

## **Prevalence and antibiotic sensitivity pattern of selected pathogenic bacteria in the sputum of patients with non-cystic fibrosis bronchiectasis attending Respiratory Clinic, Teaching Hospital Jaffna**

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**Introduction and Objectives:** Non-cystic fibrosis (non-CF) bronchiectasis is a chronic inflammatory respiratory disease with irreversible dilation of the bronchial tree. It has become a major respiratory disease in developing countries and a major contributor to chronic respiratory morbidity. Presently increased proportions of multidrug-resistant organisms are seen in non-CF bronchiectasis patients. This study aimed to determine the prevalence and antibiotic sensitivity pattern of selected pathogenic bacteria in the sputum of patients with non-CF bronchiectasis attending Respiratory clinic, Teaching Hospital, Jaffna.

**Methods:** An institutional-based descriptive cross-sectional study was performed on patients with non-CF bronchiectasis attending the Respiratory clinic, Teaching Hospital, Jaffna. Sputum samples were collected, and the microbial culture was performed. The isolated organisms were identified according to the Laboratory Manual in Microbiology, 2nd edition by Sri Lankan College of Microbiologists. The Antibiotic sensitivity tests were done according to the Clinical Laboratory Standards Institute method.

**Results:** Of the 39 samples collected, 28 yields significant growth. *Pseudomonas species* were the most frequently isolated (57.14%) organism, followed by Coliform (42.86%). *Pseudomonas species* showed resistance to Aztreonam (37.5%), Meropenem and Cefoperazone sulbactam (18.8%), Gentamicin and Cefepime (12.5%) and Ceftazidime, Ticarcillin-clavulanic acid, and Imipenem (6.3%). Whereas all the isolated *Pseudomonas species* were sensitive to Ciprofloxacin and Piperacillin-tazobactam. Around 6.25% of the *Pseudomonas species* isolated were multidrug-resistant. Conversely, isolated Coliform showed resistance to Ampicillin (75.0%) and Amoxicillin-clavulanic acid (25.0%), Cefuroxime and cefotaxime (16.7%) although they exhibited sensitivity to Gentamicin, Netilmicin, Cefepime, Piperacillin-tazobactam, Imipenem, Meropenem, Amikacin and Aztreonam.

**Conclusion:** *Pseudomonas species* and Coliform bacteria isolated from the sputum of patients with non-CF bronchiectasis exhibited Antimicrobial resistance against certain first-line antibiotics. However, the present study did not reach the calculated sample size due to time limitations, and therefore, further studies need to be done in future.

**Keywords:** non-CF bronchiectasis, Antibiotic sensitivity, Drug resistance.