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ZIKA VIRUS

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ABSTRACT

Zika virus transmitted via virus primarily by Aedes mosquitoes, mostly in day time. Zika virus sign are as mild fever, rash, conjunctivitis, muscle and joint pain, malaise or headache and these sign and symptoms last for 2–7 days. Most people with Zika virus infection do not develop symptoms. Zika virus infect during pregnancy can lead infants to be born with complications like microcephaly and other congenital malformations, known as congenital Zika syndrome
KEYWORDS: Zika Virus, Transmission, Investigation,

BACKGROUND:

Zika virus (ZIKV) is an arthropod-borne virus (arbovirus) and first isolated from a nonhuman primate in 1947 and 1948 in Africa.Historically from mosquitoes, ZIKV infection was one of sporadic, relatively mild disease with sign and symptoms fever, maculopapular rash, conjunctivitis and often arthralgia. 1

It is important to learn about the associated conditions that occur with ZIKV. The purpose of the paper to identify in detail the sign and symptoms of ZIKV in adults and neonates and to understand the pathophysiology lead to this disease condition. World Health Organization **(WHO)** declared Zika Virus Disease as a Public Health Emergency of International Concern (PHEIC) on 1st February 2016.

HISTORY OF THE ZIKA VIRUS

The virus was first found in a rhesus monkey in Uganda in the tropical Zika Forest April 1947 by the scientists of the Yellow Fever Research Institute.The first human Zika Fever infection was identified in Nigeria in 1954.

- 1951-1981 – Africa and Asia : evidence of human infection with Zika virus was reported from other African countries, such as the Central African Republic, Egypt, Gabon, Sierra Leone, Tanzania, and Uganda, as well as in parts of Asia including Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

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GLOBAL SITUATION

- 2007*:* Yap Island
- 2013-2014: Pacific Islands
- 2015-2016: The Americas

Outbreak in Yap in 2007: Remote island of Yap (7,500 inhabitants), Federated States of Micronesia reported 49 confirmed and 59 probable cases of ZVD. No hospitalization, haemorrhagic manifestations, or deaths were reported. Aedeshensilli was identified as the predominant vector species. This outbreak represents transmission of Zika virus outside Africa and Asia.

Outbreak in French Polynesia in 2013-14: 5,895 patients with suspected ZIKV infections were recorded with an estimate of 28,000 ZIKV infections in early February 2014 (about 11% of the population). ZIKV was found circulating in the Pacific in 2015 in New Caledonia, Cook Islands, Eastern Island, Vanuatu, Solomon and Fiji.

- May 2015: The World Health Organization reported the first local transmission of Zika virus in the Region of the Americas, with autochthonous cases identified in Brazil. In December 2015, the Ministry of Health estimated that 440,000–1,300,000 suspected cases of Zika virus disease had occurred. As of 17 March 2016, 59 countries have reported locally acquired circulation of the virus since January 2007.

• In July 2015 Brazil reported an association between Zika virus infection and Guillain-Barré syndrome.

• In October 2015 Brazil reported an association between Zika virus infection and microcephaly.

Expansion other countries in Africa 1947-1948	Pakistan, Malaysia, Indonesia 1977-1978
Discovered in Uganda 1947	Yap Island (Micronesia) and Guam, 2007
Pakistan, Malaysia, Indonesia 1977-1978	New Caledonia (FR) and Cook Islands, 2014Easter Island (CHILE), 2014
Tahiti, French Polynesia, 2013	2016 Active transmission in the Americas 2016 (and other areas worldwide in previous 15 months,

EPIDERMIOLOGY

AGENT-Zika virus (ZIKV) an emerging arthropod-borne virus (arbovirus) transmitted by Aedes (Stegomyia) mosquitoes. The virus belongs to the genus Flavivirus, family Flaviviridae, and related to other flaviviruses of public health relevance including dengue, chikungunya, yellow fever and West Nile viruses.

• Its single-strand RNA virus with the genome of 10,794 kb length.

• Some authors described Two ZIKV lineages in African and Asian, with the African lineage in East and West African clusters, three different lineages (West African, East African and Asian).

