



Evaluation of Outbreak and YF-17D Vaccine against Yellow Fever and its Elucidation of Stages of Symptoms

Carolina Desousa *

Department of Medicine, Brooke Army Medical Center, 3551 Roger Brooke, JBSA Ft Sam Houston, TX 78234, USA

ABOUT THE STUDY

Yellow fever is an acute viral hemorrhagic disease transmitted by infected mosquitoes. The name "yellow" refers to jaundice that affects some patients. Symptoms of yellow fever include fever, headache, jaundice, muscle aches, nausea, vomiting, and fatigue. Only a small percentage of patients infected with the virus develop severe symptoms, and about half of them die within 7 to 10 days [1].

Yellow fever is caused by a mosquito-borne virus. If you are bitten by a mosquito infected with this virus, you can develop the disease. The disease is widespread in South America and sub-Saharan Africa. Anyone can get yellow fever, but older people are at increased risk of serious infections [2]. A symptom of yellow fever consists of 3 stages

- headache, muscle and joint pain, fever, flushing, loss of appetite, vomiting, and jaundice are common. Symptoms often disappear after about 3-4 days.
- Fever and other symptoms disappear. Most people recover at this stage, but some get worse within 24 hours.
- Problems can occur in many organs, including the heart, liver, and kidneys. Hemorrhagic disorders, seizures, coma, and delirium can also occur.

The last outbreak of yellow fever in the United States was New Orleans in 1905. Today, yellow fever is endemic in the tropical and subtropical regions of South America and Africa. The development of the yellow fever vaccine (Theiler won the Nobel Prize for this study) has saved countless lives over the years, but the global burden of the disease remains high. Currently, in 2021, nine countries in the WHO Africa region (Cameroon, Chad, Central African Republic (CAR), Cote d'Ivoire, Democratic Republic of the Congo (DRC), Ghana, Niger, Nigeria, and Republic of the Congo) reported the laboratory-yellow fever. Cases of yellow fever have been identified in areas with a high risk of yellow fever transmission and a history of outbreaks. The number of these outbreaks is increasing and urgent action is required. On March 6, 2022, WHO received

notification from the Ugandan Ministry of Health of four suspected cases of yellow fever. As of April 25, 2022, a total of 7 suspicious cases were tested positive for yellow fever antibodies using the plaque reduction neutralization test. However, further investigations confirmed only one case of yellow fever testing reported from the Wakiso district of the Central Region. MoH declared an outbreak and a quick response team was dispatched to the affected area. Due to the potential epidemic in Uganda and the risk of epidemic to neighbouring countries, WHO estimates that the risk is high at the national and regional levels [3].

The most effective way to prevent the transmission of the yellow fever virus is to prevent mosquito bites. Use insect repellent, wear long-sleeved shirts and trousers, handle clothing and gear, and if vaccination is recommended, get vaccinated before traveling [4].

The most body part it may effect by High fever returns, affecting multiple body systems, usually the liver and kidneys. Jaundice (yellowing of the skin and eyes, hence the name "yellow fever"), dark urine, and abdominal pain with vomiting can occur at this stage. Bleeding can occur from the mouth, nose, eyes, or stomach. Once outbreak, a person is generally immune. This means that you are unlikely to experience it again. Yellow fever occurs in settlements near the jungle, where infected monkeys and mosquitoes live, and can spread from there [5].

The risk in areas of yellow fever endemicity and its transmission is maintained in nature by transmission of Non-Human Primates (NHPs) and their prey, *Aedes aegypti*, mainly between *Aedes aegypti* in Africa and *Aedes aegypti* in the Americas. Humans can become infected with *Aedes aegypti* when bitten by infected *Aedes aegypti*, and the use of *Aedes aegypti* as a vector of domestic transmission can also lead to persistent infections in the human population. In South America, yellow fever is transmitted primarily by *Aedes aegypti* with rare outbreaks associated with *Aedes aegypti*. In contrast, infections in Africa are often caused by a mixture of *Aedes aegypti* [6].

Correspondence to: Carolina Desousa, Department of Medicine, Brooke Army Medical Center, 3551 Roger Brooke, JBSA Ft Sam Houston, TX 78234, USA, E-mail: desousac@edu.us

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Contraindications to yellow fever in pregnant and lactating women, except in outbreak emergencies, are due to the theoretical risk of vertical transmission of the virus from mother to child. This recommendation is based on the following suggestions: In young children, the risk of vaccine neurogenicity is increased. Nonetheless, the World Health Organization (WHO) advises that, as well as the benefits of vaccination, the risks and benefits need to be assessed in order to occur and live in yellow fever endemic areas. Compensates for the transmission of a attenuated virus to the fetus, which increases the risk [7].

The pathogen of yellow fever virus is an enveloped virus with a single-stranded RNA genome, and belongs to the genus *Flaviviridae* and the family *Flaviviridae*. Other flaviviruses of great concern for human health are Dengue Virus (DENV), Western Nile Virus (WNV), Zika Virus (ZIKV), Japanese Encephalitis Virus (JEV), and Flavivirus-Mediated Encephalitis Virus (TBEV). Yellow fever virus belongs to the YFV serotype of the mosquito-borne flavivirus and is transmitted by *Aedes aegypti*.

CONCLUSION

Vaccination of yellow fever is YF 17D causes serious adverse events (YEL-AVD or YEL-AND). Although several risk factors have been suggested, the rarity and unpredictability of these events is an obstacle to their research. Test protocols have been developed and must be applied with strict adherence to the collection, transportation and delivery of biological samples to

the laboratory under favourable conditions. Despite these serious adverse events, yellow fever vaccination is the best way to prevent a serious illness with a high mortality rate, and is an endemic area based on careful risk. And should be done regularly to people in non-endemic areas-profit analysis, may be published and applied.

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