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PERINATAL ASPHYXIA

BASAL GANGLIA MRS AND APGAR SCORES CORRELATION

Brain metabolite levels were measured by proton magnetic resonance spectroscopy (MRS) and included N-acetylaspartate (NAA), creatine (Cr), choline (Cho), and lactate and the ratios NAA to Cho and Cr (NAA-Cho-Cr), NAA-Cr, NAA-Cho, and Cho-Cr. MRS findings were compared with routine and diffusion-weighted brain MRI and clinical variables in 20 infants with 1-minute Apgar scores of 6 or less at 2-28 days of age, in a study at North Shore University Hospital, Manhasset, NY, and New York University Medical College and Mt Sinai Medical Center, New York, NY.

The basal ganglia metabolite ratios NAA-Cho and NAA-ChoCr correlated with the 1-5 minute, but not with 10-min Apgar scores. Anterior border zone NAA-Cho ratios of metabolites correlated only with the 1-min Apgar scores. The basal ganglia of 3 infants with perinatal asphyxia showed elevated lactate levels. Three infants had focal MRI lesions. (Pavlakis SG, Kingsley PB, Harper R et al. Correlation of basal ganglia magnetic resonance spectroscopy with Apgar score in perinatal asphyxia. Arch Neurol Dec 1999;56:1476-1481). (Respond: Steven G Pavlakis MD, Department of Neurology, North Shore University Hospital, 300 Community Dr, Manhasset, NY 11030).

COMMENT. Infants with perinatal asphyxia at risk for cerebral palsy may be defined by a combination of neonatal clinical signs, MRS-metabolite and lactate levels, and diffusion-weighted MRI. The basal ganglia appear to be most sensitive to asphyxia and metabolite abnormalities.

NEUROLOGIC OUTCOME OF ASPHYXIATED NEWBORNS

The use of a standardized clinical neuromotor examination performed at 3 months of age (NMS-3), as a predictor of 1-year outcome (NMS-12), is evaluated in a prospective study of 60 term infants with perinatal depression, at the University of California, San Francisco. The NMS-3 examination, scored from 0 to 5, correlated with the NMS-12 or 12-month neurologic examination. Neurologic abnormalities were present in 52% at 1 year; transient abnormalities occurred in a group of 18

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infants. All infants with an NMS-3 score of 5 had an abnormal exam at 1 year. Neonatal seizures were predictive of an increased risk of developmental abnormalities at 1 year. (Hajnal BL, Sahebkar-Moghaddam F, Barnwell AJ, Barkovich AJ, Ferriero DM. Early prediction of neurologic outcome after perinatal depression. Pediatr Neurol 1999;21:788-793). (Respond: Dr Ferriero, Department of Neurology, University of California, San Francisco, School of Medicine, Box 01145, San Francisco, CA 94143).

COMMENT. A neurologic examination of high-risk term infants at 3 months of age will identify children likely to have neurologic abnormalities at 1 year and allow early intervention therapy. Transient neurologic abnormalities characterized by increased tone at 3 months may be associated with a 20% risk of mild neurodevelopmental delay at 12 months and cognitive impairment with school problems in later childhood. Neonatal asphyxia complicated by seizures is strongly correlated with neurologic abnormalities at 1 year.

Neonatal neurologic prognostication in the asphyxiated term newborn is reviewed by pediatric neurologists at the Montreal Children's Hospital (Shevell MI, Majnemer A, Miller SP. Pediatr Neurol 1999;21:776-784). These authors emphasize the evolution of neonatal encephalopathy over time, the deferral of opinions on outcome until at least 1 week of age, the role of seizures, and ancillary tests including EEG, evoked potentials, and imaging studies. Apgar scores and cord pH are used solely to define perinatal asphyxia and not for the purpose of prognostication. The severity of the encephalopathy as judged by neurologic signs and ancillary tests is the chief criterion for outcome, and the predictive value of neurologic signs is increased the longer the examination is deferred.

HEADACHE DISORDERS

CLUSTER HEADACHE-LIKE DISORDER

Four children (two girls) with cluster headache-like disorder beginning between 6 and 15 years of age are reported from Birmingham Children's Hospital, UK. Bizarre behaviorisms, including screaming and thrashing around, during attacks contributed to a delay in diagnosis from a few weeks to 6 years before referral to the pediatric neurology clinic. Attacks were characterized by severe, episodic headache and autonomic symptoms (eyes and nose watering, sweating, flushing) occurring several times a day in clusters. Pain was bilateral in 3 cases, mainly frontal, and unilateral occipital in one, and not located in the unilateral orbital, supraorbital, or temporal regions typical of pure cluster headache. EEG and cerebral imaging were normal. Treatment consisted of home oxygen, successful during acute attacks in 2 patients, whereas subcutaneous sumatriptan was of limited value. Pizotifen had some prophylactic effect. (McNabb S, Whitehouse W. Cluster headache-like disorder in childhood. Arch Dis Child Dec 1999;81:511-512). (Respond: Dr W Whitehouse, Department of Paediatric Neurology, Birmingham Children's Hospital, Birmin gham B4 6NH, UK).

COMMENT. A variant of cluster headache or paroxysmal hemicrania may occur during childhood and is termed cluster headache-like disorder. Abnormal and bizarre behavior characterized by motor restlessness during episodes of headache, sometimes mistaken for pseudo seizures, should suggest the diagnosis.