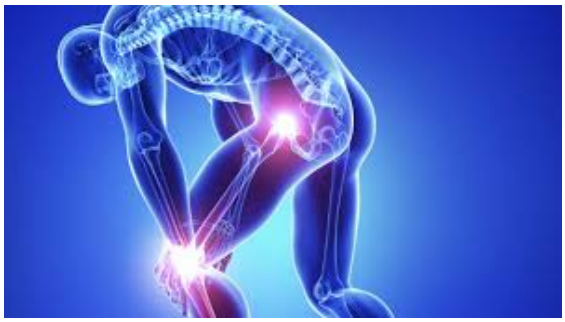
Factsheet about Chikungunya



Chikungunya fever is a viral disease transmitted to humans by infected mosquitoes that is characterized by fever, headache, rash, and severe joint and muscle pain. The name chikungunya, which means “that which bends up,” is derived from the Kimakonde language of the Makonde people. This African tribe lives on the eastern border between Mozambique and Tanzania, where chikungunya virus was first detected in an epidemic that occurred in 1952–53. The disease was given its name because severe musculoskeletal pain caused affected persons to walk in a stooped posture.

There is a recent outbreak in the Pacific Region. Any infection is notifiable in New Zealand as an arboviral disease.

AGENT

It is an RNA virus that belongs to the alphavirus genus of the family Togaviridae.

TRANSMISSION

The virus is transmitted from human to human by the bites of infected female mosquitoes. Two important vectors are *Aedes aegypti* and *Ae. albopictus*, which also transmit dengue virus.

These mosquitoes can be found biting throughout daylight hours, with peaks of activity in the early morning and late afternoon. Both species are found biting outdoors, but *Ae. aegypti* will also readily feed indoors. After the bite of an infected mosquito, onset of illness occurs usually between four and eight days but can range from two to 12 days. The proximity of mosquito breeding sites to human habitation is a significant risk factor for chikungunya.

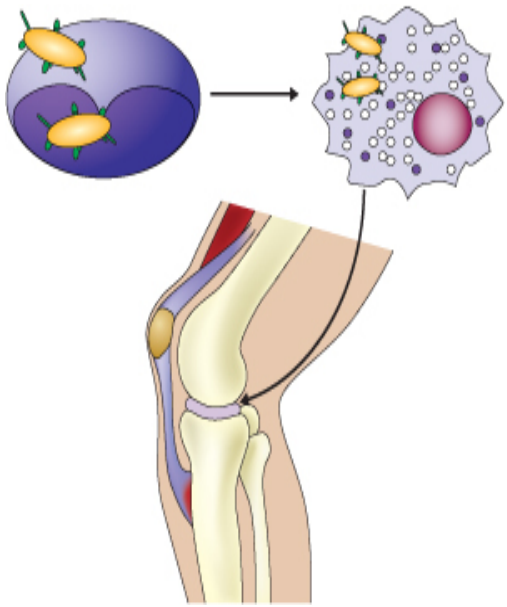
SYMPTOMS

Symptoms appear between 4 and 7 days after the patient has been bitten by the infected mosquito and these include:

- High fever (40°C/ 104°F)
- Joint pain and swelling (lower back, ankle, knees, wrists or phalanges)
- Rash

- Headache
- Muscle pain
- Nausea, Fatigue

Chikungunya is characterized by an abrupt onset of fever frequently accompanied by joint pain. The joint pain is often very debilitating, but usually lasts for a few days or may be prolonged to weeks.
Most patients recover fully, but in some cases joint pain may persist for several months, or even years.
The disease shares some clinical signs with dengue and often symptoms in infected individuals are mild and the infection may go unrecognized, or be misdiagnosed in areas where dengue occurs.
It is rarely life-threatening however widespread occurrences can cause substantial morbidity and economic loss. Occasional cases of gastrointestinal complaints, eye, neurological and heart complications have been reported, as well as gastrointestinal complaints. Serious complications are not common, but in older people are at increased risk for severe symptomes and death, as well as newborns, and people with medical conditions such as high blood pressure, diabetes, or heart disease. Recovery from an infection will confer life-long immunity.



