PREVALENCE OF SEROPOSITIVE DENGUE CASES IN CHANDRAPUR DISTRICT.

INTRODUCTION:
In recent past the Dengue has rehabilitated its framework form somewhat less sporadic self-limiting dengue fever (DF) to a life hounding condition like Dengue Shock Syndrome (DSS) and Dengue Haemorrhagic Fever (DHF) with its incremental prevalence of outbreaks.

After devastating first catastrophic epidemic in Kolkata during 1963-64, Dengue is now sprouting as infectious in many places of India which was elderly supposed to be no hostile disease.

Dengue a vector born disease initiated from a single stranded RNA virus (DENV) of Flaviviridae family, genus Flavivirus by means of its four serotypes. Infection persuades lifelong protection against the infecting serotype, but it adds only a little for protective immunity beside the other three types.

In last couple of years, the disease has reformed its advancement revealing its severe form as DHF and DSS with increased frequency of outbreaks.

Dengue is sprouting as a key health distress in India. Delhi has practised seven outbreaks of dengue virus since 1967; analogous incidents in the year 1968 and 2005 which compelled to take dynamic steps to prevent DSS.

At start of the millennium, magnitude of dengue was volatile and escorted the movement of people across continents because of the slavery and World Wars in which Indian continent was grossly hampered. Presently, about 40% of the world's population is at menace and an predictable 500 000 people with severe dengue necessitate hospitalization each year and almost 2.5% of individuals pretentious die.

Outbreak of dengue are also reported in Mumbai in 2003, analogous scenario was reported from Parbhani and Dhule region of Maharashtra state.

Hence considering recent analytics of the disease prevention has become unavoidable to avoid the complications of Dengue like DHS and DSS the severity of the diseases. Hence in the present retrospective study yearly changes in the year 2019 are being plotted which may help to construct a robust health system alongside the disease.

MATERIAL AND METHODS:
The present retrospective study was carried out in the Dengue sentinel surveillance centre, dept. of Microbiology, Govt. Medical College, Chandrapur (MH). All serum samples of clinically suspected dengue patients received from GMC and Hospital Chandrapur and from periphery of Chandrapur district were considered for the present study. Demographic details like age, gender, address, and patient's details like date of admission, clinical history, signs, symptoms, collection of sample were noted.

Received samples were processed for IgM anti dengue antibody by Dengue IgM capture ELISA (Mac ELISA), and required kits were provided by National Institute of Virology, Pune (MH). The ELISA machine used was mindray micro plate reader model: MR-96A by Shenzhen Mindray bio-medical electronics, Shenzhen, China. Test results were read as per provided literature and the data obtained was utilised for knowing seroprevalence of dengue in Chandrapur district.

RESULTS:
A sum 1616 samples from suspected dengue patients were processed in Microbiology laboratory. Out of all these tested samples 512 were found to be reactive for IgM capture dengue ELISA as depicted in table. 1. Considering the total population under study 759 were males and 857 were females. Amongst these 285 males and 227 females were positive. Considering monthly distribution most number of suspected cases were seen in the month of October were 312 of which 168 were positive.

Considering point prevalence of Chandrapur district month of October was highest and climbed up to 53.84%.

Hence prevalence of dengue for a period of 12 months (that is period prevalence) was highest and climbed up to 53.84%.

With the present scenario Prevalence of Dengue amongst the population of Chandrapur district could be calculated as: Prevalence of Dengue = total number of positive cases / sample size under population of Chandrapur district could be calculated as: Prevalence of Dengue = total number of positive cases / sample size.

Hence prevalence of Dengue for a period of 12 months (that is period prevalence) was highest and climbed up to 53.84%.
prevalence) is 31.68%.

In comparison with year 2018 where prevalence was 27.46% there is hike of 4.22%. On the other hand the period prevalence of dengue amongst the male dwellers of Chandrapur was found to be 37.55%. While in females the period prevalence was observed to be 26.49%.

