

Antihistamines, Nasal Sprays and Eye Drops

Who (needs them), What (do they do), Why (should you prescribe them), When (should you prescribe them), Where (do they fit in asthma therapy)

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Disclosure Statement

- Advisory board and speaker for Teva Pharmaceutical
- There is no commercial bias in this presentation

Objectives

- Upon completion of this presentation participants will be able to:
 - Describe the differences between first generation and second generation antihistamines

Antihistamines

- Work by blocking histamine attachment to histamine receptors
- Best used PRIOR to allergen exposure
- Act in the bronchi, capillaries and other smooth muscles
- Used to prevent or treat symptoms of rhinitis, and allergic dermatitis
- “Effects of blocking central nervous system H1 receptors are not as well understood”*

* National Library of Medicine

Histamine

- An organic compound involved in local immune responses
- Regulates physiological function in the gut
- Acts as a neurotransmitter
- Is involved in the immune response to foreign pathogens
- Produced by basophils and by mast cells
- Causes increased vascular permeability

Parking Spot Correlation

Histamine



Antihistamine



First Generation Antihistamines

- All have varying degrees of sedation
- Need to be administered several times a day for continuous benefit
- Must provide sedation precautions AND document that precautions provided (DUI)

First Generation Antihistamines

- Activastine (Semprex®)
- Brompheniramine (Bromfed®)
- Carbinoxamine (Rondec®)
- Chlorpheniramine (Chlor-trimetron®)
- Clemastine (Tavist®)
- Cyproheptadine (Periactin®)
- Dexbrompheniramine (Alahist®)
- Diphenhydramine (Benadryl®)
- Hydroxyzine (Atarax®, Vistaril®)

First Generation Antihistamines

- Phenindamine (Nolahist®)
- Pheniramine (In Nephron-A® and Opcon-A®)
- Pyrilamine (Deconasol®)
- Tripeleennamine (PBZ®)
- Triprolidine (Vanahist®)

Other First Gens

- Buclizine (Antivert®)
- Chlorpromazine (Thorazine®)
- Cyclizine (Meclizine®)
- Dimenhydrinate (Dramamine®)
- Doxylamine (OTC sleep aid)
- Meclozine (antiemetic)
- Mirtazapine (antidepressant, antiemetic and appetite stimulant)
- Orphenadrine (skeletal muscle relaxant and anti-Parkinsons agent)
- Promethazine (Phenergan®)

Second Generation Antihistamines

- Fexofenadine (Allergra®) Cat C
 - 6 to 11 years 30 mg bid
 - 12 years and up 60 mg bid or 180 mg qd
- Loratadine (Claritin®) Cat B
 - 2-5 years 5 mg qd
 - 6 years and over 10 mg qd
- Desloratadine (Clarinex®) Cat C
 - 1-5 years 1.25 mg qd
 - 6-12 years 2.5 mg qd
 - 12 years and up 5 mg qd

Second Generation Antihistamines

- Cetirizine (Zyrtec®) Cat B
 - 1-6 years **based on weight** give bid
 - 6-11 years 5 mg bid
 - 12 years and up 10 mg qd, may increase to 20 mg qd
- Levocetirizine (Xyzal®) Cat B
 - 6 mos to 5 years 1.25 mg qd in the PM
 - 6-11 years 2.5 mg qd in the PM
 - 12 years and up 5 mg qd in the PM

Nasal antihistamines

- Azelastine (Astelin®) Cat C
 - 5-11 years 1 spray each nostril twice a day
 - 12 years and up 1-2 sprays each nostril twice a day
- Olopatadine (Patanase®) Cat C
 - 6-11 years 1 spray each nostril twice a day
 - 12 years and up 2 sprays each nostril twice a day

Potential Interactions

- Sympathomimetics (MAO inhibitors-potentially life threatening)
- Selected sympathomimetics
- Tricyclic compounds
- Dopamine transporter binders
- CYP2D6 inhibitors
- Some inhaled anesthetic agents
- Phenylpropanolamine/thioridazine

Potential Interactions

- ETOH
- Sleep aids
- Antianxiety medications
- Topical antihistamines
- BP meds (beta blockers, Calcium channel blockers)
- Muscle relaxants
- Narcotics
- Herbal products (ask Maureen)



And if that wasn't enough.....

- Anesthesia
- May interfere with medical or laboratory tests (including brain scan for Parkinsons)

Available in Canada/Mexico

- Bromodiphenhydramine
- Ebastine
- Embramine
- Rupatadine
- NOT A COMPLETE LIST!

Patient Education

- When to take
- What drugs or foods interact with antihistamines including OTC medications
- How to use nasal sprays
- Don't forget precautions and DOCUMENT it!

