A vibrant sunset scene with a bright sun low on the horizon, casting a warm glow over a field of tall grass. The sky is filled with soft, colorful clouds in shades of orange, yellow, and blue. Several birds are seen flying in the upper portion of the sky. The text «In the name of GOD» is overlaid in a bold, blue, 3D-style font across the middle of the image.

**«In the name of GOD»**



# Allergic Rhinitis

Presentation by:

**Dr. Mohsen ShafiePour**

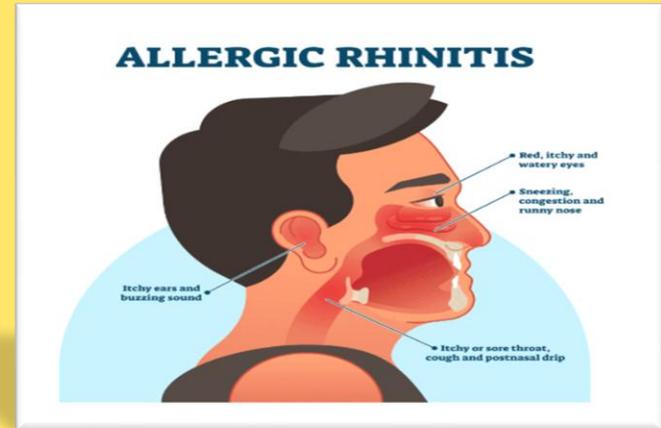
Associate Professor of Pulmonary Disease

Kerman University of Medical Sciences

# Definition

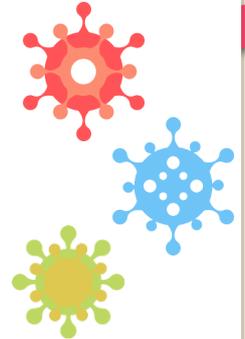


Allergic rhinitis is an IgE-mediated inflammation of the nasal mucosa triggered by allergens. Typical symptoms include sneezing, runny nose, nasal itching, and congestion.

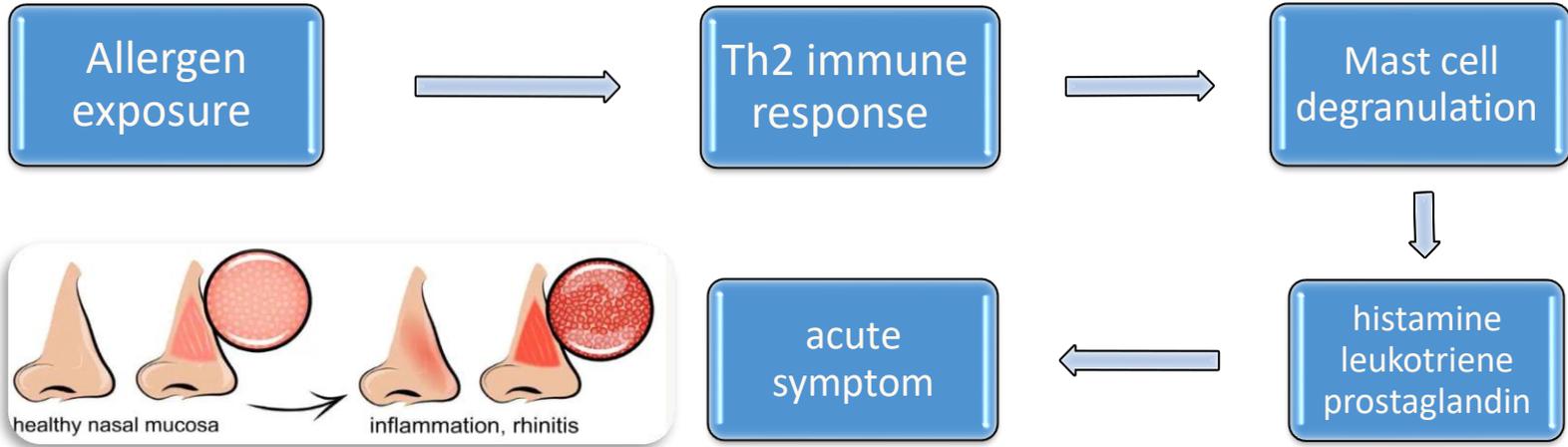


# Epidemiology

- **Global prevalence of allergic rhinitis: ~39.4% (positive allergy tests)**
- **Physician-diagnosed prevalence: ~24.2%.**
- **Slight male predominance in childhood; adult prevalence balanced.**
- **children and adolescents often affected.**
- **More common in urban areas**
- **Seasonal trends: Spring and early summer peak for pollen; autumn peak in some regions. Perennial rhinitis occurs year-round, mainly due to indoor allergens (dust mites, mold, pets).**



