

Management of Allergic Rhinitis: A Review for the Community Pharmacist

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ABSTRACT

Purpose: Allergic rhinitis is a highly prevalent disease affecting the quality of life of millions of North Americans. The management of allergic rhinitis includes allergen avoidance, pharmacotherapy, and immunotherapy. Current pharmacologic options include oral and intranasal antihistamines, intranasal corticosteroids, oral and intranasal decongestants, oral and intranasal anticholinergics, and leukotriene receptor antagonists. Second-generation oral antihistamines and intranasal corticosteroids are the mainstays of treatment, with practice guidelines recommending intranasal corticosteroids as first-line treatment for moderate to severe allergic rhinitis.

Methods: Clinical trials studying a widely used intranasal corticosteroid, fluticasone propionate, in comparison with second-generation oral antihistamines, cetirizine, loratadine, or montelukast, were selected to support the comparative review of the efficacy and tolerability of these 2 classes of medications. Studies evaluating the combination of fluticasone propionate with an oral antihistamine were also included to review the efficacy and tolerability of combination therapy to treat allergic rhinitis.

Findings: Studies comparing fluticasone propionate with cetirizine had mixed findings; fluticasone propionate was found to have equal or greater efficacy in reducing nasal symptom scores. Combination therapy of fluticasone propionate and the oral antihistamine, loratadine, was found to have efficacy comparable with that of intranasal corticosteroid alone.

Implications: Many of these medications are available over the counter in the pharmacy, and the community pharmacist plays an important role as part of the patient's health care team in managing this disease. Pharmacotherapy is patient-specific, based on type, duration, and severity of symptoms, comorbidities, prior treatment, and patient preference. This article aims to provide an overview of the pathophysiology, available treatment options,

guideline recommendations, and role of the pharmacist for this disease. (*Clin Ther.* 2017;■:■■■-■■■) © 2017 The Authors. Published by Elsevier HS Journals, Inc.

Key words: allergic rhinitis, antihistamines, community pharmacy, corticosteroids, pharmacists.

INTRODUCTION

Allergic rhinitis (AR) is a chronic inflammatory disease that affects 10% to 30% of Americans¹ and 20% to 25% of Canadians.² Prevalence of AR is increasing worldwide, affecting up to 40% of the global population.³ AR is part of a systemic inflammatory process and is associated with other inflammatory disorders, including asthma, rhinosinusitis, and allergic conjunctivitis.⁴ AR reduces quality of life by affecting sleep, school, work productivity, and social life.⁴ Due to its high prevalence and impact on quality of life, AR has been classified as a major chronic respiratory disease.³ The financial burden is also significant, with direct medical costs in the United States increasing from \$6.1 billion in 2000 to \$11.2 billion in 2005, greater than for diabetes, coronary heart disease, and asthma.⁵

Practice guidelines and parameters have been developed to classify and manage treatment of AR. Many patients who have AR do not seek care from a primary care physician or specialist and instead choose to self-treat their symptoms or even ignore them. Therefore, the community pharmacist can be a valuable resource in recognizing and assessing the symptoms of AR. Whether or not a patient has been

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diagnosed previously with AR, the pharmacist should be aware of common symptoms and understand when to refer the patient to a primary care physician. The knowledge and skills of the pharmacist allow optimization of therapy and appropriate treatment selection based on symptom presentation, duration, severity, and minimizing adverse events.

Definition

AR is an immunoglobulin E–mediated inflammatory reaction in the nasal mucosa caused by inhaled allergens, such as pollen, mold, or animal dander.¹ The allergic response occurs in 2 phases—early and late. Allergen exposure leads to the allergens cross-linking with immunoglobulin E antibodies bound to mucosal mast cells and subsequent release of inflammatory mediators, such as histamine, prostaglandins, and leukotrienes.^{6,7} These mediators initiate the early (or acute) phase of an allergic reaction, which develops within minutes of exposure and causes AR symptoms.⁷ Symptoms include sneezing, nasal pruritus (itching), upper airway obstruction (congestion or blockage), rhinorrhea (clear nasal discharge), and itchy or watery eyes.¹ The inflammatory mediators attract, recruit, and activate additional inflammatory cells—eosinophils, neutrophils, and T lymphocytes—into the nasal mucosa. These cells release more inflammatory mediators, initiating the late-phase response, which occurs several hours after initial allergen exposure.^{1,8} This late response is associated with chronic inflammation and includes the same symptoms seen in the early-phase response, with nasal congestion becoming the primary symptom due to mucosal edema.^{1,8} These symptoms begin 6 to 12 hours after allergen exposure, peaking at 12 to 24 hours.⁷ Priming is a clinical feature of AR and is thought to be related to the late-phase allergic response. Although the initial influx of inflammatory cells does not induce allergy symptoms, repeated or later exposure of a smaller amount of the same allergen will induce a symptomatic response because of increased mucosal sensitivity.⁸ Due to this sensitivity, which can persist for a few days, symptoms can be provoked by other allergens and are not limited to the priming allergen.⁸

There are 2 symptom patterns of AR, seasonal (also known as hay fever, or intermittent) and perennial (or persistent). Seasonal allergic rhinitis (SAR) symptoms are usually easily identifiable and directly associated

with seasonal allergen exposure, such as tree, grass, and weed pollens, or fungi.¹ The length of the “season” can vary based on location and climate conditions,¹ as well as the range of allergens to which the patient is sensitized. Intermittent symptoms are present <4 days per week or for <4 weeks.⁴ Perennial allergic rhinitis (PAR) symptoms occur for up to 75% of the year, are present for >4 days per week and for >4 weeks, and are less easy to identify because they overlap with symptoms seen in sinusitis, respiratory infections, and other types of rhinitis.^{4,9} Symptoms are often caused by nonseasonal allergens, such as dust mites, animal dander, or mold.¹

Treatment Options

There are many options for the treatment of AR, both nonpharmacologic and pharmacologic. A number of medications are also available over the counter (OTC) without a prescription, and product selection should be based on patient factors, including their symptoms and medical history. The goal of treatment is to reduce or eliminate current symptoms while preventing future attacks and long-term complications. Appropriate treatment selection should allow for minimal adverse effects and enable the patient to maintain a normal lifestyle.

Three approaches of AR management include allergen avoidance, pharmacotherapy, and immunotherapy. Nonpharmacologic interventions, such as allergen avoidance, can reduce or eliminate AR symptoms and the amount of pharmacotherapy needed for symptom control. Allergen avoidance is a practical option when allergens have been identified, either by the patient or by allergy testing.¹ Patients can take steps to reduce exposure to triggers based on the specific allergen, whether it is pollen, mold, or animal dander. Allergen avoidance should be part of an overall treatment strategy that includes pharmacotherapy.

Selection of pharmacotherapy (OTC and prescription) should take into account efficacy, tolerability, patient preference, and cost. Treatment options for AR are generally administered orally or intranasally. Pharmacologic treatment of AR proposed by the guidelines is a stepwise approach based on classification of symptoms in terms of course and severity.^{1,10}

Available treatment classes include antihistamines, corticosteroids, decongestants, leukotriene receptor antagonists (LTRAs), and anticholinergics. Immunotherapy is also an option for patients who are refractory to

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