



*Original article*

## Bronchial Colonization in Patients with Non–Small Cell Lung Cancer

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### SUMMARY

Lower airways are sterile, but many researchers have reported the existence of bronchial colonization with pathogenic and non-pathogenic microorganisms in smokers and patients with chronic obstructive pulmonary disease (COPD) and lung cancer. The aim of this study was to determine the existence and type of bronchial colonization in patients with non–small cell lung cancer (NSCLC), as well as to determine whether colonization depends on patient's age, smoking habit, pulmonary function and body mass index (BMI). Another aim was to estimate whether colonization causes early postoperative complications. Fifty-five subjects with pathohistologically confirmed non–small cell lung cancer in the resectable stage and good performance status (ECOG 0 or 1) participated in this cross–sectional study. We assessed patient's degree of smoking, calculated their BMI and determined the existence and severity of chronic obstructive pulmonary disease if there was one. The patients underwent a flexible bronchoscopy when biopsy samples were taken with protected specimen brush (PSB) and bronchoalveolar lavage (BAL); the retrieved samples were inoculated. Colonization was marked by an increase in the number of bacteria, yielding  $>10^3$ CFU/L. In our study, bronchial colonization was found in 21 patients (38%). Potentially pathogenic microorganisms were isolated in 13 patients (*Streptococcus pneumoniae* was found in five patients, *Streptococcus B haemolyticus* and *Pseudomonas* in three patients each, *Haemophilus influenzae* and *Enterobacter* in one patient each). Potentially non–pathogenic microorganisms were isolated in 8 patients (*Streptococcus viridans* was found in 7 patients and *Achromobacter xylosoxidans* in 1 patient). Patients' sex, age, smoking habit, body mass index and severity of chronic obstructive pulmonary disease were not statistically significant for developing bronchial colonization. Only one operated patient developed postoperative pneumonia, but he had not previously been diagnosed with bronchial colonization.

**Key words:** bronchial colonization, lung cancer, brush biopsy

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