

COMMENT. Rare in the United States, acute necrotizing encephalopathy (ANE) is reported principally in Japan. The above case in Chicago, extensively investigated by CT and MRI imaging, demonstrates the rapid evolution of thalamic involvement in ANE. Thirteen consecutive children treated and 28 cases of ANE seen at various institutions in Japan are reviewed by Mizuguchi M et al (*J Neurol Neurosurg Psychiatry* May 1995;58:555-561; see *Ped Neur Briefs* July 1995). Onset is preceded by upper respiratory infection treated with antipyretics (aspirin in only 2 cases), and impaired consciousness, convulsions, and vomiting develop rapidly within 1 to 3 days. Hematemesis and diarrhea are common, and liver enlargement without jaundice is reported in all patients of this series. Decerebrate posturing occurs with coma, and the mortality is 28%. In survivors, slow recovery begins after 10 days, and spasticity, mental retardation, and seizures are common sequelae. Laboratory findings reveal liver dysfunction, uremia, and hypoproteinemia. Liver histology is nonspecific and unlike Reye's syndrome. CSF protein is increased. CT and MRI show symmetric, multifocal areas of necrosis in the thalami, white matter, brainstem, and cerebellum. The etiology is undetermined, but recent viral infection with influenza, coxsackie, and Rotavirus is detected in 20%.

The differential diagnosis, in addition to the acute toxic encephalopathy of Reye's syndrome, includes Wernicke's and Leigh's encephalopathies, carbon monoxide poisoning, ADEM, and acute hemorrhagic leukoencephalitis. An infectious or toxic environmental factor appears most likely. (see *Progress in Pediatric Neurology III*, PNB Publishers, 1997;pp493-494 for abstract and commentary on ANE).

## **BEHAVIOR DISORDERS**

### **MATERNAL SMOKING AND CHILDHOOD HYPERACTIVITY**

A longitudinal, prospective, birth cohort design was used in an investigation of the association between maternal smoking during pregnancy and hyperactivity in 8-year-old children followed at the University Hospital of Oulu, Finland. Teachers assessed behavior by the Children's Behavior Questionnaire (Rutter B2), using a total score of 9 or more to define hyperactivity. At age 8 follow-up, 9.5% of children were identified as hyperactive. Boys (14.2%, n=617) were more often hyperactive than girls (4.6%, n=191). Smoking during pregnancy was more common among mothers of hyperactive children (39.7%, n=318) than of nonhyperactive children (26.9%, n=2,052). Maternal smoking was associated with hyperactivity in a positive dose-response relationship, especially in children of young mothers with low social standing. Single-parent families had the highest proportion of affected children. After adjustment for sex, family structure, socioeconomic status, maternal age, and maternal alcohol use, the odds ratio for a positive association was 1.30; 1.08-1.58). (Kotimaa AJ, Moilanen I, Taanila A et al. Maternal smoking and hyperactivity in 8-year-old children. *J Am Acad Child Adolesc Psychiatry* July 2003;42:826-833). (Reprints: Mr Kotimaa, University Hospital of Oulu, Clinic of Child Psychiatry, PL 26, 90029 OYS, Finland).

COMMENT. Maternal smoking is a potential risk for abnormal brain development and subsequent diagnosis of behavioral disorders. Discontinuing use of nicotine during pregnancy should lessen the incidence of hyperactive behavior in young children.