Posttraumatic meningitis

Epidemiology

Posttraumatic meningitis epidemiology.

Pathogens

As expected from above, there is a high rate of infection with organisms indigenous to the nasal cavity.

The most common organisms in a series from Greece were Gram-positive cocci (Staph. hemoliticus, S. warneri, S. cohnii, S. epidermidis, and Strep. pneumonia) and Gram-negative bacilli (E. coli, Klebsiella pneumonia, Acinetobacter anitratus) [1)]

Treatment

Posttraumatic meningitis treatment.

Outcome

Can lead to devastating results and mortality rates up to 65% have been reported [2) 3) 4) 5) 6) 7) 8) 9) 10)]. [11)].

Case series

A retrospective study was conducted over a seven-year period (January 1st, 1996 - December 31, 2002) in the ICU and the neurosurgery department of the Habib-Bourguiba University Hospital, Sfax, Tunisia.

Over the study period, 38 patients presented PTM (0.96% of patients hospitalized for head injury), 92% of them had received antibiotic prophylaxis on admission. Mean time between head injury and the diagnosis of PTM was 9+/- 8 days (range: 2-34 days). The most common isolated organisms were multidrug resistant A. baumanii, and K. pneumoniae and reduced susceptibility S. pneumoniae. Factors predictive of prognosis in the 14 days following the diagnosis of meningitis were Glasgow coma score (GCS) on the day of diagnosis of PTM, absence of nuchal rigidity, CSF protein, CSF/blood glucose ratio, and S. pneumoniae as the causal agent of PTM.

Antibioprophylaxis in patients with head trauma must be avoided to prevent the emergence of multidrug resistant bacteria when PTM occurs. GCS on the day of diagnosis of PTM, CSF protein concentration, CSF/blood glucose ratio, and S. pneumoniae as the causal agent of PTM are predictive factors of mortality of patients with PTM [12)].

Wilson et al., reviewed 7 cases presenting to Children's Hospital-San Diego between 1981 and February 1988. Ages ranged from 3 to 16 years with 4 of the 7 patients being adolescents (greater than 13 years of age). These 4 adolescents accounted for 25% of the adolescent bacterial meningitis and all cases of nonmeningococcal meningitis in this age group. Six of 7 patients had positive cerebrospinal fluid (CSF) cultures and positive blood cultures. Organisms were Streptococcus pneumoniae (4), group A streptococcus (1), and Haemophilus influenzae (1). Five of the 7 patients required intensive cardiovascular and respiratory support. Four patients had a good neurologic recovery, 2 patients had neurologic sequelae, and 1 suffered sensorineural hearing loss. These data suggest that direct invasion of the CSF by bacteria may cause sepsis and cardiovascular compromise. Further, in adolescents with nonmeningococcal bacterial meningitis, a history of previous head trauma and Cerebrospinal fluid fistula should be sought and radiographic evaluation for CSF fistula should be considered [13].

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