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Guıdance and Awareness on zika virus to Protect community

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Abstract
Zika fever (also known as Zika virus disease) is an illness caused by the zika virus Most cases have no symptoms, but when present they are usually mild and can resemble dengue fever Symptoms may include fever, red eyes, joint pain, headache, and a maculopapular rash Symptoms generally last less than seven days. It has not caused any reported deaths during the initial infection. Infection during pregnancy causes mi9crocephaly and other brain malformations in some babies. Infections in adults has been linked to Guillain Barre Syndrome (GBS).
Zika fever is mainly spread via the bite of mosquitos within the *ades kind* It can also be sexualy transmitted from a man to his sex partners and potentially spread by blood transfusion. Infections in pregnant women can be spread to the baby. Diagnosis is by testing the blood, urine, or saliva for the presence of Zika virus RNA when the person is sick. Epidemiology Countries that have past or current evidence of Zika virus transmission (as of January 2016) The very first known case of Zika fever was in a sentinel rhesus monkey stationed on a tree platform in the Zika Forest in Uganda in 1947.Population surveys at the time in Uganda found a 6.1%prevalence The first human cases were reported in Nigeria in 1954. A few outbreaks have been reported in tropical Africa and in some areas in Southeast Asia. There have been no documented cases of Zika virus in the Indian subcontinent. Surveys have found antibodies to Zika in healthy people in India which could indicate past exposure, though it could also be due to cross-reaction with other flaviviruses.
By using phylogenetic analysis of Asian strains, it was estimated that Zika virus had moved to Southeast Asia by 1945. In 1977–1978, Zika virus infection was described as a cause of fever in Indonesia. Before 2007, there were only 13 reported natural infections with Zika virus, all with a mild, self-limited febrile illness.
Prevention involves decreasing mosquitoes bites in areas where the disease occurs and proper use of condoms. Efforts to prevent bites include the use of insect repellant, covering much of the body with clothing, mosquito nets, and getting rid of standing water where mosquitoes reproduce. There is no effective vaccine. Health officials recommended that women in areas affected by the 2015-2016 zika out break consider putting off pregnancy and that pregnant women not travel to these areas. While there is no specific treatment, paracetamol (acetaminophen) may help with the symptoms. Admission to hospital is rarely necessary.
The virus that causes the disease was first isolated in 1947. The first documented outbreak among people occurred in 2007 in the Federated States of Micronesia As of January 2016, the disease was occurring in twenty regions of the America It is also known to occur in Africa, Asia, and the Pacific. Due to an outbreak which started in Brazil in 2015, world health organisation declared it public health of international emergency condition in February 2016
Most people who are infected have no or few symptoms. Otherwise the most common signs and symptoms of Zika fever are fever, rash, conjunctivitis (red eyes), muscle and joint pain, and headache, which are similar to signs and symptoms dengu and chikungunya fever The time from a mosquito bite to developing symptoms is not yet known, but is probably a few days to a week. The disease lasts for several days to a week and is usually mild enough that people do not have to go to a hospital.

Keywords: zika virus, symptoms, causes, vaccine, treatment, prevention

Introduction
Zika virus is a member of the virus family *Flaviviridae* and the genus *Flavivirus* It is spread by daytime-active *Aedes* mosquitoes, Zika virus has the potential to spread anywhere that mosquitoes capable of spreading this virus are found. Aedes species mosquitoes are a principal vector (i.e., carrier) of Zika virus in the U.S. Aedes aegypti (commonly known as yellow fever mosquitoes) are typically concentrated in the southern U.S.

