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Minimising the impact of Nipah virus in India

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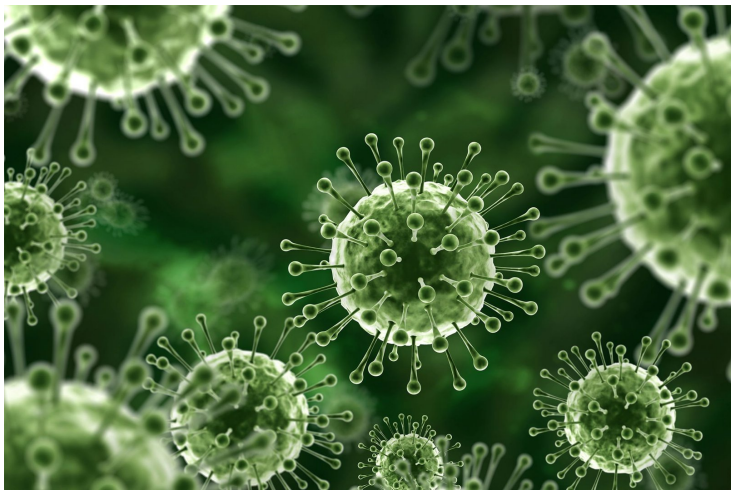
Substantial effort required by all stakeholders to provide a clear roadmap of tackling this infection



India has taken a major step forward in its efforts to combat the Nipah virus (NiV), a deadly emerging infection globally. A new vaccine (ChAdOx NipahB vaccine) targeting this virus has recently entered Phase 2 clinical trials (taking place in Bangladesh) under collaborative forces of Pune-based Serum Institute of India, Coalition for Epidemic Preparedness Innovations (CEPI) in Norway, and the University of Oxford in the UK. With the virus causing sporadic but highly fatal outbreaks across South and Southeast Asia, this marks a significant moment in epidemic preparedness and vaccine innovation.

Nipah virus is a deadly disease from the same viral family as measles, the paramyxoviruses, and is recognised by the World Health Organization (WHO) as a research priority due to its pandemic potential. Thus, a vaccine is urgently needed as the disease can be fatal in up to 75% of cases.

In 2025, a total of nine NiV outbreaks have been reported in Kerala State. Recent case numbers reported in Kerala State are consistent with trends observed in previous years and are therefore not entirely unexpected. However, they continue to highlight a localised risk associated with NiV in that area.

As a result, the state has launched a critical sero-surveillance initiative aimed at uncovering hidden transmission pathways. A new testing kit, developed by the Institute of Advanced Virology (IAV), is at the core of the effort, designed to detect Nipah antibodies in both humans and animals.

The IAV team has developed innovative Nipah virus-like particles (VLPs) that mimic the Nipah virus in appearance and behaviour but lack the genetic material necessary for replication, making them non-infectious and safe to handle in Biosafety Level 2 (BSL2) laboratories. This allows researchers to safely study how the virus enters host cells. Once the precise entry mechanism of the Nipah virus is fully understood, the team plans to test various antiviral drugs that could prevent the virus from attaching to receptor cells.

On the other hand, the Indian Council of Medical Research (ICMR) has developed a technology i.e. a colorimetric RT-LAMP

assay, for rapid detection of Nipah Virus and has invited expression of interest for its commercial production.

The ICMR is also exploring collaboration with industry partners for manufacturing indigenously developed monoclonal antibodies for treating the deadly Nipah Virus.

On the global stage, recent advancements in monoclonal antibodies, particularly hu1F5 and mAb92, show promise in treating Nipah virus infections, demonstrating effectiveness in animal models and paving the way for potential human clinical trials.

While these advancements in monoclonal antibodies, antiviral drugs, and vaccine candidates are encouraging, substantial effort is still required by all stakeholders to provide a clear roadmap of tackling this infection with a pandemic potential.

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