# Pathophysiology



- **Chronic phase: eosinophils / cytokines / neurogenic inflammation**

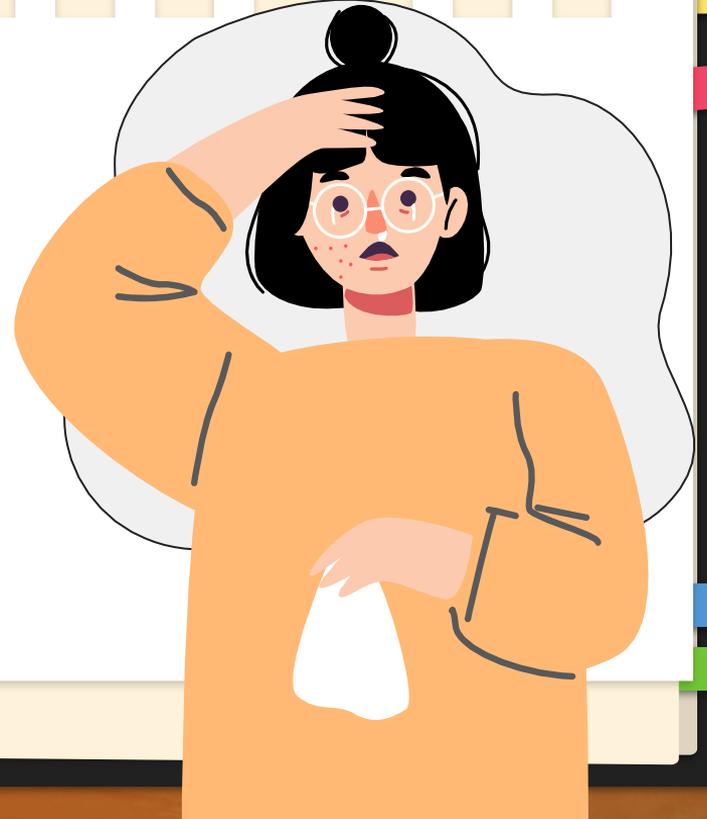
# Clinical Types

- **Seasonal (Intermittent):** <4 days/week or <4 weeks/year
- **Perennial (Persistent):** ≥4 days/week and ≥4 weeks/year
- **Occupational:** Triggered at workplace
- **Local allergic rhinitis:** Negative systemic tests, positive local nasal IgE



# ARIA Classification Framework

ARIA classifies AR based on symptom duration and severity to guide therapy.



# Classification by Duration – ARIA

- Intermittent: <4 days/week OR <4 consecutive weeks
- Persistent: ≥4 days/week AND ≥4 consecutive weeks

Examples:

- Intermittent: pollen allergy
- Persistent: dust mite allergy



# Clinical Features

- watery rhinorrhea
- Sneezing
- nasal itching
- congestion



- fatigue
- post-nasal drip
- reduced smell
- sleep disturbance

# Classification by Severity – ARIA

- **Mild:** Normal sleep, daily activities, work/school, no troublesome symptoms.
- **Moderate - Severe:** Sleep disturbance, daily activity impairment, reduced work/school performance.
- **VAS:** Mild  $<2$  | Moderate - Severe  $\geq 5$



# Visual Analogue Scale (VAS)

- VAS (0–10 cm) assesses symptom severity and treatment response:
  - 0 = no symptoms
  - 10 = extremely bothersome symptoms

