

Chikungunya

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Chikungunya is an arbovirus disease which spreads through the mosquito bite of infected female mosquito of species *Aedes aegypti* and *Aedes albopictus*. The disease derived its name from *Makonde language*, “that which bends up” because of the bent posture adopted by the affectee due to the rheumatological manifestations.¹ Chikungunya generally affects both genders and all age groups and presents like Dengue and Zika like illness with sudden onset of fever, severe joint pains, muscular aches, headache, nausea, fatigue and rash. These symptoms typically start 3-7 days after bite of an infected mosquito.² In dengue endemic areas the illness may go unrecognized, however the cases of eye, neurological, cardiovascular and gastrointestinal complications have been reported.³ Chikungunya during pregnancy has been reported to have adverse outcomes like increased risk of abortion during the first trimester and vertical transmission in the third trimester.^{4,5}

Diagnosis of Chikungunya is done by detection of anti-chikungunya antibodies (IgM and IgG) by using enzyme linked immunosorbent assay (ELISA).⁶ Levels of IgM antibodies are at peak between 3-5 weeks after the disease onset and remain active for almost around two months. Serological as well as virological methods (RT-PCR) should be used for testing samples which are collected during the first week after onset of symptoms.^{2,5}

Currently no specific antiviral drug is available for the treatment of Chikungunya; therefore treatment is mostly supportive, aimed at relieving the symptoms.⁶ There is no commercially available preventive vaccine for Chikungunya however one exposure gives lifelong immunity. During the first week of infection the person is infected and can transmit the virus to uninfected mosquito.

Chikungunya was first detected and reported in Tanzania in 1952.⁷ After that, a number of epidemics were reported in Africa and Asia from 1960 to 1990. In Asia, Chikungunya was first reported in Bangkok,

Thailand in 1958.⁷ Subsequently, imported cases have been detected in various European countries and America through tourists visiting Chikungunya endemic regions. The first case of Chikungunya, from continental Europe was identified in north-eastern Italy in 2007.⁸ Later on, a huge number of Chikungunya victims were identified in Italy, France, Croatia and Madeira from 2007-2012.⁹ In the Americas, the first case of Chikungunya was reported in Brazil in 2010¹⁰ while the first local spread of the disease was detected in 2013 within Caribbean states and territories.¹¹

The first reported epidemic of Chikungunya in Pakistan started in Malir, Karachi in December 2016.¹² Malir is thickly populated and has moderate temperature, many stagnant water pools and waste dumps which makes it the best breeding place for the mosquito of Chikungunya.¹² As vector of Chikungunya and Dengue is same and Dengue has become endemic in cities like Karachi, Islamabad, Rawalpindi and Lahore, therefore there is a great chance of spread of Chikungunya in these and other cities of Pakistan.

In endemic countries like Pakistan, dual infections of Dengue and Chikungunya viruses can be found simultaneously in human hosts and vectors. These dual infections can pose a challenge for treatment by physicians. More importantly, misdiagnosis of dengue fever as Chikungunya can pose a risk of delayed diagnosis resulting in delayed supportive treatment¹³ and can thus increase the possibility of progression from dengue fever to its severe complications.¹⁴⁻¹⁷ Arthralgia-alleviating nonsteroidal anti-inflammatory drugs that are frequently used in the treatment of Chikungunya can have a deleterious effect in patients suffering from dengue fever as these result in severe bleeding or thrombocytopenia.¹⁸ Similarly, if Chikungunya is misdiagnosed as dengue fever or not diagnosed in a co-infection it can lead to severe Chikungunya disease. Therefore, special care needs to be taken to ascertain single infection or co-infection and initiate proper and timely diagnosis to avoid progression of disease to severe dengue or Chikungunya disease.

The exposure to the mosquito breeding places is a risk factor for acquiring the disease.^{2,6} As these mosquitoes mostly bite during the daytime, therefore caution must be taken all the day to avoid exposure of skin by wearing long sleeve clothing, use bed nets, insect

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repellents, doors and window screens, and reduce water filled bodies around the houses.

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