

## Editorial

### **Risk of an outbreak of Adenovirus infection in Dhaka city after the outbreak in India: It's high time to develop a 'surveillance' system and create awareness for the virus.**

**Ritu Saha**

Adenoviruses are a group of viruses that can cause various types of illnesses. It has more than 100 serotypes, of them 49 can cause human infection.<sup>1</sup> They are very common and can affect people of all ages. However, children & immune-compromised individuals can develop the disease in a more extensive form with fatal outcomes.<sup>2</sup> Adenoviruses are usually spread through close personal contact, such as touching or shaking hands with an infected person. They can also be spread through the air by coughing or sneezing.<sup>3</sup>

Symptoms of adenovirus infection can include fever, sore throat, coughing, runny nose and congestion. The virus can sometimes cause more serious illnesses such as pneumonia or bronchitis. However, most people recover on their own within a few days. However, people with weakened immune systems or existing respiratory problems may be at greater risk for complications.

India has recently experienced an adenovirus outbreak, with the Indian state of West Bengal being hit particularly hard. From January 2023 more than 13,000 cases of adenovirus have been recorded in the state. The virus has also been found in Maharashtra and Karnataka states.

Adenovirus can cause multisystem infections including respiratory, eye and gastrointestinal tract; recently the virus has attacked children more. Nineteen children died of acute respiratory infections in West Bengal in the year 2023. Thousands more are in hospital as India grapples with the outbreak.<sup>4</sup>

The healthcare system of West Bengal is struggling to cope with the volume of cases. Some hospitals declared their pediatric wards saturated, even children having to share hospital beds. The local government has to set up help lines to handle calls from concerned parents, and the Health and Family Welfare Department has canceled health worker's leave.<sup>5</sup>

While the outbreak has prompted emergency measures from the Indian government; Bangladesh has yet to take any precautions despite many children and elderly patients visiting hospitals with symptoms similar to the adenovirus infection like fever, cough and respiratory distress.<sup>6</sup> There is a lack of the facility for medical tests to determine adenovirus cases in our country. Institute of Epidemiology, Disease Control and Research (IEDCR) has no surveillance system for adenoviruses; so it is difficult to identify the population who actually come in contact with Adenovirus.<sup>7</sup> It is essential to identify the symptomatic patients who come in contact with the adenovirus. Bangladesh faces a high risk as the pathogen has already spread in Kolkata.<sup>8</sup> It's important to know if the symptomatic patients admitted in hospitals of our country are attacked by the sub-variants of the virus, that has spread in Kolkata. If we have patients with similar symptoms in Bangladesh, we must run tests on them. Protocols, such as mask-wearing and social distancing that are used during the COVID pandemic can be introduced to slow down infection.

Coronavirus cases are dropped off after mass vaccination, but people are still at risk of developing emerging viral diseases like Adenovirus. Experts believe that early detection and effective containment strategies are the best way to address an adenovirus outbreak. In addition to these measures, there is a need for increased public awareness about adenovirus and how it spreads. This includes educating people about the importance of good hygiene and encouraging them to stay home if sick.

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**References:**

1. Lukashev AN, Ivanova OE, Eremeeva TP, Iggo RD. Evidence of frequent recombination among human adenoviruses. *J Gen Virol*. 2008 Feb;89(Pt 2):380-388.
2. Hartman ZC, Kiang A, Everett RS, Serra D, Yang XY, Clay TM, Amalfitano A. Adenovirus infection triggers a rapid, MyD88-regulated transcriptome response critical to acute-phase and adaptive immune responses in vivo. *J Virol*. 2007 Feb;81(4):1796-812.
3. Ghebremedhin B. Human adenovirus: Viral pathogen with increasing importance. *Eur J Microbiol Immunol (Bp)*. 2014 Mar;4(1):26-33.
4. The Guardian. Virus outbreak in West Bengal leaves 19 children and thousands in hospital. (15 March 2023) [Internet], available from: <https://www.theguardian.com/global-development/2023/mar/15/virus-outbreak-in-west-bengal-leaves-19-children-dead-and-thousands-in-hospital>
5. Bhattacharjee P. Adenovirus Outbreak Has Infected Thousands Of Children In India. *Asian Scientist magazine*. (30 March 2023)[Internet], available from: <https://www.asianscientist.com/2023/03/topnews/adenovirus-outbreak-has-infected-thousands-of-children-in-india/>
6. World socialist website. Adenovirus outbreak in the Indian state of West Bengal ravaging children. (29 March 2023) [Internet] Available from: <https://www.ws-ws.org/en/articles/2023/03/30/ycoj-m30.html>
7. The Daily Star. Dhaka hospitals see 'rising seasonal flu cases. (29 March 2023) [Internet] Available from: <https://www.thedailystar.net/health/news/dhaka-hospitals-see-rising-seasonal-flu-cases-3265471>
8. The financial express. No caution in Dhaka even as adenovirus runs rampant in Kolkata. (1 March 2023) [Internet] Available from: <https://thefinancialexpress.com.bd/health/no-caution-in-dhaka-even-as-adenovirus-runs-rampant-in-kolkata>