

University of Washington School of Medicine and the Children's Hospital, Seattle. One child with B-thalassemia trait had a hemoglobin of 48 gm/L, hematocrit 0.15, and ferritin 42 ng/ml. The second patient with a cor triatriatum had a hemoglobin of 51 gm/L, hematocrit 0.18, and ferritin 3 ng/ml (normal, 15-160 ng/ml). Patient 1 was treated with an erythrocyte transfusion, and patient 2 received oral iron. (Colina KF, Abelson HT. Resolution of breath-holding spells with treatment of concomitant anemia. J Pediatr March 1995;126:395-7). (Reprints: Kenneth F Colina MD, Scott and White Clinic, 7700 Fish Pond Rd, Waco, TX 76710).

COMMENT. The association between breath-holding spells and anemia was first reported by Holowach J and Thurston DL. (N Engl J Med 1963;268:21-3). Iron deficiency anemia was noted in 23% of cases.

Reversible focal neurologic deficits were reported in a 14 year old female adolescent with severe iron deficiency anemia and bleeding from intestinal polyposis and hemorrhagic telangiectasia. (Bruggers CS et al. J Pediatr 1990;117:430). After transfusion with packed erythrocytes and treatment with oral ferrous sulfate, facial palsy resolved within 12 hours and a VI nerve palsy and somnolence cleared by the fifth day. A syncopal episode was not repeated. (See Progress in Pediatric Neurology 1991, p397-8).

IRON DEFICIENCY AND INFANT DEVELOPMENT is addressed in an editorial (Lozoff B. J Pediatr Oct 1994;125:577-8). Moffatt and colleagues reported in this issue of the journal that iron deficiency caused lower developmental test scores in infancy. Iron therapy resulted in an increase of 30 points in mental scores and 24 points in motor scores in a double-blind, randomized, placebo-controlled trial conducted in Indonesia. The prevention of iron deficiency anemia during the first few years of life is important to assure optimal neurodevelopmental outcome and the avoidance of breath-holding spells.

## BRAIN TRAUMA

### **LONG-TERM OUTCOME AFTER SEVERE BRAIN INJURY**

The outcome in adulthood of severe brain injury in 39 preschoolers, aged 7 years or less, was evaluated at the Kauniala Hospital for Disabled War Veterans, the Rehabilitation Centre of Insurance Companies, Kauniainen, and the University of Helsinki, Finland. Twenty three (59%) attended a typical school, 8 (21%) attended a school for the physically disabled, and 7 (18%) attended school for the mentally retarded. In adulthood, 9 patients (23%) worked full-time, 10 (26%) worked at sheltered work-places, 14 (36%) lived independently at home, and 6 (15%) needed physical or psychological support. Of the 23 who attended a normal school in childhood, only 9 were capable of full-time work as adults. A sense of identity was the best indicator of final outcome. (Koskiniemi M et al. Long-term outcome after severe brain injury in preschoolers is worse than expected. Arch Pediatr Adolesc Med March 1995;149:249-254). (Respond: Mr Taina Nybo, Kauniala Hospital for Disabled War Veterans, 02700 Kauniainen, Finland).

COMMENT. The long-term outcome was worse than expected from initial

recovery or by school achievement. One-half the patients with severe brain injury in early childhood attended normal school, but only one-fourth could work full-time as adults. The authors stress the importance of providing the brain-injured child with a firm identity.

### **CEREBRAL BLOOD FLOW STUDIES IN SEVERE HEAD INJURY**

The results of 151 serial measurements of cerebral blood flow, arteriojugular venous oxygen difference, and cerebral metabolic rate for oxygen performed in 21 children with severe head injury are reported from the Bristol Hospital for Sick Children, UK. Cerebral hyperemia was uncommon, occurring in only 10 (7%) of the blood flow measurements. Cerebral blood flow was inversely correlated with intracranial pressure. Cerebral metabolic rate was initially normal in 81% of children, but both metabolic rate and AV oxygen difference fell significantly between the first and third days after injury. Children with head injury are most at risk of sustaining ischemic brain damage in the first few hours after injury when cerebral metabolic rate and cerebral oxygen extraction are maximal. (Sharples PM et al. Cerebral blood flow and metabolism in children with severe head injury. Part 1: relation to age, Glasgow coma score, outcome, intracranial pressure, and time after injury. J Neurol Neurosurg Psychiatry Feb 1995;58:145-152). (Respond: Dr PM Sharples, Institute of Child Health, Bristol Hospital for Sick Children, St Michael's Hill, Bristol BS2 8BJ, UK).

COMMENT. In Part 2 of the above study, the authors measured cerebrovascular resistance in 17 children with severe head injuries. Values were normal or raised in most cases. Cerebrovascular resistance was correlated with cerebral perfusion pressure, except in 4 of 5 most severely injured patients who died or survived with major handicap. The pathophysiology of traumatic encephalopathy in children is similar to that in adults. Normal autoregulatory mechanisms are preserved in most children with head injury, but pressure autoregulation may be disturbed in those with very severe injury. The adequacy of cerebral blood flow for cerebral metabolic demands should be closely monitored by continuous jugular oxygen saturation measurement in the severely injured patients. (Sharples PM, Matthews DSF, Eyre JA. Cerebral blood flow and metabolism in children with severe head injuries. Part 2: cerebrovascular resistance and its determinants. J Neurol Neurosurg Psychiatry Feb 1995;58:153-159).

A normal CT scan after mild head injury predicts a good prognosis and lack of subsequent deterioration requiring neurosurgical intervention, according to a study of 400 brain injured children reported from the University of Washington, Seattle. (Davis RL et al. The use of cranial CT scans in the triage of pediatric patients with mild head injury. Pediatrics March 1995;95:345-349).

### **SEIZURE DISORDERS**

#### **EARLY AED WITHDRAWAL IN NEONATES WITH SEIZURES**

The risk of seizure recurrence within the first year of life was evaluated in 31 surviving neonates whose antiepileptic treatment was discontinued after one to 65 days (median 4.5 days) in a study at the Neonatal