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RESEARCH ARTICLE

PREVALANCE OF JAPANESE ENCEPHALITIS IN PATIENTS PRESENTING WITH ACUTE ENCEPHALITIS SYNDROME IN A TERITARY CARE HOSPITAL OF NORTH EASTERN STATE – TRIPURA

Kanak Choudhury[1], Vamshi Krishna Thummala[2], Gatram Pavan Kumar[3] and Manodip Mandal[4]

1. Assistant Professor, Department of Internal Medicine, AGMC & GBP Hospital.
2. Post-Graduate Trainee, Department of Internal Medicine, AGMC & GBP Hospital.
3. Senior Resident, Department of Internal Medicine, AGMC & GBP Hospital.
4. Post-Graduate Trainee, Department of Internal Medicine, AGMC & GBP Hospital.

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Abstract

Introduction: Japanese encephalitis virus (JEV) is an arthropod-borne flavivirus, which has a wide distribution in many countries of Asia, Western Pacific and in northern Australia. Twenty-four countries from South-East Asia, Western Pacific regions are endemic for this disease and more than three billion people are at risks of infection. This study is conducted to observe the clinicodemographic profile and prevalence of Japanese Encephalitis in patients presenting with Acute Encephalitis Syndrome

Methods: An observational longitudinal study was carried over a period of 8 months from January 2023 to august 2023 among 80 indoor patients admitted in department of medicine of a tertiary care hospital in North-Eastern state in Tripura.

Results: Total of 80 patients were admitted in male and female wards of Department of Medicine who were diagnosed to have Acute Encephalitis Syndrome. Among 80 patients 58(72.5%) were male and 22(27.5%) were female. Out of 80 patients 60(75%) serum samples were taken and 20(25%) CSF samples were taken of which 9(11.25%) patients were tested positive for serum and 5(6.25%) tested for CSF respectively. Mean age group of patients with positive results was 50.80±10.35. Most common presentation was fever(100%) followed by focal neurological deficit(57%), headache and vomitings (30%), coma(8%), convulsions(15%) and meningeal signs(30%). Out of 14 patients who were positive for JE 12(86%) patients were from rural areas and 2(14%) people were from urban areas. Out of 14 patients 10(71%) were male and 4 patients(29%) were female respectively.

Conclusion: In this study we found that a considerable number of patients are suffering from Japanese Encephalitis which enhances and enlightens our knowledge to think about the disease and its complications to prevent the increasing mortality rates among the patients and create awareness among them as most of them are from rural areas.

Corresponding Author:- Kanak Choudhury
Address:- Assistant Professor, Department of Internal Medicine, AGMC & GBP Hospital.

Introduction:-

Japanese encephalitis virus (JEV) is an arthropod-borne flavivirus, which has a wide distribution in many countries of Asia, Western Pacific and in northern Australia. Twenty-four countries from South-East Asia, Western Pacific regions are endemic for this disease and more than three billion people are at risks of infection. Symptomatic cases are uncommon and occur in approximately 1 in 250 subclinical infections. Japanese encephalitis (JE) is a major threat with case fatality rate up to 30% among those with disease symptoms. The infection causes a spectrum of clinical illness that begins with flu-like symptoms, neck stiffness, disorientation, coma, seizures, spastic paralysis and eventually death. JEV is one of the major public health problems not only because of a large number of deaths but also due to severe neuro-psychiatric sequelae that necessitates lifelong support amounting towards considerable socioeconomic burden [1, 2] .The virus contains three structural proteins - core protein (C), membrane protein (M) and glycosylated envelope protein (E), along with seven non-structural (NS) proteins - NS1, NS2A, NS2B, NS3, NS4A, NS4B and NS [3].. JEV, a flavivirus, is transmitted to humans through the bite of infected Culicine mosquitoes. The Culex vishnui group. C. tritaeniorhynchus, C. vishnui and C. pseudo vishnui are the main vectors of JEV reported in different parts of India. C. tritaeniorhynchus has been reported as the most prominent vector in India (4). It is found in Tamil Nadu, Karnataka and Kerala. C. vishnui subgroups are common, widespread and breed in water with luxuriant vegetation, mainly in paddy fields. The abundance of JEV in these areas is related to rice cultivation, shallow ditches and pools in Tamil Nadu, Karnataka and West Bengal. The other species of Culex mosquitoes are variably isolated from states such as Tamil Nadu, Karnataka, West Bengal, Andhra Pradesh and Goa. There is no evidence of human-to-human transmission till date (5).

