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SEIZURE DISORDERS

EPILEPSY AND COMORBID MENTAL RETARDATION

Preventable and unpreventable causes of childhood-onset epilepsy associated with mental retardation were determined in 692 patients with epilepsy onset between 1977 and 1985 in a Nova Scotia population-based cohort studied in the Department of Pediatrics, Dalhousie University, Halifax, Canada. Causes and family history obtained by chart review and caregiver interview after 18.8 years of follow-up found 147 patients (77 boys, 70 girls) had mental retardation and epilepsy, involving 21% of all childhood epilepsy cases. Average age of onset of epilepsy was 38 months (range, 1-195 months); 44% had the first seizure in the first year. Mental retardation assessed by psychological testing occurred in 57% of patients; retardation was too profound for testing in 38.5%, and was assessed clinically in 4%. Mental retardation was mild in 24%, moderate in 23%, and severe in 53%. Severe neurological deficits, usually associated with severe mental retardation, were present in 59%. Twenty-nine patients died at an average age of 12 years (range 1.4-30 years). Epilepsy syndromes were symptomatic generalized in 50%, partial in 39%, and miscellaneous in 11%. CT scan was performed in 91% and MRI in 12%. The cause of epilepsy was defined in 63% and unknown in 37%. A defined cause was more frequent in patients with severe mental retardation (77% of 78 vs 48% of 65 with mild/moderate MR; $P<.001$), and in those with coexistent severe neurological disability (64% vs 18%;$P<.0001$). Causes identified were prenatal or genetic in 65%, perinatal (8%), and complications of prematurity in 13%; 14 (15%) had a postnatally acquired cause. Prenatal or genetic causes included tuberous sclerosis (3.4%), focal heterotopia (0.7%), neural tube defects (7.5%), and chromosome abnormality (4.1%). Perinatal asphyxia accounted for 4.8%. Acquired causes were potentially preventable in only 11 (7%) patients. A history of epilepsy in a first or second-degree relative occurred in 36%, especially in idiopathic cases (54% vs 30%), and in those

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without neurological deficits (57% vs 26%). (Camfield C, Camfield P. Preventable and unpreventable causes of childhood-onset epilepsy plus mental retardation. **Pediatrics** July 2007;120:e52-e55). (Respond: Peter Camfield MD, IWK Health Centre, PO Box 9700, 5850 University Ave, Halifax, Nova Scotia, Canada B3K 6R8).

COMMENT. One in 5 children with epilepsy in Canada is mentally retarded. Two thirds have a prenatal or genetic cause, and only 7% have an acquired preventable cause. Epilepsy and mental retardation appear to have a common cause, and mental retardation is not the result of the epilepsy. Genetic factors are important in etiology, 50% of those with no clear cause having a positive family history. The authors comment that the prevalence of a defined cause would probably be greater if the study had involved a later time period when MRI became more readily available.

PROGNOSIS OF CRYPTOGENIC PARTIAL SEIZURES

Factors that influence the prognosis of cryptogenic partial seizures were determined in 233 patients (136 male, 97 female) followed at the outpatient clinic of Shanghai Xin Hua Hospital, Shanghai, China. The mean age of seizure onset was 6 years (range, 3 months to 12 years), and the mean duration of follow-up was 4.5 years (range, 2-13 years). Partial seizures were simple in 41 (17.6%), complex in 162 (69.5%), and complex partial/generalized in 30 (12.9%). Antiepileptic drugs were used as monotherapy in 194 patients, and polytherapy in 39 (2 drugs in 29 and 3 or more in 10). Response was good in 198 (85%): complete control in 71.7%, reduction of seizures of >50% in 13.3%, and poor or no response in 15%. The prevalence of poor control was correlated with young age of onset (28% of 50 children <3 years age vs 8% of 183 >3 years; P=0.03). Poor control was also related to seizure frequency (P<0.001), and seizure type (P<0.001); control was worse in those with >3 seizures/month, and in patients with partial seizures and secondary generalization. No correlation was observed between the location of an EEG focal abnormality and response to therapy. In 24 patients (10% of series) with autonomic symptoms, similar to Panayiotopoulos syndrome, the prognosis was not different from that of patients with motor symptoms. Seizure prognosis was not related to duration of seizure disorder, time to starting seizure treatment, and total number of seizures before treatment. (Wang Z, Qi L, Song X. Prognosis and predictive factors of partial seizures in children. **Pediatr Neurol** July 2007;37:16-20). (Respond: Dr Wang, Shanghai Children's Medical Center, 1678 Dongfang Road, Shanghai 200127, China).

COMMENT. Young age at seizure onset, a high initial seizure frequency, and partial seizures with secondary generalization are predictors of a poor response to antiepileptic medication in children with partial seizures.

HUMMING AND SINGING IN PARTIAL SEIZURES

The frequency and anatomic localization of musical automatisms (MA) among 416 patients with partial seizures admitted for video-EEG recording and presurgical evaluation are reported from Timone Hospital, Marseille, France. Seven (1.4%) patients, 2 children and 5 adults, met criteria for MA. MA consisted of humming in 5 patients and singing in 2.