ALLERGIC RHINITIS AND ALLERGIC CONJUNCTIVITIS

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INTRODUCTION

Allergic rhinitis is a common problem in childhood and adolescence

Allergic rhinitis causes chronic disturbing symptoms which have a negative effect on physical, social and psychological well-being

Rhinitis Phenotypes

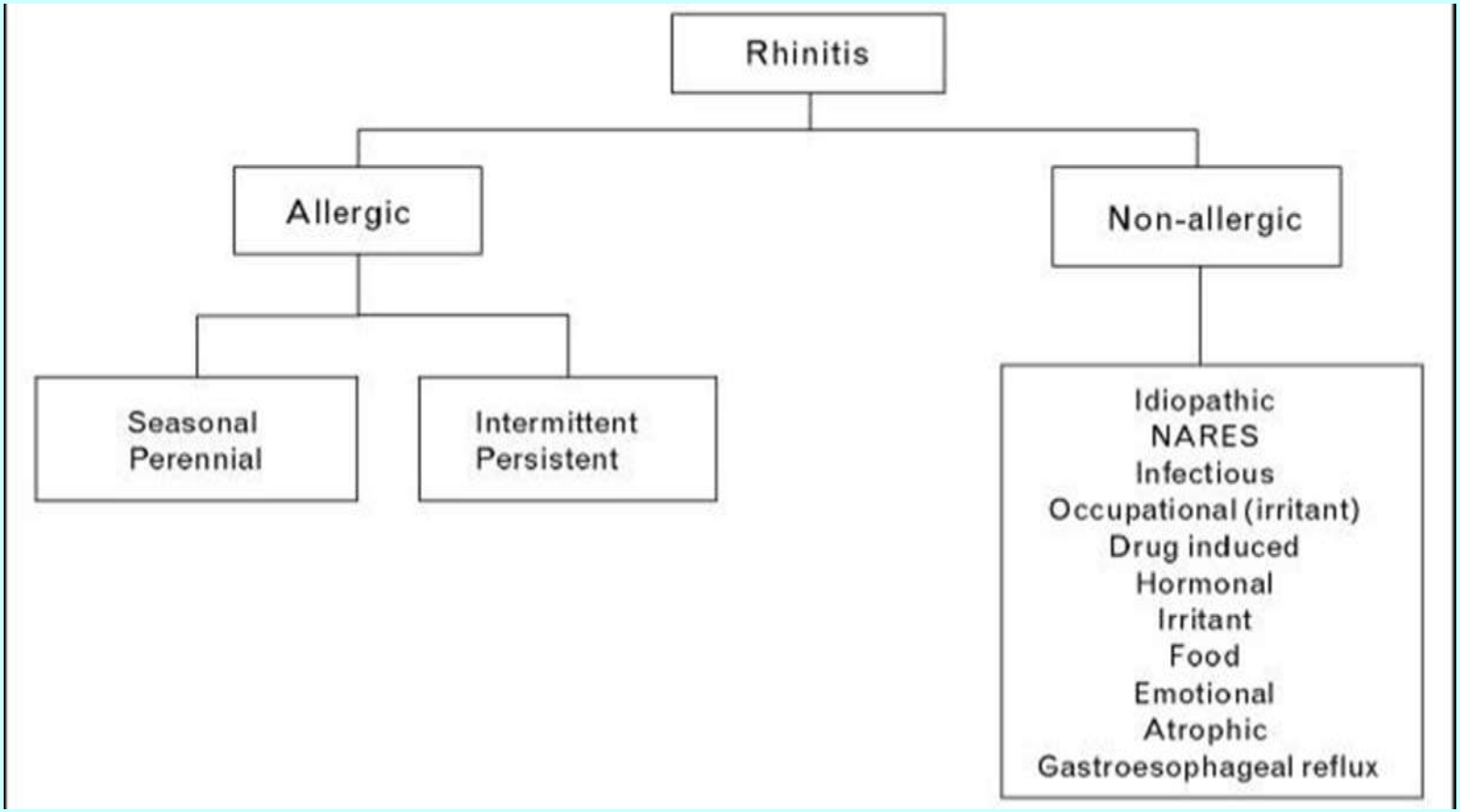
Allergic rhinitis

Non-allergic

Infectious rhinitis

Non-infectious

Rhinitis Phenotypes



Rhinitis Phenotypes

Allergic

Infectious: Viral (acute), bacterial, fungal

Non-Allergic, Non-Infectious, Rhinitis

Non-Allergic Rhinitis with Eosinophilia Syndrome (NARES)