Symptoms
Guillain-Barré syndrome Zika virus infections have been linked with GBS, which is a rapid onset of muscle weakness caused by the immune system damaging the peripheral nervous system, and which can progress to paralysis. While both GBS and Zika infection can simultaneously occur in the same individual, it is difficult to definitively identify Zika virus as the cause of GBS. Several countries affected by Zika outbreaks have reported increases in the rate of new cases of GBS. During the 2013–2014 outbreak in French Polynesia there were 42 reported cases of GBS over a 3-month period, compared to between 3 and 10 annually prior to the outbreak three deaths due to Zika-linked GBS have been reported in Colombia. Pregnancy symptoms includes microcephaly, the disease spreads from mother-to-child in the womb and can cause multiple problems, most notably microcephaly in the baby. As of April 2016, the full range of birth defects caused by maternal infection was not known, but appear to be common with abnormalities seen on up to 29% of ultrasounds [2, 1]. Observed associations include

microcephaly, eye abnormalities such as chorioretinal scarring, and hydrops fetalis, where there is abnormal accumulation of fluid in the fetus.

It is not well understood whether the stage of pregnancy at which the mother becomes infected affects the risk to the fetus, nor if other risk factors might exist that affect outcomes. One group has estimated the risk of a baby developing microcephaly at about 1% when the mother is infected during the first trimester with the risk of developing microcephaly uncertain beyond the first trimester.

Due to being in the same family as dengue, there has been concern that it could cause similar bleeding disorders. However that has only been documented in one case, with blood seen in semen, also known as hematospermia,

Causes Reservoir, Zika virus is a mosquito borne Flavivirus closely related to the dengue virus. While mosquitoes are the vector, the reservoir species remains unknown, though serological evidence has been found in West African monkeys and rodents.

Transmission

Transmission is via the bite of mosquitoes from the *Aedes* genus, primarily *Aedes aegypti* in tropical regions. It has also been isolated from *Ae. Africanus, A, Ae. Luteocephalus Ae. Vittatus* and *Ae. Furcifer* During the 2007 outbreak on Yap Island in the South Pacific, *Aedes hensilli*was the vector, while *Aedes polynesiensis* spread the virus in French Polynesia in 2013.

Sexual transmission of Zika virus from men to women has been documented in at least 4 cases with several more under investigation by the CDC. Zika virus has also been isolated from semen samples, with one person having 100,000 times more virus in semen than blood or urine, two weeks after being infected. It is unclear why levels in semen can be higher than other body fluids, and it is also unclear how long infectious virus can remain in semen. The CDC has recommended that men with Zika fever should wait at least 6 months before trying to attempt conception. To date there have been no reported sexual transmissions from women to their sexual partners.

Cases of vertical perinatal transmission have been reported. The CDC recommends that women with Zika fever should wait at least 8 weeks after they start having symptoms of disease before attempting to conceive. There have been no reported cases of transmission from breastfeeding, but infectious virus has been found in breast milk.

Like other flaviviruses it could potentially be transmitted by blood transfusion and several affected countries have developed strategies to screen blood donors. The virus is detected in 3% of asymptomatic blood donors in French Polynesia.

Diagnosis

It is difficult to diagnose Zika virus infection based on clinical signs and symptoms alone due to overlaps with other arboviruses that are endemic to similar areas The US Centers for Disease Control and Prevention (CDC) advises that "based on the typical clinical features, the differential diagnosis for Zika virus infection is broad. In addition to dengue, other considerations include leptospirosis malaria, rickettsia, group A streptococcus, rubella, measles, and parvovirus, enterovirus adenovirus, and alphavirus infections (e.g., chikungunya, Mayaro Ross River, Barmah Forest O'nyong'nyong, and Sindbis viruses).

In small case series, routine chemistry and complete blood counts have been normal in most patients. A few have been reported to have mild leukopenia, thrombocytopenia, and elevated liver transaminases

Zika virus can be identified by reverse transcriptase PCR (RT-PCR) in acutely ill patients. However, the period of viremia can be short and the World Health Organization (WHO) recommends RT-PCR testing be done on serum collected within 1 to 3 days of symptom onset or on saliva samples collected during the first 3 to 5 days. When evaluating paired samples, Zika virus was detected more frequently in saliva than serum. Urine samples can be collected and tested up to 14 days after the onset of symptoms, as the virus has been seen to survive longer in the urine than either saliva or serum. The longest period of detectable virus has been 11 days and Zika virus does not appear to establish latency.

