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LATENT AIRWAY HYPERRESPONSIVENESS – PHENOMENON ON THE BORDER OF BRONCHIAL ASTHMA DEFINITION

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Objective: The basic features of bronchial asthma (AB) are dyspnoea with wheezing and objectively confirmed obstructive respiratory disorder reversible after inhalation of bronchodilators. In stable intermittent AB these features are not present, therefore confirmaton of asthma consists of the presence of bronchial hyperresponsiveness (BHR), which is connected with eosinophilic inflammation of the airways. BHR is defined as excessive narrowing of airways resulting from an increased bronchoconstrictive response to various inhalation stimuli. BHR can be recognized as a bronchospasm caused by physical triggers or by chemical substances affecting the respiratory system and the whole organism, proved by a bronchoprovocation test (BPT).
Methods: There were 902 BPTs performed for verification of BHR (360 men and 542 women), In 231 cases aerosol of metacholine was generated in „double dose" increasing concentrations, in 671 cases aerosol of histamin was used. Significant criterium for verification of BHR is a decrease of FEV1 of 20% from the baseline level. Every test either positive or negative was finished with a so-called „lysis inhalation" - of 4 dosis of Salbutamol through a spacer.
Results: 675 BPTs were negative and 227 tests were positive. In the group of 675 patients with a negative test we observed a group of 49 patients, where FEV1 did not decrease more than 20% of basal values. However, after administering of inhalation of Salbutamol we observed an increase of FEV1 ≥20%, compared to FEV1 values obtained after the highest concentration of metacholin or histamin. We analysed these 49 patients more in detail. Accepting the negative results of BPT of these 49 patients, but their significant bronchodilation response allows to think about a positive so-called latent bronchospasm limiting further constriction. The detection of such latent bronchospasm can increase the number of patients with BHR from 25 % to 30,5 % of patients with an objectively confirmed AB. As a typical example can serve a 50- year old non smoker with bronchoscopic examination and excision and a subsequent histological examination. Severe inflammatory changes were found in specimens with numerous eosinophilic leukocytes, which indicates a presence of chronic eosinophilic inflammation. Negative BPT test with a decrease of FEV1 only by 14% indicate a preexisting latent bronchospasm. The positive bronchodilatory effect (increase of FEV1 by 28%) and the presence of eosinophils in induced sputum, as well as the

results of histological examination of bronchial mucosa, confirmed the diagnosis of bronchial asthma.
Conclusion: Our results support the importance of realization of a subsequent bronchodilation test after the end of BPT also in patients with physiological dynamic functional parameters. Performance of a successive bronchodilation test is indicated in all patients admitted with a suspection of bronchial asthma, to allow detection of latent bronchospasm as an initial stage of bronchial asthma.