

Two Years of Detection of Respiratory Syncytial Virus and its Impact on Disease Burden and Epidemiology in Children Admitted to a General Hospital in Sri Lanka

**M. V. M. Divaratne¹, R. A. M. Rafeek¹, A. M. S. B. Abeykoon¹, A. J. Morel²,
F. Noordeen^{1*}**

*¹Department of Microbiology, Faculty of Medicine, University of Peradeniya,
Sri Lanka*

²General Hospital, Kegalle, Sri Lanka

**faseeha.noordeen12@gmail.com*

Respiratory syncytial virus (RSV) associated acute respiratory tract infection (ARTI) is one of the most important causes of childhood hospitalization in Sri Lanka. In this study, we collected demographic and clinical data and nasopharyngeal aspirate (NPA) samples from children with suspected ARTI from March 2016 to July 2018 in the paediatric wards of the General Hospital, Kegalle. The study sampled children less than 5 years of age with ≤ 4 days history of ARTI. Climatic data of the Kegalle region within the study period was obtained from World Weather Online API (application programming interface). Statistical Analysis was performed using chi square test and correlation coefficient formula of the SPSS version 20. A direct immunofluorescence assay (DFA) was used in this study due to its rapidity and simplicity. DFA was performed on the NPA using a seven-valent immune fluorescence assay, which detects seven viruses, including RSV, influenza A and B, parainfluenza virus (PIV) -1, -2 and -3 and adenovirus using fluorescence labeled antibodies directed against these viruses. From a total of 502 hospitalized children, 237 were positive for any of the seven viruses (47.21%) including RSV. Out of the virus positive children, RSV was the most predominant virus detected (140/237, 59.07%). Out of the co-infected children, RSV had the highest co-infection rate (85.71%, 24/28). Male sex (M:F= 1.8:1), first year of life (72.13%) appear to associate with RSV infection, however, it was not statistically significant. RSV activity positively correlated with rainfall, temperature, humidity and wind speed. Mild to moderate bronchiolitis, pneumonia and lower respiratory tract infection were frequently diagnosed in RSV mono- and co-infections. Prevalence, seasonal patterns and diagnosis, age and gender distributions of RSV infections agreed with those reported elsewhere. This study provides detailed information on RSV epidemiology in the study area and this might be useful in planning prevention and control strategies in the country.

Key words: Acute respiratory tract infections, RSV, epidemiology, children, Sri Lanka.