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# *New guidelines in allergic rhinitis*

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# *Definition of AR*

- Allergic rhinitis is a clinical hypersensitivity of the nasal mucosa to foreign substances mediated through IgE antibodies.
- AR is a common manifestation of TH2-related immune pathophysiology in the upper aerodigestive tract.

# Classification of allergic rhinitis

<b>Intermittent</b> symptoms <ul style="list-style-type: none"><li>• &lt;4 days per week</li><li>• <u>or</u> &lt;4 weeks</li></ul>	<b>Persistent</b> symptoms <ul style="list-style-type: none"><li>• &gt;4 days/week</li><li>• <u>and</u> &gt;4 weeks</li></ul>
<b>Mild</b> <ul style="list-style-type: none"><li>• normal sleep</li><li>• normal daily activities, sport, leisure</li><li>• normal work and school</li><li>• no troublesome symptoms</li></ul>	<b>Moderate-Severe</b> <i>one or more items</i> <ul style="list-style-type: none"><li>• abnormal sleep</li><li>• impairment of daily activities, sport, leisure</li><li>• problems caused at work or school</li><li>• troublesome symptoms</li></ul>

- Seasonal AR
- Pollen, grasses, weeds
  
- Perennial AR
- House dust mite, animal dander, feathers, mould, wheat, egg, milk, nuts

# *Important factors in pharmacotherapy*

The selection of pharmacotherapy for patients with AR depends on:

- age
- prominent symptoms
- symptom severity
- control of AR
- patient preferences
- cost

# *Main therapies for AR*

- Allergen avoidance
- Drug therapy
- Allergy immunotherapy (AIT)

# *Avoidance*

- Removing a pet from the house or bathing the pet
- Covering pillows and mattresses
- Washing bedding with hot water
- Using tannic acid
- Use of acaricides; most effective at decreasing dust mite levels
- High-efficiency particulate air filters
- Avoiding lawn mowing
- Driving with the car windows closed

***Effectiveness of avoidance is low***

# *Drug therapy*

- The first-line treatments for AR include H1 antihistamines, intranasal corticosteroids (INCS) and a combination of INCS and H1 antihistamines, depending on the severity of the patient's symptoms . H1 antihistamines may be used in patients with mild symptoms or who do not want to use INCS . For those with persistent or moderate to severe symptoms, INCS is recommended .
- Reevaluation after 2 weeks of treatment. If there is a partial response while the patients were on antihistamines, we switch to an antihistamine/decongestant combination. Fixed combinations of INCS and H1 antihistamines are mainly used in patients who do not benefit from INCS alone . The stepwise treatment is suggested for AR.



# *Combination therapies with INCS*

- For residual eye symptoms treat with intraocular antihistamines (Azelastine ophthalmic, Olopatadine) or mast cell stabilizers (cromolyn sodium)
- For residual nasal congestion add an intranasal antihistamine (Azemix-F nasal spray)
- For residual rhinorrhea add an intranasal anticholinergic (Ipratropium Bromide)
- In total nasal obstruction you can use a short course of systemic corticosteroids.(probable suppression of hypothalamic-pituitary axis)

# *Monoclonal antibodies*

- Omalizumab, an anti IgE antibody and dupilumab targeting the IL-4/IL-13 pathway, have been attempted in patients with AR. Two meta-analyses revealed that omalizumab was effective and safe to treat moderate to severe asthma and uncontrolled AR patients.
- Although type 2 biologics have produced promising efficacy for the treatment of AR, they are more reasonably reserved for patients with uncontrolled disease given their high cost.
- It is not FDA approved for the treatment of AR alone.
- Biologics have also been used in patients under AIT to reduce adverse events and improve efficiency of AIT.

# Certain patients

- Pregnancy : use budesonide as the INCS of choice, loratadine , cetirizine, levocetirizine as safe antihistamines in pregnancy. Cromolyn nasal spray is safe .
- Elderly: avoid sedating antihistamines.
- Competitive athletes: systemic decongestants (eg. Pseudoephedrine)are banned substances and should be avoided.
- AIDS patients: combination use of ritonavir and intranasal fluticasone should be avoided. Safer options are budesonide, triamcinolone and flunisolide

# *AR and Covid 19 Infection*

- Comparison of disease incidence, clinical features, and immunological findings between allergic and non-allergic COVID-19 patients, has suggested that allergy is not a risk factor for COVID-19 development, severity, and disease course.
- Expert consensus statement on the use of intranasal corticosteroids in AR and asthma patients infected with COVID-19, recommended that INS should be continued at the recommended dose as stopping it would increase sneezing and lead to more spreading of the virus.

# *Allergen-Specific Immunotherapy (AIT)*

- If no response to maximal medical treatment perform allergy testing and evaluate the patient for AIT.
- Significant modulation of the immune system
- The only known therapy to alter the natural course of the disease for continued efficacy after cessation of therapy
- 40% risk reduction of subsequent development of Asthma.

# *Types of immunotherapy*

- Subcutaneous immunotherapy (SCIT)  
duration: 3 to 5 years weekly to monthly injections
- Sublingual immunotherapy (SLIT). daily sublingual tablet preparations
- Intralymphatic immunotherapy (ILIT). Under ultrasound guidance, allergen is injected into inguinal lymph nodes, 8 weeks.

# *Contraindications to AIT*

- Poorly controlled asthma
- Active autoimmune disease
- Malignancy
- Cardiovascular disease
- Current use of betablockers

# *Surgery*

- Surgical intervention may aim at reducing nasal obstruction as a means of improving quality of life of AR patients
- Other surgical options, such as posterior nasal nerve resection or ablation and vidian neurectomy can reduce the neural reflex and neuro-immune crosstalk in AR patients and therefore relieve symptoms, but unfortunately, some complications can occur.



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