

Abstract

Acute respiratory tract infection (ARTI) represents the most common acute illness evaluated in childhood. Viruses account for most ARTIs. Respiratory syncytial virus (RSV) is the predominant pathogen in childhood ARTIs. There are two major RSV groups, RSV-A and RSV-B. Some studies have reported that RSV-A is associated with more severe ARTIs. Data related to Sri Lanka is scanty.

This study was undertaken to describe the association between RSV subtypes with risk factors, clinical severity and seasonality of ARTI in inward children < 5 years of age. Nasopharyngeal aspirates (NPA) of hospitalized children with ARTI were collected from Teaching Hospital, Kegalle (THK) from March 2016 - August 2017. Following screening with indirect immunofluorescence assay (IFA), RSV was detected using the direct immunofluorescence assay. RSV was sub typed using RealStar® RSV RT-PCR Kit 3.0 (Hamburg, Germany).

Of the 443 from THK 165 (37.2%) were positive for viral screening by IFA. RSV was the commonly detected viral aetiology. RSV-B was predominant (62.3%) while less number of RSV-A (20%) was detected using the rtRT-PCR plat form. RSV-A and RSV-B co-infections were detected in 17.6%. RSV-B and RSV-A associated ARTIs were common among 1- ≤ 12-month age category while in all age categories male predominance was detected. RSV-B was significantly associated with severe form of disease including severe bronchiolitis and pneumonia. Children with low birth weight (<1500 g), children having congenital cardiac diseases and children with mothers having low level of education (<Grade 8) has acquired RSV-B infections more than children without these risk factors. There was a clear seasonality with RSV-B associated ARTI. Peak incidence was detected over May- July and was in line with South-West monsoon.

Identifying the viral aetiology using viral diagnostics will reduce the empirical use of antibiotics. Identifying RSV sub type/s responsible for causing the severe form of ARTIs in children 1- ≤ 5 years of age is important. Further, knowing the seasonality of RSV associated ARTI is important to implement early preventive measures including use of respiratory precautions and health education. In future, it will be helpful to implement seasonal RSV vaccination and monoclonal antibody prophylaxis for high risk groups.