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**Diagnoses from lung specimen collected through flexible bronchoscopy from patients in a tertiary hospital in Dar es Salaam Tanzania: a retrospective cross sectional study**

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**Abstract**

**Background**: Flexible bronchoscopy enables visualization of the respiratory airway mucosa from the oropharynx to third generation branching of the tracheobronchial tree. Bronchoscopic diagnoses vary from one locality to the other in accordance to the locality specific risk factors for lung diseases. This study aimed at describing diagnoses of all specimen of patients who underwent flexible bronchoscopy at Muhimbili National Hospital from January 2013 to November 2017.

**Methods**: A retrospective hospital-based cross sectional study was conducted among 451 patients. Data was collected from archives and included both demographic and clinical variables. Descriptive statistics were used to summarize the study findings.

**Results**: There was a 3-fold increase in the number of patients who underwent flexible bronchoscopy from 57 cases in 2013 to 180 cases in 2017. About 39% (174/451) of patients underwent lung biopsies while 64.5% (291/451) underwent bronchioalveolar lavage, bronchial washings or brush cytology, alone or in combination with biopsy. Generally, 64.4% (112/174) of all lung biopsies were malignant. Adenocarcinoma was the most common diagnosis seen in 33.9% (59/174). Of 76 cytological samples which were sent for bacterial culture and sensitivity, 11/76 (11.8%) were culture positive. A total of 6 (10.7%) out of 56 samples which were sent for GeneXpert MTB/RIF tested positive for M.tuberculosis.

**Conclusion**: Adenocarcinoma was the most common diagnosis. Bacterial and mycobacterial infections were among the most reported findings in cytological samples. Suspicious tuberculosis lesions during bronchoscopy made it possible to diagnose tuberculosis which was hard to diagnose before patients were sent for bronchoscopy.

**Keywords**: Flexible bronchoscopy, Bronchioalveolar lavage, Brush cytology, Transbronchial biopsy, Cytology, Histology, Tuberculosis, Lung tumors, Lung infections