Chikungunya viruses (top, yellow) may hitch a ride with monocytes (top left), which mature to macrophages (top right), to joints where they can cause ongoing joint pain long after the virus has been cleared from the blood. © 2010 L.F.P. Ng

TREATMENT

There is no cure for the disease – neither specific antiviral drugs nor commercial vaccine. Treatment is focused on relieving the symptoms, particularly the joint pain using anti-pyretics, optimal analgesics and fluids.
Most patients feel better within a week as symptoms are generally self-limiting and last for 2–3 days. Some people may develop longer-term joint pain
high blood pressure, diabetes, or heart disease.

The virus remains in the human system for 5-7 days and mosquitoes feeding on an infected person during this period can also become infected.

DIAGNOSIS

Several methods can be used for diagnosis. Serological tests, such as enzyme-linked immunosorbent assays (ELISA), may confirm the presence of IgM and IgG anti-chikungunya antibodies. IgM antibody levels are highest three to five weeks after the onset of illness and persist for about two months. Samples collected during the first week after the onset of symptoms should be tested by both serological and virological methods (RT-PCR).
The virus may be isolated from the blood during the first few days of infection. Various reverse transcriptase–polymerase chain reaction (RT–PCR) methods are available but are of variable sensitivity. Some are suited to clinical diagnosis. RT–PCR products from clinical samples may also be used for genotyping of the virus, allowing comparisons with virus samples from various geographical sources.

DISTRIBUTION

Chikungunya has been identified in nearly 40 countries in Asia, Africa, Europe and also in the Americas. The virus occurs in sub-Saharan Africa, south-east Asia and tropical areas of the Indian sub-continent, as well as islands in the south-western Indian Ocean.
In recent decades mosquito vectors of chikungunya have spread to Europe and the Americas. In 2007, disease transmission was reported for the first time in a localized outbreak in north-eastern Italy.
Countries having documented, endemic, or epidemic chikungunya are:
Asia: Human chikungunya virus infection has been documented in Cambodia, East Timor, India, Indonesia, Laos, Malaysia, Maldives, Myanmar, Pakistan, Philippines, Réunion, Seychelles, Singapore, Taiwan, Thailand and Vietnam.
Africa: Chikungunya occurs in Benin, Burundi, Cameroon, Central African Republic, Comoros, Congo (DRC), Equatorial Guinea, Guinea, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Nigeria, Senegal, South Africa, Sudan, Tanzania, Uganda and Zimbabwe.
Europe and the Americas: Aside from minor incidence rates caused by imported cases from travelers, Italy is the only European country which has had an outbreak. The Americas have not had any major outbreaks so far.

OUTBREAKS

This disease has been classified as re-emerging or spreading in recent years with a number of outbreaks occurring in often virgin territories.
Human infections in Africa have been at relatively low levels for a number of years, but in 1999-2000 there was a large outbreak in the Democratic Republic of the Congo.
Chikungunya was first identified in Tanzania in the early 1952 and has caused periodic outbreaks in Asia and Africa since the 1960s.

Outbreaks are often separated by periods of more than 10 years. Since 2004, chikungunya fever has reached epidemic proportions, with considerable morbidity and suffering.

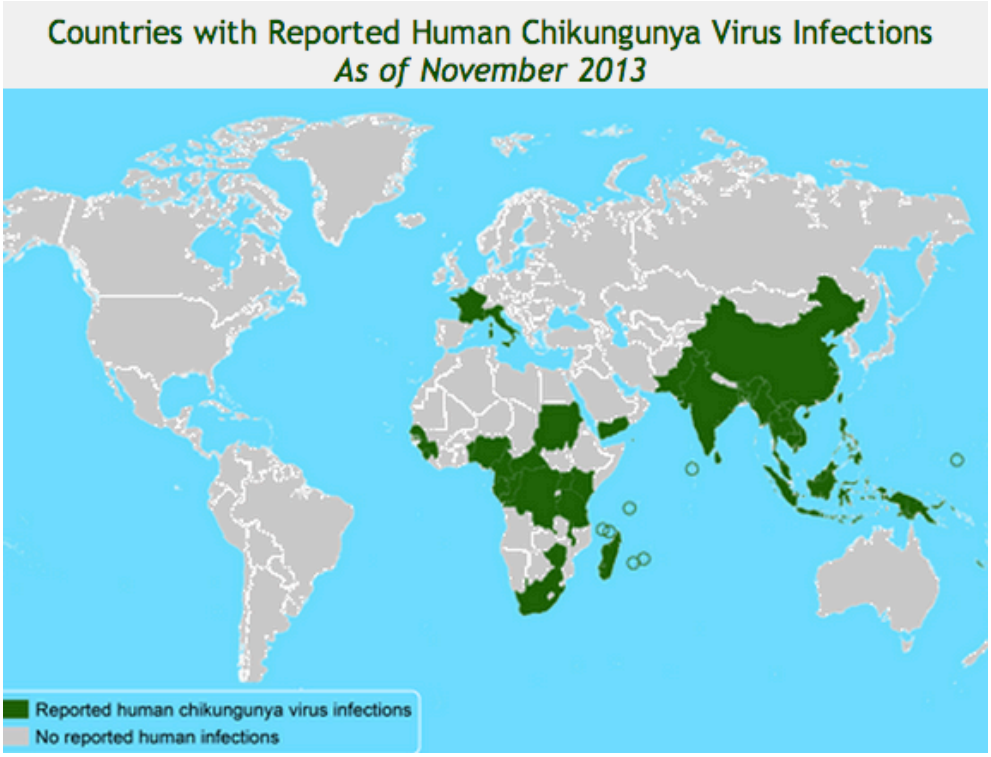
Starting in February 2005, a major outbreak of chikungunya occurred in islands of the Indian Ocean. More than 272 000 people were infected on Réunion and Mauritius where *Ae. albopictus* was the presumed vector. Several other countries in South-East Asia were also affected. Since 2005, India, Indonesia, Thailand, Maldives and Myanmar have reported over 1.9 million cases.

