Rhinitis, sinusitis, food and drug allergy, and allergic skin disorders [Part 1]

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The cell type that is important in Immediate Hypersensitivity is?

• A. T helper 1 cell
• B. T reg cell
• C. T helper 2 cell
• D. T 17 cell

• Ans:
The cell type that is important in Immediate Hypersensitivity is?

- A. T helper 1 cell
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- C. T helper 2 cell
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• Ans: C
The late phase of immediate hypersensitivity is mainly due to what cell?

• A. Neutrophils
• B. Eosinophils
• C. Mast cells
• D. T helper cells

• Answer:
The late phase of immediate hypersensitivity is mainly due to what cell?

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Answer: B
Allergic Rhinitis

• One of the most common diseases in the US
• Affects over 30-60 million Americans (20-30% of adults)
• Fifth most common chronic illness
• Sleep, physical and mental health status adversely affected
• Direct costs approximately over $5 billion/year
• Over 16 million office visits

American Academy of Allergy, Asthma, and Immunology. JACI 2008. Rhinitis Practice Parameter 2008
The most common allergen that people are allergic to outside of desert and mountain areas is?

• A. cat
• B. dog
• C. cockroach
• D. molds
• E. house dust mite

• ans
The most common allergen that people are allergic to outside of desert and mountain areas is?

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Ans- E
The most important spring allergen

Tree pollen
Black Oak (Shown in Spring) & Oak Pollen (x 450)
The most important Summer allergen

Grass Pollen

*Timothy Grass & Pollen (x 450)*

![Grass Pollen Image](image-url)
The most important fall allergens

Other weeds and mold spores such as Alternarnia are also important fall allergens.
Major perennial allergens

- Dust mite
- Cat
- Dog
- Indoor molds such as penicillium and aspergillus
In a patient with active allergic rhinitis a smear of the nasal secretions will demonstrate which cells?

• A. neutrophils
• B. T-cells
• C. plasma cells
• D. eosinophils
• E. epithelial cells

• Ans:
In a patient with active allergic rhinitis a smear of the nasal secretions will demonstrate which cells?

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Ans: D
Nasal Smears for Eosinophils, Basophils, and Neutrophils
An indication for IgE skin testing is?

• A. TB
• B. Sulfur allergy
• C. Bee sting allergy
• D. ASA allergy

• Answer:
An indication for IgE skin testing is?

- A. TB
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- C. Bee sting allergy
- D. ASA allergy

Answer: C
IgE Skin Testing

Indications:

• Asthma
• Allergic rhinitis
• Food allergy
• Drug allergy
• Bee sting/fire ant allergy
• Eczema
• Eosinophilic esophagitis
The highest risk for death from anaphylaxis to allergy vaccine or skin testing is?

- A. Severe asthma
- B. Bee sting anaphylaxis
- C. Autoimmune disease
- D. Pregnancy

• Answer:
The highest risk for death from anaphylaxis to allergy vaccine or skin testing is?

- A. Severe asthma
- B. Bee sting anaphylaxis
- C. Fever
- D. Pregnancy

Answer: A
A 22 year old patient has severe asthma and rhinitis. His FEV1 is 55% predicted. What test is contraindicated?

- A. Skin testing
- B. DLCO
- C. Spirometry
- D. eNO (exhaled nitric oxide test)
- E. Lung volumes with helium

Ans:
The best therapy for congestion associated with rhinitis is?

• A. cromolyn
• B. cetirizine
• C. montelukast
• D. topical fluticasone

• Answer:
The best therapy for congestion associated with rhinitis is?

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- Answer: D
# Treatment Considerations in Allergic Rhinitis: ARIA Guidelines

<table>
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Unique Dx Indications for Rx

- Perennial
- Non-allergic
- Gustatory
- Pre-exposure allergic
- Mild Seasonal allergic
- With asthma
- Severe allergic rhinitis

- Intranasal steroid
- Intranasal steroid
- Topical antihistamine
- Ipratropium
- Chromolyn
- NS oral antihistamine
- Montelukast
- Intranasal steroid
Unique symptom indication for Rx

- Congestion
- Itchy mucosa
- Excess secretions
- Severe symptoms
- Poor sleep
- Uncontrolled with medications

- Nasal steroid
- Antihistamine
- Nasal steroids
- Topical antihistamine
- Anticholinergics
- Nasal steroids
- Nasal steroids
- Immunotherapy
Immunotherapy is indicated in?

- 1. Eosinophilic esophagitis
- 2. Urticaria
- 3. Sinusitis
- 4. Asthma
- 5. Hypersensitivity Pneumonitis

Ans
Immunotherapy is indicated in?

- 1. Eosinophilic esophagitis
- 2. Urticaria
- 3. Sinusitis
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- 5. Hypersensitivity Pneumonitis

• Ans 4
26 year old with rhinitis and asthma is 8 weeks pregnant. Which below would you discontinue from her regimen?