Medication Induced Rhinitis

Pregnancy Induced Rhinitis

Occupational Rhinitis

Occupational rhinitis may be triggered by laboratory animal antigen, psyllium, irritants such as chemicals, grain dust, and ozone

Chronic Rhinosinusitis with/without Polyps in any rhinitis patient

DEFINITION

Allergic rhinitis is an IgE-mediated disease involving a T helper type 2 (Th2) pathway

AR is an inflammatory disease characterized by nasal congestion, rhinorrhea (nasal drainage), sneezing, and/or nasal itching.

DEFINITION

Non-allergic rhinitis is defined as rhinitis symptoms in the absence of identifiable allergy, structure abnormality or sinus disease

Nasal function includes

Temperature regulation

Olfaction

Humidification

Filtration and protection

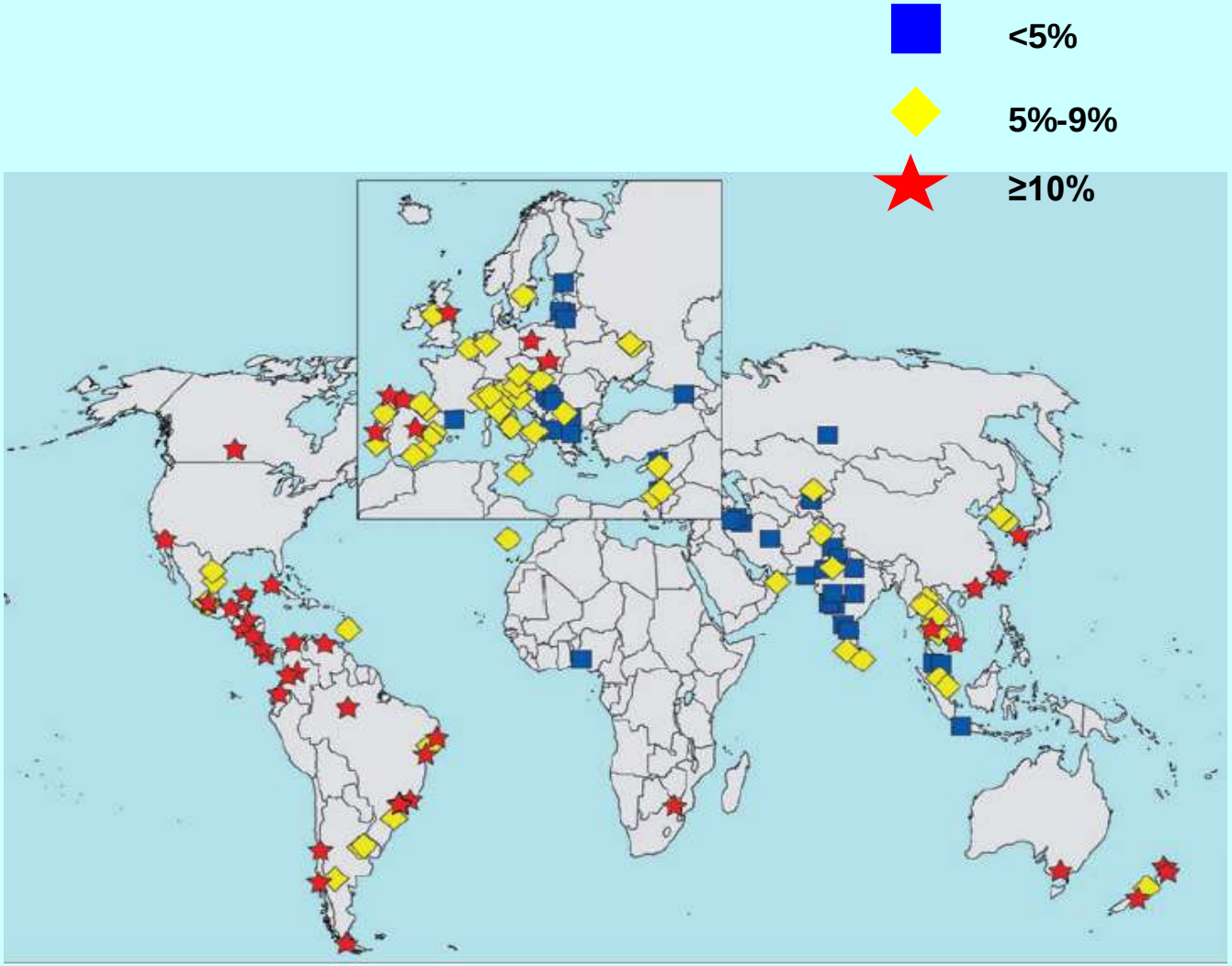
EPIDEMIOLOGY

Allergic rhinitis (AR) is one of the most common diseases affecting adults

The prevalence is between 10 to 30 percent of adults in industrialized countries. Children are affected up to 40%

In Europe - 4% - 32%

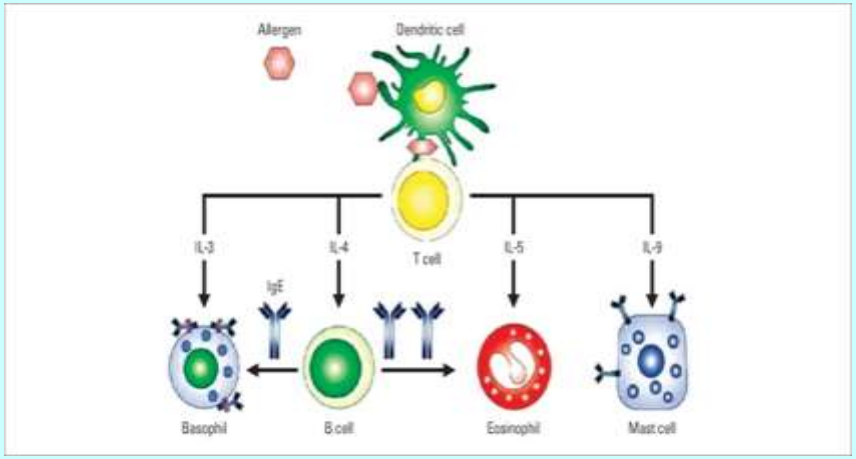
EPIDEMIOLOGY



Prevalence of AR in 6-7 year old children - ISAAC

Aït-Khaled et al. *Allergy*. 2009;64:123.

