

MODERN METHODS OF TREATING ALLERGIC RHINITIS

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Abstract: Allergic rhinitis (AR) remains one of the most common allergic diseases, significantly impairing the quality of life and productivity of patients. This review summarizes current approaches to the treatment of AR: pharmacotherapy (intranasal corticosteroids, intranasal and oral antihistamines, nasal decongestants), non-pharmacological measures (environmental control, nasal lavage), specific allergen-specific immunotherapy (SIT - subcutaneous and sublingual) and new biologics (anti-IgE, antibodies to IL-4/IL-13, etc.). Current guidelines emphasize that intranasal corticosteroids are the "mainstay" of therapy for persistent course, and a combination approach improves symptom control and reduces the need for rescue medications. Specific immune therapy demonstrates long-term disease-modifying effects and remains the only treatment capable of altering the natural history of AR. New biological agents show promise in severe or refractory forms of asthma and in those with asthma, but their use is limited by cost and indications. This review analyzes data from the past 10 years, highlights the advantages and limitations of each approach, and suggests areas for further research and clinical practice.

Keywords: allergic rhinitis; intranasal corticosteroids; specific immunotherapy; biological therapy.

Introduction: Allergic rhinitis (AR) is an IgE-mediated inflammatory disease of the nasal mucosa characterized by sneezing, rhinorrhea, nasal congestion, and itching. Its prevalence reaches 10–30% in various populations and places a significant burden on healthcare and the economy due to decreased productivity and increased treatment costs. AR is often associated with other atopic conditions, particularly allergic conjunctivitis and asthma, requiring a multidisciplinary approach to diagnosis and treatment.

Over the past decades, there has been a significant shift in approaches to AR treatment: from symptomatic therapy to strategies aimed at long-term control and disease modification. Intranasal glucocorticosteroids (INCS) have retained their role as a standard therapy for persistent cases due to their high efficacy in controlling nasal symptoms and reducing inflammation. At the same time, intranasal antihistamines and second-generation oral antihistamines remain important options for rapid symptom relief, even in cases of seasonal flu. Combination formulas (INX + intranasal antihistamine) and fast-acting intranasal medications offer greater flexibility in individualizing treatment.

Non-pharmacological measures—avoiding triggers, improving the microenvironment (air filtration, dust mite control), and regular nasal rinsing with saline solutions—are used as adjunctive measures and have proven effective in reducing symptoms and improving patients' quality of life. A significant advance is the development of allergen-specific immunotherapy (SIT): subcutaneous (SCIT) and sublingual (SLIT) formulations have demonstrated the ability not only to reduce symptoms during treatment but also to provide a lasting effect after its completion, making them the only therapeutic methods that influence the natural history of allergy. In recent years, a new approach has emerged: the use of biologics targeting key components of allergic inflammation (e.g., anti-IgE antibodies and inhibitors of the IL-4/IL-13 signaling pathways). These drugs demonstrate clinical efficacy in patients with severe or refractory allergic rhinitis, especially when combined with asthma, but require careful patient

selection and cost-benefit assessment. The aim of this review is to analyze the current evidence base for the main methods of treating AR over the past 10 years, identify the advantages and limitations of each strategy, and suggest directions for optimizing clinical practice.

Materials and Methods: A targeted literature review was performed for the period 2015–2025. Sources included professional society guidelines, systematic reviews, meta-analyses, randomized controlled trials, and large observational studies. Search queries were conducted in PubMed/Medline, Cochrane Library, and Scopus with the keywords: “allergic rhinitis,” “intranasal corticosteroids,” “sublingual immunotherapy,” “omalizumab,” “dupilumab,” “nasal irrigation,” and “guidelines.” Priority was given to guidelines and reviews from international academies (JACI/ARIA, EAACI) and the latest systematic reviews for each treatment area. Inclusion criteria: original studies and reviews published in English in peer-reviewed journals during the specified period; studies with clinical endpoints of quality of life, symptom assessment, or adverse effects. Studies with low methodological reliability (lack of a control group, declarative reports without data) were excluded. Data were synthesized in structured sections: pharmacotherapy, non-drug measures, specific immunotherapy, and biological therapy. Critical review elements were used to assess study quality: randomization, blinding, sample size, and follow-up duration.

