NEUROBEHAVIOR AND MRI IN 22q13.3 DELETION SYNDROME

Neuromotor, sensory, language, communication and social development, and cerebral MRI and PET studies were performed in 8 children with 22q13.3 deletion syndrome, at the National Institutes of Health, Necker-Enfants Malades Hospital, and other centers in Paris, France. A common developmental profile was characterized by hypotonia, sleep disorders, excessive crying, poor response to the environment suggestive but not diagnostic of autism, expressive language delay, sensory processing and neuromotor disorders. Cognitive tests revealed mild-to-severe delay in all developmental milestones, verbal and imitation more than motor skills. Episodic symptoms prompting an EEG included acute hypotonia, repetitive rolling of tongue, eyelid flutter, vagal syncope, and standing still at attention. One had bifrontal spikes but none had epilepsy. Brain MRI was normal or showed a thin corpus callosum, and PET studies identified a localized dysfunction of the left temporal lobe and hypoperfusion in the amygdala, as compared to a group of mentally retarded control children. This description of an underdiagnosed syndrome should lead to more frequent recognition. (Philippe A, Boddaert N, Vaivre-Douret L, et al. Neurobehavioral profile and brain imaging study of the 22q13.3 deletion syndrome in childhood. **Pediatrics** August 2008;122:e376-e382). (Respond: Anne Philippe MD, PhD, INSERM U781, Hopital Necker-Enfants Malades, 149 Rue de Sevres, 75015 Paris, France. E-mail: anne.philippe@necker.fr).

COMMENT. The neurobehavioral description of the 22q13.3 deletion syndrome resembles that of pervasive developmental disorders but is distinct from autism. The 8 children in this study shared a common developmental course characterized by hypotonia, sensory and sleep disorders, global developmental delay, lack of emotion and inappropriate facial expression, episodic and stereotyped movements and postures. These symptoms should prompt a chromosome analysis with special attention to the 22qter deletion.

SEIZURE DISORDERS

KETOGENIC DIET FOR EPILEPSY AND FOCAL MALFORMATION

The efficacy and long-term treatment outcome of a classic ketogenic diet (KD) add-on treatment (4:1 lipid/nonlipid ratio, without initial fasting and fluid restriction) were evaluated retrospectively in 47 children with intractable epilepsy and focal malformation of cortical development, in a study at Severance Children's and Sanggye Park Hospitals, Seoul, Korea. At 3 months after diet initiation, 21 (44.7%) were seizure free, and 29 (62%) had >50% seizure reduction. Of 21 with complete seizure control at 3 months, 16 (76%) continued the diet for 2 years without relapse; 10 (48%) remained seizure-free after discontinuing the diet, at mean follow-up of 3 years 10 months. Diet was discontinued in 2 patients who developed hemorrhagic gastritis, and diet intolerance occurred in 5 patients. Of 19 patients whose seizures were not completely controlled during the KD and in 3 who had recurrences after diet withdrawal, 13 (59%) became seizure-free after undergoing epilepsy surgery. All patients were followed for at least 12 months after completion of the KD. In the management of intractable seizures due to focal cortical maldevelopment, patients who

become seizure free within 3 months of initiating the KD have an excellent long-term outcome. (Jung DE, Kang HC, Kim HD. Long-term outcome of the ketogenic diet for intractable childhood epilepsy with focal malformation of cortical development. **Pediatrics** August 2008;122:e330-e333). (Respond: Heung Dong Kim MD, PhD, Yonsei University College of Medicine, Brain Research Institute, Severance Children's Hospital, 134 Shinchon-dong, Seodaemun-gu, Seoul 120-752, Korea. E-mail: hdkimmd@yuhs.ac).

COMMENT. The ketogenic diet (KD) was first introduced for the treatment of epilepsy at the Mayo Clinic (Wilder RM. **Mayo Clin Bull** 1921;2:307). Unlike the later Johns Hopkins protocol (Livingston S. **Postgrad Med** 1951;10:333-336; Freeman JM et al. **Pediatrics** 1998;102:158-1363), the classic Mayo KD is introduced without initial fasting (NFKD) and usually, without admission to hospital. In my experience using the NFKD, a smaller ratio of ketogenic to antiketogenic items than that employed by the present authors has usually been successful in younger children, the higher 4:1 ratio being necessary only in older children (Millichap JG et al. **Am J Dis Child** 1964;107:593-604; **JAMA** 1966;198:210). In a Korean multicenter study involving 199 patients, a comparison of the modified Mayo non-fasting KD and the Hopkins fasting KD, found that by omitting the fasting period, especially in young children, acute dehydration was prevented, with no difference in the time to ketosis or in the efficacy of the diet. However, by employing the relatively high 4:1 ratio, favored by the Hopkins method, serious adverse effects were not avoided, including 5 deaths related to lipoid aspiration pneumonia, serious infection, and nutritional problems. (Kang HC et al. **Epilepsia** 2005;46:272-279; **Ped Neur Briefs** Feb 2005:19:12-13).

RISK OF MORTALITY IN CHILDREN WITH FEBRILE SEIZURES

Mortality after febrile seizures was studied in a large population-based cohort of children in Denmark followed from 3 months of age up to 25 years or until death, by researchers at Institute of Public Health, and National Centre for Register-based Research, Aarhus University; and University Hospital, Aarhus, Denmark; and School of Public Health, UCLA, USA. Of 1.6 million children born between 1977 and 2004, 8172 died, including 232 deaths in 55,215 children with a history of febrile seizures. The mortality rate ratio (1.80) was 80% higher during the first year and 90% higher (1.89) during the second year after the first febrile seizure; 132 of 100,000 children died within 2 years of a febrile seizure compared with 67 deaths per 100,000 without a history of febrile seizures. The increase in mortality (rate ratio 1.99) was restricted to patients with complex febrile seizures (>15 min or recurrence within 24 hr); children with simple febrile seizures (<15 min and no recurrence within 24 hr) had a mortality rate similar to the background population (rate ratio 1.09). The cause-specific cumulative mortality within 2 years of a febrile seizure per 100,000 children was 13 for seizures, 11 for pneumonia, 11 for sudden unexpected death, and 11 for congenital malformation of the nervous system. The development of epilepsy was not the explanation for increased mortality in all cases. The risk of sudden unexpected death was five times greater during the 2 years after a first febrile seizure than in the background population. (Vestergaard M, Pedersen MG, Ostergaard JR, Pedersen CB, Olsen J, Christensen J. Death in children with febrile seizures: a population-based cohort study. **Lancet** Aug 9, 2008;372:457-463). (Respond: E-mail: mogens.vestergaard@a.alm.au.dk).