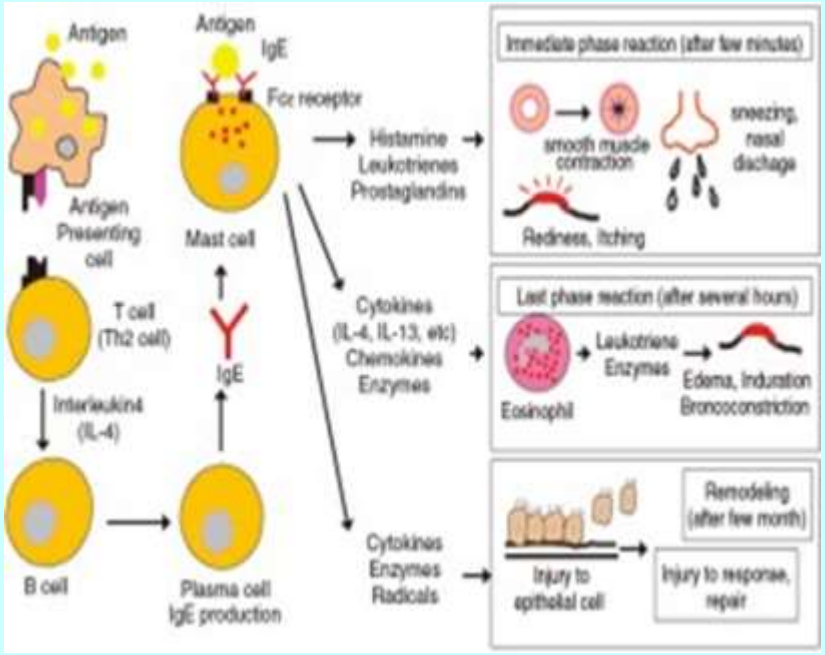
PATHOPHYSIOLOGY



When AR patients are exposed to allergens allergic reactions develop in 2 phases

The early reaction is the response of mast cells to offending allergens. Stimulated mast cells induce nasal symptoms by secreting chemical mediators such as histamine, prostaglandins and leukotrienes

Sneezing and rhinorrhea develops in 30 minutes



Eosinophil chemotaxis is the main mechanism in the late reaction, which is caused by chemical mediators produced in the early reaction

Nasal obstruction occurs approximately 6 hours after exposure to allergens and subsides slowly

ETHIOLOGY

Indoor allergens

Outdoor allergens (pollens)

Animal epidermal allergens

Fungal allergens

Seasonal Aeroallergens

- Tree pollen
- Grass pollen
- Weed pollen
- Ragweed pollen
- Out door mold spores

Perennial Aeroallergens

- House Dust mites
- Pet dander
- In door mold spores
- Cockroach

Molds

- Indoor Mold
  - Cladosporium
  - Penicillium
  - Alternaria
  - Aspergillus
- Outdoor Mold
  - Cladosporium
  - Alternaira
  - Fusarium

