Genetic generalized epilepsy

Generalized epilepsy, also known as primary generalized epilepsy or idiopathic epilepsy, is a form of epilepsy characterised by generalised seizures with no apparent cause.

Generalized seizures, as opposed to partial seizures, are a type of seizure that impairs consciousness and distorts the electrical activity of the whole or a larger portion of the brain (which can be seen, for example, on electroencephalography, EEG).

Generalized epilepsy is primary because the epilepsy is the originally diagnosed condition itself, as opposed to secondary epilepsy, which occurs as a symptom of a diagnosed condition.

Generalized tonic-clonic seizure

Komatsubara et al. from the NHO Nishiniigata Chuo Hospital, retrospectively reviewed medical records of patients with GGE who were included in the registry at the Department of Child Neurology, from 2000 through 2020. The eligibility criteria were as follows: onset of epileptic seizures at <15 years of age, treatment with an anticonvulsant, and attempted Antiepileptic Drug Withdrawal at 10-19 years of age. The rates of seizure recurrence after Antiepileptic Drug Withdrawal were evaluated. Moreover, several variables were evaluated as predictors of recurrence.

In total, 77 patients with GGE (21, 13, and 43 patients with juvenile myoclonic epilepsy [JME], juvenile absence epilepsy [JAE], and epilepsy with generalized tonic-clonic seizures alone [EGTCSA], respectively) were included in this study. Recurrence was detected in 68% of patients with GGE (86%, 31%, and 70% of patients with JME, JAE, and EGTCSA, respectively). Recurrence rates for patients who developed epilepsy at ≥13 years of age, those who started dose reduction at ≥16 years of age, those who exhibited a seizure-free period of <36 months before withdrawal, and those who chose to discontinue treatment at their own discretion were significantly higher than those for their counterparts. Multivariate analysis revealed that initiation of dose reduction at ≥16 years of age was associated with increased recurrence risk. Meanwhile, a diagnosis of JAE was associated with decreased recurrence risk. All patients with JAE were treated with valproic acid.

Antiepileptic Drug Withdrawal at ≥16 years of age and a diagnosis other than juvenile myoclonic epilepsy may be independent risk factors for seizure recurrence after drug withdrawal in adolescent patients [1].

1)
Komatsubara T, Kobayashi Y, Hiraiwa A, Magara S, Hojo M, Ono T, Okazaki K, Fukuda M, Tohyama J. Recurrence rates and risk factors for seizure recurrence following antiseizure medication withdrawal in adolescent patients with genetic generalized epilepsy. Epilepsia Open. 2022 Apr 21. doi: 10.1002/epi4.12603. Epub ahead of print. PMID: 35445562.