Zika virus – a global emergency

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Two years back, Zika virus (ZIKV) appeared as a pandemic outbreak and WHO declared the viral outbreak as a 'global emergency'. Though there has been reduced reports of ZIKV infection from around the world now and health organizations in various countries have decided to reduce their screening, research and concern about ZIKV in 2018, we should never forget that the deadly viral outbreak can return anytime. Hence, we need to be alert and aware about details of ZIKV, its disease causing mechanism and pattern so that we can take proper precaution and fight back the viral attack if needed. This virus is primarily mosquito-borne, though there are reports of sexual transmission. In 2015, an alert was declared by the Pan American Health Organization when the first ZIKV infection was confirmed in Brazil. The consequence of the outbreak in Brazil was that pregnant women gave birth to babies with developmental deformities and birth defects. The most common symptoms of ZIKV infection are fever, rash, headache, fatigue, joint pain, muscle pain, conjunctivitis, etc. Thus, the symptoms are similar to those of chikungunya and dengue and like them ZIKV is also transmitted by the mosquito *Aedes*. It is transmitted by *Aedes aegypti*, and *Aedes albopictus* is the secondary transmitter of ZIKV. The virus is not deadly as its infection does not lead to direct life threat.

The first case of microcephaly was reported in Florida, USA in 2016, but the infection was imported from Haiti. The major countries where microcephaly is prevalent are South America (especially Brazil) and the Caribbean. Though there is no definite proof, there has been increasing birth of babies in USA with smaller heads (microcephaly) following ZIKV infection.

There have been reports on the outbreak of the virus from more than 20 countries in Latin America[1]. According to WHO, this outbreak and spread of ZIKV in America was not a regular and ordinary event; rather it was considered as an 'extraordinary event'[2]. Such a public health emergency alert around the globe was last declared in 2014 by WHO during the Ebola outbreak in West Africa. The affected countries were Sierra Leone, Liberia and Guinea where the Ebola outbreak caused more than 11,000 deaths. This is the fourth global health emergency alert declared by WHO; starting from 2007, the earlier ones were the outbreaks of influenza, ebola and polio[3]. Cases of ZIKV infection in the US have dropped from 5,102 in 2016 to 385 in 2017 (ref. 3). Special alert and international travel notice was introduced to people travelling to and from countries affected with ZIKV[1]. WHO developed an application software (app) for helping people to fight against ZIKV[4]. The prime birth defect observed in babies in Brazil following one year of the event of ZIKV outbreak is a rise in babies born with smaller heads[2]. Another major complication of Zika infection is Guillain–Barré syndrome, in which the peripheral nervous system of a person is attacked by his immune system. ZIKV infection is known to trigger GBS. WHO is supporting countries to combat and fight GBS in the context of ZIKV infection management[5]. The exact incubation period of ZIKV is not known, but it may be a few days to about a week[3]. Once infected, the disease lasts for a few days from the date of onset. In general, ZIKV remains in the blood stream of an infected person for a few days; surprisingly however, in some people the virus dwells for longer periods. The virus spreads from an infected person to other healthy individuals by mosquito bite (mostly in the daytime). Prevention of mosquito breeding and precautions from mosquito bites are the first-hand preventive measures against Zika. Global warming and changing climate have lead to increased survival and breeding of mosquito, resulting in the spread and occurrence of mosquito-borne diseases. Unfortunately, *Aedes* mosquito which is the vector for fatal diseases like dengue and Zika is spreading rapidly. Infected person is advised rest; fluid intake should be adequate to avoid dehydration and assist in healing. Special precautions should be taken if an individual is travelling to areas affected with Zika. People are being advised to wear clothes with full sleeves, use mosquito net while sleeping as well as mosquito repellants.

India is at a risk of being affected by ZIKV through people who are travelling to the infected areas and returning to the country. Another prime concern is that India has several species of *Aedes* mosquito, which have often caused epidemic spread of other diseases like dengue and chikungunya in the country. Besides, India has a history of ZIKV infection[6].

Bharat Biotech International Limited, Hyderabad, has developed and patented potent vaccine against ZIKV using live ZIKV. The Indian Council of Medical Research has extended its support to this vaccine[7,8]. To keep track of the day-to-day events related to ZIKV, a joint monitoring group is formed under the Director General of Health Services by the Ministry of Health and Family Welfare. The National Centre for Disease Control and the Focal Point for International Health Regulations is in constant touch with WHO for regular updates related to ZIKV in various countries. The Ministry of Health has taken precautions and measures to prevent and fight Zika in India. ZIKV is still a risk for people who travel and so airports still need to be on alert with regular screening of passengers.

1. http://www.who.int/dg/speeches/2016/zika-situation/en/ (accessed on 8 February 2017).
2. http://www.firstpost.com/world/zika-outbreak-now-a-global-emergency-says-world-health-organisation-2607588.html (accessed on 8 February 2017).
3. https://medicalxpress.com/news/2018-01-zika-retreats-widely-health-experts.html (accessed on 12 February 2018).
4. http://www.who.int/csr/disease/zika/en/ (accessed on 12 February 2018).
5. http://www.ndtv.com/health/worlds-first-zika-virus-vaccine-made-in-india-claim-scientists-1273149 (accessed on 8 February 2017).
6. https://scroll.in/pulse/839069/how-did-the-zika-virus-get-to-india-or-has-it-always-been-here
7. http://www.who.int/mediacentre/factsheets/guillain-barre-syndrome/en/ (accessed on 11 November 2017).
8. https://journosdiary.com/2017/04/18/zika-vaccine-trial-india/ (accessed on 14 August 2017).

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