Letter to the Editor: Human Metapneumovirus—How It Affects and Whom?

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Dear Editor,

We would like to highlight the clinical spectrum of human metapneumovirus (hMPV) infection in 11 patients diagnosed in the year 2024 at our center, clarifying that it is neither new nor does it resemble COVID-19. Our observations aim to provide insights and contribute to a clearer understanding of its role in respiratory diseases.

Recent reports of hMPV infections have sparked concerns and anxiety, partly due to speculations regarding its potential origin from Wuhan, the city associated with the COVID-19 outbreak. hMPV is an RNA virus that primarily infects respiratory epithelial cells by attaching to the integrin alpha-V-beta-1 receptor.[1] It is a seasonal virus, typically seen during the winter months.[2] In our study, 145 tests were conducted throughout 2024, and all hMPV-positive cases occurred between January and March 2024. hMPV is transmitted through direct or close contact with contaminated secretions and can affect individuals of all ages, but it is particularly symptomatic in young children and older adults.[3]

We conducted a retrospective study of patients diagnosed with hMPV between January and December 2024 at our center. We analyzed clinical data from medical records, including demographic details, symptoms, comorbidities, diagnostic tests, treatments, and outcomes. The diagnosis of hMPV was confirmed using the BioFire FilmArray respiratory panel, a multiplex polymerase chain reaction (PCR) test.[4]

Our study included 11 patients with a mean age of 69.9 years (range: 50–85 years), with no sex predilection (six males and five females). All patients presented with shortness of breath and cough with expectoration. Additionally, seven patients (63.6%) reported fever, and six patients (54.5%) exhibited other symptoms, including wheezing (18.2%), rhinorrhea (18.2%), body aches (18.2%), and sore throat (9.1%). The duration of symptoms before hospitalization ranged from 2 to 7 days. Patients in this cohort had significant comorbidities such as hypertension (63.6%), type 2 diabetes mellitus (54.5%), coronary artery disease and heart disease (27.3%), chronic kidney disease (9.1%), and a history of cerebrovascular accidents (18.2%).[5] All patients required respiratory support: six patients received noninvasive mechanical ventilation (NIMV), two patients were on high-flow nasal cannula, and three patients required oxygen support *via* nasal prongs. Seven patients had bacterial infections, and three had both bacterial and viral coinfections. The bacterial infections included *Klebsiella pneumoniae*, which was isolated in all cases; two had *Pseudomonas aeruginosa* and *Haemophilus influenza* each; one had *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Acinetobacter baumannii* complex, and *Moraxella catarrhalis* each. Viral coinfections, such as influenza, parainfluenza, and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), were seen in one case each.[6]

Nine patients survived and were discharged from the hospital: five patients were discharged on room air, two patients remained on oxygen support, and two patients were discharged on NIMV support. Unfortunately, two patients died, including one with interstitial lung disease (ILD). Both deaths were attributed to multidrug-resistant bacterial infections and septic shock with multiorgan dysfunction.[7]

The clinical symptoms of hMPV are primarily respiratory, including shortness of breath, cough with expectoration, wheezing, and rhinorrhea, with or without fever (one-third of cases had no fever). Although it commonly leads to mild respiratory infections, it can also cause bronchiolitis or exacerbate asthma and chronic obstructive pulmonary disease (COPD).[1] There is partial cross-immunity between hMPV and respiratory syncytial virus (RSV).[2] Diagnosis is confirmed through reverse transcriptase PCR (RT-PCR). Management is primarily supportive, focusing on infection control and the medical management of underlying conditions. Our study suggests that patients with multiple comorbidities require prolonged intensive care unit (ICU) care and longer hospital stays.

Human metapneumovirus infections often mimic other bacterial and viral infections. In our study, none of the patients had isolated hMPV infections; all cases were complicated by coexisting bacterial and viral infections. Although hMPV itself is not directly associated with mortality, patients with multiple comorbidities are at higher risk of severe outcomes, including mortality, longer hospital stays, and the need for respiratory support due to the severe deterioration of underlying respiratory conditions. General comorbidities such as diabetes mellitus, chronic kidney disease, coronary artery disease, and cerebrovascular accidents further complicate hMPV infections by making patients more susceptible to secondary infections, suppressing immunity in elderly multimorbid individuals. Since there is no vaccine or specific treatment available, prevention should focus on shielding vulnerable patients who are at risk of complications from this viral infection.[3]

This study provides valuable insights that may aid in the planning and optimization of treatment strategies during disease outbreaks. We hope this information will be valuable to your readership and contribute to ongoing discussions about hMPV.

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