

# PEDIATRIC NEUROLOGY BRIEFS

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J. GORDON MILLICHAP, M.D., F.R.C.P., EDITOR

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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. (Pavlikis 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 Pavlikis 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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