

MICROBIAL PATTERNS OF BRONCHIAL WASHING IN PATIENTS WITH LUNG CANCER

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Area and Category(at submission):

[WCBIP] Others

Presentation Preference: Either

Case Report: NO

Introduction. Infections are considered to be a part of the natural course of lung cancer. Infections can worsen the condition of the patients and can be fatal. Underlying diseases and medical procedures may play role in the pathogenesis of infections. The aim of this study is to analyze the pattern of potentially pathogenic bacteria infecting or colonizing the bronchial tree in patients with lung cancer. The microbial pattern can be considered when administering empirical antibiotics treatment in lung cancer with bacterial infection.

Methods. Medical records of patients who undergone bronchial washing between November 2012 to December 2012 were reviewed. We analyzed patients with lung cancer among them. Gram stains and identifications on specimens collected bronchoscopically were performed . The number of bacteria present in 1 ml of fluid was estimated by quantitative culture.

Results. The study included 32 patients (20 males and 12 females) with lung cancer aged from 35 to 74 (mean age of 56,9 years). In all patients, bronchial washing was performed during bronchoscopy from November 2012 to December 2012. The types of lung cancer were adenocarcinoma (n = 23), squamous cell carcinoma (n = 5), small cell (n = 3), and large cell (n = 1). In three cases (9,4%), pathogenic bacteria was isolated which was Gram-negative in all cases. *Klebsiella pneumoniae* was isolated in three cases, *Pseudomonas aeruginosa* in one case, and *Stenotrophomonas maltophilia* in one case. In one case of small cell lung cancer, both *K.pneumoniae* and *P.aeruginosa* were isolated. Two another cases of lung cancer were adenocarcinoma. In one case, both extended-spectrum β -lactamase *K.pneumoniae* and *S.maltophilia* were isolated.

Discussion. Gram-negative bacteria when infecting lower respiratory tract is associated with higher morbidity and mortality and is more common in nosocomial infection. *K.pneumoniae* may present extended-spectrum β -lactamase that mediate resistance to third- and forth-generation cephalosporins. *P.aeruginosa* is the most common cause of cavitory pneumonia, associated with very high mortality rate, and should be treated with two synergistic antibiotic. *S.maltophilia* presents resistance to most of standard antibiotics. TMP-SMX, fluoroquinolones, and ticarcillin-clavulanate have activity.

Conclusion. Potentially pathogenic bacteria was identified in 9,4% patients with lung cancer. The isolated bacteria was Gram-negative in all cases and may cause infection of lower respiratory tract with higher morbidity and mortality. *K.pneumoniae*, *P.aeruginosa*, and *S.maltophilia* were also potentially difficult to treat.