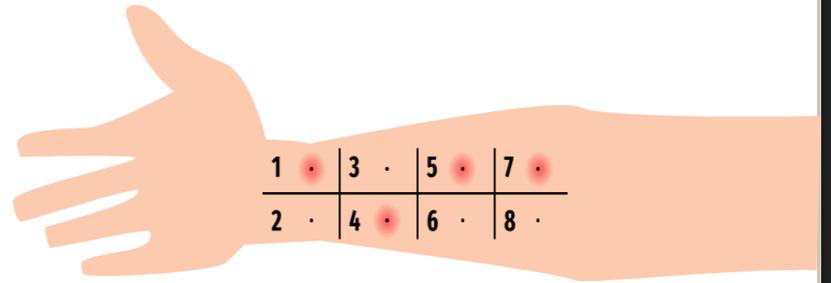


# Clinical Diagnosis

- History, Triggers
- Seasonality
- Comorbidities
- nasal exam

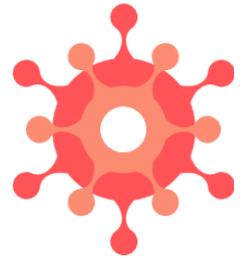
## Investigations:

- Skin prick test or serum-specific IgE
- nasal cytology or endoscopy if atypical or refractory



# Non - pharmacologic Management

- Allergen avoidance
- Environmental control
- Smoking cessation
- Air filtration and humidity control



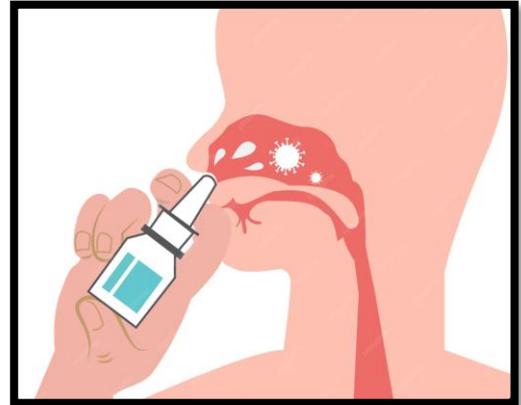
# Stepwise Treatment: Step 1

**Mild/intermittent:**

- Oral second-generation antihistamine OR intranasal antihistamine

**Moderate/severe or persistent:**

- Intranasal corticosteroid (INCS)



# Step 2: Reassessment

Reassess 48–72h or up to 7 days

If response inadequate → Step-up:

- INCS + intranasal antihistamine
- OR Add oral antihistamine
- OR Add leukotriene receptor antagonist (LTRA)



# Step 3: Severe/Refractory

- Consider immunotherapy (SCIT/SLIT).
- Evaluate omalizumab in patients with severe allergic rhinitis resistant to maximal pharmacotherapy, especially with comorbid asthma.



# Step 4: Step-down

- If symptoms controlled for several weeks → reduce dose/frequency.
- Use VAS or symptom diary to monitor.



# Oral Antihistamines (First-Generation)

- Diphenhydramine, Chlorpheniramine, Hydroxyzine
- Rapid effect
- But sedating and anticholinergic → limited to short-term or nighttime use
- Not recommended for long-term daily therapy



# Oral Antihistamines (Second-Generation)

- Cetirizine, Levocetirizine, Loratadine, Desloratadine, Fexofenadine, Bilastine, Rupatadine
- Minimal sedation, onset 0.5 - 3h, duration ~ 24h
- **Bilastine: onset 1 - 1.5h, sustained 24h effect**



# Intranasal Antihistamines

- Azelastine, Olopatadine
- Rapid onset 15–30 min
- Reduce congestion
- Can combine with INCS for refractory cases



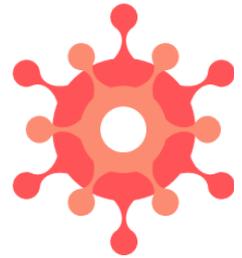
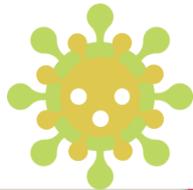
# Intranasal Corticosteroids (INCS)

- **First-line** for moderate-to-severe/persistent rhinitis
- Reduces all nasal symptoms, especially congestion
- Partial effect 12 - 24h
- Full effect several days



# Allergen Immunotherapy (AIT)

- AIT modifies the natural course of allergic disease.
- Indicated for IgE-mediated AR when pharmacotherapy is insufficient or long-term benefit desired.



