

HEADACHE DISORDERS

ROLE OF ANTIPILEPTIC DRUGS IN MIGRAINE PREVENTION

Abnormal brain excitability as a migraine trigger mechanism, and the use of antiepileptic drugs (AED) in migraine prevention, are reviewed from The Chicago Medical School, North Chicago, IL. Brain imaging with functional MRI and magnetoencephalography (MEG) have shown that the migraine aura is linked with an abnormal electric and metabolic event consistent with the cortical spreading depression of Leao. Visual activation monitored by MEG and fMRI confirm hyperexcitability of the occipital cortex with triggering of the migraine aura. Low systemic or brain magnesium levels may be involved in the abnormal brain excitability associated with migraine. The comorbidity of migraine and epilepsy may be explained by a common state of brain hyperexcitability. Several antiepileptic drugs have a moderate degree of efficacy in preventing migraine attacks. (Welch KM. Brain hyperexcitability: the basis for antiepileptic drugs in migraine prevention. **Headache** April 2005;45[Suppl 1]:S25-S32). (Respond: Dr K Michael Welch, Rosalind Franklin University of Medicine and Science, 3333 Greenbay Road, North Chicago, IL 60064).

COMMENT. The value of the EEG in children with migraine is controversial, and the EEG is not generally recommended as a routine evaluation (Kramer U, Harel S et al. **Brain Dev** 1994;16:304-308; Gronseth GS, Greenberg MK, **Neurology** 1995;45:1263-1267; **Progress in Pediatric Neurology III**, PNB Publishers, 1997;pp165-194). Kramer et al found epileptic EEGs in 11% of children with both migraine and tension type headaches; the incidence was 26% in girls with chronic, recurrent "very brief" headaches. In an earlier study of the EEG and migraine (Millichap JG. **Child's Brain** 1978;4:95-104), epileptiform EEGs were found in 18% of 100 consecutive children with recurrent headache, and the prevalence was the same in those with migraine as in the total group. In 30 patients with migraine in this series, a trial of the AED phenytoin as prophylactic therapy found that 77% were benefited, but the response to phenytoin was not correlated with an abnormal EEG, the factor that prompted this initial trial of an AED in childhood migraine; in 13 cases with abnormal and 17 with normal EEGs, response rates were 61% and 88%, respectively. These findings support the view that a response to AED does not prove an epileptic or brain hyperexcitability mechanism for migraine headache. Less toxic and more specific AEDs than those currently available might prove of practical value in migraine prophylaxis.

SPORTS-RELATED POSTTRAUMATIC MIGRAINE

Symptoms and neurocognitive functioning were compared in athletes with no headache (non-HA group), athletes complaining of HA (HA group), and athletes with posttraumatic migraine (PTM group), in a study of 261 high school and college athletes (mean age, 16.36±2.6 years) at University of Pittsburgh Medical Center; University of North Carolina, Chapel Hill; and Florida Neuroscience Institute, Orlando. A computer software program (ImPACT) designed to assess sports-related concussion found significant