Alternaria Species

Indoor and Outdoor

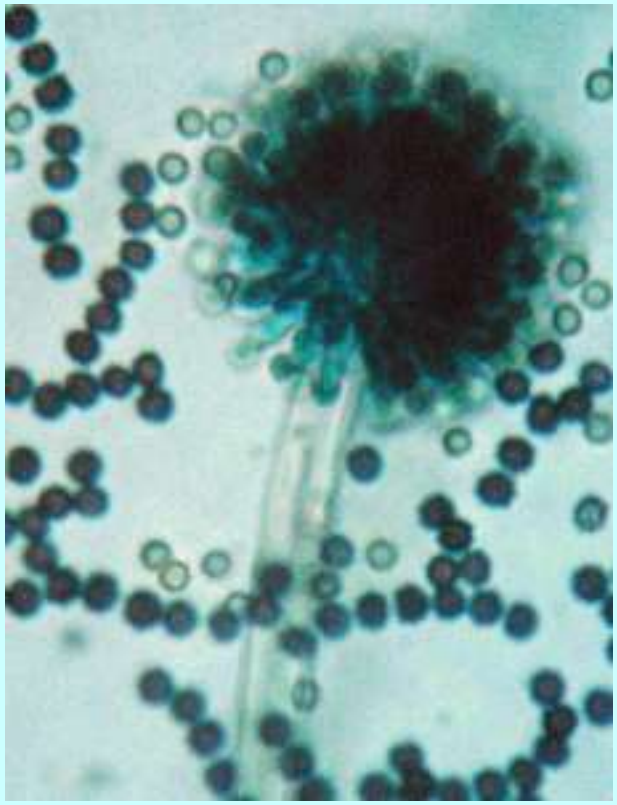
Penicillium

Cladosporium

Indoor and Outdoor Mold

Aspergillus

Indoor and Outdoor Mold



film hose dust mites-3.wmv

SYMPTOMS

Nasal obstruction
Watery rhinorrhea
Sneezing
Itching
Impairment of smell

Ocular itching
Tearing
Red eyes

Trigger factors

Specific

exposure to pollens

mold spores

specific animals

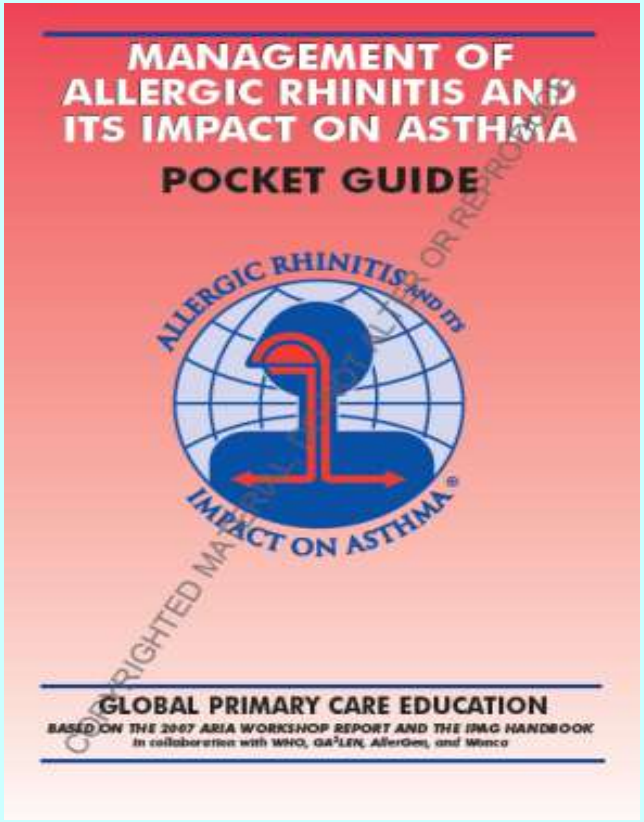
specific animals

Irritant

smoke

pollution

strong smells


MANAGEMENT OF ALLERGIC RHINITIS AND ITS IMPACT ON ASTHMA
POCKET GUIDE
ALLERGIC RHINITIS AND ITS IMPACT ON ASTHMA®
GLOBAL PRIMARY CARE EDUCATION
BASED ON THE 2007 ARIA WORKSHOP REPORT AND THE IMG HANDBOOK
In collaboration with WHO, GA²LEN, AllerGen, and Wonca

DIAGNOSIS - ARIA

Intermittent

symptoms

< 4 days per week

or < 4 consecutive weeks

Persistent

symptoms

> 4 days per week

and > 4 consecutive weeks

Mild

all of the following

normal sleep

no impairment of daily activities,sport, leisure

no impairment of work and school

symptoms present but not troublesome

Moderate-Severe

one or more items

sleep disturbance

impairment of daily activities, sport, leisure

impairment of work and school

troublesome symptoms

http://www.whiar.org/docs/ARIAReport_2010

DIAGNOSIS

Tests for allergic sensitization or presence of allergen-specific IgE

- Skin prick tests - wheal and flare - 15 -20 min.

- In vitro test for detecting sIgEs-Radioallergosorbent Test (RAST)

TREATMENT

Patient education

Avoid contact with allergens or irritants

Allergen specific immunotherapy (ASIT).

Allergen avoidance

Reduce dampness in the house

Prevent build up of dust

Wash sheets, pillowcases and duvet cases at high temperatures – at minimum of 60°C every 2 weeks

Wash curtains at 60°C

Replace pillows with new ones every 6 months

Reduce soft toys

Carpets – replace carpets, or choose very short pile, synthetic carpets

Use high efficiency filter vacuum cleaners

Replace soft furnishings

Patients should be given. detailed information on house dust mite reduction options

For patients with AR sensitised to and symptomatic on contact with pets such as cats, dogs and horses, avoidance of the animal should be advised