# **Immunotherapy & Biologics SCIT/SLIT:**

- **Modify disease course**
- **Reduce medication need**
- **Omalizumab: for severe allergic rhinitis resistant to pharmacotherapy, often with comorbid asthma**
- **IgE-mediated sensitization required**

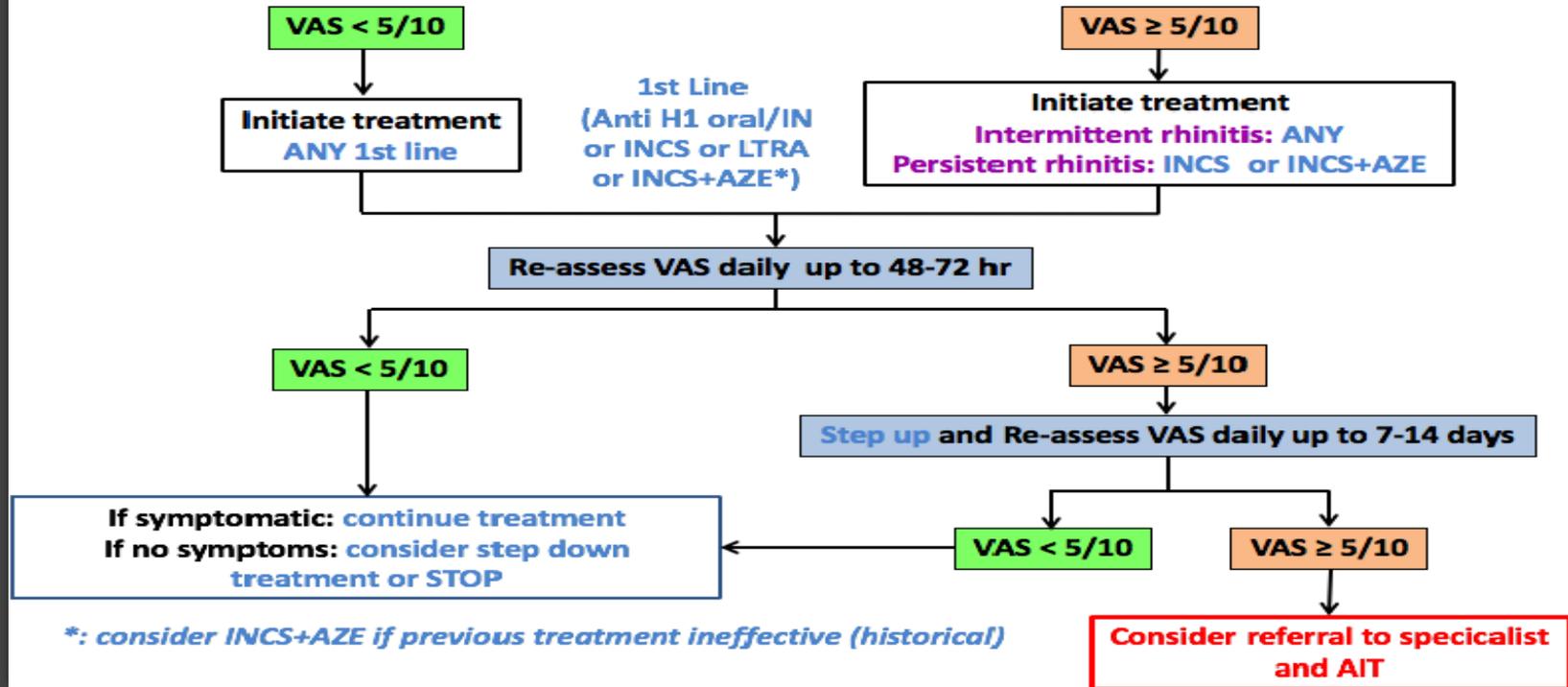
# Link with Asthma

- ARIA emphasizes 'one airway, one disease'
- AR and asthma often coexist and share inflammatory pathways.
- Relation to Asthma Upper and lower airway linked (“one airway concept”) Treating rhinitis improves asthma control and reduces exacerbations



