

EDITORIAL

Dilemma in Dengue fever and Chikungunya diagnosis and treatment - an editorial

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Dengue fever and chikungunya are both mosquito-borne viral diseases. The earliest descriptions of a dengue outbreak date from 1779; its viral cause and spread were understood by the early 20th century [1]. Dengue fever is caused by the Dengue virus. Dengue has become a global concern since the commencement of the Second World War. In 2025, as per dashboard of WHO worldwide total dengue cases are 3661680, severe cases 12667, confirmed cases 1505828 and total deaths are 2244, and in Bangladesh, upto 4th August total cases are 22,065 and total death is 86.

Historically, Chikungunya was referred to as Dengue. It was only after an outbreak of Chikungunya in Makonde Plateau, somewhere near Tanzania, that it was identified as a separate disease. Chikungunya is caused by the Chikungunya virus (CHIKV) which was first isolated by RW Ross in 1953 [2] [3][4]. In June 2025, the Institute of Epidemiology, Disease Control and Research in Bangladesh reported an outbreak of chikungunya in Dhaka city, with 337 cases reported between January and May 28, 2025.

Both dengue fever and chikungunya are mosquito-borne viral diseases with similar symptoms and geographic distribution, but they differ in severity and potential complications. Both the viral infections are characterized by similar symptoms and signs such as:

- High Fever
- Headache
- Pain in the joints and eyes
- Rashes
- Lethargy

These similar symptoms and signs make the diagnosis challenging in the early stages. Due to sharing quite similar signs, it becomes difficult in identifying the exact problem. Dengue can be severe, even life-threatening, with bleeding and may lead to DHF, DSS, organ failure, and death [5]. Chikungunya is rarely fatal and symptoms are generally self-limiting, typically resolving within a few days. However, chikungunya can cause long-lasting arthritis in some individuals; however, occasionally the joint pain may last for months or years [6][7].

Similarities:

- Mosquito bite is the main cause of Chikungunya and Dengue. Both the diseases are caused by a female mosquito, primarily *Aedes aegypti* and *Aedes albopictus*.
- Dengue and Chikungunya diseases are more common in the tropical and sub-tropical climates. India subcontinent faces the threat of these vector-borne diseases.
- Both the diseases share similar symptoms and signs.

The difference between Dengue and Chikungunya

Despite being quite similar, both the diseases are very much different. Some of the differences in both the viral infections are:

- Dengue and Chikungunya, though transmitted by the same mosquito type, but are caused by different viruses. While Dengue is caused by a Flaviridae flavivirus, Chikungunya is caused by a Togaviridae alphavirus.
- The incubation period for dengue is of 3-14 days while it stays for about 2-7 days. The incubation period of Chikungunya is of 1-12 days and the duration varies from one to two weeks. However, signs such as joint pain may stay for a long time.
- Swelling and pain is high in Chikungunya as compared to that in Dengue. Arthritis is mainly in arms and legs in Chikungunya.
- Dengue can cause bleeding in some cases, shock, etc. Whereas Chikungunya can cause tremendous joint pain.
- In Dengue, rashes are limited to limbs and face. Whereas in Chikungunya, rashes occur all across the face, palms, feet, and limbs.
- In severe cases of Dengue, complications like breathlessness, shock or organ failure can occur. Whereas complications such as chronic arthritis and rare neurological problems are possible in Chikungunya. Arthritis is absent in Dengue.
- Low platelet count occurs in Dengue, whereas lymphopenia occurs in Chikungunya.

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In spite of quite similarity, it is possible to differentiate these two viral infections clinically by different characters discussed above. Serological tests such as antigen like NS1 antigen and antibody test can help in diagnosis.

There is no specific antiviral therapy for both. Both diseases require supportive care, such as hydration and pain relief. For chikungunya, NSAIDs can be used for pain relief, but only after dengue has been ruled out.

Every year millions of people are affected by Dengue and Chikungunya all across the globe. Thousands in India subcontinent are also infected with these diseases every year. Deaths are also caused due to these diseases. Therefore, you should know that these diseases are killers and it is important to kill the cause of the diseases before it kills you i.e. by mosquito elimination and the prevention of bites [8].

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