

EMERGING THREAT OF CHIKUNGUNYA: BANGLADESH PERSPECTIVE

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After Dengue, an emerging threat of Chikungunya is prevailing in Bangladesh. Chikungunya a crippling arthritic disease with fever of sudden onset is caused by a virus Chikungunya a member of Alphavirus genus in the Togaviridae family. Because of its severe arthritic symptoms, it was named after “Chikungunya” the meaning in Swahili language is “that which bends up”.¹ The disease was first reported in 1952 in the Newala district of Tanzania.¹ Chikungunya virus is transmitted by a day-biting *Aedes* mosquito. The outbreak typically coincides with the increased number of mosquito population especially in the summer and rainy season when intermittent rain occurs².

The first outbreak of Chikungunya in Bangladesh was reported in two villages of North-West areas of the country adjacent to the border of India in 2008 and before that there were no evidence of Chikungunya infection in Bangladesh^{3,4}. In the subsequent years there were several sporadic outbreaks in different areas of Bangladesh^{5,6,7} and one of those are in rural areas of Dohar sub district adjacent to Dhaka⁶. This year, several cases are reported from different areas of Dhaka city and posing a threat of Chikungunya outbreak in Bangladesh. As the vector *Aedes aegypti* is prevailing in Bangladesh and spreading Dengue since 2000, this can transmit Chikungunya as well if the virus introduced in Bangladesh⁸. High population density and absence of antibody in blood of the population can create the momentum of the outbreak which poses an emerging threat of Chikungunya in Dhaka. It is reported by ICDDR and local newspapers that Chikungunya is spreading fast and occurring in and around homes and affecting mostly women who usually resides at home^{9,10}.

The disease has a sudden onset with an incubation period approximately 3-12 days. The

fever rises rapidly to 103-104°C may accompany rigor which usually lasts for 2-5 days without a prodrom¹¹. High fever is due to induction of large amount of interferon (IFN). Joint pain appears suddenly and may involve any joint of the body and usually the pain is incapacitating. Joint pain may persist for long time after the subsidence of other symptoms. Affected joints usually do not have redness and swelling, however the joint pains resemble pains like rheumatoid arthritis. Fever with headache is a common symptom and an itchy maculopapular rash usually appears 4th day onward the onset of illness¹. Arthralgia, conjunctival injection and itching of extensor surface of hand and legs are commoner than Dengue infection¹¹. Bleeding manifestations and shock (plasma leakage) is the important feature of Dengue haemorrhagic fever which is absent in Chikungunya and as such the case fatality is rare in Chikungunya¹². Therefore, there is no reason to be panicked about the outbreak of Chikungunya.

Diagnosis of Chikungunya can be done by blood count and virological testing. Leucopenia with lymphopenia is a common finding in blood count without thrombocytopenia which is common in Dengue. Antibody IgM to Chikungunya can be detected after 7 days of onset of fever which indicate acute Chikungunya infection¹³. RT-PCR test for Chikungunya can be quick and early diagnostic tool which usually positive before the day 5 of infection¹⁴; however it is not available in most tertiary level hospitals and expensive. ICT test for antigen is not available in Bangladesh and available ICT for IgM and IgG antibody for Chikungunya has poor diagnostic performance.

Treatment of Chikungunya is mainly conservative because there is no specific antiviral drug for Chikungunya virus. Vaccine is also not available in Bangladesh. Patients

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can be treated with up to 2 gm of Paracetamol in 4 divided doses if the patient has no liver and kidney impairment. Children may be given 50-60 mg per kg body weight per day in divided doses¹⁵. Non steroidal anti inflammatory drugs (NSAID) and Aspirin should be avoided if the diagnosis of Dengue is not excluded appropriately. Patients without complications can be treated at home only with symptomatic treatment and maintaining good rehydration. Cold compression to joints may help the patient to reduce joint pain and damage¹⁵. Recovery is spontaneous within 7-10 days. A small percentage of patients may have persistent pain in joints for long time; even years needed long term treatment for pain. Patients who are hemodynamically unstable (Hypotension, syncopal attack, Shock), have oliguria, altered sensorium, with neurological and other complications and high risk group will need management in hospital. Patients having comorbid disease such as diabetes, hypertension, CAD/CVD, COPD, conditions like extreme of ages and pregnancy and co-infections with Dengue, HIV, Tuberculosis and Malaria are considered high risk group and needs hospitalization for clinical care¹⁵.

As the vector for Chikungunya and Dengue is *Aedes aegypti* and the vector is present for long time and people are already educated for the vector control. Vector control and personal protection against mosquito bite plays important role in prevention of infection. Directorate of Health Services, Government of Bangladesh has prepared an official guideline for clinical management which will help physicians in management of patients and to reduce case fatality.

In conclusion, although Bangladesh is not appropriately prepared for controlling the emerging threat of Chikungunya our previous experience of controlling Dengue outbreaks and present rapid response from the Government and private sectors will help us in efficient management of Chikungunya. Creation of appropriate awareness will reduce the panic of the outbreak and will help in vector control in the country to control the emerging threat of Chikungunya.

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