TIME-TREND ANALYSIS OF DENGUE FEVER IN JAIPUR – A RECORD-BASED STUDY

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INTRODUCTION

Dengue is a vector-borne disease that is a major public health threat globally. 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]. DENV causes a wide range of diseases in humans, from dengue fever (DF) which is an acute febrile illness to dengue hemorrhagic fever or dengue shock syndrome which is life threatening [2]. The first case of dengue in India was first reported in Chennai in 1780, and the first outbreak occurred in Kolkata in 1963; subsequent outbreaks have been reported from different parts of India [3]. The number of dengue cases reported by the World Health Organization increased over 8 fold over the past two decades, from 505,430 cases in 2000 to 5.2 million in 2019. Reported deaths between 2000 and 2015 increased from 960 to 4032, affecting mostly young people. The total number of cases decreased during years 2020 and 2021, as well as for reported deaths. However, the data are not yet complete and COVID-19 pandemic might have also inhibited case reporting in several countries. This record-based study was planned to study the annual and seasonal trend of dengue fever (DF) and effect of COVID-19 on reporting of DF.

METHODS

The record-based analysis was done by collecting data from the CMHO after taking informed consent from the Chief Medical and Health Officer, Jaipur. Data from the past 5 years (i.e., 2017–2021) were collected to study the annual and seasonal trends of dengue in Jaipur. Descriptive statistics expressed in percentage and proportions. Data were entered in Microsoft Excel and analyzed using Epi info version 7.2.2.6 (software).

RESULTS

The number of cases increased from 2017 to 2018 with a slight decrease in 2019. There is sudden decrease in the number of cases from 2019 to 2020 which clearly shows the effect of COVID-19 pandemic. It was noticed that the number of cases starts increasing from August and reaches a peak in October and then starts decreasing.

Conclusion: Dengue is present throughout the year but becomes a public health problem in the third quarter of year. Under-reporting of dengue cases and similar clinical presentation as COVID-19 made situation more difficult in its diagnosis and management that ultimately results in less cases reported in 2020.

Keywords: Dengue, Dengue trend, Rajasthan

This record-based study was planned to study the annual and seasonal trend of DF and effect of COVID-19 on reporting of DF. These results will help us to implement appropriate control measures on time and to implement early diagnosis and reporting.

METHODS

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RESULTS

Figure 1 shows the total number of cases in a year from 2017 to 2021. From the graph, we can the number of cases increased from 2017 to 2018 with a slight decrease in 2019. There is sudden decrease in the number of cases from 2019 to 2020 which clearly shows the effect of COVID-19 pandemic.

Table 1 shows the seasonal trends of DF. For each year, it has been noticed that the number of cases starts increasing from August and reaches a peak in October and then starts decreasing. These are post-monsoon months which showed possibility of increase in number of mosquito breeding site and number of cases.

DISCUSSION

In recent years, dengue has shown an increasing trend in the number of cases in the country, therefore requiring urgent public policies to curb the disease [7]. The analysis of time trend of DF clearly shows decrease in the number of cases from 2019 to 2020 which clearly shows the effect of COVID-19 pandemic.
Dengue infection in 1858 and 1839 was reported, with a peak in 1901. The present study showed the seasonal trends of DF. The number of cases starts ascending in the month of August and reaches a peak in October.

<table>
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<td>253</td>
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<td>4121</td>
<td>3729</td>
<td>141</td>
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</tbody>
</table>

Fig. 1: Trend analysis of dengue fever

Table 1: Seasonal trends of dengue fever

CONCLUSION

Dengue is present throughout the year but becomes a public health problem from August to October. Underreporting of dengue cases and similar clinical presentation as COVID-19 made the situation worse and that ultimately resulted in less cases reported in 2020. Both temperature and rainfall are contributing factors for the spurge of cases post-monsoon. Therefore, the need of the hour is to understand this public health problem and act in time.

CONFLICT OF INTEREST

None.

REFERENCES