



## Zika virus, a New Possible Pandemic?

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### Short Communication

An arthropod-borne virus having *Flavivirus* genus, from the *Flaviviridae* family named *Zika virus* (ZIKV), first identified in Uganda in 1947 and isolated from a rhesus monkey, is a point of concern for society after the COVID-19 pandemic, with the same propensity of damage primarily for neonates. ZIKV is isolated from both human and non-human (rhesus monkey) sources. Being an Arbovirus explains ZIKV transmission from arthropods to a vertebrate, mosquitoes such as *Aedes aegypti* and *Aedes albopictus* aiding as a prime vector. The risk is coupled in areas where *Ae. aegypti*, *Ae. albopictus* are endemic. Reports suggest non-vector transmission of ZIKV *via* sexual intercourse in 4 patients having symptoms of hematospermia, cystitis, and prostatitis. Additionally, ZIKV RNA has been detected in the serum of fetus and mother, signifying its transmission through the maternofetal route, as reported in 2 infants followed by an outbreak in French Polynesia. Serologically *Flavivirus* infection is detected by Enzyme-Linked Immunoassay (ELISA), which depicts antibodies such as IgM, and IgG against the viral antigen, followed by Plaque Reduction Neutralization Tests (PRNT) that are considered more precise correspondingly Gold standard test for finding antibody neutralizing titers [1].

Although the first discovered case of ZIKV was back in 1947, the first human case was reported seven years later in a ten-year-old Nigerian girl; ever since then, multiple cases have been registered across Africa and the Pacific islands. As per reports of the BBC, in November 2021 ZIKV outbreak was observed in Asia, specifically in India's Uttar Pradesh state, making the total number of cases 89, along with many unreported patients. The State authorities focused on sanitization to halt the outbreak [2].

ZIKV presents with mild fever, headache, conjunctivitis, and arthralgia symptoms. One noteworthy is its association with pregnant women leading to congenital anomalies in the fetus. According to a study, 82 ZIKV infected pregnant women were enrolled to conduct neuroimaging on their infants. Not all presented with malformation, but the one had shocking findings.

Malformations in cortical development were found in two cases, while only microcephaly and encephalocele were noted in one case. ZIKV is an infection, but intrauterine MRI and ultrasound should be done as they can present us with significantly important information about fetal cranial development. The study proves that prenatal and postnatal imaging results differ as 79 cases were normal prenatally, and deformities were depicted in 53 infants in postnatal imaging [3].

ZIKV infection leads to Congenital Zika Syndrome (CZS), characterized by an important demyelination disease, Guillain-Barré Syndrome, accompanied by the aforementioned pregnancy complications. According to a WHO epidemiological report, amid the COVID-19 pandemic, surveillance of vector-borne areas of ZIKV has been compromised [4].

DNA vaccine trial was the necessity of the period following an epidemic around Pacific and Northeast Brazil. Phase 1 study tested two DNA-based plasmid vaccines, VRC5288 and VRC5283, in normal adults of two different age groups of 18 to 35 years old and 18 to 50 years; inclusive groups well-tolerated vaccines with only mild symptoms of inflammation at the site of administration. VRC5283 vaccine possessing wild-type ZIKV E-transmembrane protein could be responsible for its augmented immune response compared to VRC5288. Change in immune response was noted based on the mode of administration of the vaccine, which is *via* needle or needleless injection, but further studies are required to authorize this association [5].

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