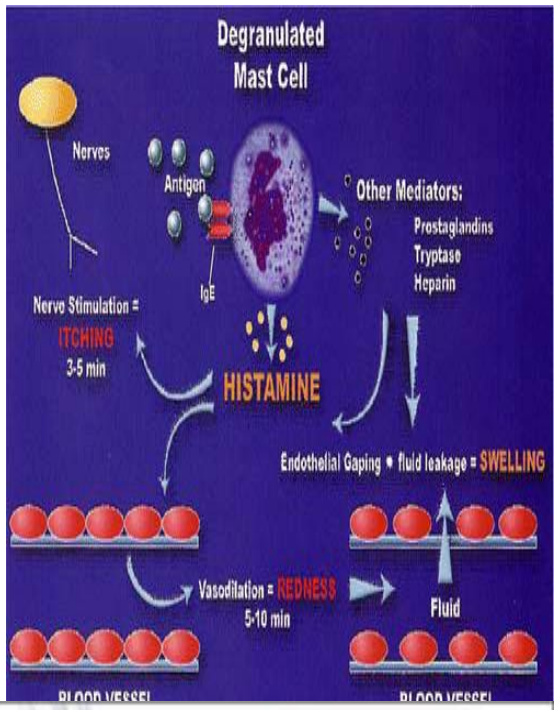
Nasal Allergy

Allergy : an abnormal reaction of the tissues to certain substances *'allergens' 'antigens'* capable of making the body produce antibodies.

In allergic subjects, a special form of antibody (IgE,) is produced. These antibodies easily fix on tissue cells, including those of the nasal and bronchial mucosa or the skin.

Aetiology

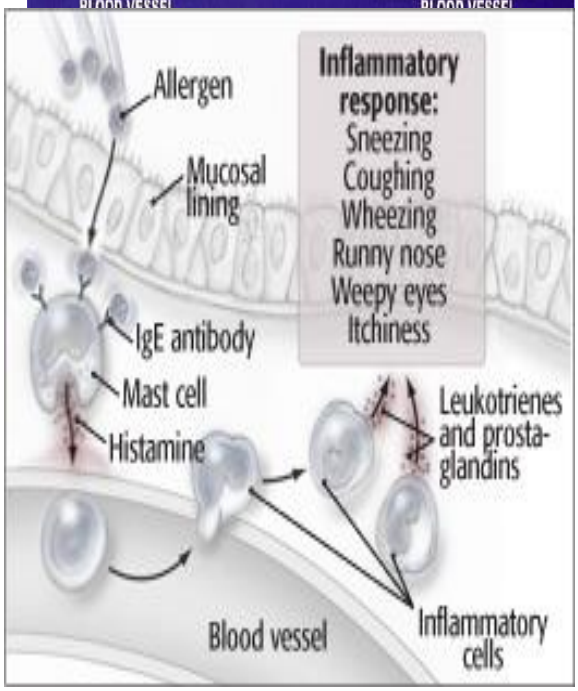


***Mechanism of allergy* (3phases):**

1. IgE (formed by lymphocytes in response to allergen exposure).
2. IgE is bound to mast and basophil cells, initiates the secretion of substances such as histamine that lead to the clinical manifestations.
3. Capillaries become permeable, and oedema occurs. Eosinophils infiltrate the tissues. Serous alveolar glands are stimulated either directly or via an autonomic reflex to produce excess watery secretion.

Predisposing factors

hereditary.. 'Atopy'=inherited tendency.



Precipitating factors

1. *Exogenous*.

a.*Inhalants:* ,:
dusts,pollens,animal,feathers,fungal spores and the house-dust mite

b.*Ingestants;* *(foods):* especially in children such as eggs, strawberries, nuts or fish .Milk or wheat are less obvious.

c. contacts *to skin or nasal mucosa*;. Face powders, and hair from electric razors, nasal drops or sprays .

d. *Drugs* *;* nasal symptoms may be part of a more generalized allergic response.
e. *Infection*: bacterial ,fungi and parasites allergy has been suspected but never proved.

2. Endogenous; tissue proteins from injured tissues, transudates and exudates) ..

Clinical types

1.*Seasonal ('hay-fever': pollinosis).*
2.*Non-seasonal (perennial).*

Age incidence

less common after 50 years of age.

