SEIZURE DISORDERS

MUSICOGENIC EPILEPSY IN AN INFANT

A 6-month-old infant with seizures triggered by loud music, especially specific songs of the Beatles, is reported from Chang Gung Children's Hospital at Linkou, Taoyuan, Taiwan. He was born by cesarean section because of fetal distress and the Apgars were 5 and 8. Partial seizures, consisting of hand raising or mouth twitching, began at age 2 months and were initially controlled by carbamazepine and vigabatrin, started at 6 months. The interictal EEG was normal, but continuous EEG monitoring revealed ictal spikes throughout the left temporal area. MRI was normal. Finally, the seizures became generalized without the musical trigger and were resistant to medication. After 1 year, neurologic examination showed a progressive developmental delay. (Lin K-L, Wang H-S, Kao P-F. A young infant with musicogenic epilepsy. Pediatr Neurol May 2003;28:379-381). (Respond: Dr Wang, Division of Pediatric Neurology, Department of Pediatrics, Chang Gung Children's Hospital at Linkou, 5 Fu-Shin Street, Kweishan 333, Taoyuan, Taiwan).

COMMENT. The term, musicogenic epilepsy was first coined by Critchley M (1936). Seizures are partial complex or generalized tonic-clonic and they originate in the temporal lobe. Musical specificity varies, classical, religious, military, or jazz; emotional content can be cheerful or sad; and some compositions are more epileptogenic (eg. Wagner, Beethoven). This is the first report of Beatles music as a trigger of seizures. Patients are usually adults, and the report of an affected infant is rare. As in this infant, both music-induced and spontaneous seizures generally occur in the same patient, and loud music is more provocative than soft sounds. The musicality of the patient and the style of music may both play a role in precipitating seizures. In rare cases, music has aborted seizures (in Lennox WG, Epilepsy and Related Disorders, Boston, Little Brown, 1960;p365).

EFFECT OF LAMOTRIGINE ON THE EEG

The effects of add-on lamotrigine (LTG) therapy on EEG paroxysmal abnormalities and background activity are evaluated retrospectively in 53 children and adolescents (mean age 12.5 years) with refractory epilepsy followed at Children's Hospital, Boston, MA. Multiple seizure types occurred in 25, generalized seizures in 15, and complex partial seizures in 13 patients. After adding LTG, seizures were controlled in 22%, a greater than 50% reduction in seizure frequency occurred in 26%, and less than 50% reduction in 13% of patients. Improvement in the EEG correlated with reduction in seizure frequency, and 12 of 82 EEGs were reported as normal for age after LTG therapy. Compared to baseline records, background activity was improved in 22% and was unchanged in 73%. Interictal abnormalities improved in 38% and were unchanged in 51%. Ictal EEG activity improved in 7 (41%) of 17 patients tested. EEGs of patients with complex partial seizures showed improvement more frequently than those with generalized seizures, 61% cf 41%, respectively. EEG improvement with LTG occurred in patients with

childhood absence seizures and Landau-Kleffner syndrome but not with other epilepsy syndromes. EEGs were improved in 28% of patients with idiopathic epilepsy compared to 18% with symptomatic epilepsy. (Akman CI, Holmes GL. The effect of lamotrigine on the EEGs of children and adolescents with epilepsy. Epilepsy & Behavior August 2003;4:420-423). (Respond: Cigdem I Akman MD, Columbia University College of Physicians and Surgeons, Division of Pediatric Neurology, 180 Fort Washington Ave, New York, NY 10032).

COMMENT. LTG add-on therapy improves EEG background activity in addition to decreasing the frequency of interictal and ictal epileptiform discharges. Interictal EEG abnormalities are reduced especially in patients with complex partial seizures, absence, and idiopathic epilepsies. Improvements in the EEG may be expected even in children with severe intractable epilepsy.

Adjunctive LTG therapy in 54 patients, 12 years of age or older, with refractory epilepsy and mental retardation showed decreased seizure frequency and improved behavior in an open-label multicenter study, while the dosage of concomitant antiepileptic drugs was reduced. (McKee JR, Sunder TR, FineSmith R et al. Epilepsy & Behavior Aug 2003;4:386-394).(Respond: JR McKee PhD, Pharmacy Department, Western Carolina Center, 300 Enola Rd, Morgantown, NC 28655).

Reversible neurotoxicity (confusion and disorientation) occurred in 3 adult patients with absence status epilepticus following administration of an IV bolus and oral doses of valproic acid. LTG levels were elevated (18-22 mcg/mL) compared to baseline (2.9-7.7 mcg/mL), whereas serum VPA and ammonia levels were in the normal range. Improvement correlated with discontinuing or reducing the dosage of LTG. (Burneo JG, Limdi N, Kuzniecky RI et al. Neurology June (2 of 2) 2003;60:1991-1992).

REVERSIBLE ALTERED CONSCIOUSNESS AND BRAIN ATROPHY INDUCED BY VALPROIC ACID

A 5-year-old female child with valproic acid (VPA)-related alteration of consciousness and brain atrophy that progressed over a 3 day period and resolved within 12 hours of discontinuing VPA is reported from Dokkyo University School of Medicine and Shimotsuga General Hospital, Tochigi, Japan. Seizures began at 2 years of age, EEG showed bilateral temporal and central focal spikes, and treatment with VPA (15 mg/kg/d) was effective until a generalized clonic seizure occurred at 5 years. CT was normal, VPA serum level was 25.7 mcg/mL, and the dose was increased to 20 mg/kg/d, resulting in a serum level of 76.4 mcg/mL. After 3 months on this dose and over a period of 3 days, she developed an alteration of consciousness. She had difficulty stating her name and had little interest in her surroundings. Neurologic examination, liver function tests and serum ammonia were normal. VPA level was 107 mcg/mL, the CT showed enlargement of cerebral sulci and evidence of brain atrophy, and the EEG awake revealed diffuse background slowing. VPA was discontinued, and consciousness level returned to normal within 12 hours. After 1 week, a repeat EEG was normal, and serial CT showed improvement within 1 month and normal appearance in 2 months. Phenobarbital was substituted, and at 5 month follow-up, her behavior and mental function were normal. (Yamanouchi H, Ota T, Imataka G et al. Reversible altered consciousness with brain