

## Effective strategies should be at place to prevent chikungunya

In the last 2 weeks of August 2016, the incidence of chikungunya has increased enormously in New Delhi and neighboring areas. There is a fear of chikungunya epidemic in the capital city of Delhi. Even a few cases of deaths, though unconfirmed due to chikungunya, have been reported, and therefore, there is panic in the mind of the people for chikungunya. Although the health-care delivery system of India has been activated to treat and prevent this highly transmissible disease, the public awareness and cooperation are equally essential for prevention of this disease.

Chikungunya virus (CHIKV) outbreaks had been identified before 2013 in countries in Africa, Asia, Europe, and the Indian and Pacific Oceans.<sup>[1]</sup> The first local transmission of CHIKV in the Americas was identified in Caribbean countries and territories in the later part of 2013. Local transmission means the mosquitoes for chikungunya have been identified in the locality that have been infected with the virus and are spreading the disease to the people. To date, local transmission has been identified in 45 countries with more than 1.7 million suspected cases reported.

CHIKV is transmitted to people through mosquito bites. Mosquitoes become infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites. CHIKV is spread to people by *Aedes aegypti* and *Aedes albopictus* mosquitoes.<sup>[2]</sup> These are the same mosquitoes that transmit dengue virus (DENV). They bite during the day and also in the night. CHIKV is transmitted rarely from mother to newborn around the time of birth. To date, no infants have been found to be infected with CHIKV through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where CHIKV is circulating. Till date, there are no known reports of spread of CHIKV through blood transfusion.<sup>[1]</sup>

Most people infected with chikungunya develop symptoms usually in 3–7 days after being bitten by an infected mosquito. The symptoms are similar to those of dengue and Zika; the diseases spread by the same mosquitoes. The disease is usually characterized by acute onset of fever and polyarthralgia.<sup>[2]</sup> Joint symptoms are usually bilateral and symmetric, and can be severe

and debilitating. Other symptoms may include headache, myalgia, arthritis, conjunctivitis, nausea/vomiting, or maculopapular rash. Common laboratory findings include lymphocytopenia, thrombocytopenia, elevated creatinine, and elevated hepatic transaminases.

Acute symptoms usually resolve within 7–10 days. Rare complications include uveitis, retinitis, myocarditis, hepatitis, nephritis, bullous skin lesions, hemorrhage, meningoencephalitis, myelitis, Guillain–Barré syndrome, and cranial nerve palsies. Persons at risk for severe disease include neonates exposed intrapartum, elderly people (age >65 years), and persons with underlying medical conditions (e.g., hypertension, diabetes, or cardiovascular disease). Mortality is rare and usually occurs mostly in older and immunocompromised patients. Many patients might have relapse of rheumatologic symptoms such as polyarthralgia, polyarthritis, and tenosynovitis for few months following acute illness. Studies have reported quite a number of patients have persistent joint pains for years. However, once a person has been infected, he or she is likely to be protected from the future infections.

Although the preliminary diagnosis is based on the clinical features, places and dates of travel, and activities, laboratory diagnosis is confirmatory that is accomplished by testing serum or plasma to detect virus, viral nucleic acid, or virus-specific immunoglobulin M (IgM) and neutralizing antibodies. During the first 5 days of illness, reverse transcription polymerase chain reaction to directly detect CHIKV or DENV nucleic acid should be performed on serum from suspected cases. Serum specimens collected five or more days after onset of symptoms should be evaluated for anti-CHIKV and anti-DENV IgM antibodies by immunoassay. If initial results are negative and dengue or chikungunya is still suspected, convalescent serum should be collected 7 days or more after illness onset and retested to detect IgM antibodies.<sup>[1]</sup>

There is no vaccine to prevent or medicine to treat CHIKV and there is no specific antiviral therapy for CHIKV infection. Treatment is mainly symptomatic that consists of adequate rest, drinking adequate fluids to prevent dehydration, and antipyretics such as paracetamol to reduce fever and pain. However, aspirin and other nonsteroidal anti-inflammatory drugs should be avoided

until dengue is ruled out, mainly to reduce the risk of bleeding. If patient is taking medicine for another medical condition, he should consult his physician before taking additional medication.

Chikungunya is a nationally notifiable disease. Health-care providers are encouraged to report suspected chikungunya cases to their state or local health department to facilitate diagnosis and mitigate the risk of local transmission. If you have chikungunya, prevent mosquito bites for the 1<sup>st</sup> week of your illness. During the 1<sup>st</sup> week of infection, CHIKV can be found in the blood and passed from an infected person to a mosquito through mosquito bites. An infected mosquito can then spread the virus to other people. The risk of a person transmitting the virus to a biting mosquito or through blood is highest when the patient is viremic during the 1<sup>st</sup> week of illness.<sup>[3]</sup>

No vaccine exists to prevent CHIKV infection or disease. Prevent CHIKV infection by avoiding mosquito bites. The mosquitoes that spread the CHIKV bite mostly during the daytime.

Tips to protect from mosquito bites:<sup>[3]</sup>

- Use air conditioning or window/door screens to keep mosquitoes outside. If you are not able to protect yourself from mosquitoes inside your home or hotel
- Sleep under a mosquito bed net
- Help reduce the number of mosquitoes outside your home or hotel room by emptying stagnating water from containers such as flowerpots or buckets
- It is preferable to wear long-sleeved shirts and long pants
- Use insect repellents containing DEET, picaridin, IR3535, and oil of lemon eucalyptus or para-menthane-diol provide long-lasting protection
- Use both sunscreen and insect repellent, apply the sunscreen first and then the repellent
- Do not spray repellent on the skin under your clothing
- Treat clothing with permethrin or purchase permethrin-treated clothing
- Always follow the label instructions when using insect repellent or sunscreen.

It is most important that the occurrence of the disease is notified immediately and measures to kill mosquitoes and prevent breeding of mosquitoes are initiated at the earliest by the government and various other agencies. It is equally important that the general public is educated about the disease and the measure to be adapted by them to prevent the spread of the disease. Public should understand and share the responsibility in prevention of the disease.

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