• The Asian lineage is expanding, this lineage emerged in the Pacific and in South America and is the currently circulating strain.

- Genre: Flavivirus
- Vector: Aedes mosquitoes (usually bite during the morning and late afternoon/evening hours)
- Reservoir: mosquitoes (gut, blood, saliva) human (blood, prostate, semen and testes) umknown (sliva, urine, milk etc)
- Immunity: As soon as person has been infected,people to be protected lifelong.

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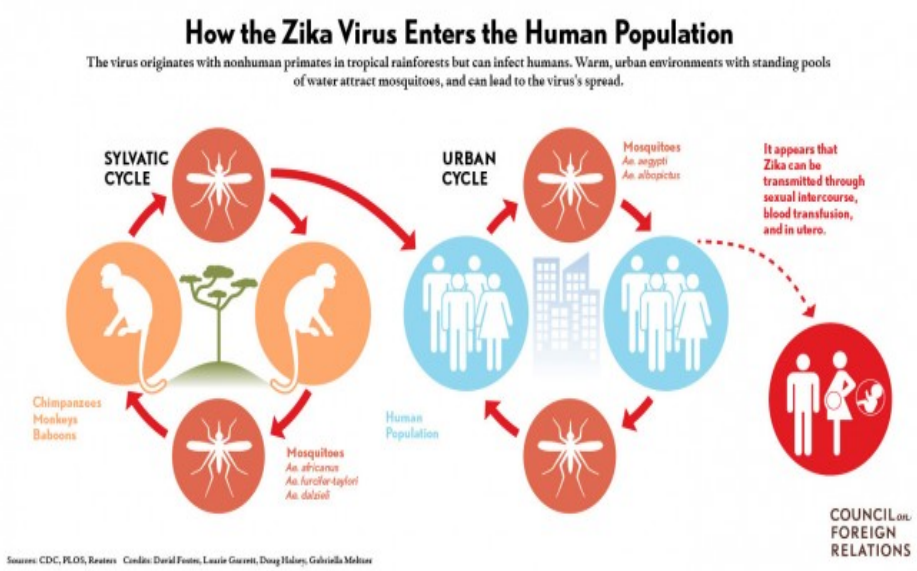
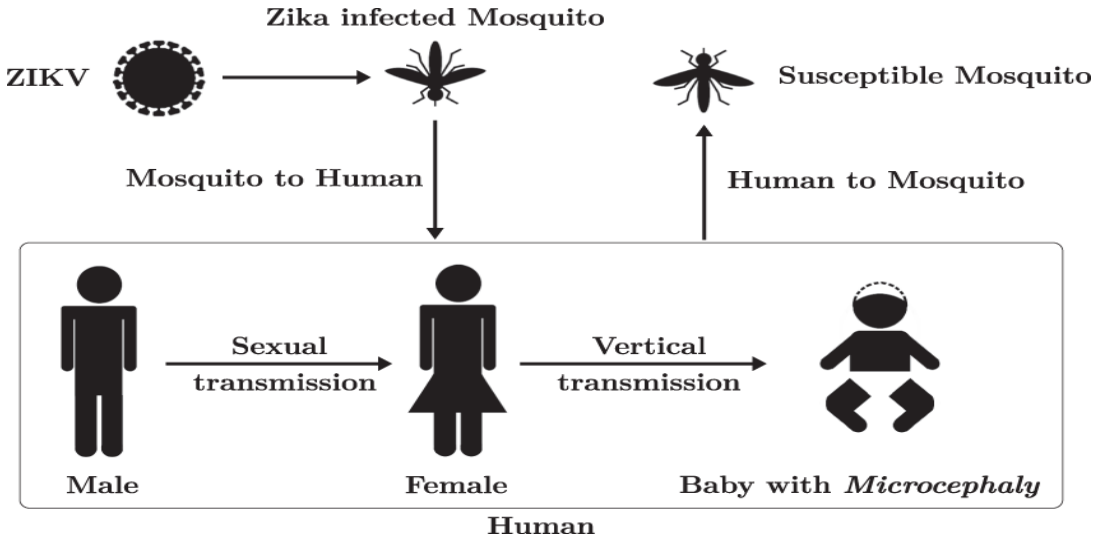


TRANSMISSION

- Primarily transmitted through the bite of an infected Aedes mosquito (Ae. aegypti and Ae. albopictus)
- Extrinsic incubation period - 7-10 days
- Maternal-fetal
- Sexual transmission from an infected person to his or her partners • Blood transfusion



PATHOLOGY

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 transmitted from a pregnant woman to her fetus. Infection during pregnancy can cause certain birth defects.
- Still research is going on for vaccine or medicine for Zika.

