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The Effect of Sputum Culture Results on the Length of Hospital Stay in Patients with Bronchiectasis

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Objectives: Bronchiectasis is a suppurative lung disease characterized by abnormal and irreversible dilatation of the bronchi as a result of the destruction of the elastic and muscle components of the bronchial walls, which can hold the entire bronchial tree regardless of the airway diameter. The main mechanism in the pathogenesis of bronchiectasis is that the frequency of colonization can reach up to 60-80% with the deterioration of mucociliary clearance. Therefore, it increases frequent exacerbations and hospitalizations. In this study, we aimed to investigate the sputum culture results of the patients with bronchiectasis and its effect on hospital stay in our clinic.

Methods: Between January 2018 and December 2018, laboratory and radiological data of 23 patients (10 male and 13 female) who were followed-up with bronchiectasis in chest diseases clinic were evaluated retrospectively.

Results: There was reproduction in culture 39.1% (9 patients) of the patients, whereas no reproduction was observed in 60.1% (14 patients) patients. The reproduced microorganisms were *Clebsiella pneumoniae* in 4 patients, *Pseudomonas aeruginosa* in 4 patients and *Mycobacterium tuberculosis* in 1 patient. Reproduction (+) patients was compared with reproduction (-) in terms of hospitalization duration. No statistically significant difference was observed between two groups, although the duration of hospitalization was longer in reproduction (+) patients compared to reproduction (-) patients (10.1±5.1 days vs. 7.8±5.5 days, p=0.135).

Conclusion: Bronchiectasis patients are required frequent hospitalization due to impaired mucociliary clearance. Duration of hospitalization may be shortened by appropriate antibiotherapy according to culture- antibiogram results. Therefore, sputum culture should be taken for every patient who is hospitalized due to bronchiectasis. In addition, preventive measures (influenza-pneumococcal vaccines, prophylactic antibiotics) can reduce both infection and hospitalization and improve the patient's quality of life.

Keywords: Sputum culture, bronchiectasis, hospitalization duration