• A. immunotherapy
• B. fluticasone nasal spray
• C. cetirizine
• D. oral decongestant
• E. montelukast
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- E. montelukast

• Ans- D
How long should a patient stay on allergy immunotherapy?

• A. 1 year
• B. 2 years
• C. 5 years
• D. 10 years

• Answer
How long should a patient stay on allergy immunotherapy?

- A. 1 year
- B. 2 years
- C. 5 years
- D. 10 years

• Answer C
After treatment with allergy vaccine (AV) for 3 years

Symptoms scores in grass allergic patients during grass pollen season on AV vs. placebo during weeks 1 to 13 of the grass season.
Allergy Vaccine (AV) in Allergic Rhinitis or Asthma after 6 years on placebo, 3 years of AV followed by 3 years of placebo, or 6 years of AV (Durham et al. NEJM 1999;341;468)

Symptom scores in grass allergic patients during grass pollen season on AV vs. placebo during weeks 1 to 13 of grass season.

(Immunotherapy (IT) equals AV)
Allergic Conjunctivitis

• intranasal corticosteroids, oral antihistamines, and intranasal antihistamines have similar effectiveness in relieving ocular eye symptoms associated with rhinitis.

• Topical antihistamines for the eye are the preferred agent
Drug-induced rhinitis may be caused by a number of medications:

- angiotensin-converting enzyme
- phosphodiesterase-5–selective inhibitors
- phentolamine,
- beta-blockers
- ASA and nonsteroidal anti-inflammatory drugs (NSAIDs).

Rhinitis medicamentosa is a syndrome of rebound nasal congestion:
- adrenergic decongestants
- cocaine
Cerebral spinal fluid rhinorrhea

- Refractory clear rhinorrhea
- Usually unilateral
- History of recent trauma or surgery

The presence of b-2-transferrin or glucose in the nasal secretions is a sensitive method of confirming cerebral spinal fluid rhinorrhea.
The true statement about sinusitis is?

- A. Clinicians continue to overprescribe antibiotics for acute sinusitis
- B. there is a lack of efficacy of intranasal corticosteroids in sinusitis
- C. Antibiotics are effective for chronic sinusitis
- D. Antibiotics are necessary for most cases of acute sinusitis

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The true statement about sinusitis is?

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ANS: A
The most common organism in acute sinusitis is?

- A. Staph
- B. Pneumococcal
- C. Rhinovirus
- D. Beta strep

• Answer:
The most common organism in acute sinusitis is?

- A. Staph
- B. Pneumococcal
- C. Rhinovirus
- D. Beta strep

• Answer: C
First line agent for acute bacterial sinusitis is?

- A. SMX-TMP
- B. amoxicillin
- C. clarithromycin
- D. Azithromycin
- E. amoxicillin with clav

Ans:
First line agent for acute sinusitis is?

- A. SMX-TMP
- B. amoxicillin
- C. clarithromycin
- D. Azithromycin
- E. amoxicillin with clav

Ans: E
• *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis*

• 33-44% of *H influenzae* and almost all of *M catarrhalis* strains have beta-lactamase–mediated resistance

• 64% of *S pneumoniae* strains are penicilllin resistant

• Empiric therapy is amoxicillin with clav

Acute Sinusitis

- Most cases resolve without therapy
- nasal steroids, decongestants and saline lavage are first line therapy
- Refractory disease- augmentin or doxycycline
Chronic sinusitis

- Chronic - anaerobes
  - staph
  - mixed cultures
  - allergic fungal sinusitis
  - inflammatory

Question if antibiotics help in chronic sinusitis
Nasal polyps in an adult suggests?

- A. sensitivity to ASA
- B. cystic fibrosis
- C. maxillary sinusitis
- D. ciliary dyskinesia

Answer:
Nasal polyps in an adult suggests?

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- C. maxillary sinusitis
- D. Cilia dyskinesia

Answer: a
Nasal Polyps

- NARES (non-allergic rhinitis with eosin)
- eosinophils in nasal secretions
- 15% ASA sensitivity
- 25% develop asthma
- treat nasal steroids, montelukast, ASA desensitization
- youth with polyps- Cystic Fibrosis
- adult- ASA sensitivity, CF, cilia defect
ASA sensitivity

😊 Non-IgE,
😊 Inhibits cyclooxygenase with a decrease in PG-E2, increase leukotrienes,
😊 Asthma (15%)
😊 avoid ASA in severe asthma and those with nasal polyps (40% if polyps + asthma)
😊 Samter’s Triad- ASA sensitivity, nasal polyps, chronic sinusitis, rhinitis and asthma
😊 also can trigger angioedema, eye and nose symptoms
ASA sensitivity

- Rx: avoid ASA and NSAID
- may use acetaminophen below 1000 mg, and COX-2-inhibitors
- acetaminophen – at high doses cross reacts in extreme ASA sensitivity
- May desensitize, which may improve asthma, rhinitis, sinusitis and nasal polyps, but must remain on ASA or NSAID indefinitely.
For questions or concerns please contact me at 717-531-6525 or Email me at tcraig@psu.edu

Good luck with your boards!