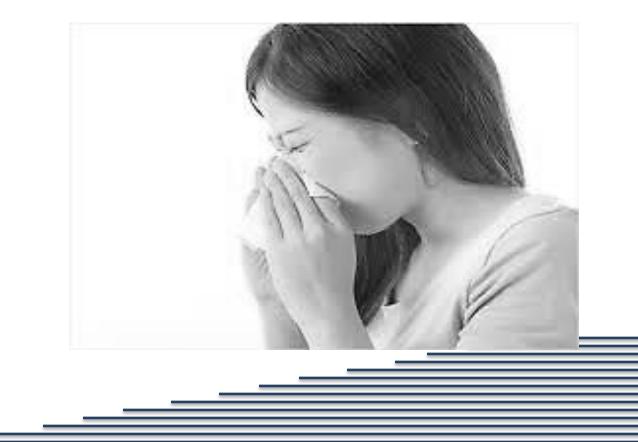
Management of allergic rhinitis



Arrangment By: Dr. Moghtaderi

AR is common chronic disease



Treatment of AR is could be divided into:

- Education for nature of disease
- Removal or avoidance of allergens
- Pharmacotherapy
- immunotherapy
- and surgical intervention

Indoor Allergens







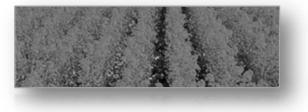
May reduce indoor allergen and risk of sensitization and symptoms:

- Sealing the patient's bedding items in allergen-proof encasings reduces the mites.
- **Sed** linen and blankets should be washed every week in hot water (>54.4°C)
- ✤ The only effective way for animal allergens in the home is the removal of the pet.

Avoidance of out door allergens



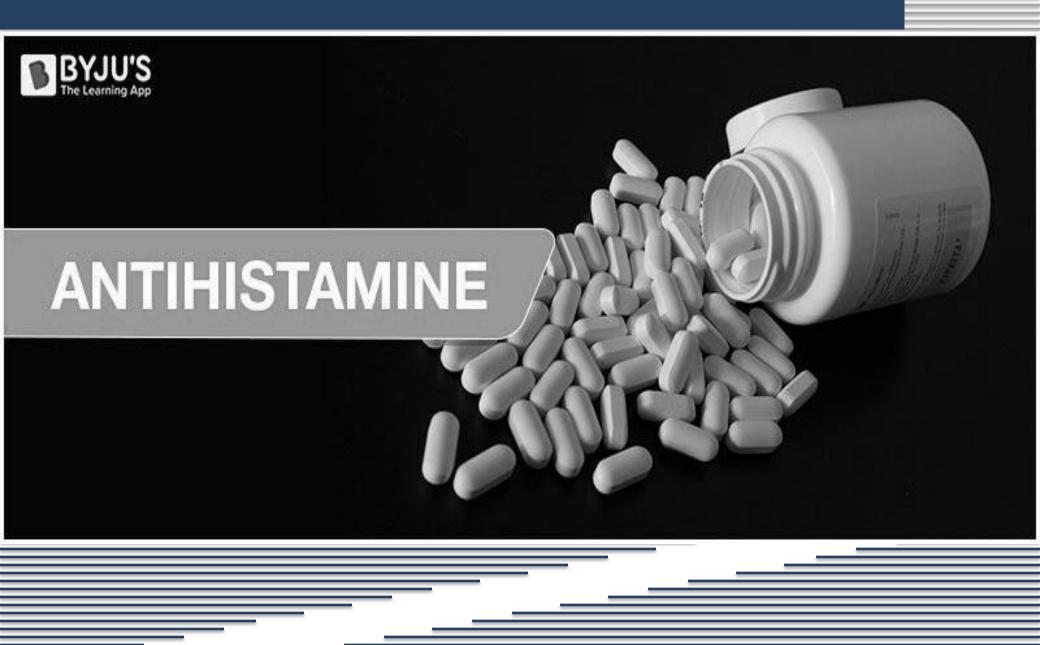




- **Avoidance of pollen and outdoor molds can be by staying in a controlled environment**
- Air conditioning allows for keeping windows and doors closed, reducing the pollen Exposure
- High-efficiency particulate air (HEPA) filters lower the counts of airborne mold spores



