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Role of real time PCR in diagnosis of Japanese encephalitis virus in acute encephalitis cases**Shantanu Prakash**

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Statement of the Problem: Japanese encephalitis virus (JEV) is the principal cause of vaccine preventable encephalitis in India, with an annual incidence of 1714 to 6594 cases and mortality of 367 to 1665 individuals. The mainstay of diagnosis of JEV is serological, which has certain limitations. The present study was designed to study the additional diagnostic value of real time-PCR in detection of JEV and to study the appropriate sample for serological diagnosis.

Methodology & Theoretical Orientation: Serum and CSF samples from AES cases referred to virology laboratory were enrolled in the study. All the samples were tested for anti-JEV IgM antibodies by ELISA (Mac ELISA kit by National Institute of Virology, Pune, India) and for real time PCR for JEV- RNA.

Findings: Total 217 patients were enrolled over a one year period during August 2015 to July 2016 of which 64 tested positive for JEV. Anti JE IgM antibody was positive in 34 (53.1%) cases from both CSF and serum, 19 (29.7%) from CSF only and 9 (14.1%) from serum only. Real time-PCR was positive in one serum and one CSF sample, which were negative by ELISA. Maximum cases (33.6%) were positive when tested on >3rd to 7th day of illness. The most commonly affected age group by JEV was >5 to 15 years and male to female ratio was 2.2:1. The common clinical symptoms present were seizure 52 (81.2%), altered sensorium 60 (93.8%), vomiting 24 (37.5%) and headache 10 (15.6%). JEV infection was associated with a high mortality (n=21, 32.8%) and residual disability (n=10, 17.2%) (Relative risk: 1.38 and 2.83 respectively).

Conclusion & Significance: Viremia in JE infection is short lived and therefore real time - PCR is not useful for increasing case detections in endemic areas. Detecting antibody in both serum and CSF is the best combination.

Biography

Shantanu Prakash has completed his PhD in the Field of Virology and Infectious Diseases. He is basically involved with research, academics and patient management. He has more than 25 publications, four patents and thousands of sequences submitted in NCBI of different viruses and bacteria and has been involved in many intramural and extramural projects. He has experience in the field of designing molecular diagnostics assay for infectious diseases, molecular characterization & whole genome sequencing of different viruses. Currently, he is involved extensively on epidemiology & surveillance of AES in northern India with focus of newer emerging and reemerging pathogens. The present study is based on several years of experience in serological and molecular techniques.

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