

abnormal placenta, intrauterine growth retardation, and postmaturity.

Intrapartum risk factors included maternal pyrexia, persistent occipito-posterior position, and acute intrapartum events. Operative vaginal delivery and emergency cesarean section were risk factors whereas elective cesarean carried a reduced risk. Intrapartum hypoxia was absent in >70% of cases of NE.

Causes of newborn encephalopathy are heterogeneous and almost 70% have only antepartum risk factors; 24% have both antepartum and intrapartum factors; 5% have only intrapartum factors; and 2% have no recognizable risk factors. (Badawi N, Kurinczuk JJ, Keogh JM et al. Antepartum and intrapartum risk factors for newborn encephalopathy: the Western Australian case-control study. BMJ 5 Dec 1998;317:1549-53 and 1554-8). (Respond: Dr N Badawi, Dept of Neonatology, New Children's Hospital, Royal Alexandra Hospital for Children, PO Box 3515, Parramatta, New South Wales 2124, Australia).

COMMENT. The majority of causes of neonatal encephalopathy occur in the antepartum period and are not primarily birth-related. Elective cesarean section is associated with a reduced risk of NE, presumably by avoidance of some intrapartum risk factors, including post-maturity, maternal pyrexia, bleeding, and acute labor events.

#### NEUROLOGIC COMPLICATIONS OF FETAL COCAINE EXPOSURE

The effects of prenatal cocaine exposure on intrauterine growth and neurologic function of 253 infants was evaluated prospectively at 1 to 7 days of age at the Division of Pediatric Neurology, College of Physicians and Surgeons, Columbia University, New York. Mothers with alcoholism, parenteral drug use, and AIDS, and infants with Apgars of <4 at 5 min, malformations, seizures, or stroke were excluded. Cocaine exposure was determined by radioimmunoassay of maternal hair collected in the last trimester. Of 240 woman and infant pairs with hair samples, 104 were cocaine-exposed and 136 unexposed. Cocaine-exposed infants had higher rates of intrauterine growth retardation (24% vs 8%), small head circumference <10th percentile (20% vs 5%), and neurologic abnormalities (hypertonia, tremor, and extensor leg posture). These abnormalities were dose-related, with increased odds of small head and neurologic impairment with increasing levels of cocaine exposure. (Chiriboga CA, Brust JCM, Bateman D, Hauser WA. Dose-response effect of fetal cocaine exposure on newborn neurologic function. Pediatrics Jan 1999;103:79-85). (Reprints: Dr Claudia A Chiriboga, Neurological Institute, 710 West 168th St, New York, NY 10032).

COMMENT. Fetal cocaine exposure has adverse neurologic effects that follow a dose-response relationship. Higher levels of prenatal cocaine exposure are associated with higher rates of reduced head growth, abnormal tone and posture, and tremor in the neonatal period.

**Motor development of cocaine-exposed children at age two years** was studied in 199 subjects (98 prenatal cocaine-exposed and 101 unexposed) at the Dept of Pediatrics, Case Western Reserve University, Cleveland, OH (Arendt R, Angelopoulos J, Salvator A, Singer L. Pediatrics Jan 1999;103:86-92). Scores on the Peabody Developmental Motor Scales showed that cocaine-exposed children performed significantly less well in gross and fine motor indices, with impaired balance and receipt and propulsion, poorer hand use and eye-hand coordination, and lower developmental motor quotients.

## **Prenatal cocaine exposure and ADHD.**

A significant proportion of foster children attending the Division of Neurology, ADD Clinic at Children's Memorial Hospital, Chicago, has a history of prenatal cocaine exposure. The earlier recognition of developmental delays related to cocaine abuse may lead to psychosocial and occupational therapy intervention and possible reduction of attentional and behavioral problems.

## **HEAD TRAUMA**

### **MANAGEMENT OF MINOR HEAD INJURY**

A national sample of pediatricians, family physicians, and emergency physicians was surveyed by questionnaire regarding initial and subsequent management of minor head injury, and responses were analyzed at the University of Washington, Seattle; the American Academy of Pediatrics; the American Academy of Family Physicians; University of California; and Children's Hospital, Boston. Surveys were returned by 765 (51%) of 1500 physicians. Pediatricians were the most frequent responders (40%), while family practitioners and emergency physicians accounted for 35% and 25% responses, respectively. For minor head trauma without complications, the majority (72%) of physicians chose observation at home as the initial management, while 11% chose observation in office or hospital. CT scan or skull X-ray was obtained by only 1% and 3%, respectively, but 80% ordered a CT scan if clinical deterioration occurred. With loss of consciousness, 18% chose CT, 21% inpatient observation, and 19% chose CT and observation. Seizures were of most concern, 27% choosing CT, 9% inpatient observation, 45% a combination of CT and observation, and 6% neurology consultation. Younger children received more X-rays, neurologic consultations, and hospital admissions than older children. (Aitken ME, Herrerias CT, Davis R et al. Minor head injury in children. Current management practices of pediatricians, emergency physicians, and family physicians. Arch Pediatr Adolesc Med Dec 1998;152:1176-1180). (Respond: Mary E Aitken MD, Center for Applied Research and Evaluation, Arkansas Children's Hospital, 800 Marshall St, Little Rock, AR 72202).

COMMENT. Variations in clinical management of minor head trauma among physicians suggests a need for the development of practice guidelines. Hopefully, pediatric neurologists and neurosurgeons will be included in these deliberations and recommendations. A persisting cognitive deficit and subsequent reading disability reported in 78 preschool children sustaining mild head injury, not sufficient to require admission for observation, points to the serious nature of the problem and the need for expert attention in management protocols (see Progress in Pediatric Neurology III, PNB Publ, 1997;pp476-478). Hyperactive behavior noted after mild head injury warrants careful follow-up.

**Head injury in a pediatric emergency department** is reviewed, comparing treatment methods before and after implementation of treatment protocols, at the Children's Hospital of Philadelphia (Lavelle JM, Shaw KN. Arch Pediatr Adolesc Med Dec 1998;152:1220-1224). Trauma management protocols resulted in significant increases of laboratory and radiologic services, without improving outcome: CT scans, cervical spine radiographs, and hepatic enzymes were ordered 14, 11, and 23 times more frequently, respectively. Management cost administrators who advocate treatment protocols should take note! (Dr DeAngelis, editorial comment).