DISCORDANT EPILEPSY IN MONOZYGOUS TWINS

Twelve monozygotic twins, discordant for epilepsy, were analysed for nonhereditary etiological factors by clinical history, MRI, and quantitative brain volume studies at the Brain Research Institute, University of Melbourne, Victoria, Australia. A major acquired factor explained discordance in 4 of 12 affected twins. All had temporal lobe epilepsy, 2 twins had a prolonged febrile convulsion in early childhood and hippocampal sclerosis on MRI, and 2 had a pre- or perinatal ischemic-hypoxic insult with ischemic lesions. MRI showed significant cortical maldevelopment (MCD) in 4 of the remaining 8 affected MZ twins without major acquired risk factors. In the remaining 4 twin pairs with discordant seizures unexplained by major acquired factors or MCDs, 2 twin pairs had differences in quantitative MRI brain volumes, indicative of subtle maldevelopment and a nonhereditary etiology. Both affected twins had idiopathic generalized epilepsy and larger hippocampal and intracranial volumes than the unaffected co-twins. No reason for discordance was uncovered in 2 or 12 twins. (Briellmann RS, Jackson GD, Torn-Broers Y, Berkovic SF. Causes of epilepsies: insights from discordant monozygous twins. Ann Neurol January 2001;49:45-52). (Respond: Dr Jackson, Brain Research Institute, Neurosciences Building, Repatriation Campus, West Heidelberg, 3081, Victoria, Australia).

COMMENT. Discordance for epilepsy in monozygous twin pairs is explained by noninherited factors. These include major acquired clinical risk factors, malformation of cortical development demonstrated by MRI, and quantitative brain volume changes. Idiopathic generalized epilepsy, usually considered primarily genetic in etiology, may be caused by underlying subtle developmental abnormalities. Occult acquired factors may explain cases of cryptogenic epilepsy.

IDIOPATHIC GENERALIZED EPILEPSY WITH HEMICONVULSIONS

Three adolescent patients with hemiconvulsive seizures and 3-cps generalized spike-and-wave discharges on EEG are reported from the National Hospital, Queen Square, London, UK. All are seizure-free following treatment with sodium valproate or/and lamotrigine, whereas prior treatment with carbamazepine was only partially effective. The diagnosis of idiopathic generalized epilepsy is supported by the EEG, normal CT or/and MRI, and pharmacological response. (Kiley MA, Smith SJM, Sander JW. Idiopathic generalized epilepsy presenting with hemiconvulsive seizures. Epilepsia Dec 2000;41:1633-1636). (Reprints: Dr SJM Smith, National Hospital of Neurology and Neurosurgery, Queen Square, London WC1N 3BG, UK).

COMMENT. Idiopathic generalized epilepsy (IGE) is a heterogeneous syndrome. Asymmetrical cortical hyperexcitability is favored as the explanation for the hemiconvulsive seizures in the above small series. In the monozygous discordant twin study (Briellmann et al, 2001), IGE was associated with asymmetrical brain volume abnormalities on quantitative MRI, suggesting a subtle maldevelopment that might explain hemiconvulsive seizures in rare cases.

PREDICTION OF COMPLIANCE WITH EPILEPSY TREATMENT

Sociocultural, medical, family environment, and cognitive factors predictive of adherence to treatment of epilepsy were analysed in 119 children, age 4 to 14 years, enrolled in a longitudinal study at the first visit to the seizure clinic, Los Angeles Children's Hospital, CA. A foreign language, most commonly Spanish, was spoken in the home in 45% of families. Families with less parental education, non-English speaking recent immigrants with lower incomes and