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Letter to Editor

Geographic information system & epidemiological trends of dengue serotypes

Sir,

We have read with interest the article titled, "Geographic information system-aided evaluation of epidemiological trends of dengue serotypes in West Bengal, India"[1] published in the February 2024 issue of the *Indian Journal of Medical Research*. Using molecular serotyping of dengue NS1 sero-reactive samples in West Bengal, this study determined that DENV (dengue virus) 3 was the most often circulating serotype in 2015, DENV 1 in 2016, and DENV 2 in 2017–2019. Males and young people (ages 21 to 30) had greater rates of dengue illnesses, according to the findings. Dengue transmission was analyzed using GIS (geographic information system) tools, which showed Kolkata as a dengue outbreak hotspot. The study also discovered that the most common serotypes had changed over time.

The major biases in the selection of serum samples and the reliance on NS1 positive samples for serotyping, which might not give a complete picture of dengue serotypes circulating in the area, are two major methodological issues in this study that we wish to highlight. Furthermore, the paucity of clinical and participant demographic data, which would have allowed for a more thorough examination of the dengue cases are also limitations of the study.

To better understand the molecular epidemiology of the virus in West Bengal, future research directions may entail a more thorough genetic investigation of the circulating strains of dengue[2]. Additionally, examining the causes of the increased rates of dengue infections in men and in the 21-30 yr age range may shed light on specific preventative and control measures. The effects of environmental variables, population density, and socioeconomic level on dengue transmission in the area should potentially be investigated in more research[3,4].

Potential avenues for future research could involve analyzing how successfully immunization campaigns work to lower the dengue epidemic burden in West Bengal and how climate change affects dengue outbreaks. Furthermore, investigating the possibility of employing GIS methods and vector data analysis to detect and forecast dengue outbreaks in advance could yield important information for regional public health initiatives.

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