

Diagnosing and Prognosticating Acute Meningitis in Young Infants within 24 Hours of Admission

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Abstract

Introduction: *The early diagnosis and prognosis of acute meningitis in young infants (infants 90 days old or younger) have not been well studied. We therefore investigated the diagnostic and prognostic factors for acute meningitis obtainable within 24 hours of admission.*
Methods: *Data were obtained through a retrospective case review of 55 young infants from 1991 to 1999 inclusive.*
Results: *The 3 commonest symptoms of acute meningitis were fever, abnormal activity and decreased feeding. The 3 commonest signs were temperature $>38.0^{\circ}\text{C}$, irritability/crying and abnormal tone/reflexes. The best predictor of acute bacterial meningitis (ABM) was the cerebrospinal fluid (CSF)-to-blood glucose ratio. A glucose ratio of ≤ 0.8 can be used to diagnose ABM with 100% sensitivity and 100% negative predictive value. Furthermore, a ratio ≤ 0.3 can be used to diagnose ABM with 100% specificity and 100% positive predictive value. The best predictor of unfavourable neurological outcome (UFNO) was also the CSF-to-blood glucose ratio. A glucose ratio of ≤ 0.3 again can be used to prognosticate for UFNO with 100% sensitivity and 100% negative predictive value.*
Conclusions: *Diagnosis of acute meningitis by history and physical examination alone is difficult. However, with the aid of laboratory tests, in particular the CSF-to-blood glucose ratio, one can diagnose ABM and prognosticate for unfavourable neurological outcome with high sensitivity and high negative predictive value within 24 hours of admission.*

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