

Topical Corticosteroids Decrease IL-25 Expression by Immunohistochemistry

Abstract

Background: Interleukin-25 (IL-25) is an important contributing factor in the pathogenesis of allergic rhinitis. It leads to increasing peripheral and infiltrating eosinophilia as well as serum IgE, IgG, and Th2 cytokines (IL-4, IL-5, IL-13), which are responsible for the allergic symptoms. Intranasal steroids (INS) are effective in treating allergic rhinitis, but their effect on IL-25 release has not been studied. We aimed to study the link between IL-25 and the pathophysiology of allergic rhinitis as well as the effect of INS on its release.

Methodology: This was a cohort, prospective, nonrandomized study that included 60 patients, 35 allergic rhinitis patients and 25 controls. We studied the effect of INS on IL-25 release.

Results: Of allergic rhinitis patients 68.6% had strong cytoplasmic stain of IL-25 in the epithelial layer, while 25.7% had intermediate stain. INS caused significantly reduced IL-25 stain as only 14.3% of patients had intermediate stain and 85.7% had weak stain. Moreover, a correlation was found between nasal smear eosinophilia and the degree of IL-25 staining in the epithelial layer.

Conclusion: Intranasal corticosteroids appear to be effective in the downregulation of IL-25, which may explain some of the utility of intranasal corticosteroid treatment in improving allergic rhinitis symptoms.

Keywords

Allergic rhinitis · Interleukin · Eosinophilia · Sinusitis