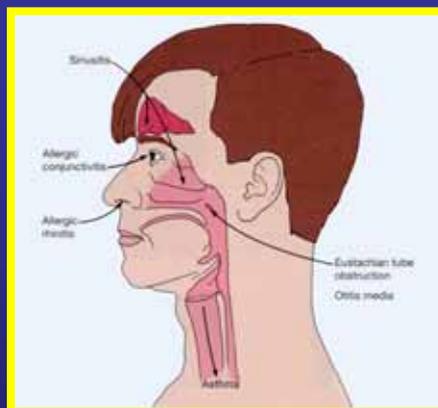


Allergic rhinitis and Asthma

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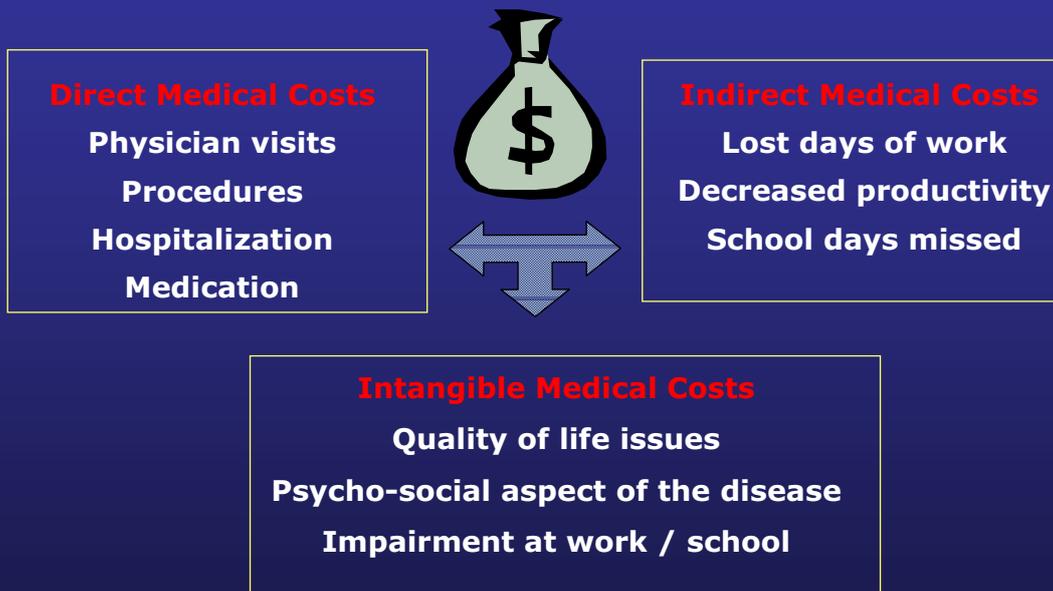
Co-morbid manifestations



- Allergic rhinitis & rhino-sinusitis frequently co-exist & are definitely linked.*
- Both entities may be associated with asthma.

*AAAAI, Allergy Report

Economic impact of allergic rhinitis*



*OCNA, Feb 1998

Co-morbidities: The link

Common Triggers & pathophysiology

Anatomy/ Physiology

- Upper and lower airways are contiguous
- Functional linkage – nose vs. mouth breathing
- Similar histology(epithelial, neural, vascular)

Same mediators

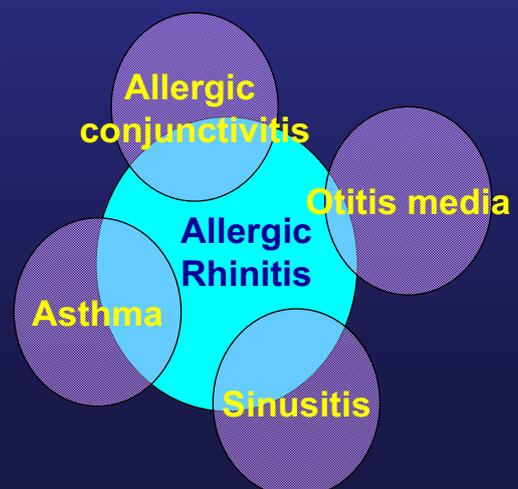
- IgE
- Histamine
- Cytokines
- Leukotrienes

