

one's blood sugar past normal ranges. **Results:** Our results show (0.45%) rate of adverse events. 2 patients in the entire cohort suffered from seizures during their hypoglycemic period. Both of them were successfully aborted with Ativan, and patients were monitored until recovery from post ictal state and discharged home with stable vitals and no acute symptoms. It was later discovered these patients had remote history of epilepsy and should've been excluded from this trial. Of the remaining 448 subject encounters, (20%) of them required urgent intervention to BP. Zero of those patients suffered any other symptoms or ongoing adverse effects. 5 patients underwent the ITT twice, again, with no adverse effects. **Conclusion:** No permanent adverse events or hospitalizations were reported. Based on our findings the clinical safety concerns of the ITT test are minimal compared with the benefit of obtaining an accurate diagnosis in this patient cohort, if done within the correct protocol. Using IGF-1 measures as a determinant of GHD is wildly inaccurate as seen in our results. Combining IGF-1 with the Cosyntropin test is not a good enough measure for diagnosing GHD. The ITT test remains the most accurate and reliable test available today.

## Neuroendocrinology and Pituitary NEUROENDOCRINOLOGY AND PITUITARY CLINICAL ADVANCES

### *Abnormal Pituitary Imaging and Associated Endocrine Dysfunctions in Erdheim-Chester Disease*

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**Background:** Erdheim Chester disease (ECD) is a rare histiocytic neoplasm associated with hypothalamic and pituitary infiltration and dysfunction. We determined the abnormal pituitary imaging (API) phenotypes in subjects with ECD and analyzed their associated endocrine dysfunctions. **Methods:** This was a cross-sectional examination of a natural history cohort study of 61 subjects with ECD performed at a tertiary care clinical research center. The diagnosis of ECD was based on clinical, molecular, and histopathological features. Enrolled subjects underwent baseline endocrine tests of anterior and posterior pituitary function in addition to pituitary imaging. The following variables were analyzed- age, sex, body mass index (BMI), *BRAF V600E*,

hsCRP, ESR, pituitary hormone deficit number, diabetes insipidus (DI), and panhypopituitarism. Fisher's exact test or t-test/Wilcoxon tests compared patients with and without API. **Results:** Sixty-one subjects with ECD (age  $\pm$ SD:  $54.3 \pm 10.9$ , 46 (75.4%) males) were studied. The prevalence of API was 32.8% (n=20), who were younger than those with normal imaging ( $50.3 \pm 10.5$  vs  $56.3 \pm 10.7$  yrs,  $p=0.042$ ). The most common pituitary imaging abnormalities included thickened pituitary stalk (18.03%, n=11/61), followed by pituitary encasement, small pituitary and abnormal morphology (6.55%, n= 4/61 for each). A higher prevalence of DI (45.0% vs 9.8%,  $p=0.003$ ) and panhypopituitarism (45.0% vs 4.9%,  $p<0.001$ ), and a higher number of pituitary deficits (median (IQR): 2.0 (0-2.5) vs 0 (0-1.0),  $p=0.007$ ) were noted in patients with API compared to those with normal imaging. Other biochemical markers were similar between both groups. **Conclusion:** Abnormal pituitary imaging was commonly seen in ECD and was also associated with a younger age and hormone deficits suggesting associations with pituitary structure-function.

## Neuroendocrinology and Pituitary NEUROENDOCRINOLOGY AND PITUITARY CLINICAL ADVANCES

### *Abnormal Sodium is a Predictor for Respiratory Failure and Mortality in Hospitalized Patients With COVID-19*

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**Background:** Hypernatremia and hyponatremia (serum sodium  $> 145$  mmol/L and  $< 135$  mmol/L, respectively) are independent risk factors for excess mortality in patients with bacterial pneumonia. We sought, for the first time, an association of sodium [Na] abnormalities with mortality, need for advanced respiratory support and Acute Kidney Injury (AKI) in hospitalized patients with coronavirus disease 19 (COVID-19). **Methods:** This retrospective, longitudinal, cohort study included 488 adults, 277 males and 211 females, with a median age of 68 years, who were hospitalized with COVID-19 to two hospitals in London over an 8-week period (February to May 2020). **Results:** The in-hospital mortality rate was 31.1% with a median length of stay of 8 days. High [Na] levels at any timepoint during hospital stay were associated with significantly increased mortality rate (56.6% vs 21.1% in patients who remained constantly normonatremic; odds ratio 3.05, 95%