Table 1: Monthly distribution of Dengue suspects in males and females:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Month</th>
<th>No. Of Tested Sample - Male</th>
<th>No. Of Tested Sample - Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>January</td>
<td>23</td>
<td>03</td>
</tr>
<tr>
<td>02</td>
<td>February</td>
<td>07</td>
<td>03</td>
</tr>
<tr>
<td>03</td>
<td>March</td>
<td>01</td>
<td>Nil</td>
</tr>
<tr>
<td>04</td>
<td>April</td>
<td>32</td>
<td>10</td>
</tr>
<tr>
<td>05</td>
<td>May</td>
<td>21</td>
<td>07</td>
</tr>
<tr>
<td>06</td>
<td>June</td>
<td>28</td>
<td>02</td>
</tr>
<tr>
<td>07</td>
<td>July</td>
<td>37</td>
<td>09</td>
</tr>
<tr>
<td>08</td>
<td>August</td>
<td>133</td>
<td>41</td>
</tr>
<tr>
<td>09</td>
<td>September</td>
<td>124</td>
<td>53</td>
</tr>
<tr>
<td>10</td>
<td>October</td>
<td>187</td>
<td>109</td>
</tr>
<tr>
<td>11</td>
<td>November</td>
<td>110</td>
<td>40</td>
</tr>
<tr>
<td>12</td>
<td>December</td>
<td>57</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>759</td>
<td>285</td>
</tr>
</tbody>
</table>

**DISCUSSION:**

Dengue is emerging as a vast burden on our country with all its (DEN1-4) types being isolated from affected Indian population. The outbreak in 1996 was the prime one to befall in Delhi after which massive efforts were reserved to prevent the outbreaks of the disease stating hard situation of the disease.

In the existing study, 31.68 % patients were affirmative for dengue infection these results coincide with dengue infection from Nagpur, the outbreak from Parbhani and Dhuile. In India, the outbreak of dengue were consistently reported from Delhi in 2004 and form rest of the parts of Indian continent like Bangalore, Punjab, Maharashtra etc.\(^\text{10,11}\)

Predominantly Dengue cases were observed in the month of September and October towards the end of Monsoon. This rise could be due to the fact that development of the vector *Aedes aegypti* is at its supreme during this passé of the year. Prevention and control of the disease could be managed by regulating spread of the vectors especially in remote dense forest areas of Chandrapur. These actions will also reduce chances of bleeding disorders due to thrombocytopenia and worse phases of the disease spread.\(^\text{12}\)

In current study it was observed that period prevalence of Dengue amongst males was 37.55% and in females was 26.49%. Parallel results were seen by Mehandale SM amongst the male and female dwellers of Nagpur region in a period of about five years.\(^\text{13}\)

PM Ukey also had observed that nearly 31% patients were seropositive who reside in Nagpur city and district. In the month of October and November increased number of cases were seen these outcomes are congruent with the observations of present study.\(^\text{11}\)

Sex ratio amongst the seropositive patients in current study was differing nearly by 10% which is homologous to the observations seen by T. Arun demarcating more number of affected males as compared to females.\(^\text{15}\)

Considering period prevalence for the year 2018 nearly 4.22% hike in the diseased population was observed in present study which could be due to improper vector control measures.

Therefore with this we conclude that Dengue cases were more towards the end monsoon season. This time period should be targeted to plan special Preventive strategies like vector control and surveillance, enhanced disease surveillance, line up waste management and community education for prevention and control of the Disease.\(^\text{16}\)

Existing study pulls attention toward the dengue infection are more as compared to rest of the regions with its prevalence of nearly 31% which is 4.22% more as compared to year 2018 making a calamitous epidemic in central parts of India especially in Chandrapur district. Strict action against vectors and spread could diminish the mortality and spread of dengue; which could be act beyond and well before TIME towards making a Dengue free India.

**Acknowledgement:**

Department of Microbiology acknowledge the technical support extended by Dr. Gurudev Kunghadkar and Mrs. Supriya Ture, Laboratory scientific officers and our Dean Dr S.S.More sir for rendering his administrative support.

**Funding:** No funding was sought for the present study.

**Conflicts:** Authors do not share any conflict of Interest.

**REFERENCES**

12. Dr. R. Surpam, Dr. B. Munde, Dr. V. Kolhe, Dr. O. Bobade. Prevalence of seropositive dengue cases in Chandrapur district. Aetospect JSSR,2019; 8(9):19-26.