

with FC, 8 (13%) developed TLE within an average of 12 years after the first FC and 4 (7%) had other seizures. Of 213 family members without FC, only 1 had TLE. The mean duration of FC was 100+/-133 min in those with later TLE and 9+/-19 min in patients without TLE at prolonged follow-up (mean 32 years). The total number of FC, the number in one day, and age at onset did not differ significantly between groups. Of 27 patients with FC who had EEGs, 11 (41%) had epileptiform records and all but one had epilepsy. Neuropathological examination of resected temporal lobes from 5 of the patients with prolonged FC and TLE revealed mesial temporal sclerosis. (Maher J, McLachlan RS. Febrile convulsions. Is seizure duration the most important predictor of temporal lobe epilepsy? Brain 1995;118:1521-1528). (Respond: Dr RS McLachlan, University Hospital, 339 Windermere Road, London, Ontario, Canada N6A 5A5).

COMMENT. The duration of the febrile convulsion was the most important determinant of the later development of epilepsy and epileptiform EEGs. This finding echoes previous publications showing that prolonged febrile convulsions and seizure discharges in the EEG are the most significant criteria of a poor prognosis. (Millichap JG et al. Studies in febrile seizures. V. A clinical and electroencephalographic study in unselected patients. Neurology 1960;10:643-653). Millichap, JG. Febrile Convulsions. A monograph. New York, Macmillan, 1968). Epilepsy and recurrent afebrile seizures developed in 30% of patients with prolonged febrile seizures and in only 5% of patients with short convulsions of less than 20 min. The incidence of paroxysmal EEG tracings in children who developed epilepsy following FC was five times that observed in children with uncomplicated febrile convulsions. EEG abnormalities occurred in 36% of patients with prolonged FC >20 min and in 10% of those having short FC <20 min duration.

Berg AT and Shinnar S, examining complex febrile seizures (Epilepsia Feb 1996;37:126-133), found a strong correlation between prolonged duration of the FC and focal features, both in first and recurrent FC. Also, complex features tended to repeat, especially the prolonged duration, suggesting genetic or constitutional factors. The authors recommend that such children may be candidates for diazepam given at the onset of fever to abort the occurrence of a prolonged seizure. The following authors report a conflicting viewpoint, a not uncommon happening among authorities on this subject.

Knudsen FU et al, examining the long term outcome of prophylaxis for febrile convulsions (Arch Dis Child 1996;74:13-18), found that the prevention of new febrile convulsions by intermittent diazepam at the onset of fever offered no advantages over treatment with diazepam administered at the time of onset of a seizure. The long term prognosis in terms of subsequent epilepsy, neurological, motor, intellectual, cognitive, and scholastic ability was not influenced by the type of treatment applied in early childhood.

## ELECTROLYTE ABNORMALITIES IN FEBRILE SEIZURES

The role of serum sodium in susceptibility to complicated febrile convulsions was studied in 115 children admitted with simple or complicated febrile convulsions to the Kuopio University Hospital, Finland. Sodium levels were lower in children with complex FC in comparison with those having simple convulsions. The means were 136.07 (n= 42) and 137.62 mmol l<sup>-1</sup>(n=71), respectively. Sodium levels were lowest in children with repeated seizures. Levels <135 occurred in 47% of children with repeated FC and only in 8% of those with simple FC, but 50% of these simple FC cases had later complicated, repeated seizures, status epilepticus, or they developed epilepsy within 3 years.

Serum potassium concentrations showed no significant changes between simple and complicated FC groups. (Kiviranta T, Airaksinen EM. Low sodium levels in serum are associated with subsequent febrile seizures. Acta Paediatr Dec 1995;84:1372-4). (Respond: Dr Tuula Kiviranta, Taivallahdentie 7, FIN-70620 Kuopio, Finland).

COMMENT. Hyponatremia may increase the risk for complicated and multiple FC during the same febrile illness.

A further study by the above investigators concerns "osmolality and electrolytes in cerebrospinal fluid and serum of febrile children with and without seizures." (Kiviranta T, Tuomisto L, Airaksinen EM. Eur J Pediatr Feb 1996;155:120-125). CSF osmolality was lower in 60 febrile children than in 30 nonfebrile controls. The febrile groups, 36 with and 24 without seizures, did not differ, but those with repeated FC had lower CSF osmolality than the simple FC group. Differences in serum osmolality between groups were smaller than those in the CSF. Serum and CSF osmolalities showed a positive correlation. The body temperature and osmolality values were negatively correlated. Decreases in CSF sodium concentration with increasing body temperature paralleled those of CSF osmolality. Age was used as a covariant in group comparisons, since osmolality and sodium concentration in CSF correlated with age in nonfebrile children. For further reference to hyponatremia in febrile convulsions, see Ped Neur Briefs June 1995;9:48.

## OTHER SEIZURE DISORDERS

### **BENIGN PARTIAL EPILEPSY IN INFANCY**

The frequency of occurrence of benign partial epilepsy in infancy (BPEI) in a first line general hospital was determined among 75 patients presenting with epilepsy in the first 2 years of age and evaluated between 1987 and 1993 at the Departments of Paediatrics, Anjo Kosei Hospital, Anjo Aichi, and Nagoya University School of Medicine, Nagoya, Japan. Twenty two (29%) fulfilled the definition of BPEI: partial or secondary generalized seizures, clusters of seizures in 17, normal development, normal EEG, and good response to treatment. Average age at onset was 5.9 months. Average seizure persistence was 3 months. (Okumura A et al. Benign partial epilepsy in infancy. Arch Dis Child Jan 1996;74:19-21). (Respond: Dr Akihisa Okumura, Department of Paediatrics, Anjo Kosei Hospital, 12-38 Miyukihonmachi, Anjo Aichi 446, Japan).

COMMENT. Contrary to previous reports BPEI in this study was not rare. When cases of West's syndrome were excluded from the group, nearly half the patients presenting with epilepsy in the first two years of life fulfilled the criteria for BPEI. The initial manifestations of the BPEI observed at this center were impaired consciousness, decreased responsiveness, and cyanosis.

### **PRETREATMENT SEIZURE FREQUENCY, CONTROL & REMISSION**

The effect of the number of seizures before antiepileptic drug (AED) treatment on the ease of seizure control and remission was studied in a population-based regional cohort of 479 children with epilepsy at the IWK Children's Hospital, Halifax, Nova Scotia, Canada. Only 55 of 99 patients (56%) with more than 10 pretreatment seizures were seizure free for a sufficient time to attempt discontinuation of medicine, compared with 276 of 380 patients