MON-181

Background: Immune checkpoint inhibitors (ICIs) have revolutionized cancer treatment over the past decade. Despite their increasing use in clinical practice, there are few established, evidence-based guidelines for the screening and management of immune-related adverse events (irAEs), particularly with regard to autoimmune endocrinopathies. Adrenal insufficiency is an irAE that is poorly characterized due to the nonspecific nature of its presentation and can be life-threatening if not promptly recognized and treated. Our aim is to better define the clinical, biochemical, and imaging features of ICI-related adrenal insufficiency (AI) to mediate earlier recognition and treatment. **Methods**: We identified a total of 54 patients treated with either nivolumab, pembrolizumab, or ipilimumab combination therapy between January 2010 and August 2018 found to have a random cortisol level less than 2 or morning cortisol less than 5 during or following therapy. Patients who had been on prednisone or dexamethasone at the time of cortisol testing, had a history of adrenalectomy or radiation to the adrenal glands, or had adrenal or pituitary metastasis were excluded. **Results**: 11 patients met criteria for new onset ICI-related AI based on clinical and biochemical findings. 78% were formally diagnosed with AI, 61% had subsequent workup with ACTH, 17% had dedicated MRI pituitary imaging, 22% had HPA axis testing, 50% were referred to Endocrinology, and 45% were appropriately treated with hydrocortisone. Mean time to onset was 137 days from initiation of ICI. Peripheral eosinophilia was observed in 55% of patients. No anti-21 hydroxylase antibodies were drawn, and no patients had known underlying autoimmune disease or auto-antibody positivity. Six patients (55%) were felt to have secondary AI from ICI-related hypophysitis and one patient (9%) was felt to have ICI-related adrenalitis. **Conclusions**: As ICIs are being used with increasing frequency, it is crucial for health care providers to recognize the characteristics of immune-mediated adrenal insufficiency and initiate the appropriate workup, treatment, and referrals. Cortisol levels are routinely ordered as part of screening of ICI infusion but often dismissed without proper workup or follow up when levels meet criteria for AI. Our findings suggest that ICI-related AI more frequently manifests as ACTH deficiency in the context of hypophysitis, though primary AI can occur as well. Ultimately, further investigation is necessary to develop a systematic approach to diagnosing and managing ICI-related AI. **References**: 1. Chang et al. Endocrine Toxicity of Cancer Immunotherapy Targeting Immune Checkpoints. *Endocr Rev.* 2019;40(1):17-65. 2. Castinetti et al. French Endocrine Society Guidance on endocrine side-effects of immunotherapy. *Endocr Relat Cancer.* 2018;26(2):G1-G8.

Diabetes Mellitus and Glucose Metabolism

CLINICAL AND TRANSLATIONAL STUDIES IN DIABETES

Association of 25-Hydroxyvitamin D Serum Levels with Markers of Glycemic Control in Diabetic and Nondiabetic Patients on Maintenance Hemodialysis

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MON-661

Introduction: In type 2 diabetic patients (T2DM) with end-stage renal disease (ESRD) on hemodialysis (HD), an inverse relationship between 25(OH)D and glycated hemoglobin (HbA1c) have been reported. However, because of anemia and altered red cells turnover, glycated albumin (GA) has been proposed as a more reliable glycemic marker in these subjects. Therefore, we have examined whether an association exists between 25(OH)D and GA in HD diabetic and nondiabetic (ND) subjects.

Material and methods: A total of 121 HD (M/F: 69/31%; age 69±15), of whom 43 (35.5%) had T2DM, were analyzed. Median Hb level was 10.2 g/dL (IQR, 9.35-10.9) and median albumin was 3.44 g/dL (IQR, 3.09-3.77). The median dialysis vintage was 29.3 months (IQR, 11.6-67.44). In all subjects, 25(OH)D, HbA1c, and GA were determined on the morning of the dialysis.

Results: Median 25(OH)D concentration in the whole study population was 25.5 mcg/mL (IQR, 17.7-33.75), while median HbA1c level was 37 mmol/mol (IQR, 32-43) and GA was 16.5% (IQR, 14.3-20.2). The median serum concentration of 25(OH)D was lower in T2DM group compared to ND (19.0 vs. 27.3 mcg/mL; P=0.002). In the entire cohort, there was an inverse relationship between 25(OH)D and GA (r: -0.255; P=0.005), while there was no significant correlation between HbA1c and 25(OH)D (r:-0.158; p=0.086). The relationship between GA and 25(OH)D levels was confirmed among T2DM patients (r: -0.375; P=0.013) but not in ND (r: -0.036; P=0.751), while HbA1c didn't significantly correlate with 25(OH)D neither in T2DM (r: -0.255; P=0.099) nor in ND (r: -0.002; P=0.986). Both in the whole cohort as well in T2DM, the independent association of GA and 25(OH)D persisted upon adjustment for age, sex, BMI, dialysis duration, and vitamin D supplementation. By these regression analyses, it was calculated that 10 mcg/mL decline in 25(OH)D was associated with a 2.4% increase in GA. When T2DM individuals were considered, this increase was 75% greater (4.2%).

Conclusions: In HD patients, serum 25(OH)D is more strongly associated with GA than HbA1c in both diabetic and nondiabetic subjects. This might reflect the higher reliability of GA in assessing glucose control in this category of subjects. Furthermore, lower serum 25(OH)D concentration was associated with poorer glycemic control among T2DM subjects, but not in ND. Since 25(OH)D deficiency was more prevalent in T2DM than ND, these findings could emphasize the importance of adequate vitamin D repletion in this category of patients. Whether correction of vitamin D insufficiency might affect GA levels remains to be explored.

Thyroid

THYROID CANCER CASE REPORTS I

A Case of Type 2 Anaplastic Spindle Cell Squamous Cancer

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SUN-487

Background: Papillary thyroid carcinoma (PTC) is generally considered a relatively slow-growing, indolent cancer;