

## AYURVEDIC APPROACH TO ZIKA VIRUS INFECTION- "A NEW CHALLENGE"

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## ABSTRACT

Zika fever, also known as Zika virus disease, is an illness caused by the Zika virus. The virus gets its name from the Zika forest in Uganda, Africa, where it was first identified in rhesus monkeys in 1947. It was reported in humans in 1952 but was unknown in the Americas until last year. The virus is transmitted by the *Aedes aegypti* mosquito, which is also responsible for the spread of Dengue and Chikungunya. It can also be potentially spread by sex and blood transfusions. The Zika virus was considered benign until recently when scientists, for the first time in November 2015, linked it to a surge in babies born with microcephaly-an incurable birth defect; they are born with abnormally small heads. Symptoms of the Zika virus disease include mild fever, headache, skin rash, muscle and joints pain, conjunctivitis; and may last for two to seven days. Precautions having from zika virus are- Keep a good distance from people who are infected with nasal congestion or symptoms of flu. In Ayurveda there is always a challenge to provide answer and remedies for the new originating disease like Zika virus infection. Fundamental principles of *Dosha- Dushya, Srotodushti, Agni, Bala, Desh- Kala* etc. help to establish the probable *Samprapti* (Pathogenesis) of these new challenging conditions. The condition can be seen as type of "*Sanniptja Jwara*". The *Ayurvedic* management of Zika virus some comprise of drugs like as *Giloya (Tinospora cordifolia)*, *Turmeric (Curcuma longa)*, *Tulsi (Ocimum sanctum)*, *Ginger (Zingiber officinale)*, *Kali Mirch (Piper nigrum)*, *Lavange (Syzygium aromaticum)*, *Chiarayata, Nimba* etc. heaving bitter tonic, antipyretic, antibacterial and immunomodulator properties.

**KEYWORDS:** Zika virus, *Aedes aegypti*, congenital microcephaly, Immunomodulator drugs.

## INTRODUCTION

Zika fever is an infectious disease caused by the Zika virus, which is transmitted to people by *Aedes aegypti* mosquitoes (also known as yellow fever mosquitoes) and by *Aedes albopictus* mosquitoes (also known as Asian tiger mosquitoes). However, since 2011 they have been detected in several California counties. Zika occurs in many tropical and sub-tropical areas of the world, particularly in Africa, Southeast Asia, and islands in the Pacific Ocean. Recent outbreaks have occurred in Latin America and the Caribbean. An *Aedes* mosquito can only transmit Zika virus after it bites a person who has this virus in their blood. Thus far in California, Zika virus infections have been documented only in a few people who were infected while traveling outside the United States. Zika virus is not spread through casual contact such as touching or hugging an infected person.

**Genre:** Flavivirus**Vector:** *Aedes* mosquitoes (which usually bite during the morning and late afternoon/evening hours)**Reservoir:** Unknown.

## Epidemiology

The very first known case of Zika fever was in a sentinel rhesus monkey stationed on a tree platform in the Zika Forest in Uganda in 1947.<sup>[1]</sup> It was reported in humans in 1952 but was unknown in the Americas until last year. A few outbreaks have been reported in tropical Africa and in some areas in Southeast Asia.<sup>[2]</sup> There have been no documented cases of Zika virus in the Indian subcontinent. Surveys have found antibodies to Zika in healthy people in India which could indicate past exposure, though it could also be due to cross-reaction with other Flaviviruses.

## Signs and symptoms

The most common signs and symptoms of Zika fever are fever, rash, conjunctivitis (red eyes), muscle and joint pain, and headache, which are similar to signs and symptoms of Dengue and Chikungunya fever.<sup>[3]</sup> The time from a mosquito bite to developing symptoms is not yet known, but is probably a few days to a week.<sup>[4]</sup> The disease lasts for several days to a week and is usually

mild enough that people do not have to go to a hospital. Bleeding has been documented in only one case, with blood seen in semen (hematospermia).<sup>[5]</sup>

#### Relationship between Zika virus and microcephaly in newborns

There is a possible association between Zika and microcephaly (abnormally small head and brain) in newborns. It is suspected that women who get infected with Zika virus may pass the virus to the developing fetus if they are pregnant. However, there are many causes of microcephaly in babies, and whether Zika virus infection causes microcephaly has not been confirmed. Studies are needed to understand this possible relationship.