Material And Methods:-

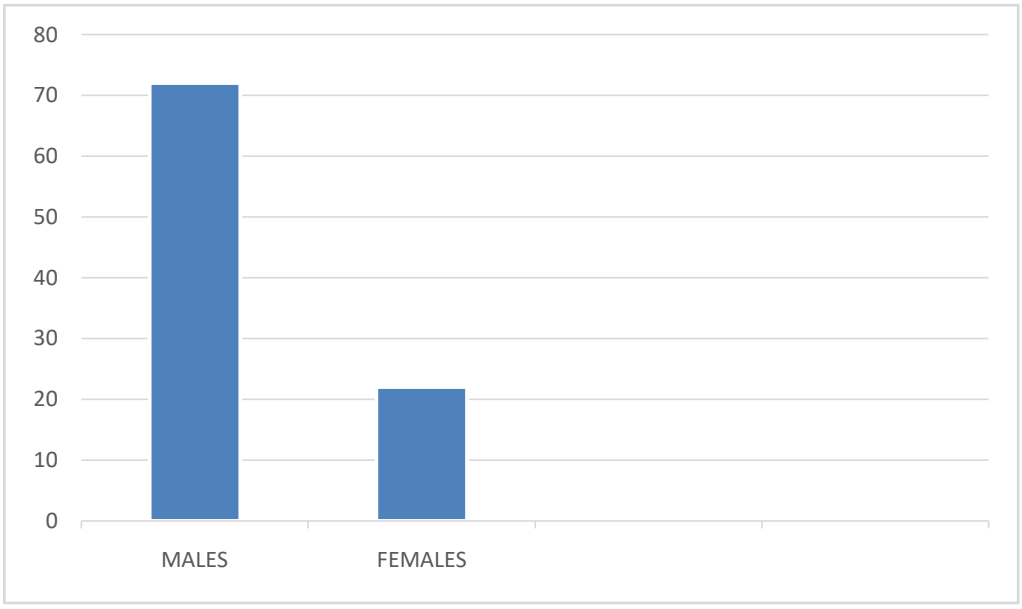
An observational longitudinal study was carried over a period of 8 months from January 2023 to august 2023 among 80 indoor patients admitted in department of medicine of a tertiary care hospital in North-Eastern India. Serum and CSF samples were collected from patientspresenting with signs and symptoms of AES. 1 mL CSF and 2–5 mL of clotted blood sample were collected as per standard procedures. The samples were transported to the virology laboratory maintaining cold chain. The CSF and serum samples were stored at 4°C in the refrigerator if tested within 3 days or minus 80 degree freezer for long-term storage.Serological study for JE IgM antibody capture (MAC) ELISA was performed on the CSF and serum samples by JE virus MAC ELISA kit supplied by the national institute of virology, Pune, as an integral part of the national vector borne disease control program. The samples were tested strictly following the manufacturer's guidelines.

