Original Research Paper

Volume - 13 | Issue - 04 | April - 2023 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Medical Microbiology

A CASE OF JAPANESE ENCEPHALITIS IN A 03 YEAR-OLD CHILD, FEBRUARY 2023 IN CENTRAL INDIA

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ABSTRACT **Background** Japanese encephalitis is caused by Culex species of mosquitoes, most commonly Culex tritaeniorhynchus. It transmit the virus through its bite. This disease is most commonly seen in rural areas but may also affect urban population in some conditions. Symptomatic patients develop a headache, high fever, disorientation, tremors, coma and mental status changes due to cerebral inflammation. Neurologic deficits, seizures and movement disorders are common, particularly in children. Approximately one out of four symptomatic cases are fatal. There is no specific therapy except supportive care, but there is an effective vaccine available to prevent infection. **Case Presentation** Here, we present a case of 03 year old child presented with high grade fever, unconsciousness and with recurrent seizures. Physical examination revealed neck rigidity and Glasgow coma score (GCS) 10. A cerebral computed tomography (CT) showed meningeal enhancement. Real time-polymerase chain reaction (RT-PCR) for Japanese encephalitis virus (JEV) in CSF was negative. The blood JE-specific IgM antibody (NIV JAPENESE ENCEPHALITIS IgM Capture ELISA Kit) was strongly positive, and the repeated test showed positive results one week later also. **Conclusion** JE is a mosquito-borne viral infection, and is an important cause of encephalitis in rural and semi-rural areas of Asia. The diagnosis of JE infection requires high quality reference laboratories, with appropriate tools to perform the diagnosis and expertise for interpretation of results.. The preventive method available for JE is JE vaccine; no specific treatment exists but case management is advised symptomatically.

KEYWORDS : Japanese encephalitis, Culex, neck rigidity, case report

Background

Japanese encephalitis is the most common preventable cause of mosquito-borne encephalitis in Asia, western Pacific and Australia. The Culex species of mosquitoes, most commonly Culex tritaeniorhynchus transmit the virus with their bite. Transmission occurs most commonly in agricultural areas but may occur in urban areas under certain conditions. While the majority of infections are asymptomatic, those who do develop symptoms of encephalitis suffer significant morbidity and mortality. Symptomatic patients develop a headache, high fever, disorientation, tremors, coma and mental status changes due to cerebral inflammation. Neurologic deficits, seizures and movement disorders are common, particularly in children. Approximately one out of four symptomatic cases are fatal. There is no specific therapy except supportive care, but there is an effective vaccine available to prevent infection. The vaccine is recommended for high-risk travellers to endemic areas. Many endemic areas have implemented childhood vaccination programs. The best protection is the prevention of mosquito bites.[1][2][3][4]

Presently, a case of JE neck rigidity, increased somnolence and irritability has been diagnosed in the Department of Microbiology and Virology lab, Bundelkhand Medical College, Sagar, Madhya Pradesh, India and we hereby describe the case in detail.

Case Presentation

A 03 year old child was admitted at Bundelkhand Government Medical College and Hospital Sagar on 08/02/2023. The patient presented with high grade fever, unconsciousness and with recurrent seizures. The patient belongs to rural area with low socioeconomic status The symptoms started with high grade fever (≥38°C) with myalgia, malaise and headache 6 days back followed by irritability, increased somnolence, altered sensorium on the consecutive days. The day before the admission the patient suffered from seizures and neck rigidity. The provisional diagnosis of viral encephalitis /meningitis was given by the Department of Pediatrics.

After admission the detailed history was taken and it was found that similar case was not found in his house or in the village from where he belongs. Also there was no history of travel in the past 15 days.

Physical examination revealed neck rigidity and Glasgow coma score (GCS) 10. Initial full blood count, urine test was done . A cerebral computed tomography (CT) showed meningeal enhancement. Biochemistry examination revealed electrolyte Na+123.0, K+-3.95 and Cl- 88.80, serum urea-16.2, creatinine-0.47, SGOT- 18.4 and SGPT -31.8

Cerebrospinal fluid (CSF) analyses revealed a clear fluid with 960 leucocytes/mm3 (norm: 4,000–10,000/) with 85% of mononuclear cells, and normal proteins and glucose. Multiple bacterial cultures including mycobacteria, blood and CSF Cryptococcus antigen, malaria blood smear and serological tests for human immunodeficiency virus (HIV), dengue virus and Leptospira was negative.

Real time-polymerase chain reaction (RT-PCR) for Japanese encephalitis virus (JEV) in CSF was negative. The blood JE-specific IgM antibody (NIV JAPENESE ENCEPHALITIS IgM Capture ELISA Kit) was strongly positive, and the repeated test showed positive results one week later also.

Conclusion:- JE is a mosquito-borne viral infection, and is an important cause of encephalitis in rural and semi-rural areas of Asia [5]. The occurrence of disease is widespread in 24 countries of South-East Asia and Western Pacific region. The diagnosis of JE infection requires high quality reference laboratories, with appropriate tools to perform the diagnosis and expertise for interpretation of results. The preventive method available for JE is JE vaccine; no specific treatment exists but case management is advised symptomatically.

Conflict of interest

No conflict of interest

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