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COMMENT. This study demonstrates good correlation between muscle MRI and muscle histologic changes in boys with DMD. It validates muscle MRI as a tool for selection of patients with sufficiently preserved EDB muscle for clinical trials of IM injections of an antisense oligonucleotide (AO) to induce dystrophin production.

VASCULAR DISORDERS

ARTERIAL ISCHEMIC STROKE STUDY OF RISK FACTORS

Data from the International Pediatric Stroke Study were analyzed by researchers at Royal Children's Hospital, Melbourne, Australia, and other centers. Risk factors (RFs) for arterial ischemic stroke (AIS) and their characteristics were identified in a total of 676 patients. RFs included arteriopathies (53%), cardiac disorders (31%), infection (24%), acute head and neck disorders (23%), acute systemic disorders (22%), chronic systemic conditions (19%), prothrombotic states (13%), chronic head and neck disorders (10%), atherosclerosis-related RFs (2%), other (22%), and none was identified in 9%. RFs were multiple in 52% patients. Prevalence of RFs varied with geography and with age: arteriopathy was relatively less prevalent in Asia and prothrombotic states more prevalent in Europe; cardiac disease was most prevalent in preschoolers, arteriopathies in children 5 to 9 years old, and chronic head and neck disorders were highest in children aged 10 to 14 years. Arteriopathies were associated with focal signs and multiple infarcts, and cardiac disease with hemorrhagic conversion. (Mackay MT, Wiznitzer M, Benedict SL, Lee KJ, deVeber GA, Ganesan V. Arterial ischemic stroke risk factors: the International Pediatric Stroke Study. *Ann Neurol* Jan 2011;69:130-140). (Respond: Dr Mark T Mackay, Children's Neuroscience Centre, Royal Children's Hospital, Flemington Rd, Parkville, Victoria, Australia 3052. E.mail: mark.mackay@rch.org.au).

COMMENT. RFs, especially arteriopathy and cardiac disorders, are common in childhood AIS. Emphasis of investigation and preventive therapies may be determined by geographical and age-related prevalences of risk factors.

OUTCOME OF CEREBELLAR HEMORRHAGE IN PRETERM NEWBORNS

Long-term neurodevelopmental outcome of preterm infants with cerebellar hemorrhages detected only on MRI was studied at University of California, San Francisco. Of 131 preterm newborns evaluated by cranial ultrasound and MRI, cerebellar hemorrhage was seen on ultrasound in 3 and confirmed on MRI. An additional 10 cerebellar hemorrhages not detected by ultrasound were seen on MRI. Three newborns died in the nursery, 2 with ultrasound-detected cerebellar hemorrhages. Of 128 survivors, 94 underwent periodic neurodevelopmental exams until age 3-6 years (mean 4.8). Of 8 newborns with cerebellar hemorrhage seen only on MRI and assessed at age 3-6 years,

4(50%) had abnormalities on neurologic examination, including hypertonia and hyperreflexia, but without ataxia or disturbed ambulation. Of 85 without cerebellar hemorrhage, 14 (16%) had abnormal neurologic exams, including truncal hypotonia and lower limb hypertonia and hyperreflexia. Cerebellar hemorrhage detected only by MRI was associated with a 5-fold increased odds of abnormal neurologic exam compared with newborns without cerebellar hemorrhage. WPPSI-III scores were unaffected. (Tam EWY, Rosenbluth G, Rogers EE, et al. Cerebellar hemorrhage on magnetic resonance imaging in preterm newborns associated with abnormal neurologic outcome. **J Pediatr** Feb 2011;158:245-250).

COMMENT. Cerebellar hemorrhage in preterm newborns and seen only on MRI may be associated with neurologic abnormalities but the outcome is generally favorable. In contrast, cerebellar hemorrhage detected by cranial ultrasound has a poor prognosis.

INFECTIOUS DISORDERS

NEUROLOGIC COMPLICATIONS OF INTRAUTERINE HERPES SIMPLEX VIRUS INFECTION

Three case reports of intrauterine herpes simplex virus infection (HSV) and 61 cases published between 1963 and 2009 are reviewed by researchers at Baylor College of Medicine, Houston, TX. HSV was cultured in 54 (84%) cases (HSV2 from 36 and HSV1 from 10). Diagnosis was established by PCR, and/or immunohistochemistry. The typical triad of symptoms (cutaneous, CNS, and ophthalmological) occurred in 19 (30%) cases. Cutaneous and CNS manifestations without eye findings occurred in 22 (34%) infants while cutaneous and eye disease without CNS involvement was uncommon (6 [9%] cases). Isolated cutaneous manifestations occurred in 14 (22%) cases. Two (3%) infants had CNS disease alone. Of 43 (67%) with CNS manifestations of intrauterine HSV infection, 29 had more than one neurologic finding, and 25 (39%) had ocular findings, including 18 with retinal disease. The frequency of neurologic abnormalities in decreasing order included calcifications in 19 (44%), porencephaly/encephalomalacia in 16, ventriculomegaly 13, microcephaly 10, hemorrhage 8, and seizures in 7. In the authors' cases, hydrocephalus on fetal ultrasound, neonatal microcephaly, ventricular enlargement, porencephaly, intracranial calcifications adjacent to the third ventricle, optic atrophy and choreoretinitis were listed. CSF in case 1 contained 5 WBC/mm³, 6000 RBC/mm³, protein 189 mg/dL, and glucose 37 mg/dL. Case 2 had a hemorrhagic infarct on CT, and CSF was unremarkable. Case 3 at birth had bulging fontanelles, split cranial sutures, and impaired primitive reflexes. No skin lesions were present. CSF revealed 178 WBC/mm³, 790 RBC/mm³, protein 1458 mg/dL, and glucose of 20 mg/dL. Transcranial ultrasound showed hydrocephalus ex vacuo and encephalomalacia. CT showed absent cerebellar hemispheres, hypoplastic cerebral hemispheres, and calcifications. Eye exam showed choreoretinitis and vitreal hemorrhages. (Marquez L, Levy ML, Munoz FM, Palazzi DL. A report of three cases and review of intrauterine herpes simplex virus infection. **Pediatr Infect Dis** Feb 2011;30:153-157). (Respond: Lucila Marquez MD, Dept Pediatrics, Baylor College of Med, 1102 Bates Ave, Ste 1120, Houston, TX, 77030. E-mail: lm043062@bcm.tmc.edu).