Abstract

Background

The American Thoracic Society's guideline of nontuberculous mycobacteria associated pulmonary disease (NTM-PD) suggests bronchoscopy as one of the ways to detect nontuberculous mycobacterium (NTM). However, the guideline also acknowledges that limited data are available on the utility of bronchoscope for the diagnosis of NTM-PD. The purpose of this study was to elucidate the diagnostic yield of bronchoscopy for patients suspected for NTM-PD when sputum cannot reveal NTM. At the same time, we evaluated factors that affected the results of bronchoscopy. Furthermore, we estimated the specificity of bronchoscopy for detecting NTM.

Method

This study utilized a retrospective cohort study design based on the review of medical records and was conducted at St. Luke's International Hospital in Tokyo, Japan. Between January 1, 2004 and June 30, 2018, among all adult patients who underwent bronchoscopy, two groups were enrolled. Group A included all patients with nodular bronchiectasis pattern on chest computed tomography (CT) findings who could not produce culture positive sputum for NTM and therefore underwent bronchoscopy for the diagnoses of NTM-PD. Group B comprised of patients who received bronchoscopy suspected for lung cancer. Group A was used to evaluate diagnostic yield of NTM-PD using bronchoscopy, and group B was employed to measure specificity of bronchoscopy.

Result

Diagnostic yield of bronchoscopy for NTM-PD was 114/205 (55.6%): 99 were patients of pulmonary MAC, remainder were 10 patients of NTM other than MAC, and 5 patients of

tuberculosis. Logistic regression showed 4 factors associated with NTM-PD: examination of the upper lobe (odds ratio [OR]: 2.31, 95% confidence interval [CI]: 1.21-4.55), absence of particular bacteria (OR: 3.35, 95% CI: 1.44-8.30), absence of connective tissue disease (OR: 3.17, 95% CI: 1.25-8.79), and higher total CT scores (OR: 1.14, 95% CI: 1.03-1.27). Specificity of bronchoscopy for NTM-PD was 99.2% (900/907).

Conclusion

Bronchoscopy showed moderate diagnostic yield and high specificity for NTM-PD.