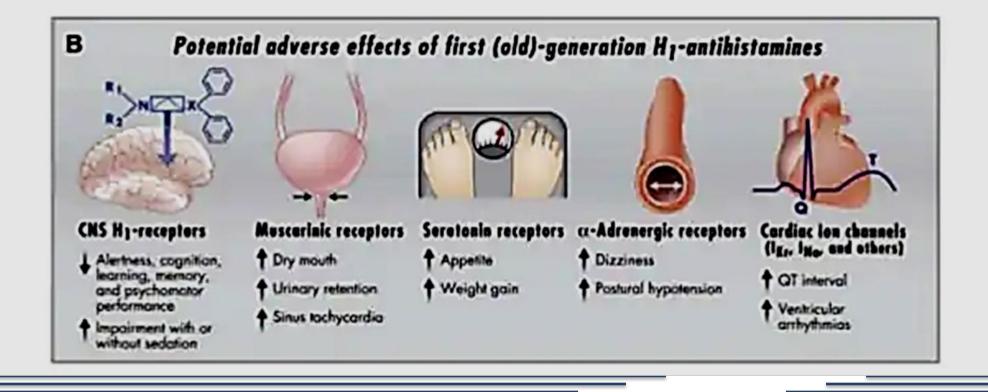
- Antihistamines
- ✤ Leukotriene receptor antagonists
- ✤ INS
- ✤ Vasoconstrictors
- Anticholinergic drugs



Histamine plays an important role in the pathophysiology of AR, especially in the early phase

- ***** H1 antihistamines are initial choice in AR
- Antihistamines classified as first or second generation, Second-generation antihistamines are preferred because they cause less sedation
- ***** Selection of antihistamine: Safety- convenience dose regimen and patient preference.
- ***** Oral antihistamines help reduce sneezing, rhinorrhea, and ocular symptoms

Risks of H1-antihistamines



Sedative properties (drowsiness and impaired performance) are associated with the inhibition of central histamine neurons. Brain H1 receptor occupancy (H1RO) is a useful index shown to be correlated with indices based on clinical findings.

- Antihistamines are classified into non-sedating (<20%), less-sedating (20−50%), and sedating (≥50%) groups based on H1RO.</p>
- Fexofenadine are classified into "non-brain-penetrating antihistamines" based on the H1RO.

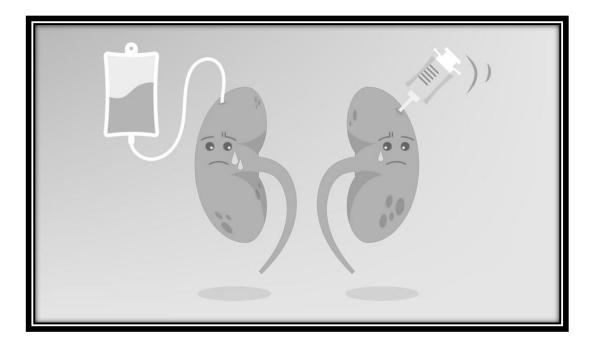
Weight gain

A study found an association between the use of antihistamines and obesity. (Ceterizine and Fexofenadine)

Cyproheptadine, used for the purpose of increasing appetite and weight gain in underweight children and cancer patients undergoing chemotherapy.

If you need to take an antihistamine your best bet is loratadine. This is because loratadine cannot stimulate the appetite center of the brain and does not cause fatigue.