Signs and Symptoms

- Sneezing
- Earache
- Itchy nose, ears, eyes and palate
- Tearing of eyes
- Red eyes
- Rhinorrhea
- Swollen eyes
- Post nasal drip
- Fatigue
- Congestion
- Drowsiness
- Anosmia
- Malaise
- Headache

Physical Examination

- Nasal crease

  Horizontal crease across the lower half of the bridge of the nose

- Rhinorrhoea

  Thin Watery secretions

- Deviated or perforated nasal septum

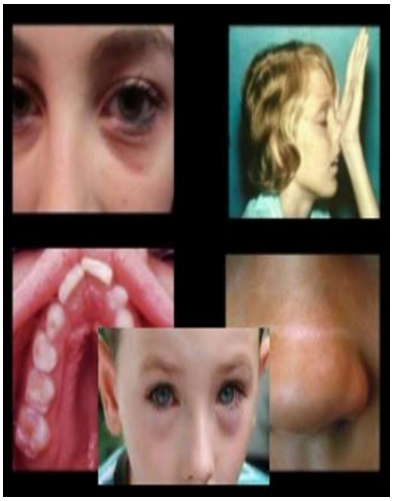
Extra Nasal Manifestation

• Retracted and abnormal flexibility of TM

• Injection and swelling of palpebral conjunctivae with excess tearing.

• Cobblestoning on oropharynx

Classical Signs of AR



• Over bite

• High arched palate

• Allergic shiners

• Allergic salute

• Transverse crease over tip of nose and lower eye lid

• Conjunctival congestion

• Periorbital oedema

Diagnosis

1.Careful history.

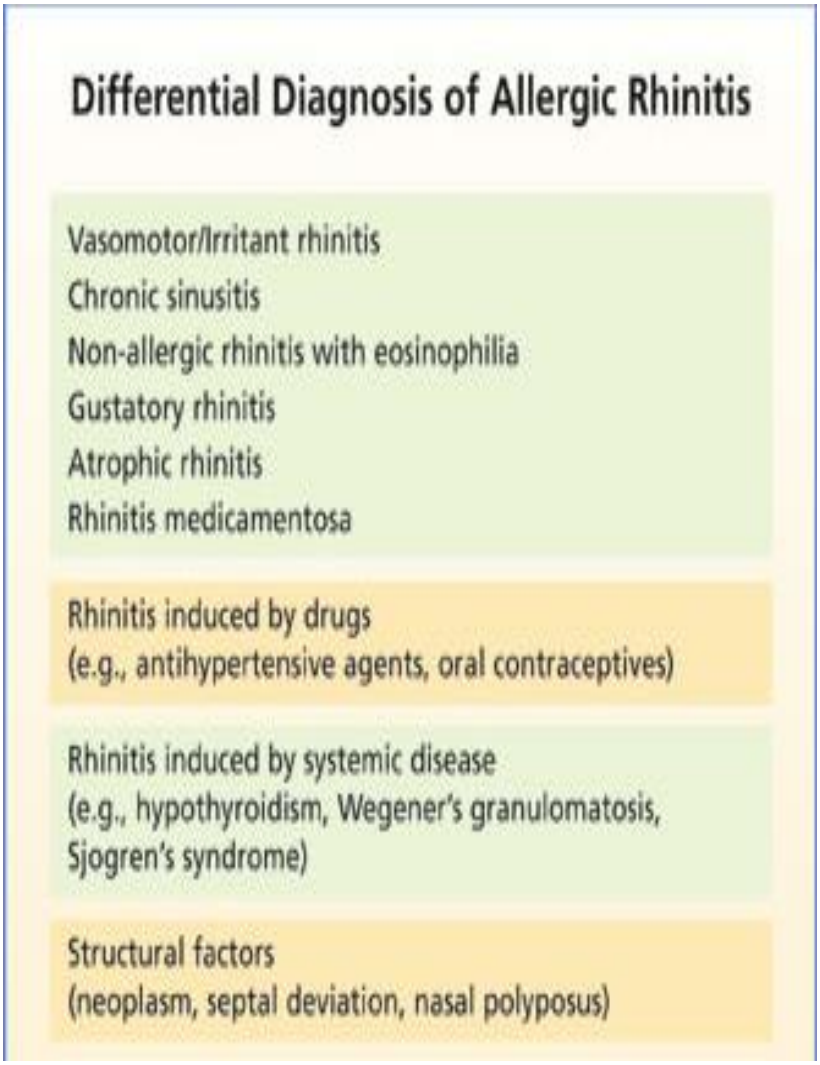
2.Clinical examination..

