STUDY OF PREVALENCE OF DENGUE CASES IN MAHARASHTRA (INDIA)

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Abstract

Dengue virus belongs to family Flaviviridae, having four serotypes that spread by the bite of infected Aedes mosquitoes. It causes a wide spectrum of illness from mild asymptomatic illness to severe fatal dengue haemorrhagic fever/dengue shock syndrome (DHF/DSS). Approximately 2.5 billion people live in dengue-risk regions with about 100 million new cases each year worldwide. The cumulative dengue diseases burden has attained an unprecedented proportion in recent times with sharp increase in the size of human population at risk. Dengue disease presents highly complex pathophysiological, economic and ecologic problems. In India, the first epidemic of clinical dengue-like illness was recorded in Madras (now Chennai) in 1780 and the first virologically proved epidemic of dengue fever (DF) occurred in Calcutta (now Kolkata) and Eastern Coast of India in 1963-1964. During the last 50 years a large number of physicians have treated and described dengue disease in India, but the scientific studies addressing various problems of dengue disease have been carried out at limited number of centres. Achievements of Indian scientists are considerable; however, a lot remain to be achieved for creating an impact. This paper briefly reviews of prevalence of dengue cases in different districts in Maharashtra in year 2014.

Key words - *Aedes mosquitoes - dengue - DF/DHF - dengue vaccine - DV - Flaviviridae - pathogenesis*

INTRODUCATION –

Dengue is an acute viral infection with potential fatal complications. Dengue fever was first referred as “water poison” associated with flying insects in a Chinese medical encyclopedia in 992 from the Jin Dynasty (265-420 AD). The word “dengue” is derived from the Swahili phrase Ka-dinga pepo, meaning “cramp-like seizure”. The first clinically recognized dengue epidemics occurred almost simultaneously in Asia, Africa, and North America in the 1780s. The first clinical case report dates from 1789 of 1780 epidemic in Philadelphia is by Benjamin Rush, who coined the term “break bone fever” because of the symptoms ofmyalgia and arthralgia (quoted from www. globalmedicine.nl/index.php/dengue-fever). The term dengue fever came into general use only after 1828. Dengue viruses (DV) belong to family Flaviviridae and there are four serotypes of the virus referred to as DV-1, DV-2, DV-3 and

DV-4. DV is a positive-stranded encapsulated RNA virus and is composed of three structural protein genes, which encode the nucleocapsid or core (C) protein, a membrane-associated (M) protein, an enveloped (E) glycoprotein and seven non-structural (NS) proteins. It is transmitted mainly by Aedesaegypti mosquito and also by Ae. albopictus. All four serotypes can cause thefull spectrum of disease from a subclinical infection to a mild self limitingdisease, the dengue fever (DF) and a severe disease that may be fatal, the dengue haemorrhagic fever/dengue shock syndrome (DHF/ DSS). The WHO 2009 classification divides dengue fever into two groups: uncomplicated and severe1, though the 1997 WHO classification is still widely used2. The 1997 classification divided dengue into undifferentiated fever, dengue fever (DF), and dengue haemorrhagic fever (DHF)1. Four main characteristic manifestations of dengue illness are (i) continuous high fever lasting 2-7 days; (ii) haemorrhagic tendency as shown by a positive tourniquet test, petechiae or epistaxis; (iii) thrombocytopoenia (platelet count <100x109/l); and (iv) evidence of plasma leakage manifested by haemoconcentration (an increase in haematocrit 20% above average for age, sex and population), pleural effusion and ascites, etc. Excellent work has been done at some of the centres in India on molecular epidemiology of dengue immunopathology and vaccine development. This paper reviewsof prevalence of dengue cases in different districts in Maharashtra in year 2014.

STUDY AREA –

For the current study we selected 10 districts in Maharashtra which are highly affected by dengue i.eSolapur, Sangali, Satara, Pune, Nagapur, Chandrapur, Vardha, Beed, Dhule, Nashik, and Kolhapur.

MATERIALS AND MEHODS –

Data collected for this research work with the help of government hospitals and private hospitals reports submitted to state health department for vector born diseases. Personal visit and interactions with common people.

LONG TERM ACTION PLAN FOR PREVENTION AND CONTROL OF DENGUE IN INDIA –

Both Dengue and Chikungunya are Vector Borne disease and are caused by viruses carried by same Mosquito [Aedesaegypti].Dengue/ DHF is being managed as a part of National Vector Disease Control Programme (NVBCDP).Chikungunya fever has occurred in epidemic form in the year of 2006 after about 30 years.Chikungunya was, till now, not part of the National Vector Borne Disease Control but the strategies for its prevention and control is similar to that of Dengue prevention and control strategies as both the disease are caused by the same Vector

(Mosquito) i.e. Aedesaegypti.The long term strategies for prevention and control of DF/DHF/DSS and Chikungunya in India would be three-pronged and is as follows:

A. Early Case reporting and management: Case reporting Fever alert surveillance Sentinel Surveillance sites with laboratory support Strengthening of referral services Involvement of Private sector in sentinel surveillance Case management Case management Epidemic preparedness and rapid response

B. Integrated vector management (for transmission risk reduction)Entomological Surveillance including larval surveys Anti-larval measures Source reduction Chemical larvicide / biocide o Larvivorous fish o Environmental management Anti- adult measures o Indoor Space Spraying with Pyrethrum extract (2%) o Fogging during outbreaks Personal protection measures o Protective clothing o Insecticide treated bed nets and repellents

C. Supporting Interventions:

Human Resource Development through capacity building Behaviour Change Communication (BCC) Inter-sectoral convergence Operational Research Supervision and Monitoring Coordination Committees Legislative support Each of the above components is described in detail as follows: A. Early Case reporting and management.

Observation Table -

Dengue Cases In Maharashtra In 2014

SR.NO	NAME OF THE DISTRICT	NO OF DENGUE CASES
1	CHANRAPUR	636
2	PUNE	480
3	BEED	160
4	VARDHA	134
5	NASHIK	92
6	DHULE	84
7	SOLAPUR	84
8	NAGAPUR	82
9	SATARA	26
10	KOLHAPUR	25
11	SANGALI	21

RESULT –

In year 2014 a state with an 11.24 crore population and over 3,000 cases of dengue, but there was only three officers are to help identify and control vector born diseases. Important fact government of Maharashtra eight post for Entemologist vacant for over 7 years. Not only Entmologist but also 2014 lab technician post 60 were vacant. 12000multipurpose worker posts 2000 were vacant.In Solapur municipal corporation health department Entemologist post also vacant.Public awareness and climate changes ,irregular water supply ,storage of water in large amount all these fact are favourable for the outbreaks of mosquito born diseases like Dengue.

Table shows the In Maharashtra total 3565 dengue cases are reported there were 24 dead. In Chandrapur total 636 cases are reported which was highest in number but all Maharshtra suffered by dengue.

Discussion-

Dengue is emerging as a major public health problem in India.The majority of the cases were reported during the monsoonandpostmonsoonseasons,inaccordancewiththe reportedpatternsofdenguetransmission .So the effective management is needed for the adult and larvae control . All vacant post fulfill by health department in Maharashtra.

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