P-030 - CLINICAL UTILITY OF CONGENITAL DISORDER OF GLYCOSYLATION GENE PANEL IN PATIENT WITH REFRACORY EPILEPSY

Roa AC\(^1\), Maxit C\(^2\), Denzler I, Onna N\(^1\), Asteggiano CG\(^3\), Kleppe S\(^1\)

(1) Sección Endocrinología, Metabolismo, Nutrición y Genética, Servicio de Clínica Pediátrica, Hospital Italiano de Buenos Aires. (2) Servicio de Neurología Pediátrica, Hospital Italiano de Buenos Aires. (3) CONICET/ CEMECO, Hospital de Niños de la Sma. Trinidad. UNC, UCC. Córdoba, Argentina. ana.roa@hiba.org.ar

INTRODUCTION: Congenital Disorders of Glycosylation (CDG) are a growing group of multisystemic diseases caused by defects in the formation or processing of glycoproteins and/or glycolipids. Most types of CDGs present in early infancy and the clinical manifestations may include failure to thrive, hepatopathy, hypoglycemia, protein-losing enteropathy, developmental delay, hipotonia, neurologic abnormalities, eye abnormalities, immunologic, skin and skeletal findings. Type I CDG includes a group of disorders where there are defects in the biosynthesis of dolichol-linked oligosaccharides in the cytosol or endoplasmic reticulum (ER), as well as defects involving the transfer of oligosaccharides onto nascent glycoproteins. CDG1K is a type I CDG caused by homozygous or compound heterozygous mutation in ALG1 gene, encoding beta-1,4-mannosyltransferase on chromosome 16p13. This type of CGD is characterized by predominant neurologic involvement.

CASE PRESENTATION: We present a patient referred to our hospital at one year for refractory seizures, lack of eye contact, failure to thrive, developmental delay and acquired microcephaly. She had mild hyperammonemia, abnormal coagulation studies, her LFTs were elevated and cholesterol was low. Her brain MRI showed cortical and central atrophy, visual evoked potentials showed axonal neuropathy and electroretinography has a normal response. Transferrin isoelectrofocusing revealed a typical CDG type I pattern. No other pathological biochemical result was found. A sequence analysis and deletion/duplication test of 102 genes of Congenital Disorders of Glycosylation was made. Two heterozygous likely pathogenic variants in trans configuration were identified in ALG1, c.826C>T(p.Arg276Trp) and c.863-2A>G. Because her refractory epilepsy and repetitive status epilepticus family was counselled and ketogenic diet was started being free of seizures.

CONCLUSION: CDGs should be suspect in patients with microcephaly, neurologic involvement and liver compromise. Molecular panels are a rapid and accurate tool for diagnosis and should be consider early in the diagnostic workup.