Study on the behavior of dengue viruses during outbreaks with reference to entomological and laboratory surveillance in Cuddalore, Nagapattinam and Thirunelveli districts of Tamil Nadu, India

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To understand the behavior of dengue viruses with the outcome of entomological and laboratory surveillance in Cuddalore (Latitude 11° 75' N; 79° 75' E), Nagapattinam (Latitude 10° 46'; Longitude 79° 50'E) and Thirunelveli (Latitude 8° 42' N; Longitude 77° 42' E) during the dengue outbreaks, this study had been undertaken. It has been used for reconfirming the facts of epidemiological, clinical and laboratory diagnosis and ultimately to use them for forecasting the dengue as well as to justify the impact of intervention measures. Data on the presence of Aedes larvae in human dwellings have been taken to compute the indices namely, House Index (HI), Container index (CI) and the Breteau Index (BI). It was observed that these indices were able to halt the outbreaks when HI <2-3% and BI <20 arrived. Standard procedures have been followed for NS1 and Ig-M ELISA for the confirmation of dengue. Incubation of dengue viruses in human was ascertained as 4-14 days, structural protein NS1 has been identified as a tool for early diagnosis of dengue cases in a place and it is so as able to implement all interventions. Besides, it has also been helped to search hidden habitats of Aedes when dengue cases have not been declined when the indices had been as HI <5% and BI <20. Based on the observation on stopping dengue outbreak, it was learnt that neighborhood areas of out broken villages around 400 m should have permissible larval indices <5% HI and BI 20. Heterogeneous serovars lead to DHF and DSS are reconfirmed in the field as DEN-1 and DEN-3 viruses were circulating in Thirunelveli outbreak with the help of RT-PCR. Thus, the facts on clinical, epidemiological, entomological and laboratory surveillance have not been deviated from the observation arrived earlier.

Biography

Parasuraman Basker had been awarded Doctoral degree in zoology from Annamalai University. Following it he was Research Associate in ICAR and UGC research projects on Carabids and mosquito cytogenetic in the University of Agricultural Sciences, Bangalore and Bangalore University. Subsequently, he got through Tamil Nadu public Health service by TNPSC in 1995. Since then he has been working as Senior Entomologist in the Department of public Health and Preventive medicine which comprises prevention and control of vector borne diseases. Experiences gained from his field activities had been shared in national and international conferences and published in the leading scientific journals. To show his consistency in research, his 33 Research Abstracts were presented in 8 International and 25 National Conferences in Abroad (Canada, Malaysia, Morocco and Singapore) and in India.

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