# PEDIATRIC NEUROLOGY BRIEFS
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### J. GORDON MILLICHAP, M.D., F.R.C.P., EDITOR

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## SEIZURE DISORDERS

### PROGNOSIS OF CHILDHOOD EPILEPSY

A cohort of 453 children, aged 1 month to 15 years, with newly diagnosed epilepsy was studied prospectively for 5 years at the Erasmus MC/Sophia Children's Hospital, Rotterdam and three other hospitals in the Netherlands, and the data analyzed to determine the prognosis, course, and response to treatment. Outcome defined as terminal remission (TR), the time from the last seizure to day of evaluation, existing at 5 years (TR5) was compared with the predetermined terminal remission at 2 years (TR2), as reported in the Dutch Study of Epilepsy in Childhood (DSEC) (Arts et al, 1999), and with the longest remission during follow-up. A TR5 of at least 1 year or 2 years occurred in 345 children (76%) and 290 (64%), respectively, and 65 (14%) were seizure-free during the entire follow-up. During the interval since the 2-year outcome evaluation, 248 (55%) had no seizures.

Compared to 388 children with seizures after intake and a worse outcome, the 65 without seizures and a good outcome showed significant variables on univariate analysis: patients who were seizure-free had fewer seizures before intake, the generalized tonic-clonic pattern was more prevalent, their EEGs showed fewer epileptiform discharges, and a symptomatic etiology was less prevalent. A history of febrile seizures was a significant predictor of a worse outcome in patients with idiopathic epilepsy but not with non-idiopathic etiology. Significant variables for the worse outcome group included a symptomatic or cryptogenic etiology, early age at onset, and a history of febrile seizures. Of 108 children (24%) with TR5 <1 year and poor outcome, 27 had intractable seizures at 5 years. Of 388 (86%) treated with AEDs, 46% had a TR5 >1 year while on one AED, 19% while on two AEDs, and 9% on additional AEDs. Of patients receiving two or more AEDs almost 60% had a TR5 >1 year. AEDs were successfully withdrawn in 227 (59%). The course of

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epilepsy was constantly favorable in 51%, steadily poor in 17%, improving in 25% and deteriorating in 6%. The number with intractable seizures had not decreased when the 2 year and 5 year outcomes were compared. A model with determinants identified at intake could predict the outcome at 5 years correctly in 64% of the cohort, especially for a long terminal remission. Prediction was less reliable for a short terminal remission and intractable outcome. (Arts WFM, Brouwer OF, Peters ACB, et al. Course and prognosis of childhood epilepsy: 5-year follow-up of the Dutch study of epilepsy in childhood. **Brain** August 2004;127:1774-1784). (Respond: Willem F Arts MD, PhD, Department of Paediatric Neurology, Erasmus MC/Sophia Children's Hospital, PO Box 2060, 3000 CB Rotterdam, The Netherlands).

COMMENT. Children with newly diagnosed epilepsy have a favorable prognosis in 76% of cases and a deteriorating or poor prognosis in 23%. Of variables predicting a poor outcome, etiology and age at onset are well known, but a history of febrile seizures is an unexpected predictive variable, of significant value only in those with idiopathic epilepsy. In this study, the duration and frequency of recurrence of febrile seizures are not noted, factors known to correlate with spontaneous seizures (Millichap, 1960). Intractability is defined as a terminal remission of less than one year and longest remission of less than 3 months during the last year of observation despite adequate treatment (optimal use of at least 2 AEDs, alone or in combination). In a group of children refractory for at least 2 years, 4% may enter remission during each year of follow-up (Huttenlocher and Hapke, 1990). The present paper emphasizes the changing course of epilepsy during childhood and underscores the need for a better definition of intractability when deciding on the timing of epilepsy surgery.

## SPONTANEOUS REMISSION OF INTRACTABLE EPILEPSY FOLLOWING ACUTE VIRAL INFECTIONS

Questionnaires regarding the occurrence of seizure remission following infection were sent to pediatric neurologists in 73 university hospitals, children's hospitals, and epilepsy centers in Japan, and the data obtained in 21 cases from 11 institutions were analyzed at St Marianna University School of Medicine, Kawasaki, and other centers. Patients included were those whose frequent seizures had remitted for at least 1 month after viral infection without change in antiepileptic therapy. Age ranged from 6 months to 17 years. Sixteen (80%) had West syndrome (13 symptomatic and 3 cryptogenic etiology), and the remainder included 2 cases of symptomatic generalized epilepsy, symptomatic partial epilepsy, continuous spike-wave and slow sleep (CSWS), and severe myoclonic epilepsy of infancy. Infections included 4 cases of exanthem subitum, 4 of rotavirus gastroenteritis, 3 of measles, 3 upper respiratory infections, 1 of mumps and cytomegalovirus, and 5 common cold. Seizures disappeared an average of 4.5 days (range, 1-14 days) after onset of infection. Follow-up was 34 months (range, 3 months to 4 years). Seizures recurred in 13 patients after a median of 7 months (range 1-30 months). Of 5 patients without seizure recurrence, 4 had West syndrome and 1 had CSWS. EEGs improved during remission periods in two-thirds of patients. AED serum levels showed no significant change during remission. Possible reasons for seizure remission included increased levels of antibodies after viral infection or suppression of immunological processes by anti-inflammatory cytokines. (Yamamoto H, Yamano T, Niijima S et al. Spontaneous improvement of intractable epileptic seizures