

Zika Virus- A Global Health Emergency

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Abstract

Zika Virus is emerging as global emergency. We are presenting here a brief epidemiological profile, brief clinical features and preventive aspects of Zika virus fever globally.

Keywords: Zikavirus, Microcephaly, Arbovirus.

Introduction

Zika fever is caused by Zika virus, an arbovirus belonging to family Flaviviridae, genus Flavivirus. Zika virus is enveloped, icosahedral & has a non segmented, single-stranded, positive-sense RNA genome. It is transmitted by daytime active Aedes mosquitoes like A. egypti & A.albopictus. It was first isolated in Zika forest of Uganda in 1947 from a rhesus monkey [1]. Human spread occurred in 1952 at Uganda & Tanzania. Major outbreaks started in 2007 from Micronesia [2] due to combination of factors like climatic change, urbanization & easy access to travel. Nearly 4 million people are estimated to be infected by the end of this year.

WHO has recently declared Zika virus as a global health emergency linked to thousands of birth defects like microcephaly, intracranial calcifications, ventriculomegaly, neuronal migration disorders (lissencephaly, pachygyria), congenital contractures & clubfoot.

During an outbreak in 2015 at Brazil, nearly 4000 cases of microcephaly was reported- a 20 fold increase from previous years. The virus has been isolated in amniotic fluid of pregnant women carrying babies with birth defects & also in brain of babies with microcephaly. However apart from pregnant women in general population only one of five people infected with virus

develops symptoms. The symptoms are similar to arbovirus infections like dengue & include fever, skin rashes, conjunctivitis, muscle & joint pain, malaise &

headache. The incubation period in the body after mosquito bite varies between 2-12 days & symptoms start between 3rd & 7th day. Most of them recover within 7 days & may not even need hospitalisation. However neurologic complications like Guillain-Barre syndrome have been reported [3].

Zika fever is usually transmitted by Aedes mosquitoes. However transmission by perinatal route transfusion & sexual intercourse [7] have been reported [4, 5, 6]. CDC has advised men who have lived or travelled to endemic areas to use condoms or abstain from sex to avoid Zika virus spread. The virus remains in blood for about a week & in semen for up to 2 weeks. Diagnosis can be established by serum reverse transcriptase-polymerase chain reaction (RT-PCR), virus-specific IgM & neutralizing antibodies; Plaque-reduction neutralization testing (PRNT). For pregnant women, negative IgM test result 2-12 weeks after exposure excludes Zika virus infection. There is no specific medication available for Zika Fever. Treatment includes bed rest, hydration, analgesics & antipyretics. Preventive measures include protection against mosquito bites by source reduction using insect repellents containing >20% DEET, mosquito nets, physical barriers such as screens, permethrin-treated clothing & spraying of insecticides.

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Recently an Indian company has been working on vaccines for the Zika virus based on two approaches: "recombinant", involving genetic engineering & "inactivated", where the virus is incapable of reproducing itself but can still trigger an immune response. However it may take some time for regular use of these vaccines. Moreover the full spectrum of outcomes associated with infection during pregnancy & the factors that might increase risk to the fetus are not yet fully understood. More research is required to learn about the risks of Zika virus infection during pregnancy and its prevention.

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