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HMPV!!!!A NEW MEMBER IN THE GAME???

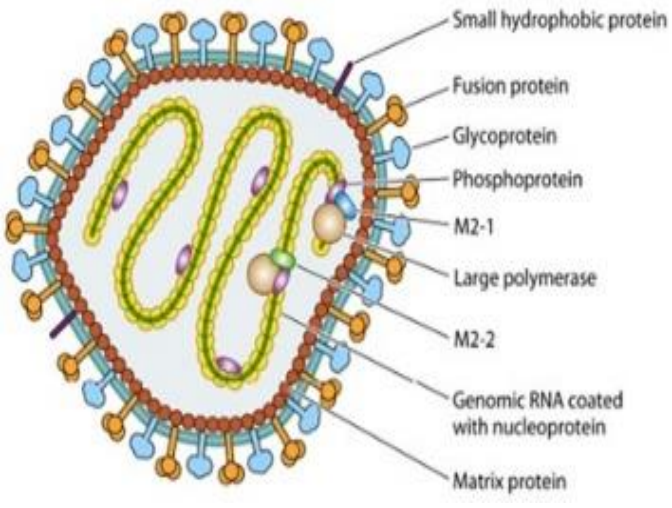
Acute respiratory infections (ARIs) are a serious public health concern across the world, causing considerable morbidity and mortality.

Every year, around 13 million children under the age of five die. Approximately 95% of them are from developing nations, and ARIs are responsible for one-third of all deaths.

Human Metapneumovirus (hMPV) is one of the causative agents associated with respiratory tract infections.

Human metapneumovirus (HMPV), a paramyxovirus identified in 2001, is a leading cause of respiratory tract infections in both children and adults.

Seroprevalence studies demonstrate that the primary infection occurs before the age of 5 years, and humans are reinfected throughout life.



STRUCTURE

HMPV is classified as the first human member of the *Metapneumovirus* genus in the *Pneumovirinae* subfamily within the *Paramyxoviridae* family. It is an enveloped negative-sense single-stranded RNA virus.

The RNA genome includes 8 genes coding for 9 different proteins. HMPV is identical in gene order to the avian pneumovirus (AMPV), which also belongs to the *Metapneumovirus* genus.

Electron has shown that hMPV is a pleomorphic, spherical, enveloped virus with a mean diameter of 209 nm. The nucleocapsid has a varying length from <200 to ~1000 nm and a 17 nm diameter.

There are two circulating genotypes of hMPV (A and B), which are further divided into four subgroups—A1, A2, B1, and B2—based on the sequence variability of the surface proteins.

In addition, the hMPV F protein, as with all studied pneumovirus and paramyxovirus F proteins, plays an indispensable role in viral infection.

SYMPTOMS

Symptoms In Adults

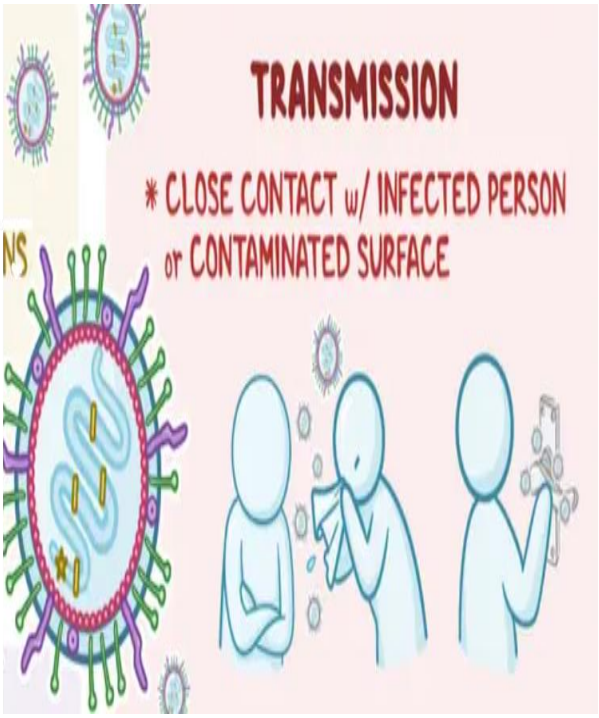
HMPV symptoms in adults often resemble those of a common cold or flu. They include:

- Persistent cough, often accompanied by mucus production.
- Nasal congestion or runny nose.
- Fever, typically mild to moderate.
- Fatigue and general body aches.
- Sore throat.
- Shortness of breath in severe cases.

