

**DENGUE SCENARIO IN CHENNAI, TAMIL NADU- AN
ANALYSIS (2011- 2013).**

Dengue is a major public health problem worldwide, especially in the tropical and subtropical areas with around 2.5 billion people living in areas at risk [1]. The estimated number of 50-100 million infections per year results in 250,000-500,000 cases of Dengue Hemorrhagic Fever (DHF) and 25,000- 50,000 deaths each year [2]. In India, Dengue Fever (DF) and DHF have been documented in different parts of the country [3]. In southern India, particularly, in Tamil Nadu, DF and DHF have been well documented [4]. The present communication reports the results of the serological and molecular analysis carried out in the suspected cases from Government General Hospital, Chennai to find out the circulating dengue serotype.

The cases were selected as per the WHO criteria. [6] The serum samples were tested for the presence of dengue virus (DENV) specific IgM & IgG antibodies by MAC-ELISA kit supplied by the National Institute of Virology, Pune and PanBio Dengue IgG ELISA (Brisbane, Australia). Plasma samples collected during acute phase were subjected to RT-PCR analysis. Gene Amp® PCR system 9700 Fast Thermal Cycler; IQ (Applied Biosystems®) was used throughout this study for the conventional PCR assay. The standard method for RT-PCR and electrophoresis was employed.[7] Initial RT PCR was performed using primers against E1 region for pan Dengue and those which were positive were subjected to Dengue genotyping.[8]

In 2011 the laboratory had received 337 samples for dengue; of these 48 were positive for IgM by ELISA. There was an outbreak in December in 2011 in the southern districts and Dengue 1 and 4 was found to be circulating.(5) In Chennai Dengue 1 predominated. In 2012 we had received 1413 samples, of which 178 (12.6%) were positive. There was an increase in the number of cases from the month of September probably coinciding with the onset of rainfall. There was an increase in the number(fifteen) of outbreaks from the ninth month last year. In this study, Out of 32 districts 20 were reported for dengue inTamilnadu,.Initially we had cases reported from southern districts and then from northern districts of Tamilnadu .The other districts in central Tamilnadu were further affected. There were certain hotspots in these

districts with extensive dengue incidence. The other districts in central Tamilnadu were further affected. Here also, there were certain hotspots with extensive dengue incidence. We received samples from outbreaks reported from southern districts of Thirunelveli, Kanyakumari etc during the post monsoon season. Molecular analysis showed Dengue 1, Dengue 3 and Dengue 4. In 2012, Dengue 3 was predominant serotype next to the dengue 1 in Tamilnadu. Dengue 3 outbreaks were separately reported in Chennai (2001), Kanyakumari (2003) & Madurai (2007). [10]. Dengue 4 was not separately reported during this study period 2011-2014. We are reporting that Dengue 4 co-circulated with other dengue serotype D1 & D3. Similar studies were reported in Delhi (2006) & Andhra Pradesh (2007).

In 2013 we received a total of 1255 samples for the testing. Dengue IgM ELISA, out of which 72 (5.7%) were positive. There has been a marked increase in the number of samples received during the last two months. In August we had received 260 samples and 16 (6.2%) were positive for IgM; in September we had received 249 samples of which 32 (12.85 %) were positive. With the onset of monsoon an increase in the number of positives was noted. There was a positive correlation between rainfall, lower temperature with the increase in the number of Dengue suspected cases coming for testing and raise in the positivity rate as well.

The Laboratory had received 146 samples for screening IgG from January 2013 till date, of this 25 (17.12%) were positive. In the last two months of August and September we had received 71 cases and 16 (22.6%) were positive. Among the 20 samples subjected to RT-PCR using group specific primers, 4 were positive for pan Dengue; of this two were positive for Dengue 3. The present findings indicate the possible spread of the potent dengue virus serotype 3 to newer areas.

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