Dengue Fever: A Biological Threat to Human Health

PK Samanta

*Post Graduate Department of Physics, Prabhat Kumar College, Contai-721 401, West Bengal, India

Dengue fever has now become a life threat to the people of West Bengal of India. Every week thousands of people are getting attacked by the dengue fever. In some cases death of the patient occurs. Thus it has become a panic to the peoples, to the doctors, to the health officials and to the government. Dengue fever is basically a viral fever with specific symptoms like high body temperature, pains in muscles and joints, acute headache, skin rash swollen lymph nodes etc., [1]. However the types of symptoms and its acuteness are different for different patients. Even in case of some patients, other symptoms like bleeding from gums, nose, acute pains behind eyes, soles, black stools are also observed [2]. People of any age may be affected by dengue fever. However it is more pronounced to those people having immune system compromised. It has been reported that about 70-80 million of peoples are infected by dengue fever in which 20% case is dengue hemorrhagic fever (DHF) and about 20,000 patients, mostly below 15 age group, died of this fever every year [3].

The DENV genome is of 11000 bases of ssRNA of positive sense having three structural units of proteins code C, M and E. It also contains seven nonstructural proteins viz. NS1, NS2a, NS2b, NS3, NS4a, NS4b, and NS5. Besides, it also contains some non-coding regions (short-type) on the 5’ and 3’ ends [4-5].

The dengue virus (DENV) has five antigenically distinct serotypes viz. DENV-1, DENV-2, DENV-3, DENV-4, and DENV-5 [6]. In Singapore the outbreak of first three serotypes (DENV-1, DENV-2, DENV-3) is observed throughout the year [7]. So a person once infected with DENV-1, an immunity of this particular serotype is produced in his life time but may be infected by the rest four serotypes. So there is a definite chance of multiple attacks by dengue to a person [8].

This fever is transmitted by mosquito (female) called Aedes aegypti. When this mosquito (dengue infected) attacks some persons it injects the dengue virus into the bloodstream of the underlying skin. So the virus now goes to the skin cells and spreads immediately throughout. Usually keratinocytes skin cells are ruinedly affected by this virus. The dengue virus now replicates itself in Langerhans immune cell. Dengue virus affects the monocytes and macrophages white blood cells and spreads over the whole body. It then affects lymph nodes and bone marrow, and later the spleen and liver [9].

Natural Preparedness of Dengue

Papaya leaves contain Papain which helps not only to digest but also to prevent Dengue viruses. Guava also contains vitamin C which improves the immune system of the body and helps to prevent against any virus. The leaf extract of guava also increases platelets in our body and there by the probability of Dengue infection reduces. It also contains tannin that helps any kind of viral infection in our body.

The Dengue mosquito (Aedes aegyptiII) usually grows up clean water. So it is advised that we should not allow stag any kind of unutilized water in our locality. Moreover, spraying of anti-mosquito fluids like DDT, malathaion etc regularly in the locality is also advised.

*Corresponding author: PK Samanta, Post Graduate Department of Physics, Prabhat Kumar College, Contai-721 401, West Bengal, India. E-mail: pijush.samanta@gmail.com Tel: +91-9775550907

Received October 31, 2017; Accepted November 03, 2017; Published November 24, 2017


Copyright: © 2017 PK Samanta. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
Moreover it is advised to use mosquito net in windows and also to use in beds.


References