Saline Irrigation

PHARMACOTHERAPY

Controllers

Nasal corticosteroids

Antihistamines

Nasal CS + Nasal antihistamine

Leukotriene Receptor antagonists (LTRAs)

Relievers

Oral decongestants

Nasal decongestants

Antihistamine/Decongestant Combination

Oral CS

Antihistamines

- First line for mild to moderate intermittent and mild persistent symptoms
- Predominantly on:itch, sneeze and rhinorrhoea
- Modest effect on:nasal congestion
- Nasal antihistamines are superior to oral antihistamines

Antihistamines

Second generation are preferred

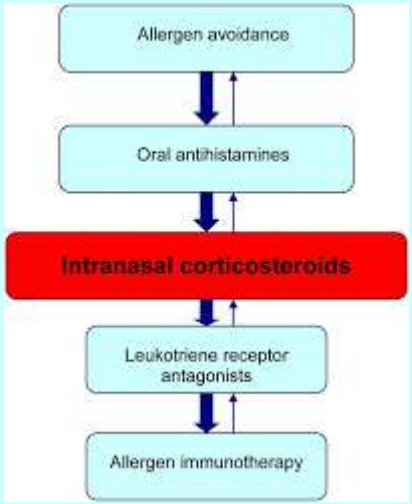
Brand Name	***Generic Name***
Cetirizine	Zyrtec
Fexofenadine	Allegra, Telfast
Loratadine	Alavert, Claritin

Antihistamines

Generic Name	***Brand Name***
Azelastine	Astelin, Astepro
Carbinoxamine	Karbinal
Desloratadine	Clarinex
Levocetirizine	Xyzal
Olopatadine	Patanase

Intranasal corticosteroids

- first line therapy for moderate to severe persistent symptoms
- anti-inflammatory effect
- reduce nasal congestion
- onset of action - 6-8 hours after the first dose
- maximal benefit can take up to two weeks



Intranasal corticosteroids

Fluticasone propionate

Mometasone furoate

Beclometasone

Fluticasone furoate

Nasal sprays

- topical anti-cholinergic – Ipratropium
- add on therapy
- decreases rhinorrhoea- three times a day
- no other effect on nasal symptoms
- add on therapy with intranasal corticosteroid and/or antihistamine
- Ipratropium needs to be sprays twice into each nostril two-three times daily

Nasal sprays

- Sodium chromoglycate
- Nedocromil sodium
- patients with mild symptoms and sporadic problems
- inhibit the degranulation of sensitised mast cells
- modest effect on nasal obstruction
- dosage:3-6 times per day
- the safest option for use in the first 3 months of pregnancy

Leukotriene Receptor Antagonists (LTRA)

- ❑ seasonal allergic rhinitis with concomitant asthma
- ❑ similar effect to oral antihistamines
- ❑ less effective than intranasal corticosteroids

Nasal Decongestants

Decongestants come in pills, liquids, nose drops, and nasal sprays

Pseudoephedrine (Silfedrine, Sudafed, Suphedrin)

Phenylephrine (Sudafed PE, Suphedrin PE)

Oxymetazoline (Afrin, Dristan, Vicks Sinex)

Mast cells Stabilizers

Cromolyn (Intal inhaler, Gastrocrom)

Nedocromil (Tilade)

Topical intranasal anticholinergic drugs

Ipratropium bromide nasal spray 0.03%. Intranasal ipratropium blocks cholinergic -mediated vasodilation.

Allergen Specific Immunotherapy

Deffinition

Subcutaneus or sublingual administration of gradually increasing quantities of relevant allergens until a dose which is effective in inducing tolerance to the allergens.