Contraindication: ceterizine and levoceterizine in renal impairment



Since 2006, regulatory agencies in the US and other countries have mandated

that H1 first generation should be withdraw from the market as" no safe" in

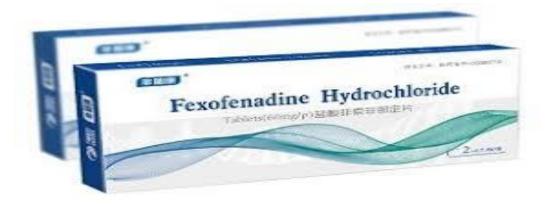
children less than 6 years (no for second generation)

Antihistamines, which affect the central nervous system, can sedate kids, but they can also cause what's called a "paradoxical reaction," meaning they can cause hyperactivity. They can also lead to seizures and cardiac arrhythmia

Name of Drug	Dosage
Neotadine	Children 6-11 mo of age: 1 mg once daily
Syrup 0.5 mg/mL	Children 12 mo-5 yr: 1.25 mg once daily
Tablet 5 mg	Children 6-11 yr: 2.5 mg once daily
	Adults and adolescents ≥12 yr: 5 mg once daily
Cetirizine	6-12 mo: 2.5 mg once daily
1 mg/mL	12-23 mo: initial: 2.5 mg once daily; dosage may be
	increased to 2.5 mg twice daily
	2-5 yr: 2.5 mg/day; may be increased to max of 5 mg/day given
	either as a single dose or divided into 2 doses
	≥6 yr: 5-10 mg/day as a single dose or divided into 2doses
Fexofenadine	6-11 yr: 30 mg twice daily
30,60, 120, 180	12-adult: 60 mg twice daily; 180 mg once daily
Loratadine	2-5 yr: 5 mg once daily
	>6 yr: 10 mg once daily or 5 mg twice daily

Fexofenadine do not require dose adjustment according to the level of hepatic and renal dysfunction.

Fexofenadine not use with antacids, concomitant ingestion of the drug and grapefruit juice should be avoided



Ketotifen

A second-generation H1-antihistamine and mast cell stabilizer, it is also a leukotriene antagonist

For oral dosage form (tablets and syrup):

Adults and children 3 years of age and older—The usual dose is 1 mg (1 tablet or 5 mL of syrup) twice daily, once in the morning and once in the evening.

Infants and children **from 6 months to 3 years of age**. It is usually 0.25 mL of syrup per kg twice daily, once in the morning and once in the evening.

The most common side-effect is feeling irritable.

Nasal Antihistamines



Nasal antihistamine (Azelastine)

- It have a more rapid onset than oral H1: azelastine 15 minutes versus 150 minutes for desloratadine.
- In SAR: intranasal H1 are more efficacious for relief nasal congestion
- intranasal H1 are more efficacious for vasomotor rhinitis
- ✤ intranasal H1 with oral H1 is supported
- ✤ Bitter taste of azelastine
- Side effects: Headache, somnolence





DYNISTA® (azelastine hydrochloride and fluticasone propionate) Nasal Spray 137 mcg/50 mcg per Spray

>12 yr: 1 spray in each nostril bid

Pseudoephedrine

Use for relief of nasal and sinus congestion

Pseudoephedrine is an oral vasoconstrictor for causing irritability and insomnia and for its association with infant mortality.

Because younger children (2-3 yr) are at increased risk of overdosage and toxicity, some manufacturers have voluntarily revised their product labeling to warn against the use of preparations containing pseudoephedrine for children <4 yr old.

Nasal spray ipratropium bromide

The anticholinergic nasal spray

is effective for the serous rhinorrhea, but no for itching, sneezing and nasal congestion

In gustatory rhinitis and rhinorrhea induced by exposure to cold and dry air, food, exercise

contraindicated in patients with hypersensitivity to soy lecithin.

Safety and efficacy of use beyond 4 days in patients with the common cold have not been established.

adverse effects: Epistaxis, nasal dryness, nausea



Cromolyn sodium nasal spray



>2 yr: 1 spray tid-qid; max 6 times daily

Not effective immediately; requires frequent administration

Safe in children and pregnancy

Oxymetazoline and Phenylephrine

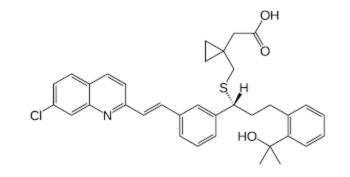
- Use in excess of 3 days may result severe rebound nasal congestion.
- Do not repeat more than once a month.
- Use with caution in patients with hyperthyroidism, heart disease, hypertension, or diabetes.



