

Succinic semialdehyde dehydrogenase deficiency (Gamma-hydroxybutyric aciduria)

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Creation Date: August 2001

Update: January 2004

Scientific Editor: Professor Jean-Marie Saudubray

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Abstract

Succinic semialdehyde dehydrogenase deficiency is an autosomal recessive disorder with a neurological presentation ranging from mild to severe. The most frequent symptoms are psychomotor retardation, delayed speech development, hypotonia and ataxia. The key biochemical feature is an accumulation of Gamma-hydroxybutyrate in urine, plasma and cerebro-spinal fluid. There is no efficient treatment available.

Keywords

succinic semialdehyde dehydrogenase, Gamma-hydroxybutyric acid

Disease name

Succinic semialdehyde dehydrogenase (SSAD) deficiency.

Excluded diseases

Many other diseases with a purely neurological presentation.

Diagnostic criterium

Gamma-hydroxybutyric acid accumulation in body fluids, and succinic semialdehyde dehydrogenase deficiency in lymphocytes or fibroblasts.

Differential diagnosis

Many other diseases with a purely neurological presentation.

Prevalence

Unknown; at least 150 patients have been diagnosed.

Clinical description

The clinical presentation is purely neurological. It is non-specific and ranges from mild to severe. The most frequent symptoms are psychomotor retardation, delayed speech development, hypotonia and ataxia. Other less frequent

symptoms are hyporeflexia, aggressive behaviour, convulsions, hyperkinesia, oculomotor apraxia, choreo-athetosis and nystagmus. Ataxia may resolve with age.

Management

Inhibition of the preceding enzymatic step, GABA transaminase, with gamma-vinyl GABA (vigabatrin) that reduces CSF gamma-hydroxybutyrate and might result into a variable improvement particularly of the ataxia and the behaviour. A more efficient treatment is not available.

Etiology

Mutations in the *SSADH* gene on chromosome 6p22.

Diagnostic methods

- Gas chromatography-Mass Spectroscopy of body fluids
- enzymatic test

Genetic counseling

Autosomal recessive inheritance.

Antenatal diagnosis

It is possible on amniocytes and chorionic villi.

Unresolved questions

An efficient treatment is not available.

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