Advantages

Decreases intake of symptomatic agents

Reduces and eliminates symptoms

Prevents progression of the disease

Reduces the risk for a new type of sensitization to other allergens

Possible complications

- otitis media
- eustachian tube dysfunction
- acute sinusitis
- chronic sinusitis

Comorbid conditions

- asthma
- atopic dermatitis
- nasal polyps

ALLERGIC CONJUNCTIVITIS

DEFINITION AND EPIDEMIOLOGY

Ig E mediated eye inflammation resulting from an allergic reaction to indoor or outdoor allergens

The common cause of red eye; affects more than 1 million worldwide

The prevalence tends to increase: 20 percent of the general population; 8 percent of ophthalmic practice

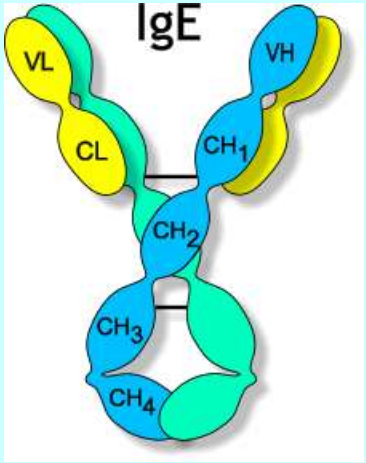
Seasonal allergic conjunctivitis (SAK) most common allergic eye disease-90%

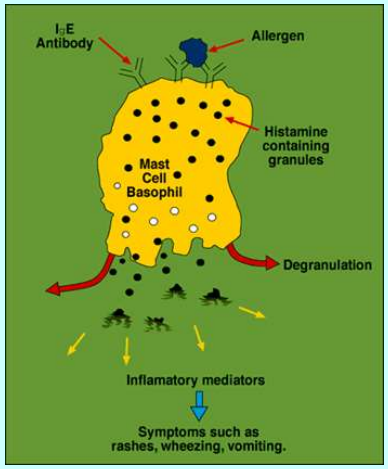
Perennial allergic conjunctivitis (PAK)-5%

Significant effect on quality of life

PATHOPHISIOLOGY

First type hypersensitivity reaction





CLASSIFICATION

Seasonal allergic conjunctivitis

Perennial allergic conjunctivitis

Vernal conjunctivitis

Atopic keratoconjunctivitis in patients with atopic dermatitis

SEASONAL
ALLERGIC CONJUNCTIVITIS

The most common type of ocular allergy. The disease mostly affects young people.

The allergic reaction is related to specific pollens from :

