

CLINICAL AND IMMUNOLOGICAL FEATURES OF ALLERGIC RHINITIS IN YOUNG ADULTS

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Relevance of the Study

Allergic rhinitis is one of the most common chronic diseases in otorhinolaryngology and significantly affects respiratory health and quality of life. According to international epidemiological data, allergic rhinitis affects approximately 20–30% of the global population, especially adolescents and young adults [1]. The disease is characterized by chronic inflammation of the nasal mucosa mediated by immunoglobulin E (IgE) and hypersensitivity reactions.

Environmental pollution, allergen exposure, genetic predisposition, and immune dysfunction play important roles in disease development. Persistent allergic inflammation contributes to mucosal edema, impaired nasal breathing, sleep disturbances, and increased susceptibility to respiratory infections. Chronic allergic rhinitis may also increase the risk of bronchial asthma and chronic sinusitis [2]. Modern studies emphasize the importance of inflammatory cytokines and immune imbalance in the pathogenesis of allergic rhinitis. Early diagnosis and immunological assessment are therefore essential for improving disease control and preventing complications.

Objective

The aim of this study was to evaluate the clinical and immunological characteristics of allergic rhinitis and determine the relationship between inflammatory markers and disease severity.

Materials and Methods

The study included 46 patients diagnosed with allergic rhinitis who underwent examination at an otorhinolaryngology clinical center. The mean age of participants was 24.9 ± 5.8 years. Men accounted for 25 cases (54.3%), while women represented 21 cases (45.7%). Clinical evaluation included assessment of nasal obstruction, sneezing frequency, rhinorrhea, itching severity, and sleep quality disturbances. Laboratory investigations included complete blood count, eosinophil count, serum IgE levels, C-reactive protein (CRP), and nasal smear cytology.

Patients with acute respiratory infections and chronic systemic inflammatory diseases were excluded from the study. Statistical analysis was performed using variation statistics and Pearson correlation analysis. Quantitative variables were expressed as mean \pm standard deviation ($M \pm SD$). Statistical significance was accepted at $p < 0.05$.

Results

The study demonstrated significant inflammatory and immunological abnormalities in patients with allergic rhinitis. Persistent nasal obstruction was identified in 82.6% of patients, recurrent sneezing in 76.1%, and rhinorrhea in 69.5%. Elevated eosinophil counts were detected in 63% of participants, while increased serum IgE levels were observed in 71.7% of cases. The mean IgE concentration reached 286.4 ± 64.8 IU/mL. Elevated CRP levels were identified in 39.1% of patients with moderate to severe disease activity.

Correlation analysis demonstrated a strong positive relationship between serum IgE levels and severity of nasal symptoms ($r = 0.74$; $p < 0.001$). Eosinophilia was significantly associated with recurrent respiratory discomfort and sleep disturbances. Men demonstrated slightly higher eosinophil levels, whereas women reported greater nasal sensitivity and headache frequency. Environmental dust exposure was identified as a provoking factor in 58.7% of participants, while seasonal pollen allergy was present in 47.8%.

Patients with prolonged allergic rhinitis duration exhibited significantly greater mucosal edema and recurrent sinusitis episodes. Approximately 28.3% of patients demonstrated signs of mild bronchial hyperreactivity.

Conclusion

Allergic rhinitis is associated with significant inflammatory and immunological disturbances that contribute to chronic nasal symptoms and impaired respiratory function. Elevated IgE levels, eosinophilia, and inflammatory activation were identified as important indicators of disease severity. The findings demonstrate that early immunological evaluation and appropriate anti-inflammatory management are essential for improving disease control and preventing respiratory complications in patients with allergic rhinitis.

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