Zika Virus in India – Do We Have the Answers?

V. Raghuram

Department of Community Medicine, ACS Medical College and Hospital, Chennai, Tamil Nadu, India

The reporting of entry of zika virus in the Indian states of Gujarat in 2017 and Rajasthan followed by sporadic cases in Tamil Nadu since May 2018 has given rise to new questions which need answers from stakeholders at different levels.

Zika burst onto the global stage starting in 2015 when an unprecedented outbreak took place in South America, infecting hundreds of thousands of people. In Brazil, more than 1000 babies were born with serious birth defects such as microcephaly, a condition where babies’ heads are abnormally small and sometimes their brains underdeveloped.

Subsequent research by the centers for disease control has shown that about 1 in 10 women infected with the virus give birth to babies with grave birth defects – a figure that rises when the infection takes place in the first trimester.[1]

The introduction of any emerging infection and its rapid spread to other parts of the world draws global attention. The changing climate also results in a boom in vector population and their accelerated dispersal. The Aedes vector species borne infections such as Zika are a potential threat, especially in urban settings where Aedes aegypti is abundant. The growing population in urban settings also increased the need for potable water, which necessitated storage practices in households, making ideal breeding habitats for A. aegypti mosquitoes.[2]

The first isolation of virus from humans was carried out in 1952, in Uganda and Tanzania. From various virological, serological, and case reports of human ZIV infection (ZIKV), the virus was identified and reported from various other Asian countries including India.[3]

The current outbreak was first reported in October 2013 from French Polynesian Islands of Society, Tuamotu, and Marquesas islands. The first indigenous case of the Americas was found in February 2015, in Isla de Pascua (Chile). Since April 2015, a large outbreak of ZIV has spread across much of South and Central America and the Caribbean.[3]

On May 15, 2017, the Ministry of Health and Family Welfare, Government of India, reported three laboratory-confirmed cases of ZIKV disease from Bapunagar area, Ahmedabad, Gujarat, India. The cases were confirmed by real-time reverse transcription polymerase chain reaction test. Before this declaration, India was in the WHO category 4 (virus may be present but no notified cases documented), but with these three confirmed cases, India has shifted to the WHO category 2 (area either with evidence of virus circulation before 2015 or area with ongoing transmission that is no longer in the new or reintroduction phase, but where there is no evidence of interruption).

As evident from the present cases, Zika may not be a recent introduction in India. In 1954, the National Institute of Virology, Pune (then Virus Research Centre), had tested samples from Bharuch district, which showed ZIKV antibody detection in 16.8% of the samples.

However, due to the high cross-reactivity of ZIKV with dengue virus and other flaviviruses, it was difficult to confirm ZIKV infection in India based on serology. Three cases identified in Gujarat and one in Chennai did not reveal any travel history to ZIKV endemic region, suggesting that the ZIKV is not a recent introduction into the country and it may have been present as a vector-borne entity albeit in a silent, low key ecological niche.[3]

The guidelines issued by the Ministry of Health and Family Welfare, Government of India, provide action plan for early detection of human cluster of ZIKV disease, appropriate case management and to institute public health measures that would ensure containment/control of the outbreak.[4]

In the wake of entry of zika virus disease into India, the following questions need to be answered.

(i) What is the risk for India, if it appears? (ii) What is our capacity on preparedness in terms of diagnostics and vaccine? (iii) What is the preparedness keeping in mind about our existing health infrastructure and surveillance program? (iv) What can be added for the better surveillance in human and vectors and what are the specific research components needed? (v) Evidence of ZIKVs in the mothers of children with microcephaly; and (vi) What is the effective message to our scientific community on certain policy-related issues?[3]

Unless we are able to find answers for these questions derived from consultations involving stakeholders at various levels, we

Correspondence: Dr. V. Raghuram, Department of Community Medicine, ACS Medical College and Hospital, Chennai, Tamil Nadu, India. E-mail: raghu3873@gmail.com
may encounter a large number of cases keeping in mind our dense urban agglomerations and underdeveloped public health infrastructure not in a position to handle a large volume of cases.

REFERENCES