A large outbreak of chikungunya in India occurred in 2006 and with more than 1 500 000 cases of chikungunya were reported with Ae. aegypti implicated as the vector.

In 2007 transmission was reported for the first time in Europe, in a localized outbreak in north-eastern Italy. There were 197 cases recorded during this outbreak and it confirmed that mosquito-borne outbreaks by *Ae. albopictus* are plausible in Europe.

In December 2013, France reported 2 laboratory-confirmed cases of chikungunya in the French part of the Caribbean island of St Martin. Since then, local transmission has been confirmed in the Dutch part of Saint Martin [St Maarten], Anguilla, British Virgin Islands, Dominica, French Guiana, Guadeloupe, Martinique and St Barthelemy. Aruba only reported imported cases. This is the first documented outbreak of chikungunya with autochthonous transmission in the Americas. As of 6 March 2014, there have been over 8000 suspected cases in the region.

In August 2014 a Chikungunya outbreak in the Pacific region was identified. More than 600 cases in American Samoa, over 300 suspected cases in Samoa, and Tonga has recorded more than 10,000 cases.



PREVENTION AND CONTROL

The major prevention is to reduce the number of natural and artificial water-filled container habitats as control relies heavily on reducing the mosquito breeding sites to human habitation. This requires mobilization of affected communities. During outbreaks, insecticides may be sprayed to kill flying mosquitoes, applied to surfaces in and around containers where the mosquitoes land, and used to treat water in containers to kill the immature larvae.

For protection during outbreaks of chikungunya, clothing which minimizes skin exposure to the day-biting vectors is advised.

Repellents which contain DEET (N, N-diethyl-3-methylbenzamide), IR3535 (3-[N-acetyl-N-butyl]-aminopropionic acid ethyl ester) or icaridin (1-piperidinecarboxylic acid, 2-(2-hydroxyethyl)-1-methylpropylester) should be applied to exposed skin or to clothing.

For those who sleep during the daytime, particularly young children, or sick or older people, insecticide treated mosquito nets afford good protection. Mosquito coils or other insecticide vaporizers may also reduce indoor biting.

Ensure rooms are fitted with screens to prevent mosquitoes from entering.

People at increased risk for severe disease should consider not traveling to areas with ongoing chikungunya outbreaks. If you are sick with chikungunya, avoiding mosquito bites will help prevent further spread of the virus.

RECOURCES

http://www.who.int/mediacentre/factsheets/fs327/en/
http://www.cdc.gov/chikungunya/
http://www.britannica.com/EBchecked/topic/1159461/chikungunya-fever
http://www.paho.org/hq/index.php?option=com_topics&view=article&id=343&Itemid=40931
http://www.ecdc.europa.eu/en/healthtopics/chikungunya_fever/pages/index.aspx
http://www.tropeninstitut.de/krankheiten/krankheit.php?kid=40
http://carpha.org/What-We-Do/Public-Health-Activities/Chikungunya