

Seroprevalence of Japanese Encephalitis in Patients Attending Microbiology Department of MGM Medical College, Jamshedpur

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ABSTRACT

Japanese Encephalitis is numerically one of the most important causes of viral encephalitis worldwide, with an estimated 50,000 cases and 15000 deaths annually. About one third of patients die and half of the survivors have neuropsychiatric sequelae. Most of China, S.E Asia and the Indian subcontinent are affected by the virus spreading at an alarming rate.

This study aims to assess the prevalence of Japanese encephalitis in the patients attending the microbiology department of MGM MCH. Data of patients from Jan 2017 to Dec 2017 were collected and analysed. Out of the 96 serum samples tested 7 were serologically confirmed for JE using Elisa. Seroprevalence was found to be 7.3 %.

Keywords: Japanese Encephalitis, Microbiology, Seroprevalence.


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INTRODUCTION

Epidemic of encephalitis were described in Japan from the 1870 onwards. Major epidemics were reported about every 10 years. With more than 6000 cases reported in the year 1924.¹

J.E was originally called Japanese b Encephalitis. J.E is a flavivirus, an arbovirus., endemic in different parts of India. JE virus is transmitted between animals by the culex tritanirhynchus, culex gelidus, culex vishnoi etc mosquitos and there are related neutrophic flaviviruses like West Nile virus found in Rajasthan to Karnataka. JE virus is transmitted to humans by cubex mosquito bites. Due to its high mortality, rapid laboratory diagnosis and treatment is very important. So is JE vaccine helpful in bringing down the mortality rate.

MATERIALS AND METHODS

Present study was conducted in Department of Microbiology, MGM Medical College & Hospital, Jamshedpur, Jharkhand, India. Blood samples of suspected JE cases were obtained which were received in the virology lab for detection of IgM antibodies were included in the study. Period of study was from January 2017 to December 2017. Serum was separated and IgM antibody detection was done by MAC ELISA manufactured by Arbo Diagnostics and supplied by NIV Pune.

RESULTS

Out of the total 96 serum samples tested, 7 were found to be positive for JE virus infection. No study was done in our

department earlier. Highest number of patients was admitted in the month of August to October. Most common presentation was acute encephalitis syndrome.

Table 1: Month wise Distribution of J.E cases

| 2017 | No. of Tests Done | Positive |
|--------------|-------------------|----------|
| January | 2 | 0 |
| February | 2 | 0 |
| March | 15 | 0 |
| April | - | - |
| May | 1 | 0 |
| June | 15 | 2 |
| July | 9 | 1 |
| August | 20 | 0 |
| September | 10 | 1 |
| October | 17 | 3 |
| November | 2 | 0 |
| December | 7 | 0 |
| Total | 96 | 7 |

DISCUSSION

Although most cases occur from rural areas, JE virus is also found in cities. After the monsoon rains mosquitoes breed prolifically and their numbers grow along with the infections of pigs.^{2,3} Human infection soon follows.

Virus is isolated from peripheral human blood.⁴ Viremias are brief and titres low, humans are dead end hosts. Most of the population are infected with J.E virus in childhood or early adulthood.⁵ In northern Thailand the incidence has been estimated to be upto 40 per 1,00,000 for the ages of 5 to 25 declining to almost zero for those above 35.^{5,6} The incidence is lower among young children (<3 years old) than in older children possibly reflecting behavioral factors for example playing outside after dusk.⁶ When epidemics first occur in new locations like Sri Lanka , India and Nepal , adults are also affected.⁷ In northern India huge epidemics occur during the summer months and in southern India. JE tends to be endemic and cases occur sporadically throughout the year peaking at the start of the rainy season. In our study the prevalence rate was found to be 7.3%. JE is a cause of great concern to public health authorities.

CONCLUSION

This study showed a significant prevalence of J.E among suspected cases. J.E is emerging as a major health concern in Jharkhand. To combat the menace general awareness among public, vaccination of school going children and constant vigilance is required.

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