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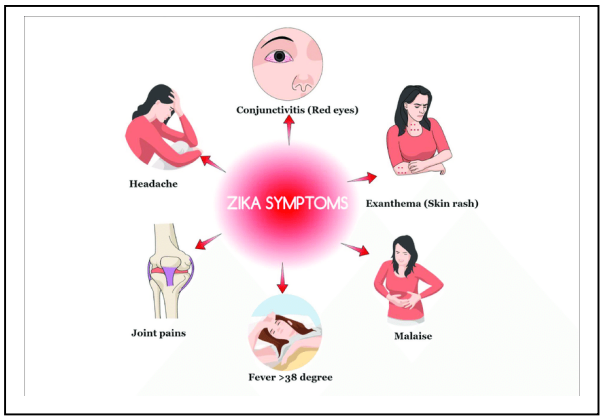
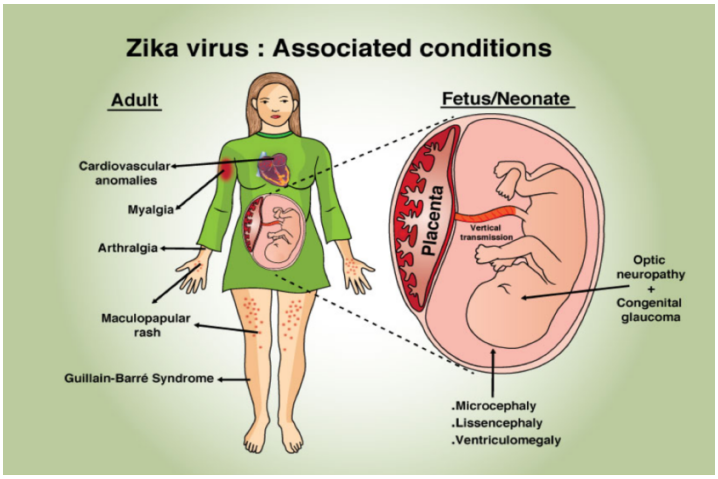
CLINICAL FEATURES



• An estimated 80% of persons are asymptomatic who are infected with Zika virus. In the majority of cases, ZVD is a self-limiting disease.

- Fever
- Skin rashes
- Conjunctivitis
- Muscle and joint pain
- Malaise
- Headache.
- Other associated symptoms are dizziness, oedema of the extremities, retro- orbitalpain, anorexia, photophobia, gastro-intestinal disorders, sore throat, cough, aphtous ulcers, back pain, sweating and lymphadenopathies.



COMPLICATIONS:

- Congenital microcephaly
- Guillain-Barré syndrome

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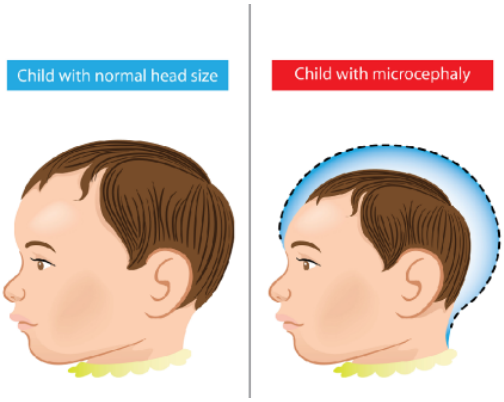

