P-150 - COGNITIVE ASSESSMENT OF EARLY DETECTED AND TREATED PKU CHILDREN

Pardo-Campos ML\textsuperscript{1,2}, Enacán R\textsuperscript{2}, Valle MG\textsuperscript{2}, Chiesa A\textsuperscript{2}

\textsuperscript{(1)} Pontificia Universidad Católica Argentina. \textsuperscript{(2)} Fundación de Endocrinología Infantil. Buenos Aires-Argentina.

**INTRODUCTION:** Early detected and treated PKU might present neurocognitive dysfunction possibly related to the underlying disease. **OBJECTIVES:** Characterize their cognitive profiles, assessing specific deficits and their relationship with variables of the disease and its treatment. **PATIENTS:** 30 moderate to severe PKU children (9-10 years), detected and adequately treated at median age of 18 days were selected and compared with a control group (CG) of 30 healthy children of the same age. All had absence of other concurrent diseases, parents with complete high school educational level and similar socioeconomic status. **METHODS:** WISC IV, Rey-Osterrieth Complex Figure Test, Continuous Performance Test (CPT II), ITPA (Illinois test of psycholinguistic abilities), Verbal Fluency Test, Trail Making Test, Faces Test were administered. Cognitive profile was related to age at start of treatment, initial phenylalanine (Phe) levels, Phe tolerance mg/day, first year median Phe levels (MPHEL), MPHEL 2-5 years of age, MPHEL 6 years to evaluation, MPHEL year previous to evaluation, number of controls the year previous to evaluation. Student´s T test for independent samples was used for statistical analysis and Pearson’s for correlations. (significance: \(p<0.05\)) **RESULTS:** PKU showed normal average IQ (mean±SD) 92±6.3 vs. CG: 101.1±5.9 (\(p<0.001\)). Significant differences were found in PKU vs. CG with lower executive control associated to organization, regulation of impulsivity and divided and focalized attention. No differences were found in memory, visuospatial skills, reaction times, processing speed or in language. Higher MPHEL the first year of age were significantly and inversely correlated to executive control \(r: -.375\) \(p<0.05\). Having more controls the year previous to assessment was associated with less impulsivity \(r: -.456\) \(p<0.03\). An inverse tendency was found between executive control with MPHEL (2 to 5 years) and (6 years to evaluation) \(r: -.362\) \(p:.058\) and \(r: -.357\) \(p:.062\) respectively. Executive control tended also to be associated with the frequency of previous controls \(r.343\) \(p:.070\) **CONCLUSION:** Our findings confirm the neurocognitive impact of PKU and reinforce the utility of early and adequate treatment to prevent mental impairment. They also evidenced an specific vulnerability that has to be considered en the attention of these patients reinforcing the impact of tight control of Phe levels during early childhood.