

SEIZURE DISORDERS

FACTORS AFFECTING RECOVERY OF CONSCIOUSNESS AFTER SEIZURES

Linear regression analysis was used to determine factors that influenced recovery time in 90 children aged 1-16 years (median age 6 years) treated for seizures with impairment of consciousness at Leeds General Infirmary, UK. In a total of 41 patients with complete coma scores, median time for full recovery of consciousness was 38 min. In patients with febrile seizures, median recovery time was 18 min, significantly shorter than for seizures of other etiologies ($P < 0.05$). Recovery times were 1.35 hrs for idiopathic seizures, 1.25 hrs for remote symptomatic seizures, and 4.57 hrs for acute symptomatic seizures. Patients treated with benzodiazepines had significantly longer median recovery times (3.46 hrs) than those not receiving benzodiazepines (0.47 hr); $P < 0.05$. Factors not affecting recovery time included age, sex, seizure type and duration. (Allen JE, Ferrie CD, Livingston JH, Feltbower RG. Recovery of consciousness after epileptic seizures in children. **Arch Dis Child** Jan 2007;92:39-42). (Respond: Dr JE Allen, Department of Paediatric Neurology, Leeds General Infirmary, Great George Street, Leeds, West Yorkshire, LS1 3EX, UK).

COMMENT. Children with febrile seizures generally recover consciousness in less than 30 min. If recovery of consciousness after a seizure takes > 1 hr, an acute symptomatic etiology should be suspected.

Why do seizures cause loss of consciousness? is addressed by Blumenfeld H and Taylor J of Yale Univ (**Neuroscientist** 2003;9:301-310; Blumenfeld H. **Prog Brain Res** 2005;150:271-286). Abnormal increased activity in fronto-parietal association cortex and related subcortical structures is associated with loss of consciousness in generalized seizures. Decreased activity in these same networks may cause loss of consciousness in complex partial seizures. Absence seizures impair focal, not generalized corticothalamic networks; they may result from a temporary suspension of "working memory circuits" in the frontal lobe (Niedermeyer E. **Clin Electroencephalogr** 1994;25:86-93; *idem* **Ital J Neurol Sci** 1999;20:7-15). Normal conscious processing requires a dynamic balance between the two extremes of excitation and inhibition.

Various behavioral disturbances masquerade as "loss of consciousness" during a seizure, according to Gloor P, in a review of consciousness as a neurological concept in epileptology (**Epilepsia** 1986;27 (Suppl 2):S14-S26). These include aphasia, absent voluntary movements, ictal or postictal amnesia, and hallucination.

NONCONVULSIVE SEIZURES IN CRITICALLY ILL CHILDREN

All patients < 18 years admitted to the ICU at Columbia University Medical Center, New York, between June 1, 2000 and April 30, 2004, and considered critically ill, regardless of etiology, underwent continuous EEG (cEEG) for detection of nonconvulsive seizures (NCSz) in the evaluation of unexplained diminished consciousness. Of 117 children monitored with cEEG, 44% had seizures and 39% had NCSz. Of patients with seizures, 73% had only NCSz, and 23% had status epilepticus (NCSE in 89%). The timing of NCSz was