

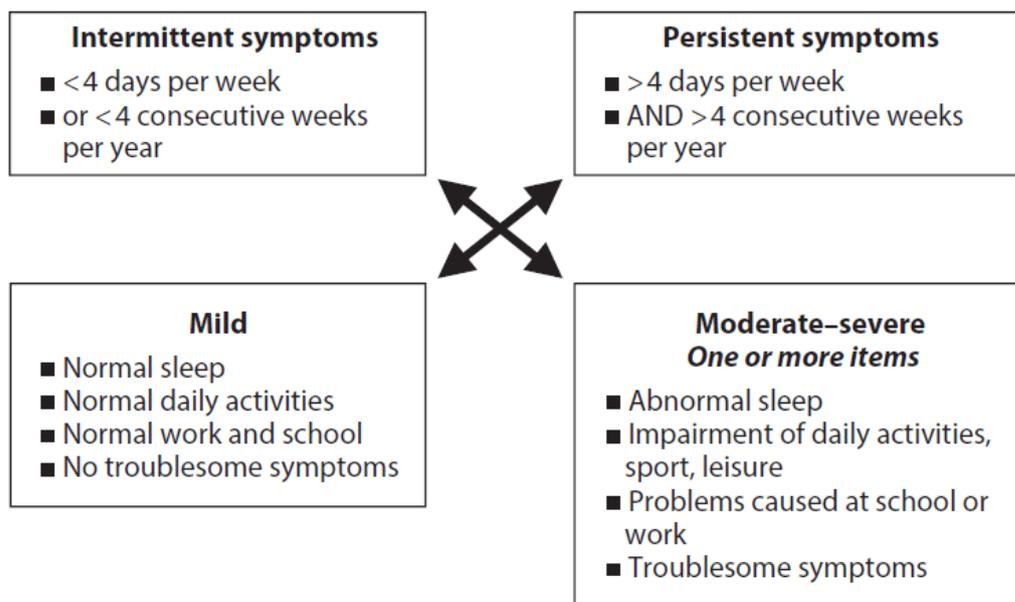
Allergic rhinitis (AR)

Objectives:

- Define AR
- Know how to treat AR
- Know how to differentiate AR from other forms of rhinitis

introduction

Rhinitis is defined clinically as having two or more symptoms of anterior or posterior rhinorrhoea, sneezing, nasal blockage and/or itching of the nose during two or more consecutive days for more than one hour on most days. Allergic rhinitis is diagnosed when these symptoms are caused by allergen exposure leading to an IgE mediated reaction. Allergic rhinitis is subdivided into intermittent (IAR) or persistent (PER) disease and the severity into mild or moderate/severe . Allergic rhinitis was previously classified as “seasonal” and “perennial”. Allergic rhinitis is not a severe disease, but it alters a patient’s social life, affecting school performance and work productivity.



Etiology and Triggers

Allergens

Aeroallergens are very often involved in allergic rhinitis. The increase in domestic allergens is responsible in part for the increase in the prevalence of rhinitis, asthma and allergic respiratory diseases. In the home, the main allergens are mites, domestic animals, insects or plants. Outdoor allergens include pollens and moulds also allergens can be classified as

- 1 seasonal, e.g. mould spores in autumn, tree and grass pollen in spring;
- 2 perennial, e.g. animal dander (especially cats), house dust mite



Pollutants

Pollutants are involved in the aggravation of nasal symptoms in patients with allergic and non-allergic rhinitis . Indoor pollution, including domestic allergens and indoor aerosol pollutants (tobacco smoke), is of great importance.

Aspirin and Non-Steroidal Anti-Inflammatory Drugs

Aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) commonly induce rhinitis and asthma..

Clinical presentation

Symptoms

1. Watery rhinorrhea
2. Sneezing often frequent and prolonged
3. Nasal obstruction which may be bilateral or alternating
4. Eye symptoms like itching and lacrimation

Signs

1. The nasal mucosa is oedematous and usually pale or violet in colour.
2. There is excessive clear mucus within the nose, and this usually contains an increased number of eosinophils.
3. Children may develop a transverse nasal skin crease from rubbing the nose—the allergic salute.