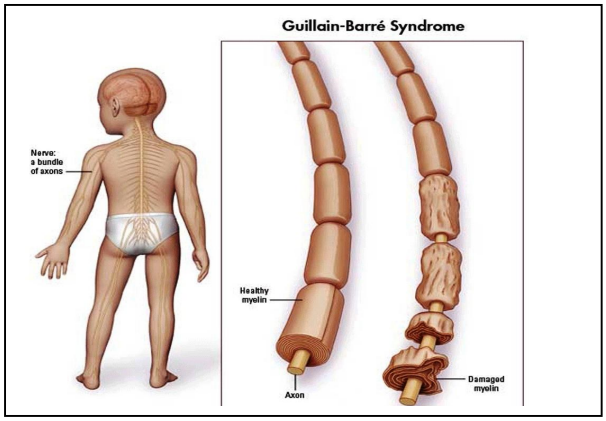

TREATMENT- No vaccine or medications are available to prevent or treat Zika infections.

Treat the symptoms:

- Get plenty of rest
- Drink fluids to prevent dehydration
- Take medicine such as acetaminophen to relieve fever and pain

• People infected with Zika virus take rest, Drink plenty of fluids, and Receive symptomatic medical treatment for pain acetaminophen (paracetamol) and antihistaminic for pruritic rash. If symptoms worsen, they should seek medical care and advice.

• Acetylsalicylic acid and non-steroidal antiinflammatory drugs are not recommended due to the increased risk of hemorrhagic syndrome described with other arboviruses as dengue.

ROLE OF NURSE

1. Assess any recent overseas travel of prenatal patients during or within two weeks of travel

2. Since there are no antiviral medicine for the virus, supportive care provide for symptoms such as rest, antipyretics, pain management, and fluids.

3. Patient Education

4. Per CDC, teach:

- Pregnant patients or patients who plan to get pregnant avoid visiting in those with high incidence countries of Zika virus
- If it is compulsry to travel for patient, teach them how to avoid getting mosquito bites such as using bed nets, window and door screens, staying in air-conditioned rooms and not exposing skin
- If the patient doubt that they infected with virus and feels sick, they should contact their provider and continue using repellent and protective clothing to avoid transmission of the virus to another person.
- Perform outreach, source reduction, larviciding, and adult mosquito control

Nursing interventions should also include thorough travel assessment, education, and provision of comfort measures, safety and pain management. The nurses should make every effort to use available resources to deliver and incorporate bereavement support to the patients and their families.

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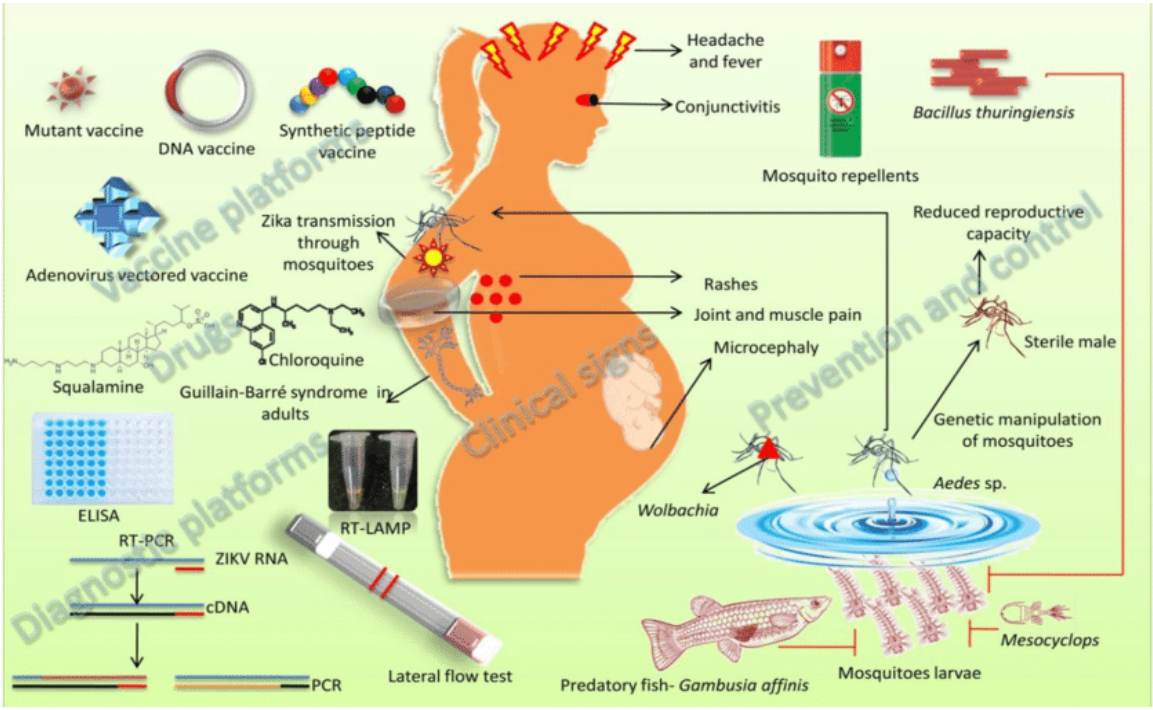

