## **HUMAN METAPNEUMOVIRUS: AN EMERGING THREAT WITH PANDEMIC POTENTIAL**

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uman metapneumovirus has gained global attention due to recent upsurge in cases reported in China. International travel and trade raise concerns about the potential spread of the virus to the rest of the world.<sup>1</sup>

Human metapneumovirus (HMPV) was first identified in 2001 and has been a common cause of acute respiratory infections. It can cause both upper and lower respiratory tract infections and affects all age groups. Infants, children, older adults and people with low immunity are at high risk and can develop complications. Morbidity and mortality remain high in high-risk groups and hospitalized patients.<sup>2</sup>

HMPV is an RNA virus of paramyxovirus family with two main subtypes, A and B. The virus lacks a hemagglutinin-neuraminidase protein, making it unique. Understanding its structure aids in diagnostics and vaccine development.<sup>2</sup>

Its transmission occurs via respiratory droplets, like respiratory syncytial virus (RSV) and influenza. Contact with contaminated surfaces or close interaction facilitates transmission. The virus can remain viable on surfaces for several hours. Its incubation period ranges from 3 to 6 days, during which transmission occurs.<sup>3</sup>

Seasonal outbreaks have been reported in the past globally in the winter and spring season. Symptoms range from mild symptoms like flu, fever, cough, sore throat, runny nose to severe representing pneumonia and bronchiolitis. These symptoms are like other respiratory viral infections.<sup>3</sup>

Infants are at high risk due to immature immune

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systems. <sup>4</sup>Elderly individuals and those with chronic conditions like asthma are vulnerable. Immunocompromised patients are prone to severe HMPV-related complications. Crowded living conditions and lack of sanitation increase exposure risks.<sup>2,3</sup>

Clinical evaluation and laboratory tests are used for diagnosis. PCR testing is the gold standard for detecting HMPV. Antigen detection tests offer rapid results but are less sensitive. Limited diagnostics in low-resource settings pose challenges. It is assumed that this has been underdiagnosed previously in resource limited settings.3,5

Currently vaccine and specific antiviral treatments are not available, so the mainstay of the treatment is symptomatic and limiting and managing the complications.6

Severe cases may require hospitalization and respiratory support. Secondary bacterial infections can exacerbate the condition. Long-term respiratory issues may develop in vulnerable patients. Timely intervention and supportive care reduce severe outcomes.<sup>2-4</sup>

Prevention aims at practicing preventive measures, spreading awareness within community and professional networks, supporting vaccine and antiviral development initiatives, and advocating for better healthcare policies and accessibility. Surveillance systems must integrate HMPV monitoring.3,5,6

HMPV remains a significant respiratory pathogen, while it has not yet reached an epidemic potential but its increasing prevalence and potential to cause severe disease warrants proactive measures. As the virus can evolve, the severity of disease may change. Timely preparation can prevent future crises. The world should invest in prevention, screening, high quality rapid identification tests, vaccination and antivirals.

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