Same triggers

- HDM, pollen, pet dander, fungi

Same cells

- Mast cells
- Eosinophils



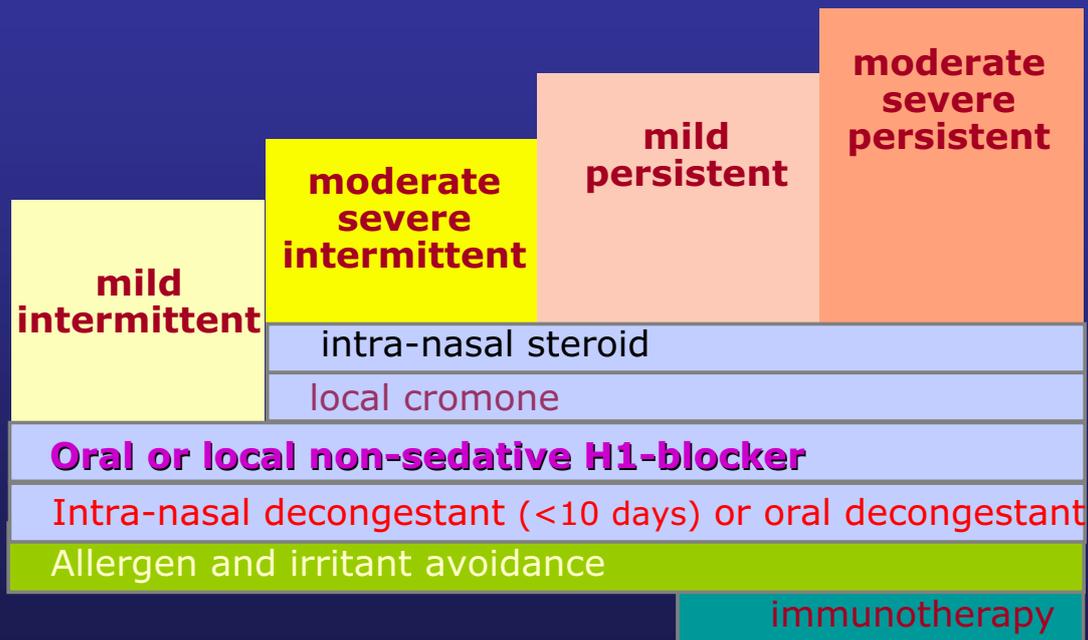
Clinical correlates

- Severity of asthma correlates with sinus mucosal thickening.
- Asthma outcomes closely related to allergic rhinitis severity.
- Nasal cold air breathing leads to increase airway resistance.
- Nasal histamine release triggers allergic activity in asthma.

Therapeutic links

- Treatment of asthma improves allergic rhinitis.
- Treatment of allergic rhinitis improves asthma.
- Systemic agents are beneficial to both.

Treatment of allergic rhinitis (ARIA)



