Two years detection of respiratory syncytial virus subtypes A and B from children admitted to a General Hospital in Sri Lanka

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Background: Respiratory syncytial virus (RSV) associated acute respiratory tract infection (ARTI) is one of the most important causes of childhood morbidity and mortality. RSV consists of two major antigenic types – A and B. This study aims to identify the types of RSV circulating in the Kegalla district, Sri Lanka.

Methods and materials: We collected demographic and clinical data and nasopharyngeal aspirate (NPA) samples from 502 children with suspected ARTI admitted to the General Hospital, Kegalle, Sri Lanka from March 2016 to July 2018. 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 the World Weather Online API (application programming interface). IFA (D3 UltraTM, USA) was performed on NPA to detect seven viruses including RSV. Viral RNA was execrated (Qiagen, Germany) from RSV positive NPA samples and performed a real-time RT-PCR (Altona-Diagnostics EN) for typing.

Results: Of the 164 IFA positive children for RSV, 46 were infected with RSV A, 101 were infected with RSV B and 17 were co-infected with RSV A and B (RSV AB). RSV B was observed throughout the study period with peak incidences from March to June 2017 and April to June 2018. RSV A was detected from June to November 2016, March to November 2017 and May to July 2018. RSV AB was detected during time periods of RSV A and B co-circulation. Overall a male predominance was evident as 73.9% RSV A, 57.4% RSV B and 64.7% RSV AB positive patients were males. First-year of life appeared to associate with RSV infection as 76% RSV A, 75.2% RSV B and 64.7% RSV AB positive patients were ≤1 year age. RSV activity positively correlated with rainfall, temperature, humidity and wind speed. Mild to moderate bronchiolitis, bronchopneumonia and unclassified lower respiratory tract infection were frequently diagnosed in RSV positive patients and RSV type did not appear to associate with disease severity.

Conclusion: RSV type B is the most predominant RSV strain to circulate among the children with ARTI in the Kegalla district, Sri Lanka.

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