



EDITORIAL: THE LARGEST CHANDIPURA VIRUS OUTBREAK IN TWO DECADES—A CALL FOR HEIGHTENED VIGILANCE

Pharmaceutical Science

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KEYWORDS

Chandipura Virus; Acute Encephalitis Syndrome; Vector-borne Diseases; Public Health Response; Viral Outbreak India

Chandipura Virus Outbreak: A Public Health Challenge In India

The continuing Chandipura Virus (CHPV) outbreak in India, regarded the greatest in the previous 20 years, is imposing enormous strain on the country's public health system. Between June and mid-August 2024, India recorded 245 instances of acute encephalitis syndrome (AES), 64 of which were proven to be related to CHPV infection. Tragically, this outbreak has taken 82 lives, with a case fatality rate (CFR) of 33%, predominantly affecting youngsters under the age of fifteen. Despite combined efforts by the World Health Organization (WHO) and the Indian Ministry of Health and Family Welfare to prevent the virus's transmission, further expansion is possible, especially with the monsoon season bringing favorable circumstances for vector populations[1].

Epidemiology And Transmission Of Chandipura Virus

CHPV, a member of the Rhabdoviridae family, was initially discovered in Maharashtra, India, in 1965. Even though HPV has occasionally produced outbreaks, mostly in western and southern India, the size and intensity of the present outbreak make it especially worrying. Sandflies are the main vectors of CHPV transmission, while ticks and mosquitoes can also act as hosts. The virus can cause acute encephalitis syndrome (AES), which is characterized by brain inflammation and frequently results in death. Since the initial symptoms of CHPV infection—vomiting, headaches, and fever—resemble those of other viral disorders, early diagnosis of the infection is difficult. Seizures and altered awareness are among the serious neurological signs that the condition can quickly advance to. Since kids are most susceptible to the virus's effects, early identification and medical intervention are essential. The WHO has emphasized the need to step up surveillance, particularly in high-risk areas, and to pay particular attention to children who come with fever and symptoms related to the central nervous system (CNS). Vector management methods are essential to halting the virus's spread since the monsoon season, which runs from June to September, provides perfect hatching conditions for sandflies and other vectors[2].

Challenges In Containing The Outbreak

A major challenge in controlling the CHPV epidemic is our incomplete knowledge of the mechanics of virus transmission. Although sandflies have been found to be the primary vector, more investigation is required to ascertain whether ticks and mosquitoes also significantly contribute to the spread of the disease. Furthermore, it is still unknown where the virus will next cause an outbreak, which makes forecasting its future locations challenging. This ambiguity emphasizes the need for more investigation into the ecology and vectors of the virus. The key to stopping the spread of CHPV is effective vector control. Prioritizing actions like fogging, spraying insecticides, and using repellents and mosquito nets as personal protection measures is necessary in impacted areas[3]. In rural and semi-urban regions where vector-borne diseases are endemic, community engagement and persistent public health campaigns are critical to the effectiveness of these treatments.

Without a particular antiviral medication or vaccination for CHPV, early symptom detection and availability of all-encompassing supportive care are critical to lowering mortality. Survival rates can be greatly increased with early medical assistance, particularly for

symptoms like fever, convulsions, and dehydration. The high case fatality rate emphasizes how urgently improved diagnostic techniques and therapeutic approaches must be developed. It is essential to promptly and accurately identify instances of CHPV, particularly when AES is present, in order to avoid misdiagnosing other encephalitis-causing conditions such dengue and Japanese encephalitis[4].

The Road Ahead: Strengthening Public Health Measures

The risk of additional CHPV transmission in India has been classified by the WHO as moderate, though this classification may alter as circumstances change. AES instances are currently being reported in 43 districts nationwide, with Gujarat and Rajasthan accounting for the majority of these cases. Although the number of new cases has been declining since the middle of July, officials still need to be on guard to stop a resurgence.

In high-risk locations in particular, enhanced surveillance is essential for the timely containment of outbreaks and the early identification of new cases. For local healthcare systems to successfully monitor and address the spread of CHPV, they require the necessary resources and instruments. Tracking the virus's spread and pinpointing the area's most at risk requires cooperation between state and federal health officials.

Campaigns for public awareness must also be at the center of the response to CHPV. Significantly reducing transmission and saving lives can be achieved by educating communities on vector management, personal protective measures, and the value of early symptom recognition. Given that rural areas have traditionally been hotspots for CHPV epidemics, they should receive special attention because they may have limited access to healthcare.

Conclusion: A Call For Global Collaboration

The persistent threat posed by newly emerging vector-borne diseases is starkly reminded by the Chandipura virus outbreak that is currently occurring in India. The intricate transmission of CHPV during the monsoon season necessitates increased public health precautions, improved surveillance, and ongoing vector control initiatives. To contain this outbreak and stop others like it from happening again, cooperation between local communities, national health authorities, and international organizations like the WHO is essential as the virus spreads. Prioritizing CHPV research is also necessary for the global medical community to create innovative preventive, therapeutic, and diagnostic tools. Together, we can lessen the terrible effects of CHPV and shield vulnerable groups—children in particular—from the potentially lethal effects of the virus.

Author contributions

This editorial was written by Dr. Rohit Singh Deo and Dr. Agnes Sara Shibu, and it was reviewed and checked for accuracy by Dr. Rajesh Kumar Singh.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict Of Interest

None

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