

## OP 14

### Prevalence of Respiratory Pathogens Causing Community-Acquired Pneumonia during rainy season and its antibiotic sensitivity at tertiary hospital in Northern Sri Lanka

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**Introduction:** Community-acquired pneumonia (CAP) is a global health burden with varying aetiologies and seasonal variations. Understanding the prevalence of respiratory pathogens and their antibiotic sensitivity is crucial for effective antibiotic stewardship.

**Objective:** This study analyses the prevalence of respiratory pathogens causing CAP in patients admitted to a tertiary hospital in Northern Sri Lanka during rainy seasons, in view of isolating the prevalent bacterial pathogens causing CAP and its antibacterial sensitivity.

**Methods:** This is a prospective longitudinal observation study on adult patients aged 16 and above admitted to the medical wards at Teaching Hospital, Jaffna with the presumptive diagnosis of CAP during rainy season from November 2022 to February 2023. Hematological, biochemical, radiological and microbiological investigations done to confirm the diagnosis and guide the management. Data were analyzed using SPSS version 12.0. A.

**Results:** 283 patients with clinical features of pneumonia were recruited in this study with the gender distribution of 55.5% males and 44.5% females. The highest number of patients presented during December (44.5%) followed by January (38.5%). Interestingly, gram staining was positive in 97.9% of patients, with 33.9% gram-positive and 64% gram-negative respiratory pathogens. Coliforms were the most common pathogen accounting for 41.3%; *Pseudomonas* (18%) and *Acinetobacter* (4.2%). *Hemophilus* was detected in 0.4%, while *Staphylococcus aureus* in 0.7%. One quarter of sputum sample were discarded as unsatisfactory. Only five blood cultures confirmed

bacteremia (three with coliforms, one each for *Acinetobacter* and *Staphylococcus*). Only 24% pathogens sensitive to Cefuroxime and 17% sensitive to Amoxicillin-Clavilanic acid combination. Most of the pathogens were shown sensitivity to second-line antibiotics such as Netilmycin (43.8%), Tazobactam-Piperacillin (41.8%), Amikacin (37.8%) and Astreonom (34.6%).

**Conclusion:** In contrast to the national prevalence of respiratory pathogens, where the pneumococcus as a leading cause, our study in a tertiary hospital at Northern Sri Lanka revealed coliforms were the major cause of CAP in hospitalized patients with positive cultures which were sensitive to second-line antibiotics. However, it is noteworthy that the sensitivity of pathogens to commonly used first-line antibiotics were limited. Further studies with sophisticated microbiological diagnostic tools are required to provide more detailed understanding of the local prevalence.

**Keywords:** Community acquired pneumonia, antibiotic stewardship, and antibiotic resistance