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TOP PAPERS OF THE MONTH

Children With an Identified Cause of Epilepsy Have a Poorer Response to Treatment

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Aaberg KM, Bakken IJ, Lossius MI, et al. Short-term seizure outcomes in childhood epilepsy. ***Pediatrics.*** **2018;141(6). doi:10.1542/peds.2017-4016.**

Epilepsy is a relatively common condition that can have a dramatic impact upon families' lives. A greater understanding of its prognosis can lead to better delivery of care and better outcomes. Prior research has shown that 61% to 71% of children with epilepsy become seizure-free with treatment. In contrast, 7% to 20% of children with epilepsy do not become seizure-free despite treatment. In this study, Aaberg and colleagues used data from a large population-based pediatric cohort in Norway to examine sociodemographic characteristics, risk factors, seizure types, and clinical characteristics as they relate to seizure outcomes.

The study drew from a subset data of participants in the Norwegian Mother and Child Cohort Study, born from 1999 to 2009, to further classify cases of children with epilepsy. These cases were identified through registry linkages and parental questionnaires and were further clarified though medical record review and interviews with parents. Drug-resistant epilepsy (DRE) was defined as seizures occurring within the last year of follow-up despite trials of at least 2 antiepileptic medications. Seizure freedom was defined as the absence of seizure activity for greater than 1 year.

The full data set of the Norwegian Mother and Child Cohort Study comprised 112,745 children between the ages of 3 and 13 years. Within this cohort, there were 600 cases of epilepsy with at least 1 year of follow-up. Of these 600 children, 178 (30%) had developed DRE at the end of follow-up, 353 (59%) had been seizure-free for more than a year, and 69 (12%) had not yet completed trials of 2 different medications; the latter group was defined as having intermediate seizure outcomes.

The research demonstrated a higher degree of drug resistance (48%) in cases with an identified cause of epilepsy, such as a structural abnormality or a genetic cause. Having a history of more than 3 separate types of seizures was always strongly associated with DRE. Interestingly, when participant characteristics—such as status epilepticus, infancy onset of epilepsy, and preterm birth—were adjusted for, the association with DRE became weaker or disappeared. Sociodemographic characteristics—such as the level of parents' education, the age of the parents, and the mother's living status (ie, married/partner or single) were not associated with short-term seizure outcomes.

This study had a higher proportion of cases with DRE (30%) than did previous studies, which hypothetically is due to the young age of the study sample. Furthermore, this study also had a higher proportion of children with identified causes of epilepsy, which may be because the study was conducted in Norway, which is a country with universal health care coverage.

If health care providers are aware that having an identified cause of epilepsy is associated with poor response to treatment, appropriate counseling and management strategies can be established with the patients and their parents or caregivers. The fairly high rate of DRE despite access to modern diagnostics and treatment reveals how much there still is to learn about childhood epilepsy.