

Practice Parameters for Diagnosis and Management of Rhinitis

This practice parameter is based upon current clinical practice and extensive review of the clinical literature and has been developed by the Joint Task Force on Practice Parameters of the American College of Allergy, Asthma & Immunology (ACAAI), the American Academy of Allergy, Asthma and Immunology (AAAAI), and the Joint Council of Allergy, Asthma & Immunology (JCAAI).

Rhinitis is defined as an inflammation of the membranes lining the nose, that may include a range of symptoms such as nasal congestion, rhinorrhea, sneezing, itching of the nose, and postnasal drainage. Systemic symptoms of fatigue, headache and cognitive impairment may significantly influence activities of daily living. Rhinitis may have an allergic or nonallergic basis.

Differential Diagnosis

Allergic Rhinitis

The severity of allergic rhinitis ranges from mild "hay fever" to severely debilitating disease.

- **Early and late phase responses** may occur; sneezing, nasal congestion, pruritus and rhinorrhea are seen with each, but nasal congestion is more prominent in the late phase reaction.
- Allergic rhinitis is characterized by temporal patterns where symptoms may occur: (1) only during specific seasons, (2) perennially with seasonal exacerbations, (3) perennially without seasonal exacerbations, and (4) sporadically after specific exposures. Exposure to one allergen (e.g., early spring pollen) may "prime" the patient for an exaggerated response to a pollen appearing later in the season.
 - *Seasonal* allergic rhinitis is caused by IgE-mediated reaction to seasonal aeroallergens — e.g., pollens.
 - *Perennial* allergic rhinitis is caused by IgE-mediated reaction to perennial environmental aeroallergens — e.g., dust mites, molds, animal allergens, cockroaches, some occupational allergens, perennial pollens.

Allergic rhinitis often coexists with allergic conjunctivitis.

Nonallergic Rhinitis

Characterized by sporadic or persistent perennial symptoms of rhinitis that do not result from IgE-mediated events.

- **Infectious rhinitis** may be acute or chronic. *Acute* infectious rhinitis is usually due to viral infection, frequently with secondary bacterial infection and sinusitis; symptoms may include rhinorrhea, nasal congestion, sneezing, and fever. *Chronic* infectious rhinitis may be confused with allergic rhinitis when patients complain of a constant cold; symptoms include mucopurulent nasal discharge, facial pain and pressure, olfactory disturbance, and postnasal drainage with cough.
- **Nonallergic rhinitis not associated with eosinophilia** is unrelated to allergy, infection, structural lesions, systemic disease, or drug abuse. Symptoms may include rhinorrhea, nasal congestion and airflow blockage. Vasomotor rhinitis refers to symptoms that may be produced by sudden temperature changes, perfumes or other odors, cigarette smoke, stress, and sexual arousal.
- **Nonallergic rhinitis with eosinophilia (NARES)** is characterized by nasal eosinophils in patients with perennial symptoms, but no clinically significant positive skin tests and/or specific IgE antibodies in the serum.

Occupational Rhinitis

Occurs in response to airborne substances in the workplace, which may be mediated by allergic or nonallergic factors; often coexists with occupational asthma.

Hormonal Rhinitis

Caused by hormonal changes associated with pregnancy, menstrual cycles, and hypothyroidism; rhinitis due to hormonal changes of

pregnancy usually disappears after delivery.

Drug-Induced Rhinitis

May be caused by ACE-inhibitors, aspirin or other NSAIDs, reserpine, guanethidine, methyldopa, beta blockers, chlorpromazine, oral contraceptives, or repeated "snorting" of cocaine. *Rhinitis medicamentosa* is caused by overuse of prescribed or OTC decongestant nasal sprays.

Food/Drink Related Rhinitis

May occur after food or alcohol ingestion and is usually not due to IgE-mediated allergy, but may be due to cholinergic or other mechanisms. Rhinitis caused by food allergy is usually associated with GI, dermatologic or systemic manifestations.

Nasal Polyps

May occur in conjunction with rhinitis or sinusitis and may contribute to symptoms, especially nasal congestion.

Other Conditions Confused with Rhinitis

Nasal septal deviation, tumors, adenoidal hypertrophy, and hypertrophy of nasal turbinates may also simulate rhinitis.

