

classical diet was more acceptable than the MCT diet, being equally effective and better tolerated by most patients. The authors were unable to document any significant changes in blood lipid profiles in the short term study, and the theoretical risks of inducing ischemic heart disease appeared to be outweighed by the benefit of the diets in controlling disabling seizures. With the increasing concern and attention to cholesterol and heart disease, however, this aspect of treatment must be followed carefully and patients with a family history of hypercholesterolemia or ischemic heart disease should probably be excluded from the ketogenic treatment program.

Balance studies are needed to determine the effect of the ketogenic diet on body water and electrolytes. In a balance study performed at the Mayo Clinic (Millichap JG, Jones JD. Acid-base, electrolyte, and amino-acid metabolism in children with petit mal. Etiologic significance and modification by anticonvulsant drugs and the ketogenic diet. Epilepsia 1964; 5:239-255), we found a decrease in the blood pH, PCO<sub>2</sub>, and standard bicarbonate during short ketogenic periods. The urinary excretion of electrolytes was increased and particularly that of calcium, magnesium and sodium, and the balance of sodium, potassium, calcium, magnesium, phosphorus and nitrogen were negative. The excretion of alphaaminonitrogen was reduced, the excretion of free amino acids was variable, and the level of leucine in the serum was elevated. Fluid intake and urine output were reduced and the fall in body weight was rapid and marked in the initial week of treatment. The total lipids, fatty acid and cholesterol in the serum were increased but not significantly during the ketogenic diet period; they became elevated significantly when carbohydrates and the antiketogenic diet were reintroduced. The anticonvulsant action of the ketogenic diet was unrelated to diuresis, independent of acidosis, and was correlated with an increased urinary excretion and a negative balance of sodium and potassium. Calcium supplements are usually advised with the ketogenic diet and in addition magnesium supplements should probably be included. The ketogenic dietary therapy of childhood epilepsies deserves further attention from pediatric neurologists. Assurance of parental and patient cooperation is essential as well as skilled dietetic advice and follow-up. The classical diet is probably more acceptable and has less gastrointestinal side-effects than the MCT diet; a lower and more palatable ratio (3:1) than that used in the Oxford study is usually sufficient and effective. If the diet is continued for long periods, consultation with a specialist in lipid metabolism should be obtained and ultrasound of the liver ordered to exclude fatty infiltration of the liver. (See Ped Neur Briefs, April 1988; 2:28)

#### VASCULAR DISORDERS

##### ISCHEMIC STROKE IN CHILDHOOD

Juvenile ischemic cerebral vascular disease was studied over a 15 year period in 34 patients in the Department of Neurosurgery, Neurological Institute, Tokyo Women's Medical College, Tokyo, Japan. Intracranial occlusions were attributed to cerebral thrombosis or embolism in 23, and to

Moya Moya disease in 11. An embolism based on congenital heart disease was found in 8, with trauma in 3, and with infection in 1. Cerebral angiography confirmed stenoses or occlusions in 17 of 21 patients tested. The initial symptoms of juvenile ischemic cerebral disease was hemiparesis in 22 (47.8%), convulsion in 9 (19.6%) and speech impairment in 7 (15.2%). The prognosis in patients with an unknown etiology for the occlusion had good outcomes whereas those with congenital heart disease had a relatively poor prognosis. Three patients had abscesses after their ischemic lesions. (Wanifuchi H et al. Ischemic stroke in infancy, childhood and adolescence. Child's Nerv Syst Dec 1988; 4:361-364).

COMMENT. Cerebral arterial occlusion in children is uncommon and only 3% of cerebral infarctions occur in patients under the age of 40. A thorough diagnostic search to prevent recurrences is of importance in the young stroke victim. Despite a lengthy differential diagnosis of cerebral infarction several predominant etiologies account for the majority of cases. The category of uncertain etiology includes 35% of patients in whom the cerebral infarction was associated with mitral valve prolapse, migraine and oral contraceptive use. Each of these conditions is frequent enough in healthy young adults that causality cannot be assumed until other causes have been eliminated (Hart, Miller. Stroke 1983; 14:110). The causes of infarction in 100 young adults were listed as cerebral vascular atherosclerosis (18), cerebral embolism (31), cerebral vasculopathy (10), coagulopathy and systemic inflammation (9), peripartum (5), and uncertain etiology (27). Ergot preparations and oral contraceptives were contraindicated in patients with migraine headaches and cerebral infarction. Platelet antiaggregates were advised in migraine patients with cerebral infarction and in the idiopathic cases. In the present paper from Tokyo, some of the patients with arterial occlusion of unknown etiology had had frequent episodes of inflammation such as measles or tonsillitis in their past history and the occlusion and inflammation were thought to be indicative of arteritis. Patients with occlusion of the internal carotid artery often show pathological findings consistent with the early stages of Moya Moya disease in childhood (Suzuki J Takaku A. Arch Neurol 1969; 20:288).

#### HYDROCEPHALUS

##### BAERS IN CONGENITAL HYDROCEPHALUS

Brainstem auditory evoked responses were studied in 20 children with congenital hydrocephalus before and after shunt surgery at the Departments of Neurosurgery and Neurology, National Institute of Mental Health and Neurosciences, Bangalore, India. Ninety-five percent showed abnormal responses preoperatively. Prolonged wave V latency was the most common abnormality, followed by increased interwave latencies. Absence of evoked responses was more common in children with communicating hydrocephalus. Following shunt surgery 50% of the responses returned to normal and 20% showed a significant improvement. The ages of the patients ranged from 2-30 months (mean 8.5). The duration of neurological symptoms ranged from 1-12 months (mean 3.9). A progressive increase in head size was the chief sign on presentation. Twelve of the children had congenital hydrocephalus alone and