ETHICAL CONSIDERATIONS

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

REPORTS :

Current observational studies suggest that ZIKV may cause more severe neurological sequelae such as Guillain-Barre syndrome, and birth defects, mainly microcephaly, in babies of whom the mother was infected with ZIKV during pregnancy. This article provides a clinically focussed overview of ZIKV, with emphasis on the current outbreak, clinical manifestations, diagnostic tools and caveats.2

The virus was identified in rhesus monkeys during sylvatic yellow fever surveillance in the Zika Forest in Uganda in 1947 and was reported in humans in 1952 In 2007, an outbreak of ZIKV was reported in Yap Island, Federated States of Micronesia . ZIKV also caused a major epidemic in the French Polynesia in 2013–2014 , and New Caledonia reported imported cases from French Polynesia in 2013 and reported an outbreak in 2014 (3).

A new challenge has arisen in Brazil with the emergence of ZIKV and co-circulation with others arboviruses (i.e., DENV and chikungunya virus [CHIKV]). We report ZIKV infection in Brazil associated with a recent ongoing outbreak in Camaçari, Bahia, Brazil, of an illness characterized by maculopapular rash, fever, myalgias/arthralgia, and conjunctivitis.4

On March 26, 2015, serum samples were obtained from 24 patients (Table) at Santa Helena Hospital in Camaçari who were given a presumptive diagnosis of an acute viral illness by emergency department physicians. These patients were given treatment for a dengue-like illness, and blood samples were obtained for complete blood counts and serologic testing by using an ELISA specific for IgG and IgM against DENV.5

One of the report ZIKV infection in Brazil in association with an ongoing outbreak of an acute maculoexantematic illness. Although the patient population samples were not randomly selected, 42% (10/24) of the patients were positive for ZIKV (n = 7) or CHIKV (n = 3) and had maculopapular rash, fever, myalgias and headache. After detection of ZIKV in Bahia, many cases have been identified in other 6

In early December 2013, during the ZIKV outbreak, a 44-year-old man in Tahiti had symptoms of ZIKV infection: asthenia, low grade fever (temperature from 37.5°C to 38°C) and arthralgia. Symptoms lasted 3 days.The medical questionnaire revealed no signs of urinary tract infection, prostatitis, urethritis, or cystitis. Researcher collected blood and semen samples.TherRT-PCR results were positive for ZIKV in semen and negative in blood, and confirmed by sequencing of the genomic position 858–1138 encompassing the prM/E protein coding regions of ZIKV. Findings support the hypothesis that ZIKV can be transmitted by sexual intercourse. Furthermore, the observation that ZIKV RNA was detectable in urine after viremia clearance in blood.

IS ZIKA STILL ACTIVE?

While it has primarily faded from mainstream news, Zika is still active in many parts of the world . Even if the mosquito apocalypse that many feared never actually happened , the risk still largely remains for pregnant women and hopeful-to-conceive parents.

IS ZIKA STILL A THREAT 2020

As of January 2020, there are no areas with a current Zikaoutbreak.If you are trying to get pregnant ,or your partner is trying to get pregnant, then you may want to reconsider travel because of the Virus's link to birth defects and complications.

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