# ARIA guidelines recommendation

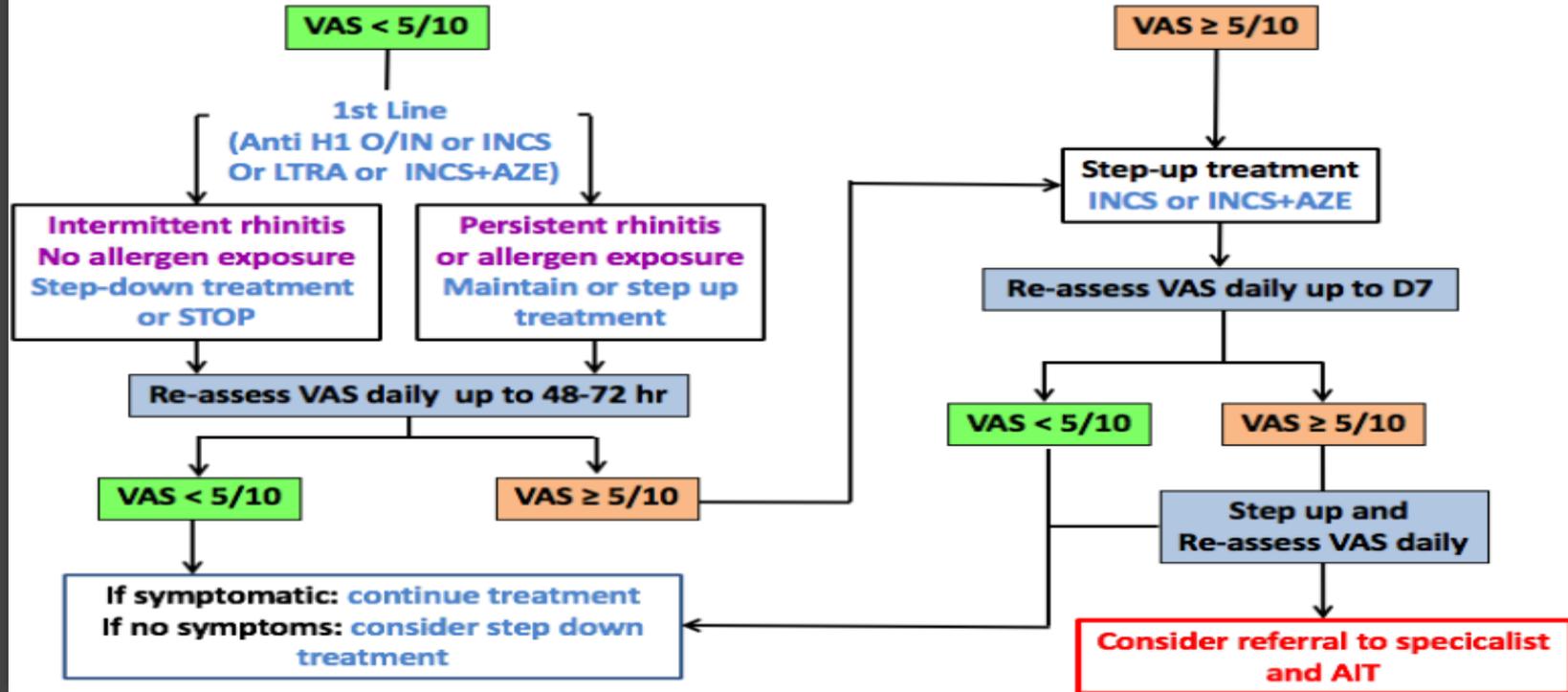
## Assessment of control in untreated symptomatic patient





# ARIA guidelines recommendation

## Assessment of control in treated symptomatic patient



# Summary

- Allergic rhinitis is common
- IgE - mediated
- Affects quality of life, sleep, and asthma

ARIA recommends:

- classification-based, stepwise therapy
- prioritizing INCS and second-generation antihistamines with immunotherapy or biologics for selected severe cases.
- First-generation antihistamines have limited use



# References

- **ARIA (Allergic Rhinitis and its Impact on Asthma) Guidelines 2023–2024**  
**UpToDate: Pharmacotherapy of allergic rhinitis**
- **GINA 2024: Global Strategy for Asthma Management**
- **Scadding GK, et al. J Allergy Clin Immunol 2022**
- **World Allergy Organization Journal 2022; Prevalence of Allergic Rhinitis**
- **Clinical trials of Bilastine, Fexofenadine, Cetirizine**
- **European studies on seasonal allergic rhinitis prevalence**

**Thanks  
for your  
attention!**

