IJMRP

Original Research Article.

A Study of Seroprevalence of Dengue in Kolhan Region of Jharkhand

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ABSTRACT

Dengue has become endemic in India. Data on the prevalence of dengue is scarce especially in Jharkhand, India. This study aims to assess the prevalence of dengue in the Kolhan region of Jharkhand.
Data of patients from Jan 2017 – Dec-2017 was collected and analysed. Out of 1309 samples tested, 441 were serologically confirmed for dengue using ELISA. Region wise prevalence and was calculated. A regular epidemiological surveillance is needed to study the spread of dengue virus in urban and tribal heartland which will help to control and manage the menace.

Keywords: Dengue, Seroprevalence, Kolhan, Jharkhand.

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Access this article online	
Website: **www.ijmrp.com**	**Quick Response code**
DOI: **10.21276/ijmrp.2018.4.4.020**	

INTRODUCTION

Dengue is the one of the most important arbovirus infection in humans in terms of mortality associated with it. It has become a notable public problem in recent times .It is endemic in different parts of India and epidemics often occur regularly.[1-3] Dengue virus, a flavivirus is transmitted from human to human biologically by the principal vector Aedes aegypti, a day biting mosquito. The dengue virus has four antigenic serotypes- DEN-1, DEN-2, DEN-3, DEN-4. The more serious forms of Dengue are Dengue Haemorrhagic Fever (DHF) AND Dengue Shock Syndrome (DSS). These are associated with infection by one serotype followed by another serotype.[4] Due to its high mortality rapid laboratory diagnosis and treatment is very important as it can lead to saving precious lives and decreasing the mortality is less than 1%.[5] It helps in planning appropriate control strategies. The present study shows the prevalence of dengue in Kolhan region of Jharkhand.

MATERIALS AND METHODS

Present study was conducted in Department of Microbiology, MGM Medical College & Hospital, Jamshedpur, Jharkhand, India. Blood Samples of suspected Dengue cases obtained within 5 days of illness which were received in the serology lab for detection of IgM antibodies were included in this study .Samples represent the whole of Kolhan region from where patients come for diagnosis and treatment. 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 110 serum samples tested, 38 were found to the positive for dengue virus infection. No study was done from this region earlier. 60.5% positive samples were of male patients and 39.5% females. Highest number of patients was admitted in the month of August to October. Most common presentation was fever. Majority of the dengue positive cases were from East Singhbhum (42.1%).
Dengue cases occurred after the monsoon season which is similar to most of the previous outbreaks in India. The cool weather during this season is conducive to the breeding of the insect's vector – A aegypti For the last four years dengue infection incidence has peaked during the months of August to October in our hospital.

Table 1: Region wise incidence

Region	Total no of Dengue positive	Percentage
East Singhbhum	550	42.10%
West Singhbhum	344	26.32%
Saraikela kharsawan	415	31.58%
Total	1309	100%

DISCUSSION

Dengue is being reported from different parts of India and is an important emerging disease. No study has been conducted in the kolhan region of Jharkhand till date to study the seroprevalence of dengue.

Since dengue presents with a wide variety of clinical features like fever, headache, retrobulbar pain, conjunctival injections, pain in the back and limbs, lymphadenopathy and maculoppular rash, it is imperative to make a correct diagnosis. Dengue virus specific IgM antibodies appear 3 days infection and remain in circulation for 30-60 days. IgM antibodies arise at about 7 days , they reach a peak at 2-3 weeks and persists for life. Detection of dengue specific   IgM antibodies alows a provisional diagnosis to be made from a single serum sample.[6] In our study, 34.5% patients were found to be positive for IgM antibodies for dengue. Different studies have reported different incidences of dengue eg- a study from Jaipur reported 18.99% infections[7], 19.7% by Garg et al.[8] 31.3% by Ukey et al.[9] and 44.56% by Gupta et al.[10]

Ukey et at have reported a male: female ratio of 2.15:1.[9] This represents the populations who is able to visit our hospital in Jamshedpur. A portion of rural population who are not able to visit the hospital may have been left out in the study. The age group of 31-40 yrs is mostly commonly affected. This may represents the young active males who are mobile because of occupation in cities. However Garg et al.[8] and Vijay Kumar et al.[6] have reported higher incidence in children.

In our study similar incidence of dengue was noted from the three districts of (E) Singhbhum,(W) Singhbhum, Saraikela-Kharsawan from where patients come to this medical college. This shows that dengue occurs equally in urban and rural areas which is a cause of concern to public health authorities.

CONCLUSION

This study showed a significant prevalence of dengue infection among suspected dengue infection among suspected dengue patients. Dengue is emerging as a major concern in kolhan region of Jharkhand. To combat the menace, general awareness among public and constant vigilance is required by healthcare officials to plan appropriate control strategies.

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