

## INFECTIOUS DISEASE

### NEUROLOGIC SEQUELAE OF BACTERIAL MENINGITIS

The occurrence of chronic neurologic sequelae including late seizures or epilepsy was determined in a nine year follow-up study of 185 infants and children with bacterial meningitis at the Departments of Pediatrics and Neurology, Washington University School of Medicine, St. Louis, MD and the Department of Pediatrics, Baylor College of Medicine, Houston, TX. Seizures occurred in 58 patients (31%) during the acute phase of bacterial meningitis. Neurologic abnormalities developing during the acute illness had persisted at one month follow-up in 69 (37%) but many of these signs resolved within a one year period. Only 26 (14%) had persistent deficits; 18 (10%) had sensorineural hearing loss; 13 (7%) had one or more late seizures; and 8 (4%) had multiple neurologic deficits. Patients with serious neurologic abnormalities other than sensorineural hearing loss had a significantly increased risk of having at least one late seizure. Only two patients whose final neurologic examinations were normal had recurring seizures during follow-up. The occurrence of seizures during acute meningitis was strongly associated with the development of late seizures. Electroencephalographic abnormalities were also predictive of late seizures as was an initial CSF glucose concentration of less than 20 mg/dl. (Pomeroy SL et al. Seizures and other neurologic sequelae of bacterial meningitis in children. N Engl J Med Dec 13, 1990; 323:1651-7).

COMMENT. Children with persistent neurologic deficits from bacterial meningitis are at risk for epilepsy whereas those with a normal neurologic examination at time of discharge usually escape neurologic sequelae including epilepsy. Seizures during acute meningitis are highly predictive of late seizures and permanent neurologic deficits.

In a study of 97 school-aged children who had been treated for Haemophilus influenzae type b meningitis during infancy at the Children's Hospital of Toronto, Ottawa and Montreal, 14 (14%) had persisting neurologic sequelae, 11 had sensorineural hearing loss, and only 2% had a seizure disorder. The total sample of index children scored slightly below their siblings in reading ability but 56 children without acute phase neurologic complications (58%) were indistinguishable from their siblings on all neuropsychological tests. Neurologic sequelae were associated with lower socioeconomic status and a lower ratio of glucose in CSF to that in blood at the time of the meningitis. The prognosis was favorable for the majority of children treated for H. influenzae type b meningitis when followed for a mean of 9.6 years. (Taylor HG et al. The sequelae of Haemophilus influenzae meningitis in school-age children. N Engl J Med Dec 13, 1990; 323:1657-63).