

## The Effectiveness of Decamethoxinum Inhalations in Patients with Bronchiectasis

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Bronchiectasis (Bx) is a chronic inflammatory lung disease characterized by recurrent cough, sputum production, and recurrent airway infections. The study aimed to determine lung microbiota composition in stable patients with Bx and the effect of Decamethoxinum (DECASAN®) Inhalations on it. Methods. The study included stable patients with confirmed by HRCT Bx. Isolation and identification of pathogens was conducted by bacteriological methods. Inhalations of DECASAN® (0.8 mg) through nebulizer were carried out twice a day for 14 days. Sputum samples were studied on the baseline (V1) and after 14 days of treatment (V2). The methods of descriptive statistics and non-parametric statistics were used to process the results. Results. 80 patients were examined. The average age was 53.2 (13.9) years, 28 of them were men (35%). Pathogens were detected in 45 (56%) samples (s), the combination of pathogens - in ten (12.5%) patients. Pseudomonas aeruginosa (PA) was identified in 17 (21.3%)s. Among the pathogens identified in the remaining 28 patients were: Haemophilus influenza - in 18 s (22.5%), Candida albicans - in four patients (5%), Staphylococcus aureus - in three patients (3.8%), Streptococcus pneumoniae - in two patients (2.5%), Klebsiella pneumoniae - in one patient (1.3%), NF gram negative bacilli - in one patient (1.3%), Aspergillus niger - in one patient (1.3%). Nebulized inhalations of DECASAN® received 28 patients, patients without sputum colonization (n=35) and patients colonized by PA (n=17) were excluded. Their median bacterial load at the beginning of the treatment was  $7 \log_{10} \text{CFU} \cdot \text{g}^{-1}$  (5; 8.1). After treatment the median bacterial load was  $4 \log_{10} \text{CFU} \cdot \text{g}^{-1}$  (0; 5.5), the reduction in total sputum bacterial load was statistically significant ( $p=0.002$  by the Wilcoxon test). Eradication occurred in 11 out of 28 subjects (39.3 %), among them Haemophilus influenza was in 6 patients, Aspergillus niger in one patient, Klebsiella pneumoniae in one patient, Candida albicans in two patients, Streptococcus pneumoniae in one patient. No abnormal safety results and cases of bronchospasm were reported. Conclusions. PA and Haemophilus influenza are the most common pathogens in sputum of the patients with bronchiectasis in Ukraine which corresponds to the world data. Inhalations of antimicrobial drug DECASAN® through nebulizer showed effectiveness in sputum bacterial load reduction in patients colonized by non-PA pathogens and could be a perspective therapeutic opportunity.

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