P-071 - BIOCHEMICAL DIAGNOSIS OF NCL2 DIAGNOSIS. EXPERIENCE WITH THREE BIOLOGICAL SAMPLES.

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INTRODUCTION: Neuronal ceroid lipofuscinoses (NCLs) are a group of 14 lysosomal storage disorders characterized by accumulation of autofluorescent lipopigments of heterogeneous chemical composition. Clinically NCLs mainly compromise central nervous system and are cause of progressive myoclonic epilepsy. NCL2 in one of the most common subtypes, caused by deficiency of the tripeptidyl transferase enzyme (TPP1). NCL2 presents in the toddler as a progressive epilepsy with fatal outcome in the first decade of life. Currently, an enzyme replacement therapy has been approved for this entity, however in Colombia, diagnosis of NCL2 is difficult since no laboratories perform the enzyme activity determination.

OBJECTIVES: To implement TPP1 enzyme activity in Colombia population.

METHODS: DBS, blood and saliva samples were obtained from 100 healthy adult subjects and 3 NCL2 confirmed patients that signed informed consent. Leukocytes were isolated using dextran gradient. DBS samples were dried overnight at room temperature and stored at 4°C. Leukocytes and saliva were frozen until processing. TPP1 enzyme activity was performed according to the method reported by Kohan et al. Reproducibility, stability and specificity of the technique were experimentally assessed for the three samples. As a simple quality control, enzyme activity of glucuronidase and PPT1 enzymes were performed to the samples.

RESULTS: A good discrimination between healthy and NCL2 individuals was observed in saliva and leukocytes. In contrast, DBS samples displayed, low temperature stability, poor reproducibility and the presence of both false positive and false negative cases, a situation that was not observed in either leukocytes or saliva. In fact, this behavior contrasted with initial approximations for PPT1 enzyme activity, in the same samples, which displayed values comparable to those observed in other laboratories.

CONCLUSION: TPP1 enzyme activity determination in two samples (saliva and leukocytes) was implemented in our laboratory and is now available for NCL2 diagnosis in Colombia. The number of samples used in this study allows a characterization of the normal values dispersion. According to our results, saliva is proposed as a screening sample and leukocytes as confirmatory. The discrepancies observed, especially regarding DBS samples, reinforces the importance of standardizing technical conditions for enzyme activity determinations in each laboratory.