Title: IgE-autoantibodies and adipokines in patients with bronchial asthma and obesity

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Body: The adipose tissue represents an important source of inflammatory cytokines with pro-allergic activity. We aimed to estimate the influence of obesity on the characteristics of autoreactivity and cytokine repertoire in patients with bronchial asthma (BA) as compared to allergic rhinitis (AR) and healthy. Methods: Body mass index (BMI) was evaluated in 80 patients with AR and BA and 25 healthy people. By ELISA were measured serum level of C reactive protein (CRP), IgE-autoAbs to keratin, collagen type III and elastin and production of TNF-α and IL-4 from blood lymphocytes. Results: Atopic patients with BMI >30 kg/m(2) had elevated levels of CRP (744±28 ng/ml) and high spontaneous production of TNF-α (45±4 ng/ml) and IL-4 (9.5±2.8 ng/ml) in comparison with normal-weight patients and healthy (7.3±2.7 ng/ml, 3±0.6 ng/ml and 1.7±0.3 ng/ml accordingly). The group of obese asthmatics distinguished with highest levels of CRP (1560±28 ng/ml) and IgE-autoAbs to keratin and collagen III, which correlated with BMI (R=0.58) and were elevated in comparison with preobese and normal-weight patients with BA and AR. Serum leptin was overproduced in BA significantly among obese (57±7.1 ng/ml) via non-obese patients (23±6 ng/ml) and showed no difference between healthy subjects independently from BMI (6.1±0.3 ng/ml). Conclusions: Asthmatics with BMI >30 kg/m(2) show a special phenotype of disease with elevated serum leptin and pro-inflammatory markers, which needs to be managed and treated distinctly. Obesity is attended with higher generation of IgE-autoAbs, which can indicate the disturbance of immune regulation.