The impact of cerebrospinal fluid viral analysis on empiric antibiotic use in children admitted to Tygerberg Children's Hospital with suspected meningitis.

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Background: Viral meningitis is the most common form of aseptic meningitis and requires minimal investigation and treatment. Polymerase chain reaction (PCR) has become the "gold standard" for identifying viruses in cerebrospinal fluid and can provide rapid results. The objective of the study was to describe the aetiology and epidemiology of viral meningitis at Tygerberg Children's Hospital, as well as the impact of a positive cerebral spinal fluid (CSF) viral panel on the duration of empiric antibiotic treatment.

Methods: This was a retrospective folder review of all children between 29 days and 13 years who hada CSF specimen on which a viral analysis was performed from 1 January 2010 to 31December 2014.

Results: Two hundred and eighty-eight specimens were identified from the laboratory database. Seventy-nine specimens were presented for data analysis. Thirty-seven specimens had a positive viral analysis. The median age was 15.76 months (IQR 5.63 – 62.53 months). The microscopy and chemistry results were similar for the two groups except for the CSF lymphocyte count which was significantly higher in the group with a positive CSF viral analysis compared to those with a negative CSF viral analysis (median 58 vs. 12 x 10^6/l, p=0.002). The most common identified virus was Epstein-Barr virus (EBV) (23%); followed by enterovirus (17%). Children with a positive viral analysis tended to receive antibiotics for longer than those who had negative results (p=0.184).

Conclusion: The addition of CSF viral analysis could be helpful in the management of children with meningitis, but at present appears to have little impact on the length of antibiotic use.