

A REVIEW ON ZIKA VIRUS**A. Suresh*, J. Chapla*, G. Prabhaker, P. Rajarao, G. Dasaratha Ram and K. Sampath**

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Environmental Science,
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Zika virus has become a major serious concern in African and Asian countries. This virus was first reported from Zika forest in Uganda, in 1940s, this virus is mosquito born disease spread to human beings. The transmission of diseases is through the female *Aedes aegypti* mosquito bite, through sex, blood transfusion and also from the infected mother to the child. Temperature plays a major role in completion of life cycle of the virus. This disease is associated with chickunugunya, dengue and Guillain-Barre syndrome. ZIKV is a asymptomatic and causes neurological disorders in the new born babies. It is single standard RNA virus, this zika will not cause death. There is no proper treatment for the disease, only rest more intake of fluids and use of pain killers are suggested.

KEYWORDS: *Aedes aegyptica*, Zika virus, Asymptomatic, Neurological disorders.**INTRODUCTION**

The name zika came from Ugandas zika forest, the zika is a virus identified in the year 1947. The virus belongs to the family Flaviviridae and genus *Flavivirus*. This is a mesquite borne disease, it spreads all most more than 70 countries of the glob, and fortunately zika virus is not reported from Indian sub continent. Though the India is infected with chickunugunya, dengue and also a rare Guillain-Barre syndrome disease, zika virus will not lead to death. The symptoms of zika viruse are skin rashes, mild fiver, joint pains and neurological disorders. Due to urbanization of India and also to be a tropical region the county is infected with vector born disease, for example dengue and chickungunya. The disease transmits through *Aedes aegyptica* female mosquitoes. Few cases of sexually transmitted were reported. The disease is endemic to African countries. Presently the zika virus disease is reported by South America and Brazil. The incubation period of mosquitoes are ten days, the possible transmission of disease is not only through mosquito bite but also by blood transmission. The infection

transmit to the newly born babies from the infected mothers, the infection is detected in the breast milk of infected mother.

Sadie J. Rayan *et al.*, (2016) worked on out break of zika virus infections from Florida USA and says zika is a congenital syndrome, which causes birth defects of the new born babies. Sonia R. Lambert Passos *et al.*, (2017) evaluated 210 samples from the infected petition of the middle aged persons from Rio de Janeiro, Brazil and found some of the people are infected by zika virus. Constancia F J Ayres (2016) says zika virus is a vector born disease there is every possibility of spread in disease from infected women through sex. A brief communication was made Zika virus infection and solid organ transplantation by M.L.Nogueira *et la.* from Brazil in 2017. First large scale zika virus among humans outside Africa and Asia this disease associated with microcephaly and Guillain-Barre syndrome. The patients are from one hospital and this region is endemic to dengue virus.

Hafasa Aziz *et al.*, (2016) published a review article on zika virus global health challenges and its threat in the present conditions from Pakistan. According to him our health is always been threatened by viral diseases, the infection of zika virus disease linked to miss carriage in pregnant women and neurological disorders such as microcephaly in infant or new born babies and also Guillain-Buarre syndrome. In the life cycle of zika virus man serves as incidental host, but where as the mosquito is primary host.

David F *et al.*, (2016) worked on risk factor analysis for dengue fever in South Africa which is also spreads through *Aedes* mosquitoes which is associated with zika virus. Geogr Priya Doss *et al.*, (2017) says there is no evidence of zika virus transmission in India and the Indian government has taken enough measures to control zika out break. A review of literature on zika virus by Anna R Ploude and Evan M. Bloch (2016) in 1947 flavi virus was first isolated from Zika forest Uganda and named it as zika virus, nearly 73% of population was infected in Yap. Zika virus infection and menace was studied by Smrati Bajpai and Milind Y Nadkar (2016) the zika virus was first identified by humans in 1968 from Nigeria WHO noted the infection was spread in 23 countries and also from America. The most effected countries are Brazil.

DGHS GOVT of India (2016) the development of symptoms of infected persons can be seen only one out of five, the out come of the clinical test is almost same to dengue fever. The male mosquito has no role to play transmission of disease. The female *Aedes* mosquito is

very active in day time that is after sunrise and before sunset, but where as the male mosquito all tougher different it will not bite animal or human beings. The female mosquito lays eggs in the stagnant water bodies the eggs can be in dormant condition in unfavorable conditions for months tougher, when conditions are favorable the mosquitoes come out of the eggs and complete the life cycle with in ten days, that means the temperature has a great role to play in the life cycle of *Aedes* mosquito. Mode of the transmission of disease is through mosquito bite, transmission through sexual inter course C. George Priya doss *et al.*, (2017). The most interesting part of this virus is in majority of the cases it is asymptomatic, the reason is the symptoms are similar to bacterial and viral diseases like dengue, chickunugunya and Guillain-Barre syndrome not only this throat infection, cough and gastro intestinal disorders are also reported. Zika virus transmission to the pregnant women may cause neurological disorders to the new born. Unfortunately there is a no specific treatment for the disease that only remedial measures are intake of plenty of fluids and use of pain killers and suggested maximum rest.