Theophylline

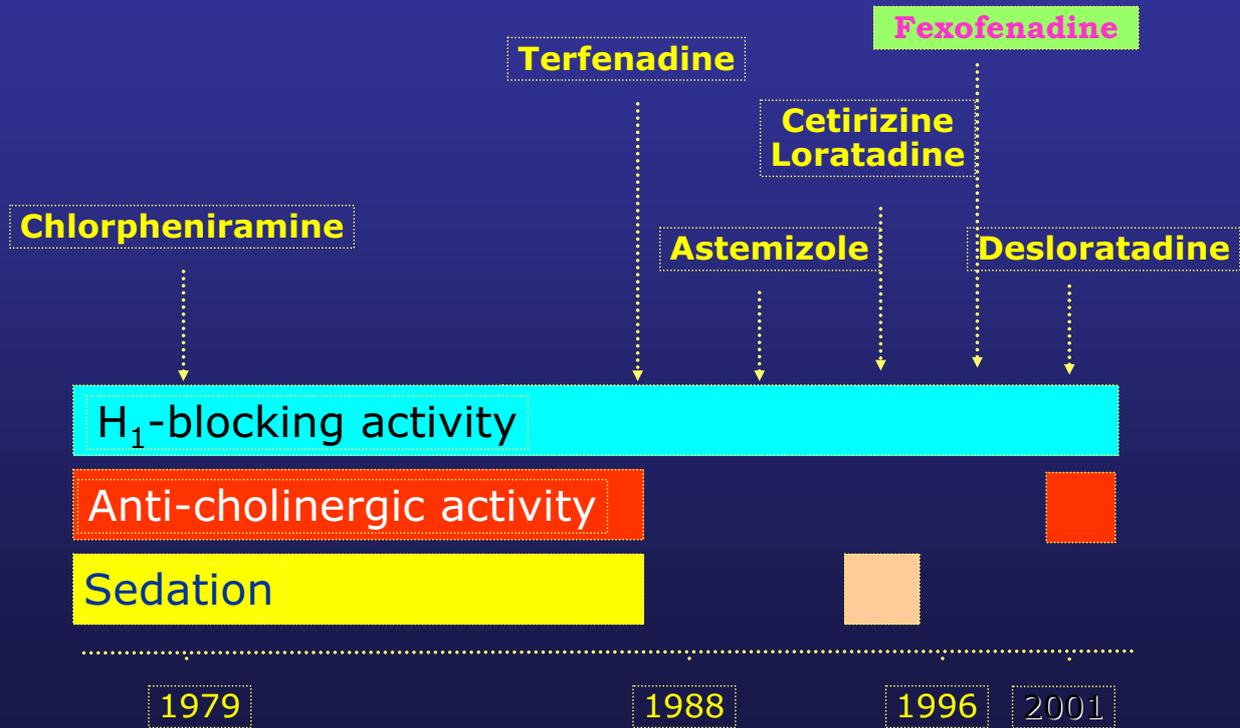
- Primarily used in asthma treatment.
- It improves allergic rhinitis.
- It has an anti-inflammatory effect which reduces the release of mediators.

Topical steroids

- Intra-nasal steroids decrease asthma symptoms & hyperactivity.
- Inhaled steroids for asthma improve allergic rhinitis.

Anti-histamines

Historical background



Criteria for selecting an antihistamine

Clinical efficacy

Should have:

- Potent & non competitive H₁ receptor blockage.
- Rapid onset of action.
- Long duration of action.
- Additional anti-allergic activities.

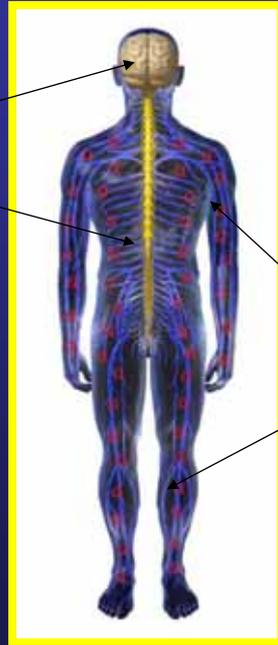
Side effects

Should not have :

- Any interference with food or other drugs.
- Sedative effects.
- Anti-cholinergic effects.
- Any cardiac side effects.

Fexofenadine is highly specific to peripheral H₁- histamine receptors

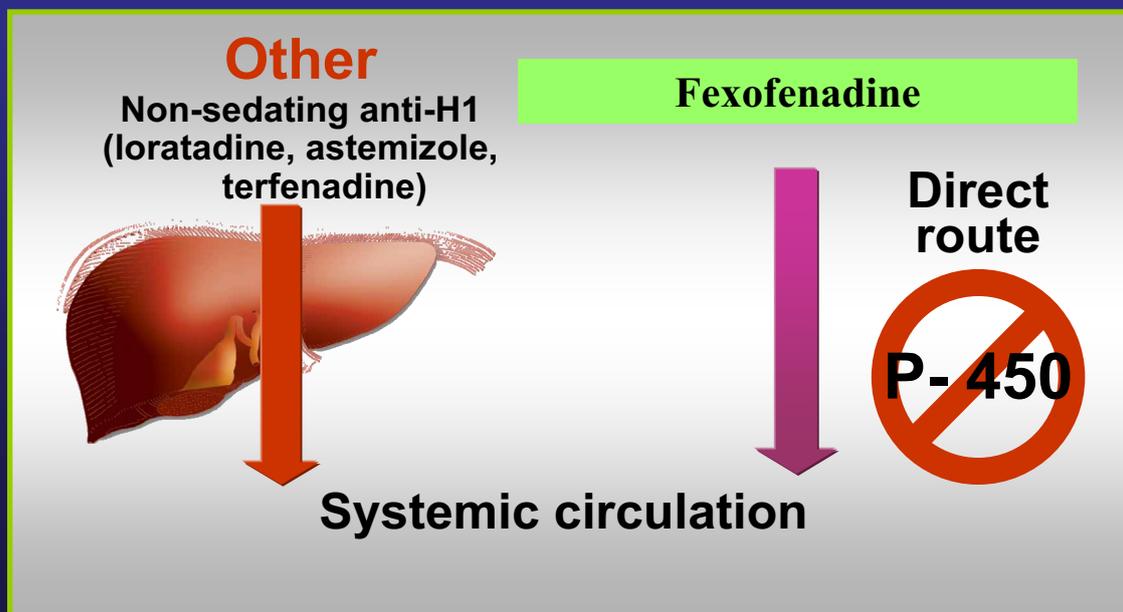
**CNS H₁-
Histamine
Receptors**
*No fexofenadine
binding*



