Poster Group 1 - Clinical Evaluation of Inflammation in Asthma

518 - Non-invasive monitoring of inflammatory changes in airways under inhaled corticosteroids treatment

Malkusova, I; Hrasko, V; Panzner, P; Gutova, V; Hanzlikova, J

Medical Faculty Hospital Plzen, Department of Allergology and Immunology, Plzen, Czech Republic

Background: Treatment with inhaled corticosteroids (ICS) reduces eosinophilic inflammation in airways, reduces exhaled NO concentrations, decreases eiosinophilic cationic protein (ECP) and eosinophil count in induced sputum (IS). These parameters correlate with other markers of asthma control such as symptoms and lung function.
Aim: The purpose of this study was to determine if non-invasive monitoring of airway inflammation in patients with asthma can be used for detection of changes after 6 and 12 weeks of ICS treatment and find out correlations between the parameters used for asthma monitoring.
Methods: Patients with newly diagnosed asthma without ICS treatment were included. Asthma control test (ACT) and lung function (FEV1) were assessed, exhaled NO concentration and sputum induction were performed. Then treatment with inhaled ciclesonide (160 µg/day) was started. After 6 and 12 weeks of treatment, patients underwent follow-up examinations. Sputum cell counts (numbers of eosinophils) were evaluated by means of Hemacolor staining (DCC) and by immunocytocheminstry (ICC). ECP in supernatant was detected by means of enzymoimmunoassay. Changes in all parameters were evaluated and compared to treatment periods and to each other.
Results: After 6 weeks of treatment, improvement in asthma symptoms (ACT) (p=0.007), sputum ECP levels (p= 0.022) and eosinophil counts (p= 0.008) were detected. Also expected increase in FEV1 (p= 0.003) and decrease in exhaled NO levels (p= 0.006) was confirmed. During next 6 weeks, only further mild improvement of inflammatory markers was seen. The changes were not significant. Correlations between all the measured parameters were calculated.
Conclusion: Significant improvement after 6 weeks of ciclesonide treatment was detected in all observed parameters, differences between 6 and 12 weeks of treatment were not statistically significant. Described parameters may serve for assessing of asthma treatment efficacy and adherence of patients to ICS treatment.