An Infant With Movement Disorder And Infantile Spasm: Attenuated NKH

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Objectives

Glycine encephalopathy, or nonketotic hyperglycinaemia (NKH) is an autosomal recessive disease due to a defect in the glycine cleavage system, which results in the accumulation of large quantities of glycine in all body tissues especially in the brain. Based on ultimate outcome NKH is categorized into severe NKH (no developmental progress and intractable epilepsy) and mild NKH (variable developmental progress and with or without treatable epilepsy).

Case Report

A 7-month-old female patient was referred to the Child Neurology Department because of spasms. She was born with normal vaginal delivery at 36 weeks and 4 days. She received incubator care for 3 days and phototherapy for neonatal hyperbilirubinemia. She had dysmorphic features, iris coloboma and mild microcephaly, She has poor sucking, and her mother had to switch to bottle feeding. Seizures started when the patient was about 6 months old. Although she was a hypotonic baby until that time, she had been developing appropiate with her age except the motor area. Her seizures, which were focal and short-lasting, later turned into infantile spasms. Her EEG was consistent with hypsarrhythmia. She first received phenobarbital, after infantile spasms started, oral prednisone therapy was given. Later, vigabatrin was added and phenobarbitale was switced to topiramate. Her seizures were under control. The patient had choreatotic movements besides seizures. Although the seizures were under control, movement disorders persisted. The patient was started on ketogenic diet and L-Dopa for movement disorder. In the brain MRI of the patient, cerebellar and cerebral volume loss, relative wide appearance of sylvian fissures, restricted diffusion in the brain stem, dentate nucleus, deep gray matter and cerebral white matter were observed. There was no cortical malformations. A high serum glycine levels were detected in metabolic tests. In the genetic analysis of the patient, in GLDC gene a missense homozygous c.1382G>A (p.Arg461Gln) variant was detected. This mutation is compatible with glycine encephalopathy (non-ketotic hyperglycinaemia). The patient was initiated sodium benzoate and dexmethorphan theraphy. Under this treatment her movement disorder was highly controlled as well as her epilepsy.

Discussion

It should be kept in mind that the clinical spectrum may be broad in inborn errors of metabolism particularly caused by enzyme deficiency. Early treatment is associated with good outcome, especially in the treatable ones. Patients with mild forms of NKH may have easy controlled epilepsy, choreic movements, hyperactivity, variable degrees of devolepmental delays, episodes of severe lethargy, often triggered by fever and infection. It would be rewarding to drawing attention of mild forms of NKH, which classical form is a well-known disease in the infantile period.

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References:

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