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Zika virus disease: An overview

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Abstract

The Zika virus got its name from Zika forest in Uganda, Africa. It was first detected in Rhesus monkey in 1947 and was reported in Humans in 1952. It is transmitted by the *Aedes Aegypti* mosquito, which is also responsible for the spread of dengue and chikungunya. Zika virus is catching global attention due to its alarming connection with microcephaly, a neurological disorder in babies being born with abnormally small heads.

Keywords: Zika virus, *Aedes aegypti*, transmission, chikungunya, microcephaly, human birth defect

Introduction

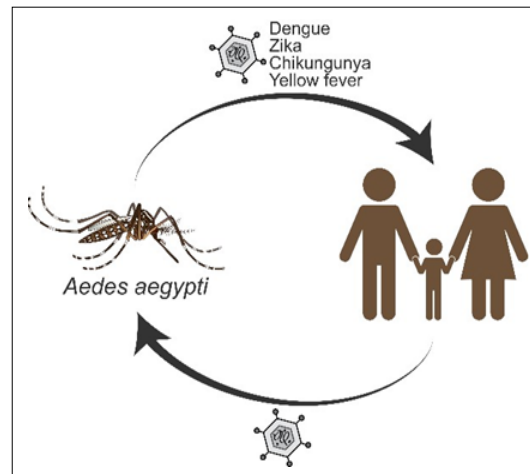


Fig 1: Zika Virus

Zika is spread mostly by the bite of an infected *Aedes* species mosquito (*Ae. aegypti* and *Ae. albopictus*). These mosquitoes bite during the day and night. Zika can be passed from a pregnant woman to her fetus. Infection during pregnancy can cause certain birth defects. There is no vaccine or medicine for Zika. In 2015 in Brazil, an association of Zika virus infection with Guillain-Barre syndrome and microcephaly was reported.

What is Zika virus?

Zika virus disease is caused by a virus transmitted primarily by *Aedes* mosquitoes, which bite during the day.

Zika Virus is Single stranded RNA virus of flaviviridae family. Is similar to the viruses that cause dengue, yellow fever, West Nile fever, and chikungunya disease.

Transmission of Zika virus

Zika can be transmitted:

1. Through mosquito bites.
2. From a pregnant woman to her fetus.
3. Through sex.
4. Through blood transfusion (very likely but not confirmed).

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Zika symptoms

Many people infected with Zika virus won't have symptoms or will only have mild symptoms. The most common symptoms of Zika are:

- Fever
- Rash
- Headache
- Joint pain
- Red eyes (conjunctivitis)
- Vomiting
- Muscle pain

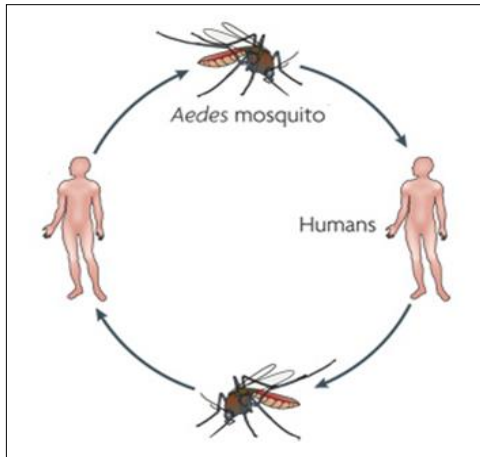


Fig 2: Transmission of Zika Virus

Symptoms can last for several days to a week. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. Once a person has been infected with Zika, they are likely to be protected from future infections.

Diagnosis

1. The symptoms of Zika are similar to those of dengue and chikungunya, diseases spread through the same mosquitoes that transmit Zika.
2. See your healthcare provider if you develop the symptoms described above and have visited an area where Zika is found.
3. If you have recently travelled, tell your healthcare provider when and where you travelled.
4. Your healthcare provider may order specialized blood tests to look for Zika or other similar viruses like dengue or chikungunya.

Treatment

1. There is no vaccine to prevent or specific medicine to treat Zika infections/virus.
2. Treat the symptoms:
 - Get plenty of rest.
 - Drink fluids to prevent dehydration.
 - Take medicine such as acetaminophen to relieve fever and pain.
 - Do not take aspirin and other non-steroidal anti-inflammatory drugs.
 - If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.
3. If you have Zika, prevent mosquito bites for the first week of your illness.
 - During the first week of infection, Zika virus can

be found in the blood and passed from an infected person to a mosquito through mosquito bites.

Prevention of Zika virus

There is no vaccine to prevent Zika. The best way to prevent diseases spread by mosquitoes is to protect yourself and your family from mosquito bites.

1. Clothing
 - Wear long-sleeved shirts and long pants.
 - Treat your clothing and gear with permethrin or buy pre-treated items.
2. Insect repellent
 - Use Environmental Protection Agency (EPA)-registered insect repellents external icon with one of the following active ingredients: DEET, picaridin, IR3535, oil of lemon eucalyptus or para-menthane-diol, or 2-undecanone. Always follow the product label instructions.
 - When used as directed, these insect repellents are proven safe and effective even for pregnant and breastfeeding women.
 - Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old.
3. At home:
 - Stay in places with air conditioning and window and door screens to keep mosquitoes outside.
 - Take steps to control mosquitoes inside and outside your home.
 - Mosquito netting can be used to cover babies younger than 2 months old in carriers, strollers, or cribs.
 - Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.
4. Sexual transmission
 - Prevent sexual transmission of Zika by using condoms or not having sex.

Conclusion

Zika virus disease is caused by a virus transmitted by Aedes mosquitoes. People with Zika virus disease usually have a mild fever, skin rash (exanthema) and conjunctivitis. These symptoms normally last for 2-7 days. There is no specific treatment or vaccine currently available. The best form of prevention is protection against mosquito bites. The virus is known to circulate in Africa, the Americas, Asia and the Pacific. Studies show that the extrinsic incubation period in mosquitoes is about 10 days.

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