

Combatting Human Metapneumovirus: Prevention and Preparedness Strategies

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Dear Editor,

We are writing this letter to expound upon the outbreak of *Human Metapneumovirus (HMPV)*. Member of the Paramyxoviridae family, HMPV was initially identified in the Netherlands in 2001 after being recovered from a child with symptoms resembling those of an infection with human *Respiratory Syncytial Virus (RSV)*. Since then, 4–16% of acute respiratory infection patients have been found to have HMPV.¹ As it is a respiratory infection, infectious airborne droplets are the means of transmission.¹ This widespread pathogen causes upper and lower respiratory tract infections especially in immunocompromised hosts, children, and older individuals. From minor upper to serious lower respiratory tract infections (such as croup, pneumonia, and bronchiolitis), symptoms can vary in young children. Clinical signs of reinfection in adults usually include colds and flu-like symptoms. Immunocompromised individuals are more susceptible to the disease, which can occasionally be fatal.² Numerous methods, such as culture, nucleic acid amplification tests (NAAT), antigen detection, and serologic testing, can be used to diagnose HMPV infection, NAAT being the most sensitive to detect viral RNA.³ Supportive interventions are the pillars of treatment. For fever, antipyretic drugs such as ibuprofen and acetaminophen are administered. Intravenous fluid hydration is recommended if the patient seems dehydrated and is unable to manage oral hydration. Furthermore, individuals with HMPV may need additional oxygen support, such as a high flow nasal cannula or, in extreme situations that result in acute respiratory failure, mechanical ventilation. This is particularly true for patients who already have a respiratory or cardiac condition or who are immunocompromised. As it has a good prognosis so the majority of people do fully recover.⁴ The use of monoclonal antibodies that target the HMPV fusion protein in high-risk infants—such as those born preterm or with chronic conditions—is being investigated.

These antibodies may lessen the severity of disease and avoid hospitalization, much like RSV prevention. HMPV outbreaks have been documented in studies. The average HMPV positive rate in a national investigation that included 188,104 clinical samples was 4.7%. Regional rates, however, differed greatly; Chongqing reported the highest rate at 15.88%, while rates were less than 3% in Beijing, Shanghai, Jiangxi, and Hainan.³ About 5–7% of all pediatric pneumonia admissions are linked to the human HMPV. Year-round HMPV was found, with February and August seeing the highest levels. There was a substantial correlation between the HMPV infection and sore throat.⁵ The NIH official concluded that while Pakistan is capable of identifying and readiness is essential. Need of hour is to raise awareness and educate people to adopt proper hygiene measures like washing hands, wearing mask, covering mouth while sneezing and coughing to stop its spread because the world is not ready to face another pandemic.

REFERENCES

1. Panda S, Mohakud NK, Pena L, Kumar S. **Human metapneumovirus:** review of an important respiratory pathogen. *Int J Infect Dis.* 2014; 25: 45–52. DOI: <https://doi.org/10.1016/j.ijid.2014.03.1394>
2. Kroll JL, Weinberg A. **Human metapneumovirus.** *Semin Respir Crit Care Med.* 2011; 32(4): 447–53. DOI: <https://doi.org/10.1055/s-0031-1283284>
3. Feng Y, He T, Zhang B, Yuan H, Zhou Y. Epidemiology and diagnosis technologies of *human metapneumovirus* in China: a mini review. *Virol J.* 2024; 21(1): 59. DOI: <https://doi.org/10.1186/s12985-024-02327-9>
4. Uddin S, Thomas M. **Human Metapneumovirus.** [Updated 2023 Jul 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/sites/books/NBK560910/>
5. Yousafzai MT, Ibrahim R, Thobani R, Aziz F, Ali A. **Human metapneumovirus** in hospitalized children less than 5 years of age in Pakistan. *J Med Virol.* 2018; 90(6): 1027–32. DOI: <https://doi.org/10.1002/jmv.25044>

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