ATTENTION, LEARNING, AND BEHAVIOR DISORDERS

VALPROATE, LEARNING DISORDERS, AND EPILEPTIFORM EEG

The effect of sodium valproate (VPA) on learning and behavior problems in 8 children with EEG epileptiform discharges but without clinical seizures was determined in a randomized, bouble-blind, crossover study at Children's Hospital, McMaster University, Hamilton, Ontario, Canada. Neuropsychological testing under video EEG and parent and teacher Behavior Check List (Achenbach) were applied during each treatment and placebo phase. The VPA mean trough level was 669 mcmol/L (range 251-1335).

Clinically, none of the children improved with VPA therapy. VPA reduced performance on verbal memory tasks, increased distractibility, increased delays on attentional tasks, and increased parent reports of internalizing problems. The use of VPA in patients with paroxysmal EEGs but without clinical seizures is not supported. (Ronen GM, Richards JE, Cunningham C, Secord M, Rosenbloom D. Can sodium valproate improve learning in children with epileptiform bursts but without clinical seizures? Dev Med Child Neurol Nov 2000;42:751-755). (Respond: Dr Gabrel M Ronen, Hamilton Health Sciences Corporation, Room 3N11H, 1200 Main Street West, Hamilton, Ontario L8N 3Z5, Canada).

COMMENT. Valproate may have adverse effects on learning, memory, and behavior in children with attention deficit and school problems who are treated because of epileptiform discharges on EEG but no clinical seizures. The decision to use AEDs in a patient with ADHD and abnormal EEG is controversial. Carbamazepine may sometimes benefit comorbid symptoms of temper outbursts and episodic confusion. However, an abnormal EEG alone is not sufficient for a diagnosis of epilepsy. Video EEG telemetry may be required to classify the symptoms as epileptic. The potential adverse effects of AEDs on learning and behavior must be weighed against possible benefits (see Ped Neur Briefs Oct 2000).

NEONATAL MORBIDITY AND LEARNING

Neurocognitive and school performance outcomes of low birth weight infants were examined prospectively at the University of Rhode Island, and Brown University School of Medicine, Providence, RI. The total 188 patients (39 healthy full-term and 149 preterm infants) were classifed at birth as a) healthy, b) sick, without neurologic complication, c) small for gestational age, and d) neurologically abnormal. Neurologic follow-up was performed at discharge, 18 months, 30 months, 4 years, and 8 years. Both full-term and healthy preterm groups were normal during the 8-year period. Preterms with neurological abnormality in the neonatal period did most poorly, 45% remaining abnormal at 8 years, and requiring significantly more academic accommodations in school. Reading and math scores were lowest for neurologically suspect or impaired preterm groups. (McGrath MM, Sullivan MC, Lester BM, Oh W. Longitudinal neurologic follow-up in neonatal intensive care unit survivors with various neonatal morbidities. Pediatrics December 2000;106:1397-1405). (Reprints: Margaret M McGrath DNSc, Infant Development Center, Women and Infants' Hospital, 111 Plain St, Providence, RI 02903).

COMMENT. Neonatal neurologic morbidity in preterm infants adversely compromises cognitive and academic performance during early childhood.