MOLECULAR DETECTION OF DENGUE VIRUS SEROTYPES PREVALENT IN AND AROUND COIMBATORE

INTRODUCTION:

Dengue fever is a mosquito-borne tropical disease caused by the Dengue virus. Dengue fever virus (DENV) is an RNA virus of the family Flaviviridae; genus Flavivirus. Dengue is spread by Aedes aegypti and Ae.albopictus.DENV- There are five closely related but serologically distinct Dengue viruses, called 1, DENV-2, DENV-3, DENV-4 and DENV-5 of the genus Flavivirus

AIM:

To identify the Dengue serotypes using molecular methods and its association with disease severity.

OBJECTIVES:

To find out the proportion of Dengue infection in fever patients in hospital. To classify primary and secondary Dengue. To find out the serotypes prevalent here using multiplex-nested PCR and severity of the disease with serotypes.

METHODOLOGY

NS1,IgM and IgG ELISA was done for 150 cases.NS1 positive cases were subjected to RNA extraction-22 cases(>50 NS1 Ag units) out of 118 cases. Extracted RNA was subjected to PCR:15 cases PCR positive out of 22 cases.

RESULTS:

The total number of patients with suspected Dengue in our hospital from August 2016 to August 2017 was 6557, out of which 70.81%(4643) were seropositive.

A total of 150 consecutive serum samples were selected from August 2016 to August 2017.Out of 150 samples, seropositivity was 78.67 %(118) with 55.9%(66) primary Dengue, most of them had < 5days of fever and 44.1%(52) secondary Dengue infections. IgM 9.3%(11), NS1+IgM 9.3%(11), NS1+IgM+IgG 9.3%(11), IgM+IgG 33.99%(40) and only IgG 0.85%(1).NS1 antigen positivity in 55.93% (66) out of 118 patients,. Nine patients showed NS1 positivity (7.63%) on 9th day of fever. Males affected more ,Commonly affected age group -11 to 20 years, peak cases in July and August(2017),common clinical symptom was high grade fever with joint pain and commonly observed significant laboratory parameters-Thrombocytopenia & Elevated liver enzymes.

The most common serotype identified was DENV-3followed by DENV-2 among which Co-infection with DENV 2&3was seen in 6 cases , followed by DENV-3 alone in 5 cases and DENV-2 alone in 4 cases. DENV-2&3 coinfection(50%) was associated to

DHF and DSS, Dengue with warning signs 33.33% and Dengue without warning signs16.66%.DENV-2&3 coinfection was primary Dengue(83.33) and secondary Dengue(16.67). DENV-3andDENV-2 infection was associated with Dengue without warning signs.

Key words:

- Dengue
- NS1,IgM,IgG
- Dengue RNA extraction
- Molecular serotyping