#### Relationship between Zika virus and Guillain-Barre Syndrome

Guillain-Barre syndrome (GBS) is a rare autoimmune disease affecting the nervous system leading to muscle weakness and possible paralysis. While most people recover from GBS, some people have permanent damage and in rare cases, people have died. Cases of GBS were reported among some persons with Zika in the French Polynesia Zika outbreak in 2013-2014, and an increase of GBS cases has recently been noted in some South American countries where Zika outbreaks are ongoing. Whether Zika virus infection and GBS are related is still not clear and is being investigated.

#### According to Ayurveda

The condition can be understood as “*Agantuja Sannipataja jwara*”. Symptoms of the *Sannipatja jwara* (caused by all the three *dosas* with equal severity) such as momentary sensations of heat and cold, pain in bone joints and head; tearful, dirty, red and crooked eyes, with tinnitus and pain, throat as if covered with awns, drowsiness, fainting, delirium, cough, dyspnoea, anorexia, giddiness; tongue as if charred and roughened excessive laxity in organs, haemoptysis, turning of head, thirst, insomnia, cardiac pain, delayed and little elimination of sweat, urine and faeces, limbs not much emaciated continuous groaning, appearance of rashes and blackish and reddish patches, muteness, inflammation in channels, heaviness in abdomen delayed digestion and *dosas*.<sup>[6]</sup>

In *Agantuja jwara* ‘*Abhishanga*’ (contact with source of infection) is one of the important cause of disease which causes imbalance of *Doshas Vata, Pitta* and *Kapha* leading to *Agnimandya, Dhatudushti* and later *Jwara*. There is important role of ‘*Ama*’ in the pathogenesis *Jwara*. When *Ama* lodges in *Dhatu*s like *Rasa, Rakta, Mamsa, Asthi and Majja* it causes serious manifestation and complication of *Jwara*.

#### Diagnosis

Zika virus is diagnosed through PCR (polymerase chain reaction) and virus isolation from blood samples. Diagnosis by serology can be difficult as the virus can

cross-react with other flavi viruses such as dengue, West Nile and yellow fever.

#### Prevention

The virus is spread by mosquitoes, making mosquito avoidance an important element to disease control. The US Centers for Disease Control (CDC) recommends that individual. Cover exposed skin by wearing long-sleeved shirts and long pants.<sup>[7]</sup> Use an insect repellent containing DEET, Picaridin, Oil of lemon eucalyptus (OLE). Use bed net if the area where you are sleeping is exposed to the outdoors. The CDC also recommends strategies for controlling mosquitoes such as eliminating standing water, repairing septic tanks and using screens on doors and windows.<sup>[8,9]</sup> Spraying insecticide is used to kill flying mosquitoes and larvae can be used in water containers.<sup>10</sup> As Zika virus may be sexually transmitted men who have gone to an area where Zika fever is occurring are recommended to either not have sex or use condoms if their partner is pregnant and should use condom.<sup>[11]</sup>

#### Treatment

In modern medicine there is no specific treatment for Zika. According to the CDC, the condition can be managed and symptoms treated with patients being put on bed rest, increasing fluid intake and having fever medication. Most people will feel better in about a week. There is currently no vaccine available.

First priority should be given to reduce or lower down the raised temperature, by means of either external measures or internal medicament in order to save the patients from congestion in the brain and toxemia by hyper-pyrexia.

Ayurveda principles of *Jwara chikitsa* like *Agnideepana, Amapachna, Srotoshodhana, Pitta shamaka* are useful management. *Samshodhana (Virechana)* is helpful in patients which eliminate *Ama* and toxins from the body for this *Haritaki, Panchsakar* powder can be given.

