Introduction

Human metapneumovirus (hMPV), a novel respiratory virus, has recently been recognized as an etiologic agent of respiratory tract infections in children and adults ***(Boivin et al., 2002).***

This virus was first discovered in 2001 in the Netherlands in patients with respiratory infections and classified in the *Pneumoviriniae* subfamily of the *Paramyxoviridae* family ***(Perez- Ruiz et al., 2007).***

The clinical manifestations of hMPV- infected children range from mild upper-airway disease to severe pneumonia and include rhinorrhea, nasal congestion,pharyngeal erythema, myalgia, cough, and fever and, in more severe cases, wheeze, dysphonia, stridor, respiratory difficulty, bronchiolitis, pneumonia, and respiratory failure ***(Matsuzaki et al., 2009).***

The epidemiology and seasonal distribution of hMPV have been described as similar to those of traditional respiratory viruses. In fact, it has been reported that the epidemiological characteristics and clinical manifestaions of hMPV closely resemble those of respiratory syncytial virus (RSV) ***(Boivin et al., 2002).***

hMPV has been shown to infect the majority of children by the age of 5 years ***(Reger et al., 2006).*** Children dually infected with hMPV and RSV present with severe bronchiolitis and increased risk of admission to a pediatric intensive care unit for mechanical ventilation (***Semple et al., 2005)***

Four principal methods are used for the diagnosis of hMPV infections: virus isolation by culture, antigen detection, RNA detection and serological study. The sensitivity of cell culture techniques for the detection of hMPV in secretions from the respiratory tract is poor as hMPV grows poorly in cell culture and the isolation

takes 2 weeks or more ***(Ebihara et al., 2005).*** Serological study is retrospectively important for differentiation between primary infection and reinfection ***(Ebihara et al., 2004).***

Two rapid antigen detection methods are available: direct immunofluorescent test and an enzyme- linked immunosorbent assay (ELISA). The ELISA method with mouse polyclonal antibodies to hMPV has been reported to enable detection of hMPV antigens of hMPV infected cells in culture ***(Wyde et al., 2003).***

The direct immunofluorescent test (DFA) is a one step technique that utilizes monoclonal antibodies conjugated to a fluorescent dye to detect specific viral antigens expressed in all strains of hMPV ***(Van Den Hoogen et al., 2001).*** Although the sensitivity of DFA is lower than that of RT-PCR, DFA is a rapid and useful test for the diagnosis of hMPV infections in children ***(Ebihara et al., 2005).***

Reverse Transcriptase – Polymerase Chain Reaction (RT-PCR) has shown promising results for detecting hMPV than are tissue cultures and serological methods, it is a robust diagnostic tool. RT-PCR is concluded to be the most sensitive and specific procedure ***(Ginocchio et al., 2008).***

The most promising PCR technique is the real time PCR. This removes the need for post-amplification handling, reducing both turnaround time and the potential for contamination ***(Kim et al., 2009).***