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## Lumbar cerebrospinal fluid evolution in childhood tuberculous meningitis

Madelein Grobbelaar, van Toorn R and Solomons R  
Stellenbosch University, South Africa

**Background:** As early diagnosis of childhood tuberculous meningitis (TBM) cannot rely on mycobacterial confirmation, clinical, CSF and neuroimaging features are essential. We aimed to describe the evolution of serially-analyzed lumbar CSF parameters.

**Methods:** We performed a retrospective observational study including children <13 years with suspected TBM, prospectively enrolled in several research studies at Tygerberg Hospital, Cape Town, South Africa, over a 30-year period. Demographic and clinical data were analyzed, as well as CSF parameters at admission, week 1, 2 and 3.

**Results:** Of 318 children with suspected TBM, 53 (17%) had definite TBM and 265 (83%) probable TBM. Serial CSF analysis from admission to 3 weeks post-admission showed decrease in mean lymphocyte count (143 to 49/ $\mu$ L), neutrophil count (53 to 9/ $\mu$ L), protein concentration (3.29 to 1.85 g/L), and rise in mean glucose concentration (1.89 to 2.72 mmol/L). Longitudinal clustering revealed three distinct profiles, with 1 group atypically demonstrating initial increase in lymphocyte count, neutrophil count and protein concentration. The decreasing CSF glucose trend remained uniform amongst all groups.

**Conclusion:** Serial lumbar CSF in TBM suspects may demonstrate different trends over time. A gradual decline in CSF lymphocyte, neutrophil and protein count, and rise in CSF glucose concentration is expected, however normal variability exists.

### Biography

Grobbelaar M is currently a Postgraduate student in the Department of Paediatrics and Child Health, Stellenbosch University, Cape Town. She has a special interest in critical care which became evident during her work experience at Red Cross War Memorial Children's Hospital in Cape Town. Her research project has been accepted for publication in the *Journal of Child Neurology*, and she is planning to obtain her FCP next year.

86madelein@gmail.com

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