Background: Atopic dermatitis is a common chronic inflammatory skin disease. Numerous IgE-inducing allergens play role in the pathogenesis of atopic dermatitis. *Malassezia*, the predominant skin microbiota fungus, is considered to exacerbate atopic dermatitis, especially in a subset of patients with head and neck type. In the present study the relationship between atopic dermatitis and sensitization to *Malassezia* antigens was investigated.

Methods: We assessed 240 patients with atopic dermatitis seen at the Department of Dermatology, University Hospital in Zürich, Switzerland and at the Department of Dermatovenereology, University Hospital in Pilsen, Czech Republic. The subgroup of patients with primarily head, neck and upper torso pattern of atopic dermatitis was considered as HNAD type. Severity of eczema was assessed with EASI in Switzerland and with SCORAD in the Czech Republic. Total serum IgE and specific IgE to *Malassezia* were determined and correlated with clinical picture of atopic dermatitis, gender, age and severity of eczema.

Results: Total IgE was elevated in 72.5% of patients. Specific IgE to *Malassezia* was positive (≥ 0.35 kU/l) in 54.2% of patients. Men were significantly more often sensitized to *Malassezia* antigen (63.5% of men versus 47.1% of women, p-value 0.013). Concurrently, patients with HNAD and group of patients younger than 25 years had higher levels of specific IgE to *Malassezia* (HNAD, p-value 0.001; ≤ 25 years, p-value 0.043). Patients with atopy were also more frequently sensitized to *Malassezia.* No significant relationship between EASI and the level of total IgE or specific IgE to *Malassezia* was observed. In contrast, correlation between SCORAD and the level of total IgE and specific IgE to *Malassezia* was demonstrated.

Conclusions: In our study more than half of the patients suffering from atopic dermatitis were sensitized to *Malassezia* antigens. Our results confirm the findings of previous studies, but our study is the first to describe a large central European population, including the aspects of HNAD/non-HNAD.