significantly smaller right anterior lobes of the cerebellum, pars triangularis bilaterally, and brain volume. Measures of the right cerebellar anterior lobe and the pars triangularis correctly classified 72% of the dyslexics and 88% of controls. These neuroanatomical measures were significantly correlated with reading, spelling and language measures related to dyslexia. Anomalies in a cerebellar-frontal circuit are proposed as a neuroanatomical basis for dyslexia. (Eckert MA, Leonard CM, Richards TL et al. Anatomical correlates of dyslexia: frontal and cerebellar findings. Brain February 2003;126:482-494). (Respond: Mark A Eckert, PO Box 100244, Department of Neuroscience, University of Florida McKnight Brain Institute, Gainesville, FL 32610).

COMMENT. Anatomical deficits in a frontal-cerebellar system may lead to dyslexia. Measures of the right cerebellar anterior lobe and inferior frontal gyrus may be used to predict reading skills. Children with right cerebellar tumors have poor verbal and naming performance compared to patients with left-sided tumors (Scott et al, 2001; cited by Eckert et al).

VASCULAR DISORDERS

RISK FACTORS FOR ARTERIAL ISCHEMIC STROKE

Risk factors in 212 children (54% male; median age 5 years) presenting with a first arterial ischemic stroke (AIS) over 22 years were studied at Great Ormond Street Hospital for Children, London, UK. Patients were grouped as 1) symptomatic AIS (97), at risk because of a preceding medical diagnosis; and 2) previously healthy (115). Cerebral arterial imaging in 185 (87%) (including 115 previously healthy patients) was abnormal in 79%. Echocardiography in 104 previously healthy patients was abnormal in only 8. A comparison of the prevalence of trauma, infection, fever, varicella zoster within previous year, and hypertension within the 2 groups showed 2 significant differences: 1) trauma within previous 2 weeks was more common in the previously healthy group (23/115 cf 2/97 symptomatic); and 2) previous v. zoster was more likely in previously healthy group (68/105 cf 31/71 symptomatic). Cerebral arterial abnormalities, previous v. zoster infection, preceding trauma, recent infection, and anemia are common findings in children with AIS. Previously undetected structural cardiac abnormalities are rare. A previous medical diagnosis was identified in approximately one half. Hypertension was recognized in approximately 50%; anemia in 40%; and elevation of total plasma homocysteine or homozygosity for the MTHFR mutation in 21%. Prothrombotic screening is commonly negative. (Ganesan V, Prengler M, McShane MA et al. Investigation of risk factors in children with arterial ischemic stroke. Ann Neurol February 2003;53:167-173). (Respond: Dr V Ganesan, Lecturer in Paediatric Neurology, Neurosciences Unit, Institute of Child Health (UCL), The Wolfson Centre, Mecklenburgh Square, London WC1N 2AP, UK).

COMMENT. Risk factors and precipitating triggers for arterial ischemic stroke in children may be identified by clinical history and examination. Cerebral arterial imaging is usually abnormal, and some risk factors such as anemia and hyperhomocysteinemia (Hhcy) may be modifiable. Identification of all risk factors is important. Hhcy may be due to cystathionine b-synthase deficiency (Kelly PJ et al. Neurology Jan 2003;60:275-279).