Later on, serology for the detection of specific IGD and IgG antibodies to Zika virus can be used. IgM antibodies can be detectable within 3 days of the onset of illness. Serological cross-reactions with closely related flaviviruses such as dengue and West Nile virusas well as vaccines to flaviviruses are possible. Commercial assays for Zika antibodies are now available but have not yet been approved.

Screening in pregnancy

The CDC recommends screening some pregnant women even if they do not have symptoms of infection. Pregnant women who have travelled to affected areas should be tested between two and twelve weeks after their return from travel Due to the difficulties with ordering and interpreting tests for Zika virus, the CDC also recommends that healthcare providers contact their local health department for assistance. For women living in affected areas, the CDC has recommended testing at the first prenatal visit with a doctor as well as in the mid-second trimester, though this may be adjusted based on local resources and the local burden of Zika virus.

Infant testing

For infants with suspected congenital Zika virus disease, the CDC recommends testing with both serologic and molecular assays such as RT-PCR, IgM ELISA and plaque reduction neutralization test (PRNT). Newborns with a mother who was potentially exposed and who have positive blood tests, microcephaly or intracranial calcifications should have further testing including a thorough physical investigation for neurologic abnormalities, dysmorphic features, splenomegaly, hepatomegaly, and rash or other skin lesions. Other recommended tests are cranial ultrasound, hearing evaluation, and eye examination. Testing should be done for any abnormalities encountered as well as for other congenital infections such as syphilis toxoplasmosis, rubella, cytomegalovirus infection, lymphocytic choriomeningitis virus infection.

Treatment

There is currently no specific treatment for Zika virus infection. Care is supportive with treatment of pain, fever, and itching. Some authorities have recommended against using aspirin and other NSAIDs as these have been

associated with hemorrhagic syndrome when used for other flaviviruses. Additionally, aspirin use is generally avoided in children when possible due to the risk of Reye syndrome Zika virus had been relatively little studied until the major outbreak in 2015, and no specific antiviral treatments are available as yet. Advice to pregnant women is to avoid any risk of infection so far as possible, as once infected there is little that can be done beyond supportive treatment.

Prevention

The virus is spread by mosquitoes, making mosquito avoidance an important element to disease control. The CDC recommends that individuals.

- Cover exposed skin by wearing long-sleeved shirts and long pants
- Use an insect repellent containing DEET, picaridin, oil of lemon eucalyptus (OLE),Always follow product directions and reapply as directed
- If you are also using sunscreen, apply sunscreen first, let it dry, then apply insect repellent
- Follow package directions when applying repellent on children. Avoid applying repellent to their hands, eyes, or mouth
- Stay and sleep in screened-in or air-conditioned rooms
- Use a bed net if the area where you are sleeping is exposed to the outdoors
- Cover cribs, strollers and carriers with mosquito netting for babies under 2 months old.

The CDC also recommends strategies for controlling mosquitoes such as eliminating standing water, repairing septic tanks and using screens on doors and windows. Spraying insecticide is used to kill flying mosquitoes and larvicide can be used in water containers.

Because Zika virus may be sexually transmitted, men who have gone to an area where Zika fever is occurring should be counseled to either abstain from sex or use condoms for 6 months after travel if their partner is pregnant or could potentially become pregnant. Breast feeding is still recommended by the WHO, even by women who have had Zika fever. There have been no recorded cases of Zika transmission to infants through breastfeeding, though the replicative virus has been detected in breast milk.

When returning from travel, with or without symptoms, it is suggested that prevention of mosquito bites continue for 3 weeks in order reduce the risk of virus transmission to uninfected mosquitos.

Vaccine

There is currently no vaccine. Development is a priority of the US National Institutes of Health (NIH), but officials warn that development of a vaccine could take years. However, at least one company has publicly stated that a vaccine could be available for emergency use by the end of 2016.

Conclusion

Indian community needs to be particularly conscious about the spread of the disease since the mosquito that carries the virus actually thrives in the country. The Aedes Aegypti mosquito whose bite transmits the disease is the same as the one that transmits dengue and chikungunya, which is widely prevalent in India.

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