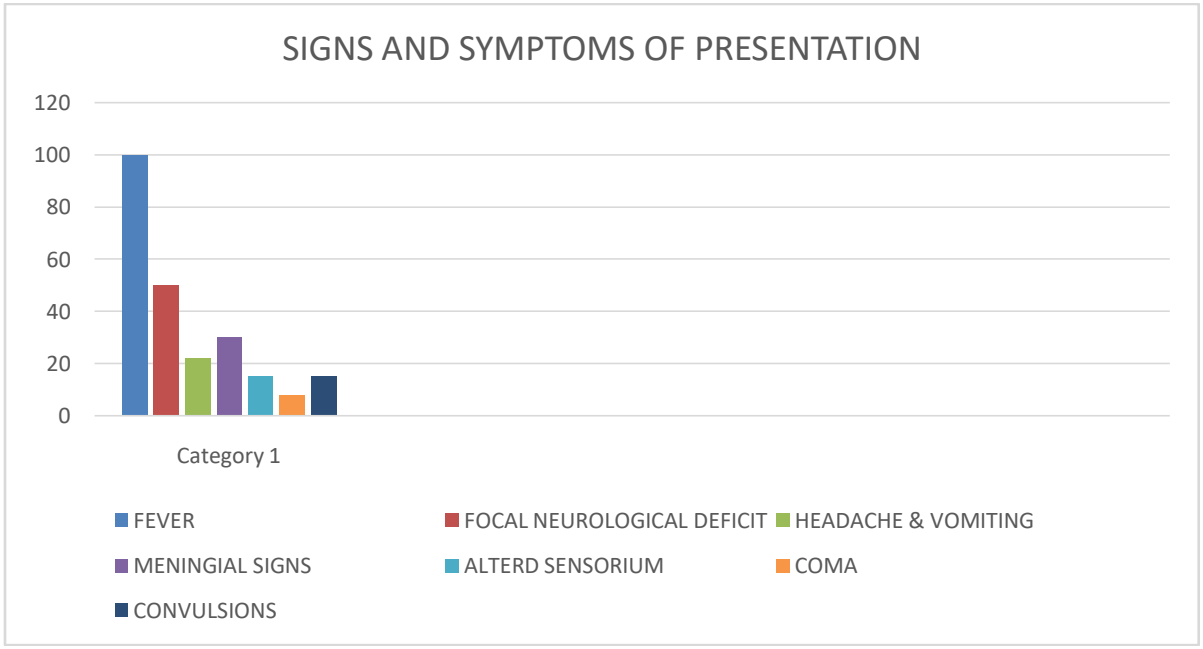
Statistical Analysis:-

Descriptive statistics like mean and percentages were used for the analysis and interpretation of the results and represents in the form of tables and charts. Comparison of the groups was done by t tests. Statistical analysis was performed using SPSS version 21.

Results:-

Total of 80 patients were admitted in male and female wards of Department of Medicine who were diagnosed to have Acute Encephalitis Syndrome. Among 80 patients 58(72.5%) were male and 22(27.5%) were female. Out of 80 patients 60(75%) serum samples were taken and 20(25%) CSF samples were taken of which 9(11.25%) patients were tested positive for serum and 5(6.25%) tested for CSF respectively. Mean age group of patients with positive results was 50.80±10.35. Most common presentation was fever(100%) followed by focal neurological deficit(57%), headache and vomitings (30%), coma(8%), convulsions(15%) and meningeal signs(30%). Out of 14 patients who were positive for JE 12(86%) patients were from rural areas and 2(14%) people were from urban areas. Out of 14 patients 10(71%) were male and 4 patients(29%) were female respectively.





Discussion:-

In this studypatients clinically diagnosed with AES were subjected to detection of JE IgM in their serum and CSF.the overall positivity is seen around 17.5% of the cases.various studies conducted in india as shown different positivity rates. Bandopadhyay et al has also reported higher number of cases 22.76% in patients presenting with AES[6]. Chakraborty et al reported 11.61% which is lesser than our studies[7].In our study the positivity rates are higher in males(72.5%) when compared to females(27.5%) this is similar to a study of Arup Roy etal[8].

Conclusion:-

In this study we found that a considerable number of patients are suffering from Japanese Encephalitis which enhances and enlightens our knowledge to think about the disease and its complications to prevent the increasing mortality rates among the patients and create awareness among them as most of them are from rural areas.

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