

Zika Virus: Mode of Transmission, Outrageous Effects and Clinical Trials

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Abstract

Zika has become one of the most worldwide spreading dangerous infection over the past decade because of its perpetual spread, initially in Asia-Pacific region, followed by its expeditious entry into the Western world. Zika virus was initially discovered in rhesus monkey in the forest of Uganda. But due to Unique genetic recombination in the genome of Zika virus has made the Zika infection more dangerous than the last one. Zika virus can be transmitted through both vector and non-vector means such as mosquito and sexual transmission. Eighty percent patient with Zika virus showed asymptomatic symptoms on the initial stage of disease onset but later symptoms can become severe. Zika has become one of the most dangerous infections of the 21st century because of its association with microcephaly and Guillain-Barre syndrome. Due to the rapid spread of virus WHO declares Zika virus as public health emergency in the end of 2016. There are many methods of early Zika virus diagnosing but the most common method used all over the world is RNA NAT analysis. RT-PCR can also use for the early diagnoses of Zika virus. At this time, clinical trials in different countries are continuing for the development of successful vaccines against Zika until now the most effective vaccine developed against Zika is DNA vaccine due to its effective mechanism of action and high efficacy. Various antiviral drugs against Zika have also approved by FDA. In our review, we emphasize on every aspect of Zika virus from the genetic basis to its effective treatment strategies.

Keywords: Zika virus, *Flavivirus*, Positive sense RNA; Transmission; Disease; Microcephaly; Guillain-Barre syndrome; Vaccine; mRNA vaccine

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time in 2017, the full genome of the African Zika V strain MR 766 derived from the monkey was sequenced. The genome of Zika V is 10.8-kb long and consists of single-stranded positive sense RNA, which encodes a polyprotein of 3419 amino acids [7]. Smaller polypeptides of Zika V were only segregated from monkey and mosquitoes. Untranslated regions in *Flavivirus*

Viral particles replicative of Zika virus, as well as the viral RNA were found in infected person in high number; and the viral RNA, was spotted up to 62 days after the appearance of the signs [13]. Many patients show symptoms of sexual transmission, but the sexual transmission was also shown in that patients are asymptomatic at the time of the sexual contact. Male to female transmission is the most common, but there have also been reports of sexual transmission from female to male and from male to male. The growing number of case of

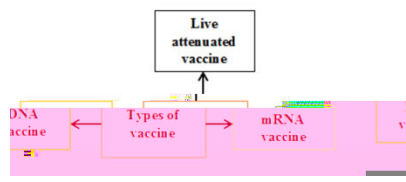
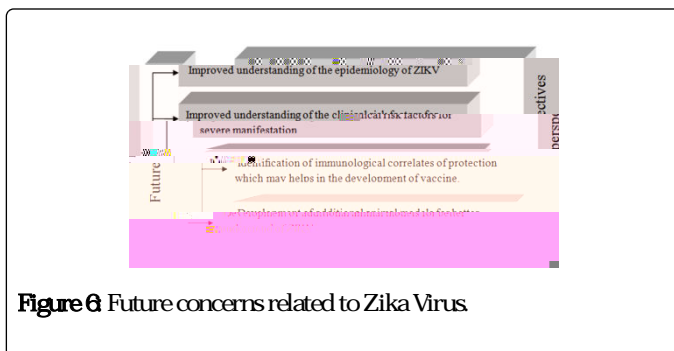


Figure 4 Types of Vaccines against Zika

Conclusion and Future Perspective

A Few years back, Zika virus was considered but due to its rapid spread throughout the world scientist are searching better way for diagnoses and treatment of Zika virus. Zika virus is a mosquito-borne virus belonging to the species of *Aedes* which is also serving as a trajectory for of other *Flavivirus* like Dengue and Chikungunya a Nevertheless, there is also other route of transmission like sensual interaction and blood transfusion, main distress must be granted to the mosquito control because it is the main cause of Zika virus transmissions. existing rate of Zika V infection in the world is challenging to determine accurately because the symptoms are imprecise and asymptomatic or and workshop analyses of Zika virus is not available in every region of the area. Some current therapies discovered by the scientist show auspicious in controlling Zika virus infection and associated diseases. therapies include inhibiting virus entry into the cells or by targeting viral infectious proteins which are responsible for causing infection. At this time various clinical trials are performing in laboratory for development of the most vaccine against Zika virus. most successful trials are given by the DNA and mRNA vaccine which act by targeting the genome of the Zika virus or by inhibiting its protein synthesis mechanism. In future for controlling the further outbreak of Zika virus, certain preventive measure should be adopted and diagnoses method should be improved in urban areas of Africa where ratio of Zika virus infected patient is high. Furthermore, trails should be performed in the laboratory for commercialization of vaccine and antiviral drugs against Zika virus. current inauguration of a Zika vaccine enterprise by NIH might give the essential enhancement to the vaccine expansion practice, and many nations have introduced movements to accelerate research on this facade. Furthermore, the main points of future perspective described in (Figure 6).



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