

## TOXIC DISORDERS

### NEUROTOXICITY OF STAR ANISE TEA

Seven cases of adverse neurologic reactions associated with the home administration of star anise tea to young infants, aged 2 to 12 weeks, and identified over a 2-year period, are reported from the Miami Children's Hospital, FL. Patients came from the Cuban and Central and South American population of southern Florida. Symptoms included seizures, jitteriness, irritability, hyperexcitability, emesis, vertical nystagmus, and myoclonic movements. The dose varied from 1 star to 6 stars, boiled in water and administered as a carminative and sedative, once a day or up to once every four hours, on one occasion or for a period of 2 weeks. Laboratory values, EEG, and neuroimaging studies were all normal. Complete recovery occurred within 48 hours of discontinuing treatment. Symptoms were attributed to an overdose of *Illicium verum* (Chinese star anise), contamination with *Illicium anisatum* (Japanese star anise, *I japonicum*), or a combination of the two. Star anise tea should not be given to infants. (Ize-Ludlow D, Ragone S, Bruck IS, et al. Neurotoxicities in infants seen with the consumption of star anise tea. **Pediatrics** November 2004;114:e653-e656). (Reprints: Barbara M Garcia Pena MD MPH, Division of Emergency Medicine, Miami Children's Hospital, 3100 SW 62<sup>nd</sup> Ave, Miami, FL 33155).

COMMENT. The authors cite several references to seizures and other neurologic reactions to star anise herbal tea, in both infants and adults. The ingestion of star anise should be considered as a possible explanation for acute irritability, vomiting, and seizures, especially in young Latino patients. Chinese star anise (*I verum*) has been considered safe as a food or medicine because of its low content of veranisatins. However, large quantities administered to infants and even adults may result in neurologic reactions. Japanese star anise (*I anisatum*), a common contaminant of Chinese star anise, contains the potent toxin anisatin which causes both neurologic and gastrointestinal toxicities (Garzo FC et al. **An Esp Pediatr** 2002;57:290-294). The adulteration of Chinese star anise with the more toxic Japanese variety has led to a recall of these teas in many countries, including Spain, France, China, Japan, and Netherlands. Stricter federal regulation of the import of star anise into the United States is suggested by the authors.

### FULL AND INCOMPLETE FETAL ALCOHOL SYNDROME

The clinical features and hospitalization rates of children with full or incomplete fetal alcohol syndrome (FAS) were compared in retrospective case-controlled studies of affected Northern Plains American Indian children attending Aberdeen Area Indian Health Service hospitals, South Dakota. Forty-three children with FAS and 35 with incomplete FAS were identified from 1981 to 1993, using the International Classification of Diseases diagnostic criteria. Compared to controls, FAS and incomplete FAS children had significantly more facial dysmorphic features, growth deficiency, CNS dysfunction, muscular and cardiac problems and were hospitalized more frequently with otitis media, pneumonia, FAS, dehydration, anemia, failure to thrive, and feeding problems. Case children were hospitalized

more days and were placed in foster care more often than control children. In order of decreasing frequency from 90% to 20%, the manifestations of CNS dysfunction were behavior problems, developmental delay, language delay, microcephaly, seizures, irritability, attention deficit disorder, hyperactivity, hearing loss, and learning disabilities. The most frequent facial dysmorphic features included a long, flat philtrum, low nasal bridge, short palpebral fissures, thin upper lip, ear malformations, flattened maxilla, short, upturned nose, and epicanthal folds. The frequencies of CNS dysfunction and dysmorphic features were lower in the incomplete FAS patients than in those with the full syndrome, except for ADHD, learning disabilities, mental retardation, flat philtrum, and low nasal bridge, which occurred with the same respective frequencies. (Kvigne VL, Leonardson GR, Neff-Smith M, et al. Characteristics of children who have full or incomplete fetal alcohol syndrome. **J Pediatr** November 2004;145:635-640). (Reprints: Thomas K Welty MD MPH, 5990 East Jeremy Lane, Flagstaff, AZ 86004).

COMMENT. Fetal alcohol syndrome diagnosis should meet all 5 of the following criteria: 1) prenatal alcohol exposure, 2) FAS suspected by physician, 3) one or more typical facial features, 4) growth deficiency, and 5) CNS impairment (CDC. **Mort Mor Wkly Rev** 1994;42:312-314). Children meeting only 1 to 4 of these criteria are defined as incomplete FAS. Children with FAS have numerous health, learning, and social needs. The diagnosis of FAS becomes more difficult as the child grows older since the pronounced growth retardation and dysmorphisms of early childhood tend to diminish with age. FAS in adolescence was studied in 44 patients followed for 10-14 years (Spohr HL et al. **Acta Paediatr** 1994;404:19-26). Although manifestations were less obvious, a characteristic "juvenile" pattern of FAS was recognized that included microcephaly, growth retardation, cognitive deficits, behavioral problems, and craniofacial dysmorphisms. (see **Progress in Pediatric Neurology III**, PNB Publ, 1997;524-525, for further articles on FAS).

## VASCULAR DISORDERS

### **BRAIN BIOPSY IN DIAGNOSIS OF PRIMARY ANGIITIS OF THE CENTRAL NERVOUS SYSTEM**

Two cases of histologically confirmed childhood primary angiitis of the central nervous system (PACNS) are reported from the University of California-San Diego, and Children's Hospital, San Diego, CA. Patient 1, a 12-year-old boy presented with morning headaches, vomiting, and perioral dysesthesias. Examination showed papilledema, ataxia, focal weakness, and brisk reflexes. CSF contained 16 white cells/mm<sup>3</sup> (89% lymphocytes). Infections were excluded. Von Willebrand factor antigen was persistently elevated, and ESR was normal. MRI showed white matter abnormalities. Despite a normal angiogram, brain biopsy showed vasculitis involving larger leptomeningeal vessels. Treatment with steroids and cyclophosphamide resulted in resolution of weakness and ataxia and reduction of papilledema, with one period of relapse. Patient 2, a 3-year, 9-month-old girl presented with intermittent fever, vomiting, somnolence, and arthralgias. The child had chicken pox at 3 weeks of age. Blood count showed 13,000 leukocytes/mm<sup>3</sup>, and ESR was 81 mm/h. Infectious disease evaluation was negative. Symptoms resolved without treatment but recurred 3 months later. CSF revealed 150 WBC/mm<sup>3</sup> (83% lymphocytes) but no pathogens.