

Zika Virus: A Mosquito-Borne Flavivirus

Samuel fedeli*

Department of microbiology, Arizona state university, Arizona, United states

*Corresponding author: Samuel fedeli, Department of Microbiology, Arizona state university, Arizona, United states, E-mail: fedelisamuel@avh.org

Received date: February 03, 2021; Accepted date: February 17, 2021; Published date: February 24, 2021

Citation: Samuel F (2021) Zika Virus: A Mosquito-Borne Flavivirus. Arch Clin Microbiol Vol.12 No.S1.141.

Abstract

The Zika virus is part of the Flaviviridae family of viruses. It is transmitted by *Aedes* mosquitoes that are active during the day, such as *A. Aegypti*, *A. Albopictus*. Its name comes from the Ugandan Zika Forest, where, in 1947, the virus was first isolated. The species shares dengue, yellow fever, Japanese encephalitis, and West Nile viruses with the Zika virus. There are sometimes no or only mild signs of an infection known as Zika fever or Zika virus disease, similar to a very mild type of dengue fever.

History

Zika is a mosquito-borne flavivirus that was first observed in monkeys in Uganda in 1947. In Uganda and the United Republic of Tanzania, it was later described in humans in 1952. Zika virus disease outbreaks have been recorded in Africa, the Americas, Asia and the Pacific. Rare sporadic cases of human infections were discovered across Africa and Asia from the 1960s to 1980s, usually followed by mild disease.

The Island of Yap (Federated States of Micronesia) confirmed its first documented outbreak of Zika virus disease in 2007. This was followed by a major outbreak of infection with the Zika virus in 2013 in French Polynesia and other Pacific countries and territories. Brazil reported a correlation between infection with the Zika virus and microcephaly in October 2015. Throughout the Americas, Africa, and other regions of the world, outbreaks and signs of transmission soon emerged. To date, evidence of mosquito-transmitted Zika infection has been recorded in 86 countries and territories in total.

Microcephaly

Microcephaly is a medical condition which involves a head that is shorter than normal. There may be microcephaly at birth or it may grow in the first few years of life. Since brain development is associated with head growth, there is also intellectual disability, impaired motor control, poor speech, irregular facial features, seizures, and dwarfism in people with this condition. The condition is caused by a disturbance to the genetic mechanisms that form the brain early in pregnancy, but in most cases the cause is not recognized. Many genetic syndromes, including chromosomal and single-gene disorders,

may result in microcephaly, but almost always in conjunction with other symptoms.

Transmission

In the so-called enzootic mosquito-monkey-mosquito loop, the vertebrate hosts of the virus were predominantly monkeys, with only occasional transmission to humans. Research into its ecological niche suggests that changes in precipitation and temperature may affect Zika to a greater extent than dengue, making it more likely to be restricted to tropical areas. Increasing global temperatures, however, would enable the disease vector to broaden its range further north, enabling Zika to follow.

Sexual

It is possible to transmit Zika from men and women to their sexual partners; most known cases include transmission from men to women who are symptomatic. In the human testis, the virus replicates, infecting many cell types, including testicular macrophages, peritubular cells and germ cells, precursors of spermatozoa.

Pregnancy

Zika virus can spread by vertical (or "mother-to-child") transmission, during pregnancy or at delivery. An infection during pregnancy has been related to changes in the unborn child's neuronal growth.

Blood transfusion

A possible risk was suspected based on a blood donor screening study during the French Polynesian Zika epidemic, in which 2.8% of the donors tested positive for Zika RNA between November 2013 and February 2014 and were all asymptomatic at the time of blood donation.

Signs and Symptoms

There are no signs in the majority of cases. Zika can cause paralysis (Guillain-Barré Syndrome) in a few instances. It can cause subsequent birth defects in pregnant females.

Symptoms are mild when they are present and last less than a week. Fever, rash, joint irritation and red eyes are included.

Treatment

A treatment for microcephaly is not known. Treatment is compassionate and symptomatic. Since certain cases of microcephaly and its related symptoms may be due to amino acid deficiencies, it has been shown that amino acid treatment in these cases improves symptoms such as seizures and delays in motor function.

There's no special medication or vaccine. Instead, the focus is on relieving symptoms which involves rest for fever and pain, rehydration, and acetaminophen. It is best to avoid aspirin and Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), such as ibuprofen.