

DIAGNOSTIC ALGORITHM FOR BRONCHIAL ASTHMA

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The modern conception regarding pathology of bronchial asthma may be summarized as follows: 1. Basic mechanism - nonspecific bronchial hyperreactivity. 2. Modifying factors - inflammation, immunity disturbances, allergy. With regard to this, the diagnostic tests for bronchial asthma can be classified as: 1. Tests proving the disease - bronchoconstriction tests with nonspecific stimuli; 2. Tests characterizing bronchial asthma - cytological, biochemical, immunologic, allergologic. Having in mind the rather contradicting opinions regarding the diagnostic value of the different methods, we set ourselves a goal to study the informativeness of a diagnostic tests group for bronchial asthma with a view to making an optimal diagnostic algorithm for bronchial asthma of light and average heavy degree.

Following groups of patients have been checked up: 528 suffering bronchial asthma, 68 - clinically in good health, 41 - suffering chronic bronchitis and 31 - suffering hayfever - all of them in clinical remission. Following methods have been used: 1. Skin-allergic test. 2. Bronchoconstricting tests with methacholin, propranolol, distilled water and hypertonic salt solution. 3. Bronchoconstricting test with specific allergens. 4. Fibrobronchoscopic and bronchoalveolic lavage (BAL) with cytologic study of the lavage liquid. 5. Study of general and local immunity. The results have been analysed using the methods of the alternative, variation and correlation analyses.

All patients with bronchial asthma responded positively (with bronchospasm) to methacholin and propranolol inhalation while the relative part of the positive responses to hypertonic salt solution and distilled water was less expressed - 82% and 53%, respectively.

Positive response to methacholin gave 36,30% of the studied patients with chronic bronchitis, 21,05% - with hayfever and 9,8% of the clinically healthy ones. Rest of the tests were selective to bronchial asthma. 68 patients suffering bronchial asthma were subjected to skin-allergic tests with standard allergens. Positive to house dust and pollens were 42 (61,76%). Only 20 of them gave positive response to the inhalatory bronchoprovocational test with specific allergen carried out. Fibroscopic findings and cytology of the bronchoalveolar lavage (with prevalence of certain cellular composition) in patients with bronchial asthma made us characterise the results as follows: signs for eo-

sinophilic bronchitis in 53%, desquamative bronchitis in 37% and neutrophilic bronchitis in 10% of all cases. The study of the general and local immunity of patients with bronchial asthma showed disturbance of local immunity in 42% of the cases while lack of changes in general immunity and nonspecific resistance was registered.

It is found that correlation exists between the results of the diagnostic tests carried out and the heaviness of the asthma (defined by clinical criteria):

1. Bronchoprovocational tests: a) with methacholin - $r=0,563$; b) with propranolol - $r=0,714$; c) with salt solution - $r=0,841$; d) with allergen - $r=0,316$;

2. FBS and cytologic tests: a) desquamative bronchitis - $r=-0,694$; b) eosinophilic bronchitis - $r=0,756$; c) neutrophilic bronchitis - $r=0,796$;

3. Immunologic study: a) high local IgA - $r=-0,741$; b) low local IgA - $r=0,711$; c) normal IgA $r=0,531$.

Studying the above results the following conclusions could be made:

1. The selective for bronchial asthma bronchoprovocational tests have different informativeness: 53% for the distilled water, 82% for the salt solution and 100% for the propranolol.

2. Allergen specific inhalatory bronchoprovocational tests have 26,19% of the patients with bronchial asthma.

3. The bronchoprovocational test with methacholin is non-selective for bronchial asthma.

4. Characteristic for troublesome bronchial asthma are the eosinophilic and neutrophilic bronchitis and decreased or normal local IgA while for the light bronchial asthma characteristic are desquamative bronchitis and increased local IgA.

With regard to the results and the conclusions made, we would offer the following diagnostic algorithm for bronchial asthma:

1. Proving or rejecting the bronchial asthma: a) BPT with salt solution; b) Its negative response to (a) - BPT with propranolol.

2. Proving the allergic component - BPT with specific allergen.

3. Defining the heaviness of bronchial asthma: a) Determining PD-20 FEV-1 for propranolol; b) BAL with cytologic test; c) Determining the level of the local IgA.