DIAGNOSIS AND MANAGEMENT OF ALLERGIC RHINITIS

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INTRODUCTION

• Rhinitis is inflammation of nasal mucosa characterised by more than 2 of:
  • Nasal blockage/congestion
  • Rhinorrhoea
  • Sneezing
  • Itchy nose
• Allergic
  • Due to IgE mediated inflammation

• Nonallergic
  • Infective
    • Viral, Bacterial
  • Noninfective
    • vasomotor, hormonal, occupational, drug-induced etc
PATHOPHYSIOLOGY

**Early phase reaction**
- Within minutes

- IgE being crossbound by allergens
- IgE antibodies
- Histamine
- Eosinophils
- Leukotrienes
- Cytokines (TNFα, IL-4, IL-5)
- Thromboxanes
- Prostaglandins

**Late phase reaction**
- 6–12 hours

- Recruitment of inflammatory cells*
  - (Eosinophils, basophils, monocytes, lymphocytes, neutrophils)

- Secretion of soluble mediators*
  - IL-1, IL-4, IL-5, IL-6, IL-8, TNFα, IFNγ

**Continuation of symptoms**
- Sneezing, rhinorrhea, congestion, pruritus

*Steps inhibited by glucocorticoids
Common aeroallergens

Particles in air (allergens)
- Pollen
- Dust mite debris
- Animal dander

Allergic symptoms
- Watery eyes
- Runny nose
- Itchy throat
ARIA CLASSIFICATION

**Intermittent**
- < 4 days per week
- or < 4 weeks

**Persistent**
- > 4 days per week
- and > 4 weeks

**Mild**
- normal sleep
- no impairment of daily activities, sport, leisure
- normal work and school
- no troublesome symptoms

**Moderate-severe**
- one or more items
- abnormal sleep
- impairment of daily activities, sport, leisure
- abnormal work and school
- troublesome symptoms
DIAGNOSIS

- History
- Physical examination
- Skin Prick tests
Hx

• Nasal symptoms of sneezing, rhinorrhea, blockage and irritation
• Precipitating factors
• Diurnal or seasonal variations in symptoms
• Personal or family hx of eczema, asthma, food allergies
• Allergic shiner
• Transverse nasal crease
• Mouth breathing
• Hypertrophied inferior turbinates
• Watery rhinorrhoea
Systemic examination

- Sinusitis
- Otitis media with effusion
- Conjunctivitis
- Asthma
- Eczema
Differential diagnoses

• Viral rhinitis
  • Acute onset symptoms
  • Watery rhinorrhoea
  • Low grade fever

• Bacterial rhinitis
  • May follow viral rhinitis
  • Rhinorrhoea is coloured-yellow/greenish/bloody
  • Fever

• Adenoid hypertrophy
SKIN PRICK TESTS

- Cannot replace a good history and physical examination
- Differentiate between allergic and non-allergic rhinitis
- Helps identify the trigger allergens
- Selection of allergen to be tested must be relevant to history of exposure
- Helps reinforce specific allergen avoidance measures
MANAGEMENT OF AR

- Patient education
- Pharmacological
- Immunotherapy
- Surgery
Education and Allergen avoidance

• Allergic march
• Genetics
• Passive smoking
• Allergen avoidance
## Treatment Considerations in Allergic Rhinitis: ARIA Guidelines

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<th>Itching/Sneezing</th>
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Treatment of allergic rhinitis (ARIA)

Allergic Rhinitis and its Impact on Asthma

- **mild intermittent**
  - intra-nasal steroid
  - local chromone
  - oral or local non-sedative H1-blocker
  - intra-nasal decongestant (<10 days) or oral decongestant
  - allergen and irritant avoidance

- **moderate severe intermittent**

- **mild persistent**

- **moderate severe persistent**

- **immunotherapy**
Intranasal corticosteroids

- Common ones include fluticasone, budesonide, mometasone, beclomethasone
- First line treatment in all classes except mild intermittent AR
- Most effective therapy in mx of AR
- Show a 3-7 day lag period before full benefit is seen
• No clinically significant differences among the INCS in current use
• Fluticasone and mometasone have negligible systemic bioavailability
• Recent randomized studies on budesonide and mometasone show no evidence of growth suppression
  • Agertoft L et al. J Allergy Clin Immunol 1999;104:948-52
• One year use of fluticasone furoate reduced growth rate by an average of 0.27cm in children with a mean age of 6.2 years
  • Lee et al. JACI 2014;2:421-7

General consensus is that INCS are safe for use in children with AR
Antihistamines

- As a single modality in mild intermittent AR
- Preferable to use 2nd generation
- Intranasal antihistamines (azelastine/olopatidine) also useful for seasonal AR in children
Montelukast

- Equivalent to antihistamines when used as a monotherapy
- Addition to an antihistamine more significant benefit than either alone
- Useful in children with coexisting asthma
- Use in children above 6 months
IMMUNOTHERAPY

• The only disease modifying modality in treatment of AR
• Indicated when AR is severe or poorly controlled by pharmacotherapy
• Halts march of AR to asthma
SURGERY

- For management of complications and comorbidities such as sinusitis, nasal polyposis, otitis media with effusion