

RELATIONSHIP BETWEEN RHINOSINUSITIS AND ALLERGIC RHINITIS: CLINICAL AND THERAPEUTIC ASPECTS

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Abstract

Allergic rhinitis and rhinosinusitis are among the most common inflammatory diseases of the upper respiratory tract and frequently coexist in clinical practice. Chronic inflammation of the nasal mucosa caused by allergic mechanisms may contribute to impaired sinus drainage, mucociliary dysfunction, and increased susceptibility to infectious rhinosinusitis. Understanding the pathophysiological relationship between these conditions is essential for selecting effective treatment strategies. This article reviews current data on the interaction between allergic rhinitis and rhinosinusitis, clinical features of comorbidity, and modern therapeutic approaches aimed at controlling inflammation and preventing disease progression.

Keywords: *allergic rhinitis, rhinosinusitis, nasal inflammation, mucociliary clearance, upper airway disease.*

Introduction

Rhinosinusitis represents a heterogeneous group of inflammatory conditions affecting the nasal cavity and paranasal sinuses. Allergic rhinitis, characterized by IgE-mediated inflammation of the nasal mucosa, is a significant risk factor for the development of both acute and chronic rhinosinusitis. Epidemiological studies demonstrate that patients with allergic rhinitis develop rhinosinusitis more frequently and often experience a more prolonged and recurrent disease course.

The concept of united airway disease highlights the close anatomical and functional relationship between the nasal cavity and paranasal sinuses. Persistent allergic inflammation leads to mucosal edema, obstruction of sinus ostia, and impaired ventilation, creating favorable conditions for secondary infection.

Pathophysiological Link

In allergic rhinitis, exposure to allergens triggers mast cell activation and release of inflammatory mediators such as histamine, leukotrienes, and cytokines. These mediators increase vascular permeability and mucus secretion, resulting in nasal congestion and rhinorrhea. Swelling of the mucosa in the osteomeatal complex disrupts normal sinus drainage and mucociliary clearance.

Prolonged mucostasis and hypoxia within the sinuses promote bacterial growth and contribute to the development of rhinosinusitis. In chronic cases, sustained inflammation leads to epithelial remodeling, goblet cell hyperplasia, and thickening of the basement membrane, further worsening sinus ventilation.

Clinical Features

Patients with concomitant allergic rhinitis and rhinosinusitis typically present with nasal obstruction, nasal discharge, facial pressure, hyposmia, and frequent sneezing or itching. Symptoms tend to be more persistent and recurrent compared to non-allergic individuals. Seasonal exacerbations are common in patients sensitized to pollen allergens, while perennial allergens contribute to chronic disease progression.

Diagnostic Approach

Diagnosis is based on a combination of clinical symptoms, nasal endoscopy, and imaging when indicated. Allergy testing, including skin prick tests or serum-specific IgE measurement, plays an important role in identifying etiological allergens.

Computed tomography of the paranasal sinuses is reserved for patients with suspected chronic or complicated rhinosinusitis.

Therapeutic Strategies

Effective management requires an integrated approach targeting both allergic inflammation and sinus pathology. Intranasal corticosteroids remain the cornerstone of therapy, as they reduce mucosal edema, suppress inflammation, and improve sinus drainage. Saline irrigation enhances mucociliary clearance and reduces allergen load.

Antihistamines and leukotriene receptor antagonists are useful in controlling allergic symptoms. Antibiotics are reserved for confirmed or suspected bacterial rhinosinusitis. In selected patients, allergen-specific immunotherapy may reduce symptom severity and prevent disease recurrence.

Conclusion

Allergic rhinitis and rhinosinusitis are closely interconnected inflammatory conditions that often coexist and exacerbate each other. Early recognition and comprehensive treatment of allergic inflammation play a crucial role in preventing the development and progression of rhinosinusitis. An integrated therapeutic strategy improves symptom control, reduces recurrence, and enhances patients' quality of life.

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