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**Paper Poster Session**

**Influenza - clinical epidemiology**

**Occurrence and diversity of viruses in acute respiratory tract infections in hospitalized children in wet and dry zones of Sri Lanka**

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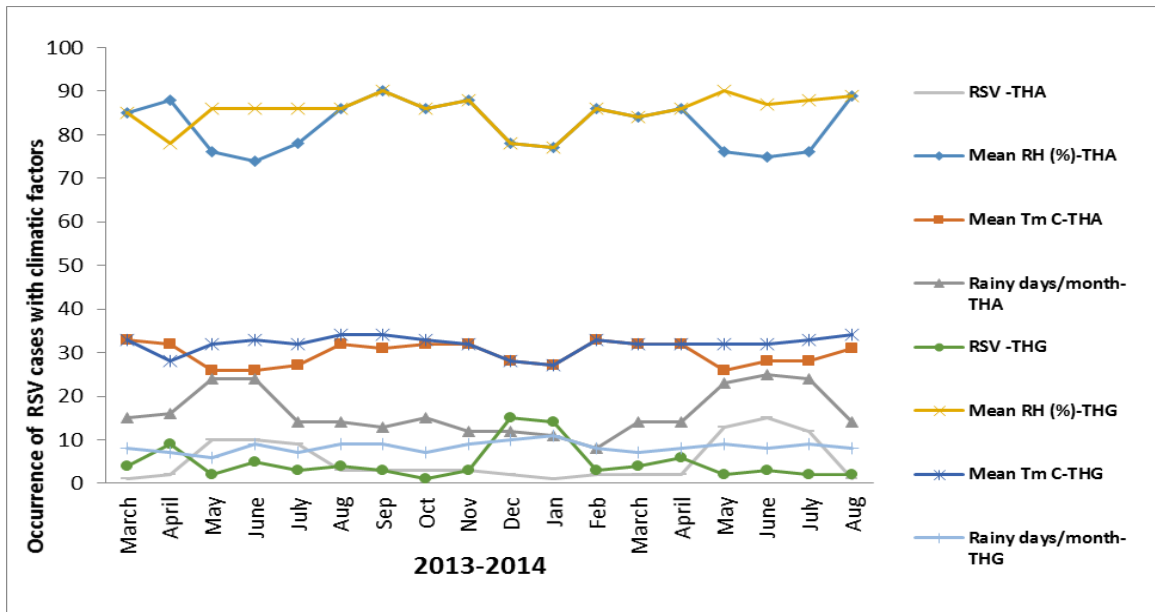
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**Background:** The viral aetiology of acute respiratory tract infection (ARTI) is diverse and differs in different climatic zones within a country and regions in the world. Common viral aetiology in ARTI in children under 5 years are respiratory syncytial virus (RSV), parainfluenza types 1, 2 and 3 (PIV), adenovirus (AV), influenza virus types A and B (In A & B), coronavirus (CoV), enterovirus, human Boca virus (hBoV) and human metapneumo virus (hMPV). This study was undertaken to identify the viral aetiology in hospitalized children with ARTIs to map the occurrence of different viruses with local seasonality.

**Materials and methods:** Nasopharyngeal aspirates (NPA) of inward patients (1 month - 5 years) with ARTI were collected in Teaching Hospital, Gampola (THG) and Teaching Hospital, Anuradhapura (THA) from March 2013 - August 2014. Following screening of NPA with indirect immunofluorescence assay (IFA), specific viral aetiology was detected by direct immunofluorescence assay (DFA). IFA negative hundred NPA were tested for hMPV, hBoV and corona viruses (CoV) using PCR. Seasonality, risk factors for the occurrence of other viruses compared to RSV and the overall viral burden were evaluated. The descriptive statistics and step wise logistic regression were used to identify the risk factors for other viral aetiologies when compared to RSV.

**Results:** Out of 443 and 418 NPAs tested, RSV was detected 94 children (59.96 %) in THG and 85 children (51.51%) in THA. In both cohorts RSV was detected throughout the year. In the dry zone (THA) the peak viral incidence was found from May-July in 2013 and 2014. In the wet zone (THG) two peaks was found, December-January 2013 and April 2013 and 2014 (Figure 1). Spearman's correlation and multiple linear regression showed a positive correlation of monthly RSV cases with number of rainy days in THG cohort and inverse correlation with mean atmospheric temperature in both THG and THA cohorts.



**Figure 1.** Distribution of RSV ARTI in THG and THA cohorts with climatic factors such as rain fall, relative humidity and atmospheric temperature.

Period prevalence of RSV ARTI in THG was 4.7 % and in THA was 4.25 %. The RSV incidence at THG and THA was 31.3 and 28 /100000 person years. Other viral aetiologies did not follow a clear seasonality. However, the hMPV distribution was similar to that of RSV. Compared to RSV, acquisition of AV in both cohorts was high among children with low birth weight, malnutrition, living in crowded environment, attaining day care and mother's having poor education. Acquisition of PIV-2 was high in children with malnutrition, attaining day care and congenital heart diseases in both cohorts.

**Conclusions:** Knowledge of seasonality of the occurrence of viral aetiologies in children with ARTI is important to implement early preventive measures.