**Peripheral H₁-
Histamine
Receptors**
*Fexofenadine
binding*

Fexofenadine is an active metabolite

Enters blood stream pharmacologically active
without hepatic bio-transformation



Fexofenadine versus Cetirizine & Loratadine

	Fexofenadine	Loratadine	Cetirizine
CNS psychomotor impairment	No	Dose dependent sedation	Yes
Wide therapeutic window	Yes	No	No
No special dose adjustment in geriatric patients	Yes	No	No
No special dose adjustment in hepatic impairment	Yes	No	No

Sources: (fexofenadine HCl) prescribing information; Bernstein DI et al. *Ann Allergy Asthma Immunol.* 1997; Data on file, Aventis Pharmaceuticals; Hindmarch I et al. *Clin Exp Allergy.* 1999; Howarth PH. *Clin Exp Allergy Rev.* 2002; Zyrtec® (cetirizine HCl) prescribing information.

Fexofenadine versus Desloratadine

	Fexofenadine	Desloratadine
Flexible tablet dose available	Yes	Data not available
Non-sedating at more than twice the recommended daily dose	Yes	No
Dosage adjustment with hepatic impairment	No	Yes
Potential anti-cholinergic	No	Yes

Administered as 240 mg bid for 14 days (n = 144). There is no evidence that higher-than-recommended dosages of fexofenadine HCl provide superior efficacy. †Desloratadine is nonsedating at the recommended dosage of 5 mg qd.
 ** FEX has been shown to have a high affinity for the H₁-receptors (600 times more selective) than muscarinic ones, while DL is poorly selective (5 times only); Bernstein DI et al. *Ann Allergy Asthma Immunol.* 1997; Aeries® (desloratadine) prescribing information; Weiler JM et al. *Ann Intern Med.* 2000; Telfast® (fexofenadine HCl) prescribing information; Aeries® (desloratadine) prescribing information; Day JH et al. *Ann Allergy Asthma Immunol.* 1997

