

Chikungunya fever

It is a viral disease transmitted to humans by the bite of infected mosquitoes. Chikungunya virus is a member of the genus *Alphavirus*, in the family *Togaviridae*. Chikungunya fever is diagnosed based on symptoms, physical findings (e.g., joint swelling), laboratory testing, and the possibility of exposure to infected mosquitoes. There is no specific treatment for chikungunya fever; care is based on symptoms. Chikungunya fever is not usually fatal. Steps to prevent infection with chikungunya virus include use of insect repellent, protective clothing, and staying in areas with screens. Chikungunya virus was first isolated from the blood of a febrile patient in Tanzania in 1953, and has since been cited as the cause of numerous human epidemics in many areas of Africa and Asia and most recently in limited areas of Europe. Chikungunya virus is not currently found in the United States.

Transmission of Chikungunya Virus

Chikungunya virus is spread by the bite of an infected mosquito. Mosquitoes become infected when they feed on a person infected with chikungunya virus. Infected mosquitoes can then spread the virus to other humans when they bite. Monkeys, and possibly other wild animals, may also serve as reservoirs of the virus.



The *Aedes aegypti* mosquito is the principle vector responsible for transmitting the chikungunya virus to humans.

Aedes aegypti, a species of mosquito that breeds in household containers, is an aggressive biter during the day, and is attracted to humans for bloodmeals. *Aedes albopictus* (the Asian tiger mosquito) has also played a role in human transmission in Asia, Africa, and Europe. Various forest-dwelling mosquito species in Africa have been found to be infected with the virus.

Symptoms and Treatment

Chikungunya virus infection can cause a debilitating illness, most often characterized by fever, headache, fatigue, nausea, vomiting, muscle pain, rash, and joint pain. The term 'chikungunya' means 'that which bends up' in the Kimakonde language of Mozambique.

Acute chikungunya fever typically lasts a few days to a few weeks, but as with dengue and other arboviral fevers, some patients have prolonged fatigue lasting several weeks. Additionally, some patients have reported incapacitating joint pain, or arthritis which may last for weeks or months. The prolonged joint pain associated with chikungunya virus is not

typical of dengue. No hemorrhagic cases related to chikungunya virus infection have been conclusively documented in the scientific literature. Co-circulation of dengue fever in many areas may mean that chikungunya fever cases are sometimes clinically misdiagnosed as dengue infections, therefore the incidence of chikungunya fever could be much higher than what has been previously reported.

The incubation period (time from infection to illness) can be 2-12 days, but is usually 3-7 days. "Silent" chikungunya virus infections (infections without illness) do occur, but how commonly this happens is not yet known. Chikungunya virus infection (whether clinically apparent or silent) is thought to confer life-long immunity. Fatalities related to chikungunya virus are rare.

Pregnant women can become infected with chikungunya virus during all stages of pregnancy and have symptoms similar to other individuals. Most infections occurring during pregnancy will not result in the virus being transmitted to the fetus. The highest risk for infection of the fetus/child occurs when a woman has virus in her blood (viremic) at the time of delivery. There are also rare reports of first trimester abortions occurring after chikungunya infection. Pregnant women should take precautions to avoid mosquito bites. Products containing DEET can be used in pregnancy without adverse effects. Currently, there is no evidence that the virus is transmitted through breast milk.

There is no vaccine or specific antiviral treatment currently available for chikungunya fever. Treatment is symptomatic and can include rest, fluids, and medicines to relieve symptoms of fever and aching such as ibuprofen, naproxen, acetaminophen, or paracetamol. Aspirin should be avoided. Infected persons should be protected from further mosquito exposure (staying indoors in areas with screens and/or under a mosquito net) during the first few days of the illness so they can not contribute to the transmission cycle.

Diagnostic Testing

A presumptive diagnosis of an arboviral disease is often based on the patient's clinical features. Laboratory diagnosis of arboviral infections is generally accomplished by testing of serum or cerebrospinal fluid (CSF) to detect virus-specific IgM and neutralizing antibodies.

In fatal cases, nucleic acid amplification, histopathology with immunohistochemistry, and virus culture of biopsy or autopsy tissues can also be useful.

Preventive Measures

The best way to avoid chikungunya infection is to prevent mosquito bites. Infected persons should be isolated from further mosquito exposure in order to avoid transmission of infection to other people.

Stagnating water, a perfect breeding ground for mosquitoes, is the main cause for the scattering of the disease. Preventive measures for controlling proliferation of mosquitoes are

eliminating stagnant water, getting rid of containers like food cans, used tyres, buckets, barrels etc which will retain water in the outdoor surroundings, covering water tanks properly etc.

Other precautions are

- * wear long sleeved clothes that will cover arms and legs for for protection against mosquitoes
- * use mosquito repellent products or nets
- * use insect repellents over the exposed parts of the body
- * secure screens on windows and doors

Geographic Distribution of Chikungunya Virus

