Increased serum vascular endothelial growth factor is associated with acute viral encephalitis in Bangladeshi children

ABSTRACT

Encephalitis causes significant global morbidity and mortality. A large number of viruses cause encephalitis, and their geographic and temporal distributions vary. In many encephalitis cases, the virus cannot be detected, even after extensive testing. This is one challenge in management of the encephalitis patient. Since cytokines are pivotal in any form of inflammation and vary according to the nature of the inflammation, we hypothesized cytokine levels would allow us to discriminate between encephalitis caused by viruses and other aetiologies. This pilot study was conducted in a tertiary care hospital in Dhaka, Bangladesh. Viral detection was performed by polymerase chain reaction using patient cerebrospinal fluid. Acute phase reactants and cytokines were detected in patient serum. Of the 29 biomarkers assessed using the Wilcoxon rank-sum test, only vascular endothelial growth factor (VEGF) was significantly higher ($P = 0.0015$) in viral-positive compared with virus–negative encephalitis patients. The area under the curve (AUC) for VEGF was 0.82 (95% confidence interval: 0.66–0.98). Serum VEGF may discriminate between virus-positive and virus-negative encephalitis. Further study will be needed to confirm these findings.