Test BAT in diagnosis of allergy to hazelnut in patients with birch pollen allergy
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Introduction: Basophiles and mastocytes are main effectors cells of allergic reactions. In scientific research and diagnostic the BAT (basophile activation test) is frequently applied. In patients with atopic allergy contact with specific allergen leads to activation of basophiles and the increase of expression on the surface of certain activation markers. Markers can be assessed by flow cytometry method with the monoclonal antibodies linked with fluorochromes.

Aim of the Study: The aim of our study was to prove the usefulness of BAT test in diagnostic and assessment of hypersensitivity to hazelnut in patients with primary allergy to birch pollen.

Material and Methods: 15 patients with allergy to birch pollen and cross reactivity to hazelnut took part in the study on the base of medical history, positive skin prick tests SPT with birch extract and the presence of as IgE confirmed in test ISAC and/or FEIA test of UNICap. The most frequent symptoms were typical OAS symptoms, nettle rash and dyspnoea. The control group consists of 8 healthy volunteers without atopy with negative SPT test and without asIgE in serum. The measurement of basophiles’ activation was conducted using the Flow CAST (Bühlmann) certified CEIVD according to the producer’s instruction. Assessed was the percentage of basophiles with marker expression CD63 on the surface after stimulation with hazelnut allergen (Bühlmann). Simultaneously, as the positive control the specific monoclonal antibody anti FcεRI and unspecific activator fMLP were used. As negative control we used wash buffer. Analysis was conducted in flow cytometer BD FACS Calibur. The positive results of BAT test was confirmed when the applied allergen had caused the expression on the surface of more than 15% analyzed Ba defined as cells SSC-low CCR3+.

Results: Among the 15 patients examined, positive results of BAT test were confirmed in 11 of them (73,3%) and in one person (12,5% - out of 8 person) in control group.

Conclusions: BAT test is a valuable diagnostic tool for hypersensitivity to hazelnut in patients with cross-reactivity to birch pollen.