# Clinical and laboratory investigations of human metapneumovirus (hMPV) in infants and young children with Pneumonia and bronchiolitis in Saudi Arabia

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## Introduction

Human metapneumovirus (hMPV) is classified in the metapnuemovirus genus, Pneumovirinae subfamily of the Paramyxoviridae family (1). It was isolated for the first time in 2001 in the Netherlands (2) and then reported in many parts of the world with seasonal distribution. It may be the second most common cause (after the *respiratory syncytial virus*, RSV) of pediatric lower respiratory illness. However, hMPV can also cause upper respiratory tract infections across all age groups (3). Compared with RSV, infection with hMPV occurs in slightly older children and to produce less severe disease. Co-infection with both viruses can also occur and associated with worse disease. hMPV were known to account for approximately 10% of respiratory tract infections worldwide (4). The transmission occurs by contact with contaminated secretions, via droplet, aerosol, or fomite vectors. Infection with hMPV results in symptoms of bronchiolitis and pneumonia (5). Laboratory testing for identification of hMPV include: PCR, ELISA and immunofluorescence (6).

## Objectives

To determine the role of hMPV in LRT infections in children in Aseer area (Southwest Saudi Arabia) for the first time.

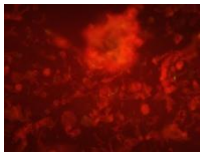
## Materials and methods

An amount of 98 samples of respiratory secretions in swabs were collected from patients who attended the pediatric clinics with respiratory problems at Aseer Central Hospital. Samples were collected from patients in both genders, different ages and with different geographical and social backgrounds.

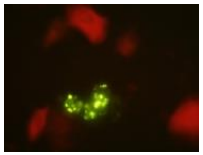
Direct Fluorescent Antibody (DFA) techniques using the commercial kit was employed to determine the presence of the virus antigens in these specimens. The technique was exactly employed as described by the direct immunoflouresnce Kit manufacturers with some modifications.

## Results

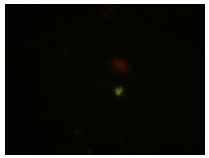
Nine samples out of 98 (9.18%) were found positive to the virus. Positive cases includes patients from both genders and from 6 out of 7 geographical distributions tested. The results obtained indicated hMPV is among one of the potential causes of pneumonia in children in the study area.



**Negative, control**

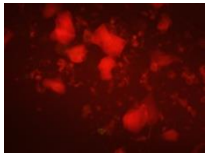


**Positive, control**



**positive, male**

**positive, female**



**Negative, male**

**Negative, female**

## Conclusion

Human metapneumovirus (hMPV) was reported for the first time to be incriminated in causation of lower respiratory tract infections in children in Aseer region (Southwest Saudi Arabia).

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