Specific Asthmatic Phenotype of Patients with Bronchiectasis in Ukraine

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Background. Bronchiectasis (Bx) is a chronic inflammatory airways disease with high rate of comorbidity and heterogeneity of clinical and laboratory characteristics. The aim: to detect if there are features of the course of the disease in patients with Bx and comorbid asthma. Materials and methods. Stable bronchiectasis patients confirmed by HRCT were included. Asthma was diagnosed based on GINA recommendations. Bx exacerbations frequency during the previous year was calculated by self-reports and medical documentation analyzing. Allergen-specific IgG4 to recombinant (rAspf1) Aspergillus fumigatus (AF) allergens (AfIgG4) was measured with Thermo Fisher ImmunoCAP. Total serum IgE (TSIgE) was evaluated by electrochemiluminescence immunoassay, specific IgE to AF (sIgEAf) was measured by immunoCAP technology. Microbiological detection of sputum samples was conducted by bacteriological methods. Results. 80 patients (28 (35%) men) made the study sample. The average age 53.2 (13.9) years. 14 patients had asthma (17.5%). Patients were divided in two groups: G1 - with asthma, G2 - without asthma. There were not statistically significant differences between the groups in age and sex. The median number of exacerbations in G1 was 4 (3;7.5) per year, G2 - 2 (1;4), p=0.001 by Mann-Whitney test. The number of frequent exacerbators (3 and more per year) in G1 was 13(92.8%), G2 - 25(37.8%), p=0.0001 by xi-square test. The median TSIgE in G1 - 268.7(42.5;410) ME/ml, G2 - 48.5(19.2;120.6) ME/ml, p=0.04. The median AfIgG4 in G1 - 0.19(0.12;0.24) kU/L, G2 - 0.08(0.03;0.11) kU/L, p=0.04. In turn, the median sIgEAf in G1 - 0.1(0.1;0.1) kU/L, G2 - 0.1(0.1;0.1) kU/L, p=0.97. The number of patients with sputum chronically colonized by pathogens in G1 - 6(42.8%), G2 - 39(59.1%), p=0.03. Pseudomonas aeruginosa (PA) was detected in G1 in 3 patients (21.4%), G2 - in 14(21.2%) patients, p=0.87. Conclusions. 17.5% patients with Bx have asthma in Dnipro region. This phenotype has more frequent exacerbations and a higher proportion of frequent exacerbators although the number of patients with PA colonization did not differ between groups. TSIgE was predictably higher in patients with Bx and comorbid asthma. The measurement of sIgEAf did not show statistically significant differences in the presence of hypersensitization to AF, but the determination of AfIgG4 indicated chronic contact, although there was not detected any AF positive sample during bacteriological analyses. This response was higher in patients with asthma. Based on this data, we recommend further investigations of the sAfIgG4 level in all patients with Bx focusing on patients with comorbid asthma.

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