em Saude, Faculty of Medicine of the University of Porto/ IPATIMUP – Institute of Molecular Pathology and Immunology of University of Porto, Portugal, Porto, Portugal, [9]IPATIMUP Faculty of Medicine of the University of Porto/ IPATIMUP – Institute of Molecular Pathology and Immunology of University of Porto, Porto, Portugal, [10]Ricardo A T Castilho Center of Studies, Terespolis, Brazil, [11]University Federal of Rio de Janeiro/ Medical School/ Endocrine Unit, Rio de Janeiro, Brazil.

Pheochromocytomas and paragangliomas are tumors derived from chromaffin cells which result from mutations of at least six different genes as autosomal dominant disorders. We evaluated the existence of correlations between genetic alterations and clinical data in 16 patients with pheochromocytomas and/or paragangliomas. From 2007 to 2019, 13 patients with pheochromocytoma [3 men, medium age 39 years (14–61)] and 3 with paraganglioma [1 men, medium age 33 years (22–35)] were evaluated regarding the presence of genetic mutations and possible correlations between the latter and some clinical features. Besides the mutations, tumor size, symptoms and signs present by the time of the diagnosis were studied. Four patients had pathogenic mutations (SDHB deletion encompassing the promoter and exon 1, C98Y in the SDHB gene, N78S in the VHL gene, and C634R in the RET gene) and one subject had a V90M variant in the TMEM127 gene. Two patients did not present mutations and nine had nonpathogenic mutations. Regarding the presence of clinical features before treatment, there was a predominance of arterial hypertension (75.0%), while the prevalence of tachycardia, abdominal pain and headaches was respectively 12.5%, 12.5% and 6.25%. There was no significant difference between the age of patients with pathogenic mutations and that of the other patients (31.2 vs. 38.6 years, p= 0.3952). Moreover, there were no differences regarding the prevalence of pheochromocytoma (p= 0.2143) or clinical features (p: hypertension= 0.6346, tachycardia= 0.4583, abdominal pain= 0.5417, headaches= 0.6875), or tumor dimensions (p= 0.4578) when the two groups were compared. However, the prevalence of paragangliomas was higher in patients with pathogenic mutations (p= 0.0179). In patients with pheochromocytoma and paraganglioma, the absence of correlations between pathogenic mutations and clinical features increases the importance of the genetic studies in the determination of treatment and prognosis of these tumors. Furthermore, subjects with germline mutations associated with pheochromocytoma and paraganglioma should undergo lifelong clinical, biochemical and imaging surveillance and their families should receive genetic counseling.

Adrenal

ADRENAL – CLINICAL RESEARCH STUDIES

Hydrocortisone Suspension Provides Similar Growth Outcomes as Hydrocortisone Tablets in Young Children With Congenital Adrenal Hyperplasia: A Cross Sectional Study

Heba Al-Rayess, MD[1], O Yaw Addo, PhD[2], Elise Palzer, BA[1], Mu'taz Jaber, PharmD[1], Kristin Fleissner, BSN[1], James Hodges, PhD[1], Richard Brundage, PharmD, PhD[1], Bradley Scott Miller, MD,PhD[1], Kyriakie Sarafoglou, MD[1].
[1]University of Minnesota, Minneapolis, MN, USA, [2]Emory University, Atlanta, GA, USA.

Young children with CAH require small doses (0.1–1.25mg) and incremental adjustments of hydrocortisone (HC) to control excess androgen production and avoid the negative effects of overtreatment. A recent 6 hour pharmacokinetic/pharmacodynamic study reported that alcohol-free HC suspension provides similar cortisol exposure to tablets (1), but more data is needed to assess its clinical efficacy. We performed a chart review to determine the effect of the alcohol-free HC suspension compared to tablets on height, weight, BMI, bone age z-scores and corrected height z-scores to target height z-scores in children aged 2 yrs and 4 yrs in a cohort with classic CAH. Independent 2-sample t-tests examined cumulative and average HC dose at 2 and 4 yrs. Triple logistic modeling of longitudinal heights were used to calculate predicted near-adult height. Adjusted linear regression models assessed the effect of HC suspension compared to tablets on final adult height. Charts of 130 children (70 females, 100 salt wasting and 30 simple virilizing) were reviewed. At 2 yrs, 97 were treated with tablets and 33 with suspension (17 previously switched from tablets). At 4 yrs, 89 were treated with tablets and 41 with suspension (25 switched). No significant differences in height or BMI z-scores at both 2 and 4 yrs, before or after adjusting for age at diagnosis and sex were found. Bone age z-scores averaged 7.2 SDs lower for patients treated with HC suspension only compared to patients on HC tablets at age 4 ($p<0.001$), and 5.93 SDs lower for patients switched from tablets to suspension compared to tablets ($p<0.001$). The suspension group received 16% lower ($p=0.055$) and 25% lower ($p=0.002$) cumulative HC doses by the ages of 2 yrs and 4 yrs respectively. Average daily HC dose was lower by 3.44 and by 4.46 mg/m^2/d over the first 2 and 4 yrs of life respectively. No significant differences were found between patients treated with tablets and suspension in the predicted final adult height, its z-score or its corrected z-score to target height after adjusting for age at diagnosis, sex and diagnosis. Our data indicates that treatment with alcohol-free HC suspension decreased androgen exposure as shown by lower bone age z-scores, generated no significant differences in SDS in observed height, BMI or predicted near-adult height, and allowed for lower average and cumulative daily HC dose compared to HC tablets in children with CAH. **Reference**: (1) Sarafoglou et al., J Clin Pharmacol.2015;55(4):452–7.

Adrenal

ADRENAL – CLINICAL RESEARCH STUDIES

Impaired Cognitive Performance in Patients With Mild Autonomous Cortisol Secretion

Catherine D. Zhang, MD[1], Sumitabh Singh, MD[1], Malavika Suresh, MB Bch BAO[1], Andreas Ladefoged Ebbehøj, MD[2], Nikki H. Stricker, PhD, LP[1], Michelle M. Mielke, PhD[1], Sundeep Khosla, MD[1], Walter A. Rocca, MD[1], Irina Bancos, MD[1].
[1]Mayo Clinic, Rochester, MN, USA, [2]Aarhus University, Aarhus N, Denmark.

Background: Cognitive deficits in memory, language, and executive function have been described in Cushing's syndrome, but the impact of mild cortisol secretion on cognition is unclear. Rather than overt hypercortisolism,