Symptoms In Children

Children are more likely to experience severe symptoms, including:

- Breathlessness
- Wheezing and persistent cough
- High fever
- Poor feeding and dehydration, especially in infants



TRANSMISSION

- **Respiratory Droplets:** The virus can spread when someone who is infected coughs, sneezes, or talks, releasing respiratory droplets into the air.
- **Direct Contact:** The virus can spread through physical contact with an infected person, especially if one touches their face, eyes or mouth.
- **Surface Contamination:** The virus can persist on surfaces, and touching contaminated objects such as doorknobs or mobile devices heightens the risk of infections.
- **Airborne Particles:** Small respiratory particles may remain suspended in the air, particularly in crowded or poorly ventilated spaces.

COMPLICATIONS ASSOCIATED WITH HMPV

- Most people recover from HMPV in about 7 to 10 days without any complications. However, certain groups face a higher risk of severe complications:
- **Pneumonia:** HMPV can cause viral pneumonia, requiring hospitalisation and intensive care in severe cases.
- **Bronchiolitis:** Infants and young children often experience inflammation and blockage of airways, leading to difficulty breathing and wheezing.
- **Exacerbation of Chronic Conditions:** HMPV can worsen existing respiratory conditions like asthma or chronic obstructive pulmonary disease (COPD).
- **Secondary Bacterial Infections:** These infections, such as bacterial pneumonia, may develop as complications due to a weakened immune system.
- **Pregnancy Complications:** Respiratory issues caused by HMPV during pregnancy can lead to maternal and foetal health risks.

DIAGNOSIS

- Diagnosing HMPV based solely on symptoms can be challenging, as it mimics other respiratory infections like RSV and influenza.
- Reverse transcription polymerase chain reaction (RT-PCR) is the gold standard diagnostic tool for detecting HMPV RNA, while antigen detection assays offer quicker results

HMPV TREATMENT

- HMPV does not have a specific antiviral medication. Treatment primarily aims at managing symptoms and preventing complications.
- **Rest and Hydration:** Essential for recovery and maintaining strength.
- **Over-the-counter Medications:** Medications like acetaminophen or ibuprofen can manage fever and body aches.
- **Oxygen Therapy:** In severe cases, supplemental oxygen or mechanical ventilation may be required.
- **Hospitalisation:** Patients with complications, such as pneumonia, may need close monitoring in a hospital setting.

PREVENTION

- To prevent HMPV, it is important to focus on preventive measures since no vaccine is currently available. To minimise the risk of infection, follow these measures:
- Wash your hands off with soap and water for at least 20 seconds.
- Use alcohol-based hand sanitisers when soap and water are unavailable.
- Stay away from individuals who show symptoms of respiratory illness.
- Avoid crowded areas during outbreaks.
- Make sure to regularly clean surfaces frequently touched, such as doorknobs, phones, and countertops.
- Wearing masks during outbreaks or flu season can help reduce exposure to respiratory droplets.
- If you have any symptoms, it is important to stay at home to stop the spread of the virus.

When should I get tested for HMPV?

Testing is recommended if you:

- Experience severe respiratory symptoms, such as difficulty breathing or persistent fever.
- Belong to a high-risk group (e.g., young children, the elderly, pregnant women, or individuals with a weakened immune system).
- Have been in contact with someone diagnosed with HMPV during an outbreak.