3. Eosinophils. May be found in great numbers in the nasal secretions ,the nasal mucosa or polypi. The eosinophil count of the blood is raised, especially in the morning, and always in the presence of an extrinsic allergen.

4. Skin tests. These are confirmatory. Sensitivity is less than 50% of cases clinically suggestive of a non-seasonal allergy. Nearly all patients with seasonal symptoms will give positive responses.

5. intranasal test. A drop of test solution may promote rhinorrhea and sometimes lacrimation - so-called '*nasal provocation*' test.

6. Elimination test. may be helpful, especially in suspected food allergies.



Management (Avoidance, Medical, Surgical)

Avoidance

- Minimize contact with offending allergens
- Reduce dust mite exposure by encasing bed pillows and matress in allergen proof covering
- Use of allergen proof bedding…

Acute Phase medications:

- Antihistamines effectively block histamine effects (runny nose and watery eyes)
    - Side effects : sedation, dry mouth, nausea, dizziness, blurred vision, nervousness
- Non sedating antihistamines (cetrizine, Ioratidinelr

- Fewer side effects .

- Fexofenadine may be effective _
    - Carries a lower risk of cardiac arrythmias
- Decongestants
- Anticholinergenic agents
    - inhibit mucous secretions, act as drying agent
- Topical eye preparations
    - Reduce inflammation and relieve itching and burning, -

Generic Name	Trade Name	Dose
First generation		
Diphenhydramine	Benadryl	25–50 mg Q 4–6 hours PRN
		6.25 mg Q 4–6 hours (pediatric)
Clemastine	Tavist	1–2 mg BID-TID PRN
		.5 mg BID (pediatric)
Chlorpheniramine	Chlor-Trimeton	4 mg Q 4–6 hours
		1 mg Q 4–6 hours (2–6 year olds)
		2 mg Q 4–6 hours (6–12 year olds)
Second generation		
Acrivastine	Semprex D	8 mg TID
Loratadine	Claritin	10 mg QD
		5 mg QD (2–12 year olds)
Third generation		
Fexofenadine	Allegra	60 mg BID
		30 mg (6–11 year olds)
Cetirizine	Zyrtec	10 mg QD
		5–10 mg QD (6–11 year olds)
Topical		
Azelastine	Astelin	2 sprays per nostril BID
		1 spray per nostril BID (5–12 year olds)

<u>Prevention Therapy:</u>

- Intranasal corticosteroids
    - Reduce inflammation of mucosa
    - Prevent mediator release
    - Can be used safely daily
    - May be given systemically for a short course during disabling attack.
- Intranasal cromolyn sodium
    - Mast cell stabilizer
    - Prevent release of chemical mediators
- Oral Mast cell stabilizer
- Ophthalmic solution cromolyn
- Leukotriene receptor antagonists
    - Montelukast (singulair) and Zatirlukast (accolate)
    - Systemic agents used for asthma
    - Reduce inflammation, edema and mucous secretions of allergic rhinitis

Immunotherapy

- If allergic rhinitis is refractory to pharmacotherapy or severe
    - Helps in reducing the specific serum IgE level
    - decreases the basophil sensitivity .
    - increases IgG blocking antibody level, thus preventing allergen from reaching mast cells and subsequent mast cell degranulation.

Surgical Therapy

- Limited
    - Submucosal turbinectomy - reduces size of boggy turbinates
    - Septoplasty - correction of deviation of septum
    - Sinus surgery – clearance of sinuses if sinusitis is present.

Complications

- Allergic asthma
- Chronic otitis media
- Hearing loss
- Chronic nasal obstruction.
- Sinusitis
- Orthodontic malocclusion in children.

Thank you,,,