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SEIZURE DISORDERS

IMMUNOGENETIC ASPECTS OF FEBRILE CONVULSIONS.

Investigators in Genetics, Pediatrics, Neurology, and Immunology, at Mansoura Un., Mansoura, Egypt found a gene frequency of 0.284 (c.f. 0.093 in controls) and a highly significant association between HLA-B5 antigen and febrile convulsions in 39 patients compared to 380 healthy controls. The high frequency of HLA-B5 antigen (48.7 in patients c.f., 17.6 in controls) reflected a significantly high relative risk and indicated that children having antigen B5 are 4.4 times more susceptible to febrile convulsions than those without that antigen. The means of IgA (89 mg%) and E-rosette (54%) were significantly low c.f. controls (151 and 64, respectively). The authors suggest that the genetic control of febrile convulsions is in linkage disequilibrium with HLA-B5, low IgA and low total T-cells and that this altered immune function may predispose to acute infections and high fever which precipitate the febrile convulsions. (Hafez M, Nagaty M, El-Shennawy F, El-Ziny M. J Neurogenetics 1987; 4:267-274).

COMMENT: Ehrengut W and Ehrengut J (Deutsch Med Wschr 1964; 89:166) found a lack of immunoglobulins beta-2A and beta-2M and a reduction of gamma globulin in 4 of 6 patients and postulated a weakness of defense mechanisms against infection as a possible cause of febrile convulsions. This report was the first and only reference to hypoimmunoglobulinemia cited in the monograph Febrile Convulsions 1968 MacMillan, N.Y., which included a review of world literature published in English and foreign languages. Isaac et al (Arch Dis Child 1984; 59:367) reported low serum IgA in children with febrile convulsions and Grob and Herold (Br Med J 1972:2:561) and others have found IgA deficiency among epileptics receiving anticonvulsants, especially hydantoins (see Hafez et al).

The multifactorial inheritance of febrile seizures is alluded to in the 6th annual Merritt-Putnam Symposium (Bird TD. Epilepsia 1987; 28 (Suppl 1): S71-81). Siblings have approximately a 8-12% risk of also having febrile seizures. If the index child and one parent are

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affected, the risks to siblings are 30-40% (50% if both parents are affected). A high proportion of probands and their siblings develop EEG abnormalities 3-5 years after the febrile seizure, including generalized spike-and-wave and a photoconvulsive response (Hauser et al 1985; Millichap, 1968).

SURGICAL TREATMENT OF INTRACTABLE EPILEPSY

Seventy-five children, ages 5 months to 15 years, were treated for intractable seizures in the Neurosurgical Dept. of Washington University School of Medicine, St. Louis, MO, USA. The use of implantable arrays of epidural electrodes facilitated extraoperative electrocorticography (ECOG) and simultaneous video monitoring that provided localizing information prior to cortical excision in 53 patients. The pathological lesions were chronic encephalitis of Rasmussen (9), cortical sclerosis with infantile hemiplegia (7), mesial temporal sclerosis (6), extratemporal sclerosis (6), cortical dysplasia (4), tuberous sclerosis (3), porencephalic cyst (3), Sturge-Weber (3), polymicrogyria (2), heterotopia (2), occult vascular malformation (1), misc (7). Results were good in 32 (65%): 16 seizure free and 16 improved control after follow-up of 1-14 years. Gliomas were found in an additional 17 cases and were the most common single cause of intractable seizures; 82% were seizure free for more than 1 year (mean follow-up of 4.5 years) since surgery. (Goldring S. Pediatric epilepsy surgery. Epilepsia 1987; 28 (Suppl 1:S82-102).

COMMENT: With an increasing awareness of the adverse effects of antiepileptic drugs on learning and behavior in children (see Ped. Neur. Briefs 1987; 1:20; Vining EPG et al. Pediatrics 1987; 80:165; Freeman JM. Epilepsia 1987; 28S:103) the need for alternative therapies becomes more apparent. The ketogenic and MCT diets could be used more frequently, metabolic causes requiring specific therapy (e.g. biotin, pyridoxine), though rare, should not be overlooked; and psychological factors especially important in the adolescent and young adult should be investigated and remedied. Dr. Goldring offers another alternative in surgical intervention which he believes to be a much under utilized therapeutic approach to intractable epilepsy in children. Although the emphasis and reliance on drugs in the management of seizures cannot be discounted, their promotion must not permit the neglect of preventive and alternative approaches to the child with seizures.

HEAD AND NECK TRAUMA

ICE HOCKEY INJURIES

The School of Public Health Institute for Athletic Medicine, and Departments of Orthopedic Surgery and Biomechanical Engineering, University of Minnesota, Minneapolis, MN, conducted an epidemiological study of ice hockey injuries among 12 high school varsity teams in the 1982-83 season. A major finding was a high incidence of concussion (9%), accounting for 12% of the total injuries. In addition, dizziness in 34%, headaches in 30%, blurred vision in 12%, and tinnitus in 11%, followed a blow to head or neck. Residual symptoms, including neck pain, back pain, reduced strength in upper extremities, were reported in 28% of players with a blow to head, neck or back. The older, taller, heavier player was injured most frequently, except that the risk to the 14-year old player