

# **The association between Interleukin-37 and Allergic rhinitis and it's severity**

Thesis Submitted for partial fulfillment of The MSc Degree in  
Otorhinolaryngology

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## ENGLISH SUMMARY

Allergic rhinitis (AR) is a global health problem affecting 10–40% of the population worldwide and it usually persists throughout life. AR is a symptomatic disorder of the nose induced by an immunoglobulin E (IgE)-mediated inflammation after allergen exposure of the membranes lining of the nose, and it is usually accompanied by classical symptoms such as nasal itching, sneezing, rhinorrhea, and nasal congestion. This disorder can be classified into acute, chronic, seasonal, or permanent types. It can also be categorized into intermittent or persistent types concerning the duration of symptoms. If symptoms persist below four days per week or four weeks at a time, they are intermittent. If symptoms persist above four days per week or for four weeks at a time, they are persistent

Over the last 20 years, the pathogenesis of AR has been widely investigated and the majority of studies have focused on pro inflammatory cytokines. However, anti-inflammatory cytokines in AR have received less attention. Interleukin (IL)-37, a novel member of the IL-1 family and originally termed IL-1F7, has been shown to be a natural suppressor of innate immunity and inflammatory responses. Various normal immune and non-immune cells and tissues express IL-37 including, stimulated B cells, natural killer cells, monocytes, epithelial cells, skin keratinocytes, thymus, lymph nodes, lung and bone marrow .Regarding this point, IL-37 has been considered a key player in a variety of inflammatory and autoimmune diseases ( for instance, inflammatory respiratory diseases, inflammatory bowel diseases, rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, psoriasis and multiple sclerosis ) , and studies have shown dysregulated expression of IL-37 under these conditions.

The Aim of This Study is to assess the association between interleukin 37 and allergic rhinitis and its severity.

This study investigated the relationship between IL-37 levels and various health factors among participants. The results demonstrated significant differences in IL-37 levels between cases and controls, both in blood and after nasal lavage, suggesting potential role of IL-37 as anti-inflammatory cytokine in development of allergic rhinitis disease and its severity.

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