

Pharmacologic Therapies in Pulmonology and Allergy



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KEYWORDS

- Asthma • Chronic rhinitis • Allergic rhinitis • Angioedema • Acute urticaria
- Chronic urticaria

KEY POINTS

- Although conditions such as chronic rhinitis, urticaria, angioedema, and asthma have markedly different clinical presentations, a core group of medications such as antihistamines, corticosteroids (systemic and topical), leukotriene blockers, and anticholinergic medications are often used to treat these conditions, and knowing the indications and side-effect profiles of each can allow for maximum efficacy.
- Chronic rhinitis symptoms often respond to first-line agents such as second-generation H1 antihistamines, topical antihistamines, and nasal steroids, but other therapies such as leukotriene blockers, nasal anticholinergics agents, and nasal decongestants can be used depending on patient symptoms and cause of rhinitis being treated.
- Urticaria is generally divided into acute (<6-week duration) and chronic (>6-week duration) because they often have different causes based on this distinction. Although medications used to treat urticaria can be similar to atopic conditions, the dosing regimens can differ significantly.
- Angioedema can often be differentiated into mast cell and complement-mediated forms, and this distinction is important given the medications used to treat each form are significantly different.
- Although medications such as inhaled corticosteroids, β -agonists, and leukotriene blockers used according to National Heart Lung and Blood Institute are effective for most patients, there are biologic therapies available to treat uncontrolled asthma according to the asthma phenotypes.

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RHINITIS

Rhinitis is characterized by 1 or more of the following nasal symptoms: congestion, rhinorrhea, sneezing, and itching. Rhinitis symptoms are one of the most common causes of primary care physician visits and can result in a decrease in quality of life, decreased productivity, missed work/school days, and significant treatment costs.¹ There are different causes of rhinitis symptoms, and it is important to try and elucidate a specific diagnosis because the treatment varies.

Seasonal and perennial allergic rhinitis are reactions to aeroallergens due to an immunoglobulin E (IgE) antibody-mediated sensitivity. Allergic rhinitis is one of the most common chronic illnesses in developed countries with significant morbidity to patients and substantial treatment-related costs with loss of workplace productivity.^{1,2} Allergic rhinitis most commonly develops before 20 years of age, whereas nonallergic forms of rhinitis can have similar symptoms but often affects an older population and may involve sensitivity to triggers, such as strong odors and other non-IgE-mediated irritants.^{3–5} Different forms include nonallergic rhinitis (NAR), nonallergic rhinitis with eosinophilia (NARES), infectious rhinitis, and medication-induced rhinitis. **Table 1** reviews some of the common forms of rhinitis and lists treatments that are often effective.

H1 Antihistamines

H1 antihistamines act as inverse agonists that combine with and stabilize the inactive conformation of the H1 receptor (**Table 2**).⁵ H1 antihistamines represent a first-line treatment for many conditions such as allergic rhinitis and urticaria. This class of medications offers an inexpensive, safe, and effective therapy in many different conditions.

First-generation H1 antihistamines were introduced for clinical use in the 1940s and are one of the more commonly used medication classes available. This group of antihistamines readily crosses the blood-brain barrier, which accounts for sedation that is often seen with this group of medications. First-generation H1 antihistamines should be prescribed cautiously in the elderly or patients with occupations for which alertness is essential. More than 40 H1 antihistamines are available, and adverse effects can include dry eyes, dry mouth, constipation, and urinary hesitancy and retention, increased appetite and weight gain, and dizziness.⁵

In the 1980s, relatively nonsedating second-generation H1 antihistamines were introduced.

Common Types of Rhinitis	Common Treatments
Allergic rhinitis	Oral antihistamines, nasal steroids, nasal antihistamines, antileukotriene agents
NAR	Nasal antihistamines, nasal steroids
NARES	Nasal steroids
Gustatory rhinitis	Nasal anticholinergics ⁶³
Medication induced ^a	Treat symptoms or discontinue medication
Infectious rhinitis	Supportive therapy or antibiotics
Atrophic rhinitis	Difficult to treat, often use lubrication and removal of crusts

^a Oral contraceptives, antihypertensives, aspirin/NSAIDs, ACE inhibitors, phosphodiesterase-5-selective inhibitors, α -receptor antagonists.

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