

# PROFILE OF CEREBROSPINAL FLUID FINDINGS IN CHILDREN AGED 3 MONTHS TO 12 YEARS WITH FEVER AND CONVULSIONS AT KENYATTA NATIONAL HOSPITAL

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## ABSTRACT

### Background

Fever and convulsions in children can be caused by bacterial meningitis, encephalitis, severe malaria, febrile convulsions and other central nervous system pathologies. Performance of a lumbar puncture is important in order to differentiate the various clinical causes of fever, convulsions and altered consciousness. There is need to find out if there has been any change in the pathogens causing meningitis which is a leading cause of fever and convulsions in children in Kenya since the introduction of the *Haemophilus influenzae* type b (Hib) and pneumococcal vaccine.

### Methods

This cross sectional study was carried out at the Paediatric Emergency Unit and general paediatric wards of Kenyatta National Hospital (KNH) from September 2016 to April 2017. The study population was children between the ages of 3 months to 12 years who presented with fever and convulsions. Relevant clinical information was noted and the children had lumbar punctures performed aseptically. Data collected was entered and analyzed using SPSS version 23.

### Results

Eighty-four children were enrolled into the study. Overall 69(82.1%) patients had normal CSF while 15(17.9%) patients had abnormal CSF findings. Five (5.9%) CSF samples had organisms

identified either on gram stain or culture. Three (3.6%) CSF samples had positive growth on culture and the organisms isolated were *Haemophilus influenzae*, *Enterococcus* and *Escherichia coli* which were all sensitive to meropenem. Fever for more than 24 hours, neck stiffness, irritability, lethargy and positive kerning sign were associated with abnormal CSF results. The multivariable logistic regression model showed that the odds of having abnormal CSF was eight fold higher (OR = 8, 95% CI 1.6-40.62) among children who had neck stiffness compared to those who did not have this sign.

**Conclusions:**

High index of suspicion for abnormal CSF is needed in children less than 2 years presenting with fever and convulsions especially if they have a stiff neck.