LEARNING DISABILITY IN CHILDHOOD-ONSET EPILEPSY

The occurrence of learning disability (LD) in adults with childhood-onset epilepsy and its impact on medical and social outcome were analyzed in a study at the University of Turku, Finland. The study group of 242 patients included all children aged less than 16 years having active epilepsy, resident in a geographically defined area of the University Hospital in 1964, and followed for 45 years. Data were retrospective for the first 10 years and then prospective by examination every 5th year for the last 35 years of follow-up. LD was present in 182 (76%) patients and was related to the IQ level. LD occurred in 57% of subjects with IQ>85, and in 67% of those with IQ of 71-85; 51% of patients with LD were mentally retarded. Of the total subjects, 78% attended regular classes, 12% attended special classes at ordinary schools, and 9% attended training schools for mentally handicapped. Mentally near-normal subjects had hyperkinetic behavior more often than mentally normal subjects (44% vs 8%, P<0.0001). Reading, writing, and speech problems in mentally nonretarded patients occurred in 19, 19, and 40%, respectively. Reading disability occurred less often in patients with rolandic epilepsy than with other epilepsies. Speech problems were associated with temporal lobe and minor motor epilepsies. A symptomatic etiology of epilepsy was the only predictor of LD in mentally nonretarded patients. LD and seizure outcome were closely related. A 5-year or longer seizure-free period was achieved in 90% of patients with no LD compared to 70% with LD and in 54% of mentally retarded subjects. Patients with LD or MR relapsed more often than non-LD or nonretarded patients. Risk factors for MR and LD were the occurrence of cerebral palsy, onset of epilepsy before age 6 years, and early resistance to antiepileptic drugs. The degree of LD significantly impacted medical, social, and educational long-term outcomes. (Sillanpaa M. Learning disability: occurrence and long-term consequences in childhood-onset epilepsy. Epilepsy & Behavior Dec 2004;5:937-944). (Respond: Dr Matti Sillanpaa, Departments of Child Neurology and Public Health, University of Turku, Turku, Finland).

COMMENT. Learning disability is a common complication of childhood-onset epilepsy and it adversely affects medical, social, and educational outcomes. Neuropsychological mechanisms involved in epilepsy that may interfere with learning include the following: 1) disturbance of attention to incoming information, its storage or retrieval during seizures; 2) damage to neural tissue; 3) antiepileptic drug toxicity; 4) cognitive impairment related to subclinical generalized spike wave discharges (Binnie GD et al. Learning disabilities in epilepsy: neurophysiological aspects. Epilepsia 1990;31(Suppl 4):S2-8; Ped Neurol Briefs Feb 1991). Speech delay due to a prelinguistic regression of epileptic origin has been described (Dubois C M et al. Neuropediatrics 2004;35:50-53).

Recovery of cognitive function may occur in children with rolandic-epilepsy, when patients are followed and retested at 5 years after onset, at a time when most have become seizure-free (Lindgren A et al. Epilepsy & Behavior 2004;5:903-910).