

Dengue – What to Do?

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This year dwellers of Bangladesh, especially those living in our beloved city Dhaka had to face a tremendous outbreak of Dengue fever which surpassed all the previous records in terms of the number of affected people as well as the death toll. Dengue is the fastest emerging arboviral infection caused by Dengue virus (DENV) according to WHO reports.¹ It is a mosquito-borne viral infection and the *Aedes aegypti* mosquito is the main vector. It is a severe flu-like illness and, sometimes causes a potentially lethal complication called severe Dengue.² This year it showed “atypical” symptoms affecting brain, heart, and liver leading to multiple organ failure. Apparently there were no early signs and more severe symptoms manifested much earlier than normally expected. In previous years Bangladesh witnessed outbreaks of the DENV1 and DENV2 strain, but this year DENV3 and DENV4 were more prevalent and these strains are considered deadly as they cause plasma leakage, respiratory distress and organ impairment in patients.³

The disease is widespread throughout the tropics, with local variations in risk influenced by rainfall, temperature and unplanned rapid urbanization.¹ The *Aedes* mosquito breeds in fresh stagnant water. Heavy rainfalls in Bangladesh during the monsoon season and unplanned rapid urbanization with thousands of building sites have created the perfect breeding ground for the mosquito-borne virus. Moreover several investigations suggested that both our city corporations used ineffective insecticides and mosquito repellents, because of which the mosquito population has increased.³ Out the country’s 64 districts, 61 have reported cases of Dengue with the largest proportion being from Dhaka. Dengue outbreak was earlier in the country than usual this year with higher levels of rainfall.⁴ There was lack of preparation as the crisis worsened in June this year coming ahead of its usual time in September. Besides, although being an urban disease, Dengue had a strong presence in the rural areas of the country as well this year.⁵

Dengue outbreak of current year is unprecedented. According to the Directorate General of Health Services (DGHS), more than 100,000 Dengue patients were hospitalized throughout the country by the end of November.⁶ According to DGHS, highest number of deaths of Dengue patients was 93 in 2000. The confirmed number of deaths this year has already equaled with that, with some 90 more deaths yet to be confirmed and most of the deaths are due to Dengue shock syndrome, a serious complication of secondary infection.^{3,5}

The Government of Bangladesh has however taken effective measures by this time. The Directorate General of Health Services (DGHS) has declared this as an outbreak and is being publishing number of registering patients at public and private hospitals every day. For prompt and appropriate treatment of the patients DGHS has developed the National Guideline for Clinical Management of Dengue Syndrome and has widely distributed throughout the hospitals and is also available online. Special Dengue wards have been set in a number of public hospitals.

Bearing in mind this year’s early attack, we will have to prepare ahead in the coming years. According to UNDP, climate change, changing patterns of rainfall, and humidity are leading to longer to longer breeding spells for the mosquitoes and diminishing disease incubation times. This is leading Dengue epidemics to become much more unpredictable in terms of when and where they occur, and their scale, overwhelming health systems.⁷ Renowned medical journal Lancet has said that the risk of Dengue in Bangladesh has gone up by 36 per cent due to climate change.⁸ A recent study on Dengue by icddr,b found a correlation between increased rainfall in Dhaka and the number of Dengue cases two months later. Data from 2010-14 revealed that 90% of cases occurred between June and November, highlighting the importance of being prepared for a surge of cases during peak months.⁹

To combat this deadly disease we should not only focus on destroying mosquito breeding sites or use of insecticides as poor water sanitation and hygiene systems alongside a dense population prolong the outbreak in Bangladesh. A number of short term and long term nationwide actions by government, non-governmental organizations, policy makers, and institutions must be initiated and continued for sustained success. Measures should be taken on regular basis to address water logging and cleaning of canals, water tanks, rainwater collection tanks, sump pits, downpipes, and gutters. Distribution of Dengue detection kits to health centres and training of health facilitators would be beneficial in rural areas. A special focus should be given to school children through the improvement of school uniform as personal clothing acts as a preventive measure. In addition, a Dengue virus vaccine could be launched in the country as it has been shown to reduce severity and hospital admissions by 80-90% among children in Asia.¹⁰

Alongside, as a consultant biochemist I have some observations regarding Dengue test. This year's Dengue attack was terrible but our common people also got panicked and rushed for unnecessary tests and some of the laboratories started to capitalize it. With due respect to the clinicians, their advice could be more authentic and relevant as of when to do the tests for Dengue and what tests.

It is very much appreciable that the Government of Bangladesh took a very good initiative by fixing and limiting the test price. Regarding the quality and availability of test devices I am still in dark as government by its order had given permission to a few reputed companies to import the devices with much flexible terms and conditions. Still there was a shortage of devices. And there were devices of a number of unauthorized and unknown sources in the market. Government should take it into account for strict quality control.

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