

**TUBERCULOUS MEININGITIS IN QUEEN SIRIKIT NATIONAL
INSTITUTE OF CHILD HEALTH, THAILAND**



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TUBERCULOUS MENINGITIS IN QUEEN SIRIKIT NATIONAL INSTITUTE OF CHILD HEALTH, THAILAND

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ABSTRACT

The objective of this retrospective descriptive study was to evaluate the clinical features, treatment, and outcomes of tuberculous meningitis among a sample of children. The study cohort comprised 30 children (age 11 months to 14 years) with tuberculous meningitis, who were admitted to Queen Sirikit National Institute of Child Health, Bangkok, Thailand, during the period 2003-2009.

Ninety-six percent of the patients had a positive history of Bacillus Calmette-Guérin (BCG) vaccination. Forty, 27, and 33% of the patients were in stages I, II, and III, of tuberculous meningitis on admission, respectively. On admission, fever, weakness, neck stiffness, headache, vomiting, and seizures were present in 83, 62, 53, 43, and 40% of patients, respectively. Of the 30 patients, 70% were positive by tuberculin skin test.

Overall, the results of this study agreed with typical cerebrospinal fluid (CSF) findings. Leukocytes >5 cells/mm³, protein >100 mg/dl, CSF glucose $< 50\%$ of plasma glucose, increased opening pressure, and increased mononuclear cells, were present in 91, 69, 78, 95, and 82% of patients, respectively. Acid-fast stain and polymerase chain reaction (PCR) analysis of CSF for *Mycobacterium tuberculosis* were positive in 5 and 26% of patients, respectively.

Six- and 9-month anti-tuberculous drug regimens were used for 28 and 39% of patients, respectively. Sixty-seven percent of the patients underwent a combination-regimen of 4 anti-tuberculous drugs (isoniazid, rifampicin, pyrazinamide, and streptomycin). Ninety percent were administered steroids, while 30% received a ventriculo-peritoneal (VP) shunt.

The case fatality rate was 10%; all fatal cases had hyponatremia on admission. Fifty percent had neurological sequelae, of which 33% were temporary and 17% permanent.

KEY WORDS: TUBERCULOUS MENINGITIS / NEUROLOGICAL SEQUELAE / CLINICAL MANIFESTATIONS

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