Objectives

- Distinguish between allergic rhinitis and the common cold
- Understand the non-pharmacologic and pharmacologic OTC treatment options for allergic rhinitis
- Discuss how to properly use medications to treat allergic rhinitis to minimize risks and adverse effects

Background

- Affects ~20% of the population
- 10-30% of adults
- Up to 40% of children
- 20 – 40 million people annually in the US
- >80% who develop allergic rhinitis develop symptoms before age 20
- Chronic condition in 80-90% of sufferers
- ~$6 billion in health expenditures in US each year

Allergic Rhinitis

- 2 Types:
  - Seasonal/intermittent
  - Perennial/persistent
- Severity:
  - Mild
  - Moderate-severe
- Triggers: pollen, mold spores, pollutants, house dust mites, cockroaches, cigarette smoke, pet dander, wool dust, latex, resins, biological enzymes, organic dusts

Pathophysiology

- Sensitization phase
- Early phase
- Cellular recruitment
- Late phase

Allergic Rhinitis vs. Common Cold

<table>
<thead>
<tr>
<th>Common Cold</th>
<th>Allergic Rhinitis</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sore throat</em></td>
<td><em>Nasal congestion</em></td>
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<tr>
<td>Nasal congestion</td>
<td>Watery eyes</td>
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<tr>
<td>Rhinorrhea</td>
<td>Itchy nose, eyes, or throat</td>
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<tr>
<td>Sneezing</td>
<td>Repetitive sneezing</td>
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<tr>
<td>Headache</td>
<td>Watery rhinorrhea</td>
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<tr>
<td>Malaise</td>
<td>Red, irritated eyes</td>
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<tr>
<td>Chills</td>
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<tr>
<td>Low-grade fever</td>
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<tr>
<td>Cough</td>
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Treatment

- Nonpharmacologic
- Pharmacotherapy
  - Over the counter products
  - Prescription
  - Immunotherapy

Nonpharmacologic Treatment

- Allergen avoidance
- Nasal wetting agents (sprays)
  - Saline
  - Propylene
  - Polyethylene glycol

Pharmacologic Treatment

- Seasonal/Intermittent: start taking medication at least 1 week before symptoms typically appear
- Perennial/Persistent: start taking medication before known allergen exposures

Antihistamines

- Indications: allergic rhinitis, conjunctivitis, urticaria, atopic dermatitis, allergic asthma, angioedema, itching
- MOA: H1 receptor blockers, possible anti-inflammatory activity
  - First-generation: nonselective, sedating
    - Ex: diphenhydramine, chlorpheniramine, clemastine
  - Second-generation: peripherally selective, non-sedating
    - Ex: loratadine, cetirizine
- Dosage forms: ophthalmic, oral

Side Effects:
- First-generation: sedation, anticholinergic
- Second-generation: minimal
- Ocular: burning, stinging, itching, dry eye, eyelid edema, hyperemia
- Contraindications
  - First generation: newborns, nursing mothers
- Drug Interactions
  - CNS depressants, MAOIs with first generation
- Combo products

Pharmacologic Treatment - OTC's

- Antihistamines
  - Ophthalmic
  - Oral
- Decongestants
  - Topical
    - Ophthalmic
    - Intranasal
  - Oral
- Mast cell stabilizers
**Decongestants**

- **Indications:** congestion, cough due to postnasal drip
- **MOA:** adrenergic agonist → vasoconstriction
- **Systemic:** pseudoephedrine, phenylephrine
- **Topical:**
  - Ophthalmic: naphazoline, oxymetazoline, phenylephrine, tetrahydrozoline
  - Intranasal: ephedrine, epinephrine, naphazoline, phenylephrine, tetrahydrozoline, xylometazoline, oxymetazoline, desoxyephedrine, propylhexedrine
- **Limit use 3-5 days**

**Contraindications:** children <5 years

**Drug Interactions:** none

**Side effects:** sneezing (most common), rhinitis

**Summary**

- Allergic rhinitis is characterized principally by nasal congestion and itchy, watery eyes
- First line treatment in most cases is antihistamines
- Special considerations when choosing an agent:
  - Children
  - Elderly
  - Pregnant
  - Concomitant diseases

**Product Selection Guidelines**

- **Considerations for product selection:**
  - Duration of treatment
  - Concomitant disease
  - Side effects
  - Patient response
References


True/False Questions

1. A patient presenting with congestion ALWAYS has a cold.
2. Lowering humidity and limiting carpeted spaces in the home can help reduce allergic rhinitis symptoms.
3. All second generation antihistamines cause drowsiness.