Investigations

1. **Skin prick test** : The skin of the forearm is pricked with a needle through a dilute solution of the relevant allergen; a positive response is a central weal with surrounding erythema.
2. **RAST (radio-allergo sorbent test)** measures allergen-specific IgE and has the advantage of being performed on a blood sample.
3. **High total IgE level** is a useful indication of the presence of atopy

Management

- **Allergen avoidance** :

allergen avoidance (including house dust mites) should be an integral part of a management strategy.

- **Pharmacological Treatment**

1. H₁ antihistamines

Old generation (1st): chlorpheniramine, diphenhydramine, ketotifen

New generation (2nd): azelastine (intranasal), cetirizine, desloratadine, fexofenadine, levocetirizine, loratadine.

The mechanism of action of this drug class is blockage of H₁ receptors, Side Effects of Old generation include Sedation and/or anticholinergic effect which is less in the new generations, while the new generations is rapidly acting on nasal and ocular symptoms it is less effective on nasal congestion.

2. Corticosteroids

Intranasal: beclomethasone, budesonide, fluticasone, mometasone,

Oral/IM: dexamethasone, hydrocortisone, methylprednisolone, prednisolone,

Corticosteroids potently reduce nasal inflammation and nasal hyperreactivity, side effect of nasal preparation is negligible compared with systemic which may include deleterious effect on BP, S. glucose, cataract, obesity...etc

Corticosteroids are the most effective pharmacological treatment for allergic rhinitis. They are effective against nasal congestion and loss of smell.

3. SODIUM CROMOGLICATE

Sodium cromoglicate nasal spray has modest effects on rhinitis symptoms but must be used four times daily, which limits compliance. It has no side effects.

4. DECONGESTANTS

Topical (e.g. xylometazoline) and systemic decongestants (e.g. pseudoephedrine) are available and have a place in allergic rhinitis management. Unwanted side effects include palpitation, agitation, HT, urinary retention and dry mouth.

5. Anticholinergics

This class of drugs includes ipratropium. Anticholinergic drugs almost exclusively block rhinorrhea. The side effects of anticholinergics are minor and local.

6. Leukotriene Receptor Antagonists

The drugs in this class include montelukast and zafirlukast and it is effective if combined with antihistamine than if used alone.

- **Immunotherapy**

Specific immunotherapy is effective when optimally administered . it can be administered either by SC injection or by nasal and sublingual administration.

	sneezing	rhinorrhea	nasal obstruction	nasal itch	eye symptoms
H₁-antihistamines					
oral	+++	+++	0 to +	+++	++
intranasal	++	+++	+	++	0
intraocular	0	0	0	0	+++
Corticosteroids					
intranasal	+++	+++	++	++	+
Chromones					
intranasal	+	+	+	+	0
intraocular	0	0	0	0	++
Decongestants					
intranasal	0	0	++	0	0
oral	0	0	+	0	0
Anti-cholinergics	0	++	0	0	0
Anti-leukotrienes	0	+	++	0	++

- **Surgical intervention**

Nasal surgery may be needed where there is a marked septal deviation or bony turbinate enlargement which makes topical nasal sprays usage difficult.

Non-allergic rhinitis

The term 'non-allergic rhinitis' is commonly applied to a diagnosis of any nasal condition in which the symptoms are identical to those seen in allergic rhinitis but an allergic aetiology has been excluded. These non-allergic aetiologic entities can broadly be classified as:

- idiopathic rhinitis (also referred to as vasomotor rhinitis, or non-allergic non-infectious perennial rhinitis (NANIPER));
- non-allergic occupational rhinitis;
- hormonal rhinitis;
- drug-induced rhinitis; and
- other forms (non-allergic rhinitis with eosinophilia syndrome (NARES), rhinitis due to physical and chemical factors, food-induced rhinitis, emotion-induced rhinitis, atrophic rhinitis).

Clinical presentation

Usually similar to signs and symptoms of AR with exception of negative allergic test.

Treatment

Usually depending on the identifying the underlying precipitating factor and avoiding it .

Medical treatment

Similar to those used in AR (ICS , Antihistamines , decongestant ... etc)

Surgical intervention

- surface turbinate cauterly
- septoplasty: removes mechanical points of irritation
- vidian neurectomy (efficacy controversial)
- partial turbinectomy or turbinate ablation
- total turbinectomy risks atrophic rhinitis