRE, the autoimmune regulator gene which is hypothesized to be playing an important role in the generation of regulatory T cells. Although the complete pathogenesis is unclear, mutation in generation of these regulatory cells leads to autoantibody formation. Hypoparathyroidism or Chronic persistent Mucocutaneous Candidiasis is usually the first manifestation seen during adolescence and adrenal insufficiency usually manifests later. A variation of other autoimmune syndromes can be observed, with Hypothyroidism, Type-1 Diabetes Mellitus and Primary Hypogonadism being a few of them. Treatment primarily involves replenishment of the hormones of the underperforming gland. Management of a complex syndrome like APS-1 in a patient with psychiatric disabilities can be challenging and needs a multi-disciplinary approach involving the endocrinologist, the primary care physician and the psychiatrist.

Thyroid
THYROID NEOPLASIA AND CANCER
SPOCK1 Promotes the Progression of Papillary Thyroid Cancer ViaPI3K/Akt Signaling Activation
Hai Li, MD, PhD, Manting Choy, MD, Hongyu Guang, MD, PhD, Yanbing Li, MD, PHD.
The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China.

MON-536
With the increasing incidence, thyroid cancer as one of the most common malignancy, got widespread attention during the past few years. Papillary thyroid cancer (PTC) is the most common thyroid cancer type. Understanding the underlying molecular mechanisms of PTC is of great interest. The oncogenic role of SPARC/osteonectin, ccwcv, and kazal-like domain proteoglycan 1 (SPOCK1) has been demonstrated in several cancers, however, the clinical and functional significance of SPOCK1 in PTC are largely unknown. Here, we found that the expression of SPOCK1 was upregulated in PTC tissues when comparing with the adjacent normal thyroid tissues. The overexpression of SPOCK1 was associated with the clinicopathological characteristics of the patients with PTC. We demonstrated that the proliferation of PTC cells was significantly promoted and the apoptosis of PTC cells was significantly inhibited in cells with overexpression of SPOCK1. Furthermore, we showed that knockdown of SPOCK1 arrested the cell cycle in G0/G1 phase and promoted the apoptosis in PTC cell lines. Importantly, our data suggested that SPOCK1 promoted the progression of PTC cell via regulating the PI3K/Akt signaling pathway. Taking together, our findings demonstrate that SPOCK1 enhances the activation of PI3K/Akt signaling pathway thereby promoting the proliferation and inhibiting the apoptosis of PTC cells.
Diabetes Mellitus and Glucose Metabolism

CLINICAL AND TRANSLATIONAL GLUCOSE METABOLISM AND DIABETES

Rapid Improvement in Glycated Albumin Before Educational Admission Predicts Fair Glycemic Control One Year After the Discharge of Patients with Type 2 Diabetes Mellitus

Syo Katsuragawa, MD, Yuya Tsurrutani, MD, PhD, Tomoko Tukiguchi, MD, PhD, Jun Saito, MD, PhD, Tetsuo Nishikawa, MD, PhD.

Yokohama Rosai Hospital, Yokohama, Japan.