Leukotriene-modifying agents have a modest effect on rhinorrhea and nasal blockage

Are not recommended as monotherapy for AR (but in AR with asthma)

Montelukast Oral Granules :6 mo-5 yr: 4 mg daily Chewables: 5 mg tablets; 6-14 yr: 5 mg daily Tablet 10 mg >14 yr: 10 mg daily





More in non allergic rhinitis with thick discharge

In atrophic rhinitis

No effect on nasal congestion

Intranasal steroids



Used for persistent, severe symptoms of AR

Is the most effective therapy for AR

A benefit of use of INS in patients with AR is a significant reduction concomitant of ocular symptoms

These agents reduce the symptoms of AR with eosinophilic inflammation, but not those of rhinitis associated with neutrophils or free of inflammation.

(A)

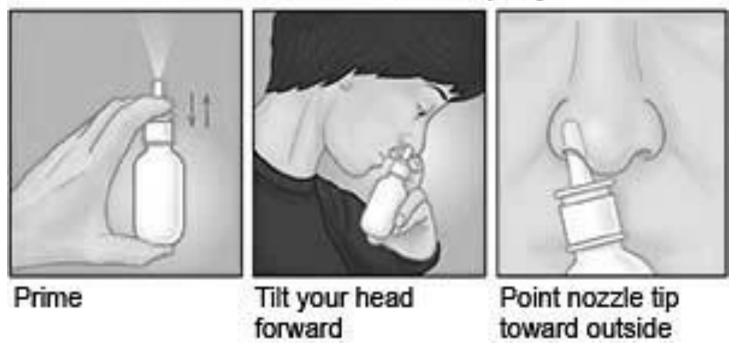
- 1. Shake bottle well
- 2. Look down
- Using right hand for left nostril put nozzle just inside nose aiming towards outside wall
- 4. Squirt once or twice (2 different

directions

- 5. Change hands and repeat for other side
- 6. Breathe in gently through the nose
- 7. Do not sniff



How to Use Nasal Spray



Nasonex, mometazone 2-12 yr Restanex Vivanella

Rhinocort Aqua, budesonide 6-12 yr Naxonella

Flomist, Fluticasone proprionate: 2 yr

In SAR: start treatment 1 week before the pollination and reevaluate

INS begins to have effect within 7 to 8 hours of dosing but sometimes is earlier

Monitor for side effects (local nasal irritation, epistaxis in 4-8% especially for more 1 year, Candida overgrowth

INS on pediatric growth evaluate each 6 months to monitor growth

INS has no ocular side effect



Allergen Immunotherapy

Systemic corticosteroid

Role in AR is limited

NARES

Rhinitis medicamentosa

No using in SAR



Allergen Immunotherapy



Allergen-specific immunotherapy is a well-defined treatment for IgE-mediated allergic disease which cannot be adequately controlled by avoidance and medication

It may be administered by subcutaneous or sublingual routes.

Allergy immunotherapy (AIT) is an effective treatment for AR (PAR &SAR) and allergic conjunctivitis.

In addition to reducing symptoms, it may change the course of allergic disease and induce allergen-specific immune tolerance by production of IgG4.



Indication of immunotherapy:

Severe no responsive to medication

AR complicated by other disease

Desire of patient

Adverse effect of medication



Mild intermittent complains of rhinorrhea or sneezing:

Oral non- sedative antihistamine or intranasal antihistamine Nasal congestion: INS + antihistamine + decongestant

Moderate to severe symptoms: Combination of INS with antihistamine and



Pregnancy

no treatment or irrigation with hypertonic saline INS in not effective in symptoms of rhinitis of pregnancy

In pregnant women with AR: Nasal congestion with Cromolyn spray is safe, if no response for 2-week period start INS (more safety with budesonide) Antihistamine: Diphenhydramine and chloropheniramine – ceterizine and loratadine (group B)

Oral decongestant should be avoided during the first trimester for anomaly