Olette Shiu *et al.*, (2018) worked on the testing of Zika virus disease and out comes during pregnancy from Florida and also did the statically analysis. Adverse pregnancy out comes after the infection of zika was studied by Rosalind M. Eggo and Adam J. Kucharski (2018) that is brain abnormality and mal formation, eye anomalies neural tube defects etc. Candice J. Mc Neil and AK. Shetty (2016) says zika virus is a serious health threat and it is a single standard RNA virus and the zika virus infection can be tested from blood samples, urine, amniotic fluid, cerebral spinal fluid and semen. Presently zika virus infection diagnosed by molecular test RT-PCR, but there is no specific treatment for zika virus infection. From Rio de Janeiro Atul Gogia and Atul kakar (2016) worked on pregnant women who are infected with zika virus and found 82% of women tested positive for zika virus. A review was made by Ruili Li *et al.*, (2017) on zika virus infections from china and gave the remedial measures such as educating the public and awareness of precaursniory measures among the community. Joacim Rocklov *et al.*, (2016) assessed the seasonal risk of mosquito-borne spread of zika virus in European countries, and found the climatic conditions of European countries are more suitable for the transmission for zika virus disease. Same time number of travelers are exporting zika virus to the other regions of the world during the months of July to august. Zika virus infection distribution pattern with reference to rain fall studied in Thailand by Somsri Wiwanitkit and Viroj Wiwanitkit (2016), they say that the climatic factors play a important role for the zika virus infection. Ali A. Rabaan *et al.*, (2017) says zika virus transmits not only through mosquito also through sex and also by blood

transmission from the infected person to the healthy person. The mosquito born flavivirus was first isolated from monkey in the Zika forest of Uganda in 1947.

Julien Riou *et al.*, (2017) did a comparative analysis between chikungunya and Zika. The most common vector is *Aedes aegyptica* which is well adapted to human habitat. The history of Zika virus epidemiology, transmission was studied by Byung-Hak Song *et al.*, (2017) from USA. From Asia Singapore Zika virus studies were carried out by Veasna Duong *et al.*, (2017) Cambodia, Indonesia, Japan, Hong Kong, Singapore, South Korea, Taiwan, Thailand, Vietnam, Philippines and China are the countries reported the Zika virus infection except India. Azhar Hussein *et al.*, (2018) gave a comprehensive review of Zika virus in neonates and adults. Zika virus is becoming an epidemic in different parts of the world.

A Brief History and Epidemiology of Zika Virus

In the year 1947 the Zika virus was isolated from the serum of monkey from Zika forest of Uganda. Zika virus was first identified in humans in 1968 from Nigeria. The Zika virus infection is diagnosed by molecular test RT-PCR. It is single ssRNA virus, this Zika will not cause death. The outbreak of virus is due to low levels of immunity among the population. In the year 2016, the infection was spread to nearly 49 countries, even the advanced countries like America also confirmed the Zika virus in their country.

The Zika virus transmits through a *Aedes aegyptica* female mosquito bite from the infected person to a healthy person. The disease may spread not only the bite but also through sex that is infected woman to healthy man and blood transmission (from donor to receiver). The temperature plays a major role in completing the life cycle, the life cycle may be from 10 to 12 days. The young *Aedes* mosquito bites and sucks the blood from animals and human beings, retains the adult hood, once the female mosquito attains the adult hood it can lay eggs.

Transmission of disease

In urban areas the ZIKV disease spreads or transmits not only through mosquito bite, sexual intercourse and blood transmission from the infected persons to healthy persons. The disease also carries from infected mother to the child during the delivery and also through breast milk. A case was reported in 2015, Hawaii the ZIKV infection was transmitted from mother to her baby during delivery (22). The reproductive virus is isolated from semen and urine of an infected person after clinical cure (15).

Controlling measures

The preventive measures should be given priority to control zika virus disease. Mosquito proofing of the water bodies, creating unfavorable conditions for the mosquito breeding, use of chemicals, use of neem leaves, mosquito repellents, mosquito coils and mosquito nets, awareness campaigns among the residents of the colonies, proper planned sanitation, keeping the environment clean discourage tourism to the infected areas. There is no available vaccine to control ZIKV. The blood donors, organ donors should also be screened for zika virus.

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