Seasonal trend of Dengue cases admitted in a tertiary Hospital: A record based study

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Abstract—*Dengue virus infection has emerged as a notable public health problem in recent decades in spite of having a national programme to control it. This study was conducted on records of dengue cases admitted in department of Medicine, SMS Hospital Jaipur (Rajasthan) in year 2018. Seasonal variation was observed in these cases. Maximum (75.4%) of these cases admitted in September to November with peak in October. Few cases admitted in and around that period, so it can be concluded with this study that Dengue cases spurge in post-monsoon period. Occurrence of most of the cases in post-monsoon period indicates a need for acceleration of vector control programme prior to monsoon.*

Keywords: Dengue, Seasonal Trends.

I. INTRODUCTION

Dengue Dengue is a vector-borne disease that is a major public health problem. It is caused by the dengue virus (DENV, 1–4 serotypes), which is one of the most important arboviruses in tropical and subtropical regions.[1,2] The epidemiology of dengue in India was first reported in Madras (now Chennai) in 1780, and the first outbreak occurred in Calcutta (now Kolkata) in 1963; subsequent outbreaks have been reported in different parts of India.[3,4]

In the early 2000s, dengue was endemic in a few southern (Maharashtra, Karnataka, Tamil Nadu and Pondicherry) and northern states (Delhi, Rajasthan, Haryana, Punjab and Chandigarh). It has recently spread to many states, including the union territories. Both *Aedes aegypti*and *Aedes albopictus* are the main competent vectors for dengue virus in India.[5] The number of dengue cases has increased 30-fold globally over the past five decades.[6]

A Global strategy for dengue prevention and control (2012- 2020) has been devised by WHO with an aim to reduce the mortality from dengue by at least 50% by 2020.[7] India has launched National Vector Borne Disease Control Programme (NVBDCP) in year 2003 to control vector born diseases including dengue. Despite of this control programme, dengue cases are on increase in Rajasthan also.

So this study was designed to find out seasonal trend of Dengue cases admitted in Medicine department of SMS Medical College Jaipur (Rajasthan) India.

II. METHODOLOGY

This record base analysis was done at Department of Community Medicine, SMS Medical College, Jaipur (Rajasthan) India of year 2018.

In this study, records of dengue cases admitted in year 2018 at department of Medicine, SMS Medical SMS Medical College, Jaipur (Rajasthan) India were included. Month wise distribution of these cases

were observed and seasonal trend of these cases were analysed.

Statistical analysis: Descriptive statistics was expressed in percentage and proportions.

III. RESULTS

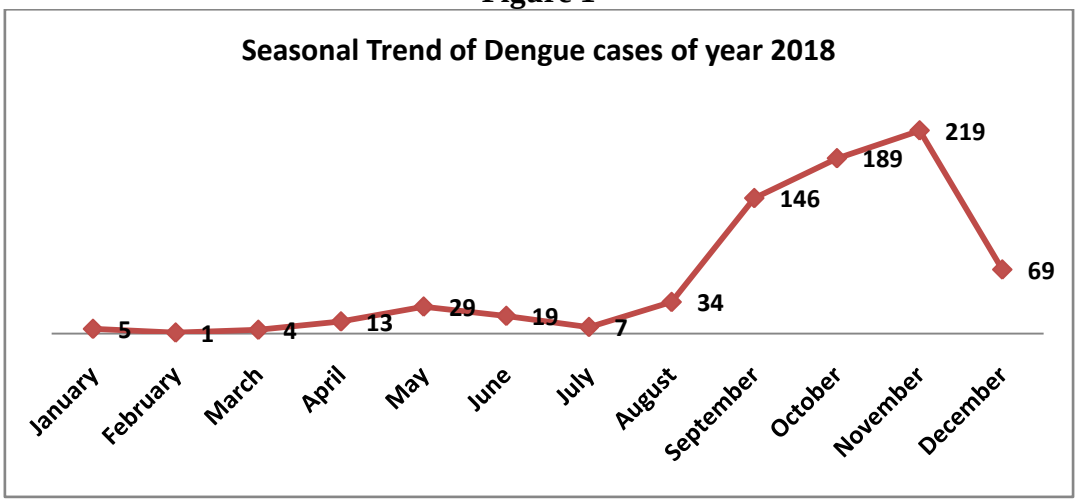
In year 2018 total 735 cases of Dengue were admitted in medicine wards of SMS Medical College, Jaipur (Rajasthan) India. Out of these 735, maximum admitted in the month of November i.e. 219 (29.8%) followed by in October (25.7%), September (19.9%), December (9.4%), August (4.6%), May (3.9%), June (2.6%), April (1.8%), July (1%), January (0.7%), March (0.5%) and February (0.1%). So maximum (75.4%) cases admitted from September to November. (Table 1 & Figure 1)

Table 1
Month wise distribution of Dengue cases of Year 2018

S. No.	Month	Number	Percentage (%)
1	**January**	5	**0.7**
2	**February**	1	**0.1**
3	**March**	4	**0.5**
4	**April**	13	**1.8**
5	**May**	29	**3.9**
6	**June**	19	**2.6**
7	**July**	7	**1.0**
8	**August**	34	**4.6**
9	**September**	146	**19.9**
10	**October**	189	**25.7**
11	**November**	219	**29.8**
12	**December**	69	**9.4**
Total		735	**100**

Maximum (75.4%) cases admitted from September to November with peak in October, so it the disease which is on peak in post-monsoon season. (Figure 1)

Figure 1



IV. DISCUSSION

In the present study, there is an increase number of dengue cases in September to November with peak in October depicting spurge in post monsoon season.

Other studies from various regions of country like Rajasthan (Jaipur and Ajmer),[8,9] Lucknow,[10] Nagpur,[11] Chandigarh,[12] New Delhi[13,14] and Karnataka[15] also reported their findings well in resonance with the present study. However a study from Odisha reported majority(47.86%) of cases limited in the month of September.[16] This can be explained by the stagnant water sources following heavy rainfall, which favor breeding of the mosquito vector resulting in an increased post-monsoon incidence of dengue.

Most of the parts of Rajasthan receive a low average annual rainfall of 57.5 cm and have a high temperature regime.[17] High levels of precipitation and low temperature are most strongly associated variables for elevated risk of dengue transmission, although low precipitation was not found to strongly limit transmission.[18] Dengue cases in Rajasthan are showing a constant increase in last few years despite harsh climatic conditions as compared to rest of India

This study reports constant presence of dengue cases in Jaipur, thus making it an endemic disease despite dry climatic conditions as there was no nil reporting in any of month. Thus supporting the endemicity of dengue as reported by other study also.[6]

V. CONCLUSION

This present study concluded that maximum (75.4%) of these cases admitted in September to November with peak in October. Few cases admitted in and around that period, so it can be concluded with this study that Dengue cases spurge in post-monsoon period. Occurrence of most of the cases in post-monsoon period indicates a need for acceleration of vector control programme prior to monsoon.

CONFLICT OF INTEREST

None declared till now.

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