trees

grass

ragweed

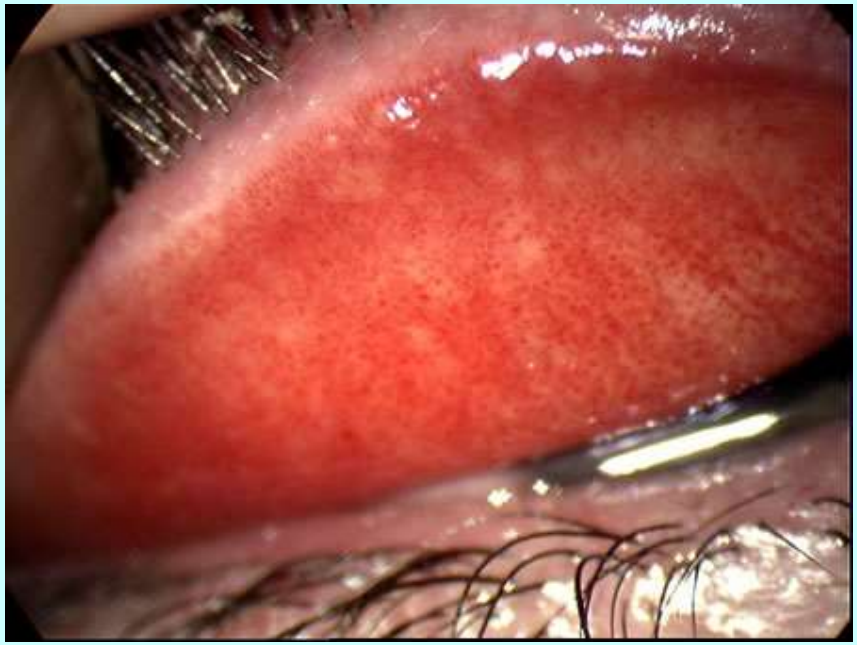
SEASONAL
ALLERGIC CONJUNCTIVITIS

Symptoms

itching
redness

tearing
watery discharge

burning
rhinorrhea in some cases



PERENNIAL
ALLERGIC CONJUNCTIVITIS

The allergic reaction is related to

- house dust mites
- animal dander
- fungal allergens

PERENNIAL
ALLERGIC CONJUNCTIVITIS

Symptoms

- swelling
- redness
- itching
- tearing
- mucus dicharge

VERNAL CONJUNCTIVITIS

Mostly affects children usually boys 9-17 year old

The allergic reaction is related to

pollens

cigarette smoke

pet dander

ingredients in cosmetics

VERNAL CONJUNCTIVITIS

Symptoms

itching
tearing

burning
swelling

“pink eyes”
sensitivity to bright light

rough eyelids
blurry vision

ATOPIC KERATOCONJUNCTIVITIS IN PATIENTS WITH ATOPIC DERMATITIS

Characteristics

relatively uncommon

usually affects 20-50 year old patients

associated in 95 percent with asthma or eczema

first type of hypersensitive reaction

ATOPIC KERATOCONJUNCTIVITIS IN PATIENTS WITH ATOPIC DERMATITIS

Symptoms:

tearing

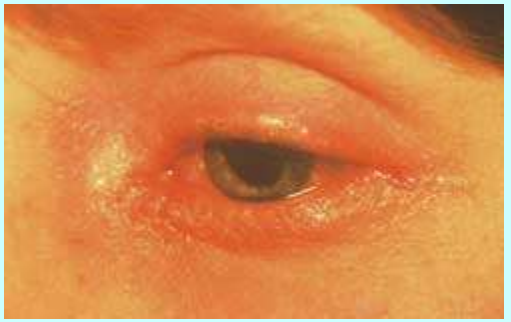
eye irritation

swelling

itching

mucus dicharge

vision loss



DIAGNOSIS

Eosinophilia – 400-450 Eo per microliter

Allergen-specific IgE (sIgE) measurment In vitro

Skin prick tests

PREVENTION STRATEGY
FOR SEASONAL ALLERGIC CONJUNCTIVITIS

limiting outdoor activities during the symptomatic period

Planning outdoor activities

Avoid rubbing the eyes

Sunglasses

Close windows and doors, use of air conditioning in the car and home

PREVENTION STRATEGY FOR PERENNIAL ALLERGIC CONJUNCTIVITIS

Home care

protective pillow, mattress and blanket

regular washing of linen at 60

vacuuming and wet cleaning – weekly

remove or more frequent cleaning of carpets, upholstery and curtains that retain dust

reduce humidity in home - 35% -50%

avoid contact with animals

TREATMENT

Non pharmacological methods

Cold compress

A saline acid wash

Lubricating drops or artificial tears

Mast cell stabilizers

Decongestants

Immunotherapy

TREATMENT

Systemic Anti-Histamines

Loratadine
Diphenhydramine Hydrochloride
Hydroxyzin Hydrochloride
Desloratadine
Azatadine Maleate

Cetirizine Hydrochloride
Fexofenadine Hydrochloride
Hydroxyzin Hydrochloride
Diphenhydramine Hydrochloride

TREATMENT

Ophthalmic Anti-Histamines

Ketotifen Fumarate

Emedastine Difumarate

Naphazoline/Pheniramine

Azelastine Hydrochloride

Levocabastine Hydrochloride

Olopatadine Hydrochloride

TREATMENT

Opthalmic Corticosteroids

Prednisolone Acetate

Loteprednol Etabonate

Difluprednate

Prednisolone Acetate

Mast Cell Stabilizers

Alomide (Lodoxamide Tromethamine)

Alocril (Nedocromil Sodium)

Opticrom (Cromolyn Sodium)

Alamast (Pemirolast Potassium)

THANK YOU FOR YOUR ATTENTION

ANY QUESTIONS?