MON-622

Background and Aim: Glycated albumin (GA) reflects a short-term glycemic control (about 2 weeks) in comparison to glycated hemoglobin (HbA1c) which reflects a long-term glycemic control. Thus, if the dietary, exercise, or medication therapy before the educational admission is effective, a rapid improvement in GA can be observed. However, the impact of the improvement in GA on the subsequent glycemic control is not well understood. This retrospective study analyzed the association between the change of GA before educational admission and glycemic control one year after the discharge of patients with type 2 diabetes mellitus (T2DM). Method: We analyzed data from 114 T2DM patients who were admitted to our hospital from 2011 to 2016. The GA data within 30 days before admission and on the day of admission were available for all patients. The change of GA per day (ΔGA/day) was calculated as [(GA on admission) - (GA before admission)/number of days between the two measurements of GA]. Patients with renal dysfunction (eGFR < 30 mL/min/1.73 m²) or insulin deficiency [fasting C-peptide (CPR) < 0.5 ng/mL or two-hour postprandial CPR < 1.0 ng/mL] were excluded. Patients achieving an HbA1c of < 7.0 % at one year after discharge were defined as achievers, and the rest were defined as non-achievers. Multiple baseline factors including the ΔGA/day between the two groups were compared. Results: Of the 114 patients, 68 were achievers and 46 were non-achievers. The ΔGA/day was lower in the achievers in the non-achievers (1.85 [1.32 - 2.87] vs 1.21 [0.53 - 1.92], p = 0.002). A logistic regression analysis showed that the ΔGA/day was the factor associated with achieving an HbA1c of < 7.0 % at one year after discharge (Odds ratio: 0.037, 95 % confidence interval: 0.004 - 0.267, p < 0.001). In the receiver operating characteristic curve analysis, the ΔGA/day had an area under the curve of 0.67 in the achievement group and the cutoff value was set as -0.146 for predicting the achievement, with a sensitivity of 0.50 and a specificity of 0.85.

Conclusion: Our results suggest that the change in GA before the educational admission can predict the glycemic control one year after the discharge of T2DM patients.

Thyroid

BENIGN THYROID DISEASE AND HEALTH DISPARITIES IN THYROID I

Novel Autoantibodies for Thyroid-Specific Transcriptional Factors in Patients with Immune-Related Adverse Events Involving the Thyroid Gland

Ichiro Yamamura, MD, PhD1, Akishiro Yasoda, MD, PhD1, Takaafumi Yamashita, MD1, Yohei Ueda, MD, PhD1, Yoshiki Fujii, MD, PhD1, Daiju Taura, MD, PhD1, Masakatsu Sone, MD, PhD1, Nobuya Inagaki, MD, PhD1.

1Department of Diabetes, Endocrinology and Nutrition, Kyoto University Graduate School of Medicine, Kyoto, Japan, 2Clinical Research Institute, National Hospital Organization Kyoto Medical Center, Kyoto, Japan.

SAT-416

Background: Immune-related adverse events by immune checkpoint inhibitors often involve several endocrine-related organs. PD-1 pathway blockade therapy by anti-PD-1 antibodies including nivolumab frequently causes thyroid dysfunction (thyroid irAE). Thyroid irAE seems to be distinctive compared to conventional painless thyroiditis in terms of a clinical course: transient thyrotoxicosis and subsequent persistent hypothyroidism [1]. Our retrospective cohort study regarding nivolumab provided several suggestions [2]. The thyroid irAE (+) group had a longer median overall survival than the thyroid irAE (−) group in patients with lung cancer, but this observation was not seen in patients with malignant melanoma: In addition, 5 of 17 patients tested at the point of thyroid dysfunction development were double negative for TPOAbs and TgAbs, known thyroid autoantibodies. From these findings, we set a hypothesis that antibodies for unknown antigens mediate prognostic effects of thyroid irAEs if tumor tissues express the same antigens.

Methods: We performed co-immunoprecipitation using Protein G beads, sera of three patients with thyroid irAEs, and lysates of HEK293T cells overexpressing candidate proteins tagged with FLAG and HiBit (NKX2-1, PAX8, FOXE1, HHEX). The pellets were analyzed by western blot. Results: FOXE1 bands were augmented in patient 1 with lung cancer, a PAX8 band in patient 2 with malignant melanoma, and bands of FOXE1, PAX8, and HHEX in patient 3 with renal cell carcinoma, compared to a control sample of a normal subject. We performed subcutaneous injections of purified IgG fraction from the serum of patient 3 to C57BL/6 mice every 2 weeks. The mice were sacrificed after 4 weeks, but no significant changes were observed in their thyroid glands and thyroid function. Conclusions: We identified novel autoantibodies for FOXE1, PAX8, and HHEX, thyroid-specific transcriptional factors. In our experiments, the pathogenicity of antibodies were not suggested. Considering our previous observation that the thyroid gland expresses both PD-L1 and PD-L2, ligands of PD-1 receptor [1], PD-1 pathway blockade may particularly...