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Absence Seizures in Children

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Absence seizures are characterized by sudden, brief, frequent periods of unconsciousness, which may be accompanied by automatic movements. They may occur alone, or may coexist with other types of seizures in a child with other epileptic syndromes.

- Absence seizures have a typical spike and wave pattern on the electroencephalogram (EEG). Atypical absence seizures have different EEG changes and clinical manifestations, and have a different natural history and response to treatment.
- Absence seizures can be differentiated from complex partial seizures by their abrupt ending and lack of a postictal phase.
- About 10% of seizures in children with epilepsy are typical absence seizures, with genetic factors considered to be the main cause. Where they are the only manifestation of epilepsy, they generally resolve spontaneously by 12 years of age.

Lamotrigine increases the likelihood of being seizure-free compared with placebo, but it seems to be less effective than valproate and ethosuximide at reducing seizures in children with absence seizures of new onset, and it can cause serious skin reactions and aseptic meningitis.

Ethosuximide seems to be more effective than lamotrigine at reducing seizure frequency in childhood absence seizures of new onset.

- Ethosuximide is rarely associated with aplastic anemia, skin reactions, and renal and hepatic impairment.

There is consensus that valproate is beneficial in childhood absence seizures, although we do not know this for sure. We do not know how effective valproate and ethosuximide are, compared with each other, at reducing seizure rate in children with absence seizures.

- Valproate is rarely associated with behavioral and cognitive abnormalities, liver necrosis, and pancreatitis.

We do not know whether clonazepam or gabapentin reduces the frequency of absence seizures.

Definition

Absence seizures are sudden, frequent episodes of unconsciousness lasting a few seconds, and they are often accompanied by simple automatisms or clonic, atonic, or autonomic components. The differentiation into typical vs. atypical seizures is important, as the natural history and response to treatment vary between the two groups. Interventions for atypical absence seizures or for absence seizures secondary to structural lesions are not included in this review. Typical absence seizures display a characteristic EEG showing regular symmetrical generalized spike and wave complexes with a frequency of 3 Hz, and usually occur in children with normal development and intelligence. Typical absence seizures are often confused with complex partial seizures, especially in cases of prolonged seizure with automatisms. However, the abrupt ending of typical absence seizures, without a postictal phase, is the most useful clinical feature in distinguishing the two types. Typical absence seizures should not be confused with atypical absence seizures, which differ markedly in EEG findings and ictal behavior, and are usually present with other seizure types in a child with a background of learning disability and severe epilepsy.

Incidence and Prevalence

About 10% of seizures in children with epilepsy are typical absence seizures. Annual incidence has been estimated at 0.7 to 4.6 per 100,000 persons in the general population, and six to eight per 100,000 in children zero to

15 years of age. Prevalence is five to 50 per 100,000 persons in the general population. Similar figures were found in the United States (Connecticut) and in Europe-based (Scandinavia, France) population studies. Age of onset ranges from three to 13 years, with a peak at six to seven years of age.

Etiology and Risk Factors

The cause of childhood absence epilepsy is presumed to be genetic. Seizures can be triggered by hyperventilation in susceptible children. Some anticonvulsants, such as phenytoin, carbamazepine, and vigabatrin, are associated with an increased risk of absence seizures.

Prognosis

In childhood absence epilepsy, in which typical absence seizures are the only type of seizures affecting the child, seizures generally cease spontaneously by 12 years of age or sooner. Less than 10% of children develop infrequent generalized tonic-clonic seizures, and it is rare for them to continue having absence seizures. In other epileptic syndromes, in which absence seizures may coexist with other types of seizure, prognosis is varied, depending on the syndrome. Absence seizures have a significant impact on quality of life. The episode of unconsciousness may occur at any time, and usually without warning. Affected children need to take precautions to prevent injury during absences and should refrain from activities that would put them at risk if seizures occurred (e.g., climbing heights, swimming unsupervised, or cycling on busy roads). Often, school staff members are the first to notice the recurrent episodes of absence seizures, and treatment is generally initiated because of the adverse impact on learning.

Clinical Question

What are the effects of treatments for typical absence seizures in children?

Trade-off between benefits and harms	Ethosuximide Lamotrigine Valproate
Unknown effectiveness	Clonazepam Gabapentin

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