Fexofenadine HCL

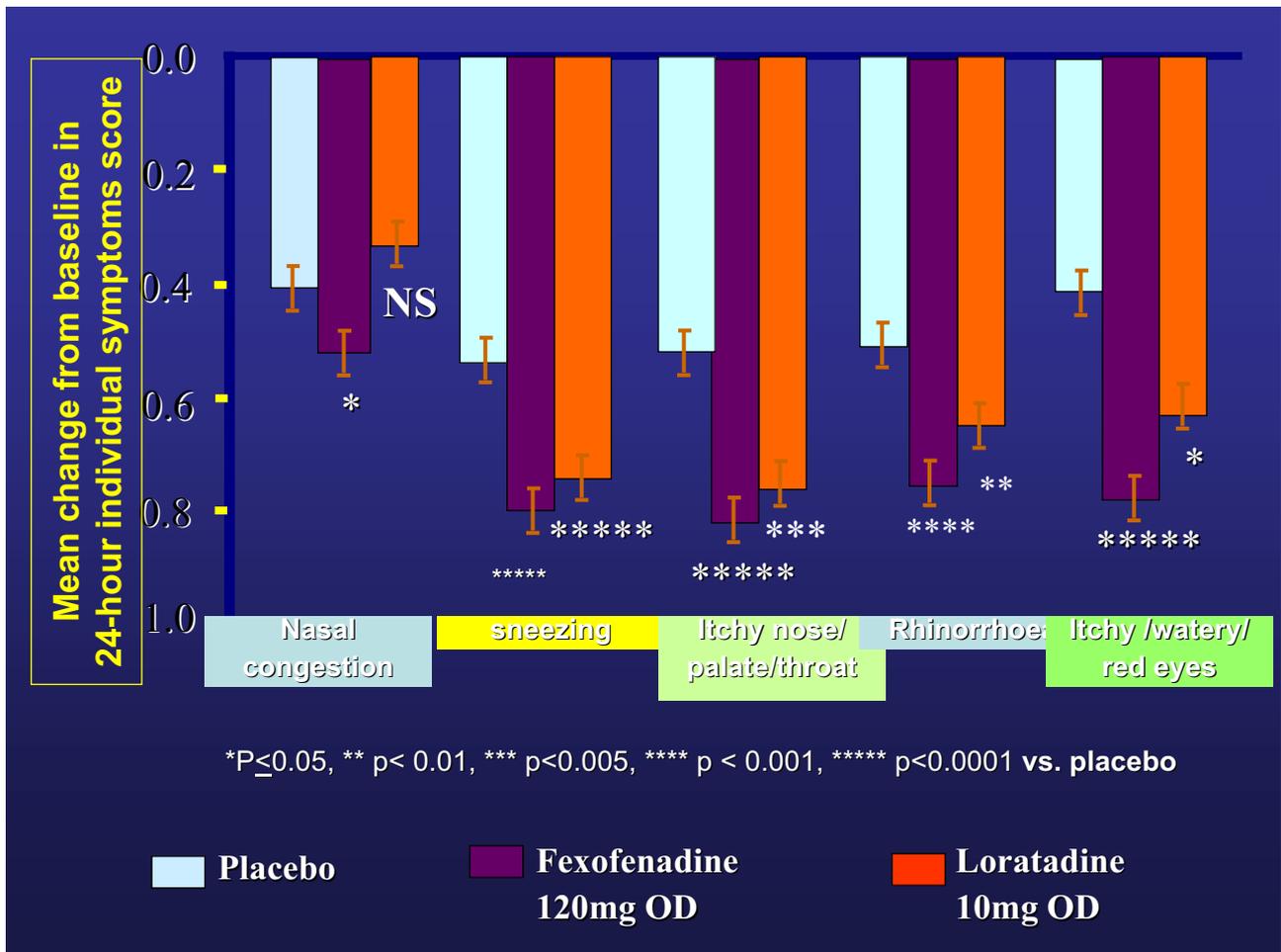
- ✓ It is a safe & effective adjunctive therapy in allergic rhinitis & asthma.
- ✓ It has an anti-inflammatory effect (attenuates chemotactic effects & interferes with eosinophilic aggregation).
- ✓ No drug interactions with commonly used therapies as Macrolide, Theophylline & Azoles groups.

Clinical & Experimental Allergy Journal*: STAR Study

Comparison of efficacy, safety & quality of life provided by *Fexofenadine hydrochloride 120 mg*, Loratadine 10 mg & placebo administered once daily for treatment of seasonal allergic rhinitis.



* Clinical & Experimental Allergy: The official Journal of the British Society for Allergy & Clinical Immunology edited by A B Kay and S T Holgate Volume 30 Number 6 June 2000 P.Van Cauwenberge, E.F. Juniper and Star Study Investigating group pp.891-899



Leukotriene modifiers

- Leukotrienes are mediators in both allergic rhinitis & asthma.
- Nowadays, they are considered as an established treatment of asthma.
- They are alone not effective in allergic rhinitis.
- Concomitant use with antihistamines appears promising.

Immunotherapy

- It is recommended in patients with allergic rhinitis to prevent asthma.
- It inhibits development of sensitization in 50% of patients by altering the natural course of the disease.

Anti-Ig E

Although, anti- IgE inhibits IgE mediated allergic responses & improve both allergic rhinitis & asthma, they are not yet available for use in many countries (expensive).

**“The nose is the part of the lung which
can be assessed by the finger”**

Do you believe the phrase ????

Thank you

Thank you

Thank you