1. **Jvarahara drugs is:** *Sudarshan Churna, Tulsi Swarasa, Giloya Churna, Sanshamni Vati, Guduchyadi Kwatha, Pravala Bhasma, Sudda Tankan. Godantimishran*-A combination of *Godanti Bhasma* 8 parts, *Jaharmohra Pisti* 2 parts, should be prescribed every four hourly in dose of 1 gram.
2. *Tulsi (Ocimum tenuiflorum), Giloya (Tinospora cordifolia), Madhuyashti (Glycyrrhiza glabra), Sahadevi (Vernonia cineria), Peetadarum (Adinam cordifa), Karavellaka, Saptaparna, Dronapuspi (Lewas cephalotes), Tulasi (Ocimum sanctum), Kiratatikta (Swertia chirata).*
3. **Diet:** *Usnajala* (hot water) should be used for drinking. Gruel (*Yavagu*) prepared with *Jvarahara* drugs should be given as diet. Gruel may be prepared with Barley, Sago and *Laja* etc.

#### 4. Natural Home Remedies for Zika Virus:

- Turmeric (*Haldi*) is a great antioxidant herb with lot of medicinal properties. It is one of the best anti-inflammatory and natural analgesic herbs commonly used in India to treat health problems at home.
- Drink 1 glass of milk with half tsp. pure turmeric powder daily at least once. Do this on regular basis. This will help you to enhance your immune system and provide stamina to fight with health problems.
- Holy basil or *Tulsi* is another amazing herb accepted by *Ayurvedic* science. This is used abundantly in many *Ayurvedic* formulations. This is packed with vitamin A, C and many other phytonutrients. It is proved excellent antioxidant herb that protect body from free radicals.
- Prepare an herbal tea with some *Tulsi* leaves along with 2, 3 small ginger pieces. You can add honey and sip hot.
- Another effective natural remedy for Zika Virus is here. Make a decoction by using few *Tulsi* leaves with 3 to 4 black pepper (*Kalimirch*), 2 or 3 cloves (*Lavange*). Filter and add 1 tsp honey to have it. Take this once daily for couple of days. This helps to provide strong stamina against various deadly diseases.
- Fresh Ginger (*Adrak*) is another useful herb for Zika Virus. This is very useful spice in Indian and Chinese kitchen. Also proved that it has got antiviral activities. Ginger is powerful anti-inflammatory herb that provides relief from joint, muscles pain and can deal effectively with respiratory illness like nasal congestion, cough and blockage of channels. It treats headache, abdominal cramps, nausea, vomiting, bronchitis, osteoarthritis etc.
- Have ginger tea with or without milk. Or you can make decoction by adding fresh ginger pieces or juice. Honey can be added to sweeten it.

5. **Other drugs:** *Goduchi Ghan Vati, Sudarshana Ghana Vati, Samshamani Vati, Arogyavardhini Vati, Avipattikara Churna, Triphala Churna, Mahasudarshana churna, Laxmi Vilas Rasa, Basant Malti Rasa, Sarv Jwarahara lauha, Guduchyadi Kwatha, Pathyadi Kwatha, Mahamanjishtha Kwatha, Shadanga paniya.*

#### CONCLUSION

Thus from above description it can be conclude that Zika is a viral infection that is spread by the bite of an infected mosquito. Outbreaks typically occur in tropical Africa and Southeast Asia. About one in five people develop symptoms and infection is usually mild. Zika virus disease is usually relatively mild and requires no specific treatment. No vaccine or preventive drug is available at this time. The best way to prevent Zika is to avoid mosquito bites when traveling to an area where Zika is present. People sick with Zika virus should get plenty of rest, drink enough fluids and treat pain and fever with common medicine. In *Ayurvedic* management of Zika virus some comprise of drugs like as *Giloya (Tinospora*

*cordifolia*), *Tulsi swarasa*, Turmeric (*Haldi*), Fresh Ginger (*Adrak*) heaving bitter tonic, antipyretic, antibacterial and immunomodulator properties.

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