



SEASONALITY AND ASSOCIATION OF METEOROLOGICAL FACTORS WITH RESPIRATORY VIRUSES DETECTION IN NON-HOSPITALIZED CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA IN A TROPICAL REGION

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BACKGROUND

Community-acquired pneumonia (CAP) is the leading cause of death and hospitalization among children under-5 years worldwide. Information on the seasonal distribution and association with meteorological factors of respiratory viruses, particularly in tropical regions, is scarce. We aimed to investigate the seasonal distribution and the association of meteorological factors with the frequency of detection of respiratory viruses in children with CAP in a tropical region.

METHODS

In a 54-month period, non-hospitalized patients, aged 2-59 months, were diagnosed with CAP in Salvador, Northeast Brazil, had nasopharyngeal aspirate samples collected and tested for 16 respiratory viruses by PCR (Anyplex [TM] II RV 16, Seegene, Seoul, South Korea). Data about rainfall, relative humidity, air temperature, and sunshine were collected. Time series analysis using Prais–Winsten generalized linear regression was used for identification of seasonality and association with meteorological factors.

RESULTS

Out of 774 cases, 708 (91%) had ≥ 1 respiratory virus found. The monthly number of rhinovirus, adenovirus, enterovirus, respiratory syncytial viruses A (RSVA) and B (RSVB), influenza viruses A (Flu A) and B (Flu B) detections showed seasonal distribution. Rainfall was associated with the number of detections of rhinovirus, adenovirus, RSVB, Flu A, and coronavirus 229E. Relative humidity was associated with the number of detections of rhinovirus, adenovirus, RSVA, RSVB, parainfluenza 2, human metapneumovirus (hMPV), Flu A, and coronavirus NL63. Air temperature was associated with the number of detections of hMPV and Flu A. Hours of sunshine was associated with the number of detections of hMPV.

CONCLUSION

Seasonality and meteorological factors probably play a role in the frequency of detection of the majority of the investigated viruses making possible planning of vaccine prevention regarding the season of the year in tropical regions.