P-064 - BIOCHEMICAL DIAGNOSIS OF NEURONAL CEROID LIPOFUSCINOSIS TYPE 2 IN DRIED BLOOD SPOTS: 28 CASES IN TWO YEAR OF EXPERIENCE

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**INTRODUCTION:** Neuronal Cereoid Lipofuscinosis type 2 (CLN2) is a rare, neurodegenerative lysosomal disorder caused by mutations in TPP1 gene, resulting in deficiency of the enzyme tripeptidyl peptidase 1 (TPP1). The classic phenotype is the most frequent with late-infantile onset, presenting with seizures starting between 2-4 years of age and a history of early language delay, followed by rapid psychomotor decline and early death. The atypical phenotypes are supposed to be rarer, characterized by later onset and longer life expectancy. CLN2 incidence ranges from 0.22 to 9.0 per 100000 live births, but is possible that it is underestimated. Diagnosis can be made measuring TPP1 activity in dried blood spots (DBS) or leukocytes, followed by genetic test. Enzyme replacement therapy is available since 2017.

**OBJECTIVE:** Present our two-year experience in the biochemical diagnosis of CLN2.

**MATERIALS AND METHODS:** Between October 2016 to January 2019, 397 DBS were screened for CLN2. Most of them were from Argentinean patients and few samples were sent from Chile, Uruguay and Paraguay. TPP1 enzyme activity in DBS and leukocytes was measured with fluorogenic substrate. Beta-Galactosidase activity was also analyzed in all DBS as a control enzyme, to assess sample quality. Although the TPP1 assay was not available at our center before 2016, we had not had any CLN2 request before that year.

**RESULTS:** From 397 DBS samples analyzed, 28 showed low TPP1 activity: 0 - 4.2 pmol/h/punch (Normal range: 40 – 279), and 10 were confirmed in leukocytes. Mean age at diagnosis was 10.8 years (range: 4 to 20 years). CLN2 patients were: 17 from Argentina (61%); 6 from Chile (21%), 4 from Paraguay (14%) and 1 from Uruguay (4%).

**CONCLUSIONS:** From 397 patients, 28 were positives for CLN2 giving a diagnosis rate of 7%. The availability of a therapy for CLN2 increased the clinical suspicion of this disease. DBS are easy to submit and have contributed to increase the recognition of this disease.