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COMMENTARY

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Dengue Virus: A Global Menace to Humans

Isumu Yu*

Department of Oral Medicine, Nihon University, Tokyo, Japan

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Description

Aedes mosquitoes transmit the acute viral disease dengue, which is brought on by the Flaviviridae RNA virus family. Asymptomatic fever to terrifying consequences including hemorrhagic fever and shock may be the presenting symptoms [1,2]. The most typical symptoms include a high temperature with a sudden start, muscular and joint discomfort, and myalgia, a rash on the skin, hemorrhagic episodes, and circulatory shock. Even though oral symptoms are rarely the main presenting symptom of dengue infection, this can happen in some situations. To reduce mortality, an early and precise diagnosis is essential [3,4]. Dengue infection has emerged as a public health issue in tropical and subtropical countries, despite the fact that dengue virus infections are typically self-limiting. Infections with the dengue virus, their various clinical symptoms, diagnosis, differential diagnosis, and prevention are all covered in length in this page.

The dengue virus is an arthropod-borne virus with four different serotypes that belongs to the genus Flavivirus and family Flaviviridae (DEN-1, DEN-2, DEN-3, and DEN-4). Dengue is regarded by the World Health Organization as a serious global public health threat in countries that are tropical or subtropical [5,6]. Between 1960 and 2010, dengue cases surged by 30 times globally as a result of rapid population development, climate change, unplanned urbanisation, ineffective mosquito control, frequent air travel, and a dearth of medical facilities. The clinical manifestations of dengue virus infection vary, making an accurate diagnosis challenging and requiring laboratory confirmation [7,8]. Since there is now no antiviral medication available, the problem typically resolves on its own. The preferred management approach consists of supportive care with analgesics, hydration with fluid replacement, and enough bed rest.

DF is a serious flu-like condition that affects people of all ages (infants, children, adolescents, and adults). The mosquito Aedes aegypti transmits the disease to people, and this season is when it is most prevalent. The following are some of the suggested etiologies for dengue virus infection:

- Immunological and chemically mediated mechanisms brought on by host-viral interaction;
- Direct cutaneous infection by the virus.

Upon a mosquito bite, the dengue virus enters the host organism through the skin. The development of the sickness is thought to be influenced by innate, cellular, and humoral host immune responses. The more severe clinical symptoms appear after the virus has been rapidly removed from the host organism. Therefore, a high viral load does not correspond with the most severe clinical manifestation during the course of the infection. An increased loss of protein and plasma results from changes in thromboregulatory systems and endothelial microvascular permeability [9,10]. Plasma leakage is thought to be mediated by endothelial cell activation brought on by monocytes, T-cells, the complement system, and different inflammatory chemicals. Thrombocytopenia might be caused by changes in megakaryocytopoiesis, which show up as human hematopoietic cell infection and stunted progenitor cell proliferation. Significant haemorrhages could result from platelet malfunction, injury, or depletion as a result of this.

The most common populations for which DF occurs are adults and older children. It can occur after both primary and secondary infections. A biphasic, high-grade fever lasting 3–7 days marks the begin-

Contact: Isumu Yu, Email: yisumu@attu.ac.jp

ning of symptoms. Other symptoms include a severe headache, lassitude, myalgia and aching joints, a metallic taste, appetite loss, diarrhoea, vomiting, and stomachaches. Because it causes myalgia and joint discomfort, dengue is sometimes known as breakbone fever. 50%-82% of DF patients report having a strange cutaneous rash. The initial rash is caused by capillary dilatation and manifests as a brief facial flushing erythema before or for the first one to two days after the onset of fever.

If a patient has a high fever within two weeks of being in the tropics or subtropics, cautious attention should be paid to DF. The first alterations in laboratory tests are a drop in white blood cells (leukopenia), followed by a decrease in platelet count (thrombocytopenia), and metabolic acidosis.

In more than 100 nations, dengue now threatens the lives of almost 2.5 billion people, making it a serious public health issue. The doctor should guarantee an early and adequate treatment plan by being knowledgeable of the many clinical signs of this ailment. Future efforts to treat this terrible illness will focus on developing vaccines, antiviral medication regimens, and mosquito control strategies.

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