Diagnosis and Management of Rhinitis

Initial Evaluation

History

- Presenting symptoms (e.g., rhinorrhea, nasal congestion)
- Duration, severity and seasonality of symptoms
- Medications used to date, their effectiveness, and side effects
- Coexisting medical conditions (e.g., otitis media, sinusitis, asthma)
- Medications being taken for other conditions

Physical Examination

- Nasal examination — should focus on the appearance of nasal mucous membranes, patency of nasal passages, whether findings are bilateral or unilateral, causes for nasal obstruction (e.g., nasal polyps), quality and quantity of nasal discharge.
- Extra-nasal examination
 - Eyes (conjunctivitis), ears (otitis), throat (post-nasal drainage)
 - Lungs (signs of asthma)

Need for Consultation after Initial Evaluation

Referral to an allergist-immunologist should be considered when:

- rhinitis is prolonged or associated with complications — e.g., otitis media, sinusitis, nasal polyps
- comorbid medical conditions exist — e.g., asthma
- the patient has required oral corticosteroids to manage symptoms of rhinitis
- treatment to date has been ineffective
- allergic/environmental triggers must be identified
- allergen immunotherapy is a consideration

Pharmacologic Considerations

For Episodic (E) or Persistent (P) Rhinitis Symptoms

- Second-generation (nonsedating/less sedating) antihistamines to reduce allergic symptoms (E or P). Note that second-generation antihistamines should usually be considered before first-generation (sedating) antihistamines because the patient may not perceive impairments to driving or thinking.
- Oral decongestants (e.g., pseudoephedrine, phenylpropanolamine) to reduce nasal congestion (E or P).
- Decongestant nasal sprays — limit to 2-5 days of use of topical nasal spray-type decongestants in all forms of rhinitis to avoid rebound congestion.
- Intranasal cromolyn — may reduce allergic symptoms (P) in some patients, or prevent symptoms (E) when used prior to acute allergen exposure.
- Intranasal antihistamines (e.g., azelastine) for allergic rhinitis symptoms (E or P).
- Intranasal ipratropium for rhinorrhea (E or P).
- Nasally inhaled corticosteroids (most effective agent to control symptoms (P). Directing spray away from nasal septum may prevent septal perforations).

For Severe Intractable Symptoms

- Add oral corticosteroids for 5-7 days

Assess Patient Improvement by

- nasal symptoms
- quality of life
- comorbidities (e.g., asthma, sinusitis)

If response is poor, refer to an allergist-immunologist.

Consultation by Allergist-Immunologist, including

- more extensive history and physical examination
- immediate hypersensitivity skin tests to (1) confirm underlying allergic basis for patient's symptoms, (2) define more specifically triggers of patient's symptoms, and (3) determine patient's sensitivity to allergenic triggers
- rhinoscopy as indicated
- appropriate tests for comorbidities — e.g., PFT (asthma), CT scan (sinusitis)

Does Patient's Rhinitis Have an Allergic Basis?

- History of symptoms after exposure to known allergens?
- Correlation of history with appropriately positive skin tests for specific IgE?

Poor correlation between allergen exposure and symptoms suggests that those allergens are not the cause of symptoms, even if tests for immediate hypersensitivity are positive. Negative reactions to these tests in most cases rule out allergic rhinitis.

General Management Principles

Allergic Rhinitis

Effective management may require:

- combinations of medications — antihistamine, decongestant, nasal corticosteroid, anticholinergic agents
- aggressive avoidance of rhinitis triggers — e.g., allergens, irritants
- allergen immunotherapy in carefully selected patients, in consultation with an allergist-immunologist
- short course of oral corticosteroid for intractable nasal symptoms
- education of patient regarding allergen avoidance, medication use, and therapeutic compliance

Nonallergic Rhinitis

Effective treatment may require:

- avoidance of irritants that produce symptoms
- nasal corticosteroids
- oral decongestants
- anticholinergic agents for rhinorrhea

Special Considerations

Children: Diagnosis

- Viral-induced rhinitis averages 6 episodes/year at ages 2-6 years.
- Nasal obstruction may occur from structural defects, adenoidal hypertrophy, foreign body in nose.
- Nasal polyps (rare in childhood) may be associated with cystic fibrosis, ciliary dyskinesia, chronic infection.

Children: Therapy

- Oral second-generation antihistamines and nasal cromolyn are first-line treatments for allergic rhinitis.
- Nasal corticosteroids are the most effective treatment for allergic rhinitis, but they should be used at the lowest effective dose and the child's height must be monitored.
- If nasal corticosteroids are used, they should be used in conjunction with other medications and avoidance measures and, if appropriate, immunotherapy to reduce the corticosteroid dose.

Elderly Patients

Allergic rhinitis is less common than cholinergic hyperreactivity, medication-induced rhinitis or sinusitis in patients over age 65. Rhinorrhea associated with cholinergic hyperreactivity may respond to intranasal ipratropium. Antihypertensive medications should be considered as a possible cause of nasal congestion in this age group.

Pregnant Patients

Chlorpheniramine and tripeleminamine have been the preferred antihistamines for use in pregnant patients. Nasal cromolyn has reassuring safety data and may be considered first. Intranasal beclomethasone may be used with intractable symptoms or as an alternative to oral therapy. Oral decongestants are best avoided in the first trimester. Allergen immunotherapy may be continued in patients during pregnancy, although doses should not be increased.