Results and discussion: Pharmacotherapy. Intranasal corticosteroids (INCS) continue to be considered the most effective treatment for persistent nasal symptom control: numerous studies demonstrate their superiority over placebo and comparable or better efficacy than oral antihistamines for nasal congestion and overall symptom severity. Intranasal antihistamines provide rapid symptom relief, particularly for rhinorrhea and itching, but are inferior to INCS in terms of inflammation control; they are rationally used in combination or for predominantly episodic symptoms. Current meta-analytic data confirm that combination therapy (INCS + intranasal antihistamine) often provides more rapid and complete symptom control. Second-generation oral antihistamines retain their role as a safe and convenient treatment for sneezing and itching symptoms, but their effect on nasal congestion is limited. Nasal decongestants are effective in the short term, but with long-term use, the risk of rebound congestion and side effects limits their use.

Non-pharmacological measures. Environmental control (microclimate, elimination of house mite allergens, pollen management) remains a basic recommendation, especially in combination with pharmacotherapy. Regular nasal irrigation with saline solutions has proven effective as an adjunctive treatment: it reduces symptoms, facilitates the action of topical medications, and reduces the need for medications. Metadata support the benefit of saline irrigation in symptomatic treatment and as part of combination therapy.

Specific allergen immunotherapy (SIT) SCIT and SLIT have demonstrated clinical efficacy in reducing symptoms and medication requirements, as well as in reducing the risk of asthma development in certain populations. EAACI data and numerous systematic reviews demonstrate that SIT has a disease-modifying effect: the persistence of the effect after discontinuation of therapy is one of its key advantages. SLIT tablets are convenient for patients and are safe, particularly in European programs, with proven efficacy for a number of allergens (grass, ragweed, mites). Limitations include product specificity, the need for long-term therapy (2–3 years or more), and variability in responses in multiallergic patients.

Biological therapy

Anti-IgE (omalizumab) and IL-4/IL-13 pathway blockers (e.g., dupilumab) have shown positive results in clinical trials and meta-analytic evaluations for patients with severe, refractory AR and those with bronchial asthma. Omalizumab reduces symptom severity and the need for rescue

therapy, demonstrating safety in several studies; dupilumab has been shown to improve nasal and associated skin symptoms in patients with atopic comorbidities. However, their widespread use is limited by high cost, the need for systemic monitoring, and uncertain indications (most often used for recurrent severe AR and/or those with asthma). Practical recommendations and research directions

Current guidelines recommend a personalized approach: standard therapy with INSTIs for most persistent forms, the addition of intranasal antihistamines for acute symptoms, the use of SIT for patients seeking long-term disease modification, and the use of biologic agents for severe refractory cases. Further research is needed on the long-term cost-effectiveness of biologic agents, the optimization of combination therapy regimens, and the selection of biomarkers predicting response to SIT and biologic agents. Large randomized trials comparing modern therapy combinations in real-world clinical practice are also needed.

Conclusion: Over the past decade, approaches to treating allergic rhinitis have advanced significantly: modern strategies focus not only on rapid symptom relief but also on long-term disease control and modification of its natural course. Intranasal corticosteroids remain the cornerstone of pharmacotherapy for persistent allergic rhinitis due to their high anti-inflammatory efficacy and broad indications. Intranasal and oral antihistamines remain essential for rapid symptom relief, and combination regimens often provide a synergistic effect. Non-pharmacological interventions, such as environmental factors and regular nasal irrigation, complement drug therapy and help reduce the overall medication burden.

Specific allergen immunotherapy (SCIT and SLIT) is the only method proven to influence the natural course of allergy and provide long-term positive effects after completion of treatment. SLIT tablets offer a convenient treatment format with good tolerability and proven efficacy for specific allergens, expanding the potential for SIT use in outpatient practice.

Biologic agents (omalizumab, dupilumab, etc.) represent a promising adjunct for patients with severe or refractory allergic rhinitis, especially when combined with bronchial asthma or polysensitization, where standard treatments prove ineffective. However, their widespread adoption in routine practice is limited by cost, the need for rigorous patient selection, and the lack of long-term population-based cost-effectiveness data. The optimal treatment strategy should be personalized, taking into account the severity and seasonality of symptoms, comorbidities, patient preferences, and the availability of therapeutic options. Prospects for further research include the development of response biomarkers, economic evaluations of new therapies, optimization of combination regimens, and comparative studies of SIT and biological therapy. In clinical practice, the implementation of algorithms combining evidence-based pharmacotherapy, immunomodulatory approaches, and non-drug measures is relevant, which will improve patients' quality of life and reduce the disease burden.

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