Precautions

- Caution against engaging in hazardous occupations, operating machinery or driving a motor vehicle
- Caution against concurrent use of alcohol or other CNS depressants
- Risk of urinary retention in patients with predisposing factors (spinal cord lesion, prostatic hyperplasia)

Adjust dosing for patients with

- End stage renal disease
- On hemodialysis
- Liver disease

Nasal Steroids

- Help to reduce swelling and mucus in the nasal passageway
- Reduce symptoms of allergic rhinitis
- Some are approved for Non-Allergic Rhinitis (NAR) or Vasomotor Rhinitis (VMR)
- To treat nasal polyps and to prevent regrowth

Currently Available-Aqueous

- Triamcinolone(Nasacort AQ®) 6 yr & up: 1-2s/n qd Available OTC
- Fluticasone proprionate (Flonase® and generic) 4-11 yr: 1s/n qd; 12 & up: 2s/n qd
- Mometasone (Nasonex®) 3-11 yr: 1 s/n qd; 12 & up: 2s/n qd
- Ciclesonide (Omnaris®) 6 & up: 2s/n qd
- Budesonide (Rhinocort®) 12 & up: 1-4s/n qd Cat B
- (Fluticasone furoate (Veramyst®) 2-11 yr: 1s/n qd; 12 & up:2s/n qd

Currently Available-Dry

- Beclomethasone (Q-nasl®) 12 & up: 2s/n qd
- (Ciclesonide (Zetonna®) 12 & up: 1s/n qd

Common Side Effects

- Dryness, burning, stinging in the nasal passage
- Sneezing
- Throat irritation
- Epistaxis
- Headaches (less common)
- Increased risk of nasal infection
- Perforation of the nasal septum

Other Nasal Sprays

- Astelastine & fluticasone (Dynamist®) 12 & up: 1s/n qd
- Ipratropium (Atrovent®) anticholinergic 6 & up
 - 0.03% for AR, NAR, VMR 6 & up: 2s/n 2-3x/day
 - 0.06% for AR and colds 2s/n 2-3x/day
- Oxymetazoline (Afrin®) OTC decongestant 6 & up: per package insert USE ONLY FOR 3 DAYS

Teaching Points for Nasal Steroids

- May take up to 2 weeks for maximum benefit
- Start at beginning of season
- Correct technique is critical
 - Blow nose gently to clear mucus
 - Tip to tip
 - Use opposite hands to spray
 - Aim toward ear
 - Alternate sides
 - Sniff GENTLY

Eye Drops

- Decongestants
- Mast cell stabilizers
- Antihistamines

OTC Decongestants

- Clear Eyes® (Naphazoline HCl)
- Refresh® (Phenylephrine HCl)
- Visine® (tetrahydrozoline HCl, Oxymetazoline HCl)
- Never to be used with glaucoma
- Similar risks as nasal decongestants
 - Rebound redness
 - Eye swelling

Mast Cell Stabilizers

- Ketotifen fumarate (Claritin Eye®, Refresh Eye Itch Relief®) Available OTC
- Periolast (Alamast®)
- Nedocromil (Alocril®)
- Cromolyn (Crolom®)

Antihistamines

- Epinastine (Elestat®)
- Olopatadine (Patanol®, Pataday®)
- Ketotifen (Zaditor®)
- Azelastine (Optivar®)
- Levocabastine (Livostin®)
- Emedastine (Emadine®)

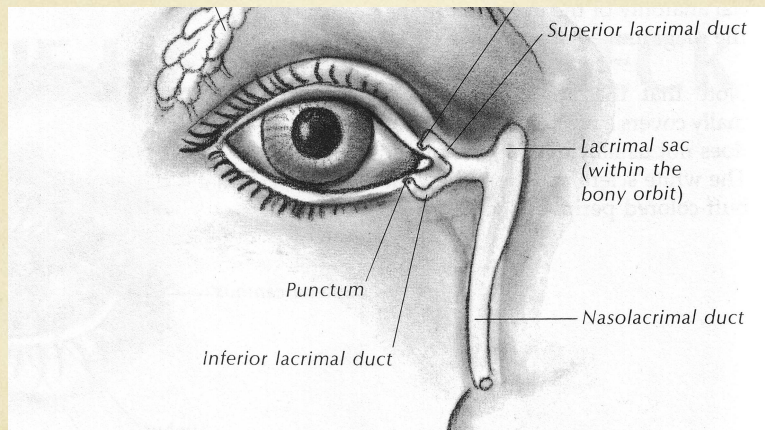
Antihistamine/Decongestant

- Pheniramine maleate/naphazoline HCl (Opcon A® and Naphcon A®)
- Antazoline/naphazoline HCl (Vasocon A®)

NSAID/Steroid Eye Drop

- Ketorolac (Acular®/Acuvail®) NSAID
- Loteprednol (Alrex®, Lotemax®)
 - Used to treat severe, long-term eye allergy symptoms
 - Not recommended for long-term use except for SEVERE symptoms
 - Should be followed by Ophthalmologist
 - Can increase risk of cataracts, eye infections and glaucoma

External Eye Structure



Types of Conjunctivitis

- Allergy
 - Seasonal AC
 - Perennial AC
 - Atopic Keratoconjunctivitis
 - Vernal Keratoconjunctivitis
 - Giant Papillary Conjunctivitis
- Non-allergic
 - Irritative Conjunctivitis
 - Viral Conjunctivitis
 - Bacterial Conjunctivitis
 - Dry Eye Syndrome

Allergic Conjunctivitis (AC)

Signs and Symptoms

- Bilateral involvement
- Ocular itching
- Tearing-watery discharge
- Redness of conjunctiva
- Often associated with rhinitis
- Not sight-threatening
- Can cause significant impairment of Quality of Life
- Can be isolating, especially for adolescents

Allergic Conjunctivitis (AC)

Treatment

- Oral antihistamines
- Ophthalmic drops
- Nasal steroids

Patient Education

- Instruct patient to be meticulous in treatment
- Some infections can lead to permanent vision loss if not appropriately treated
- Always finish medications as instructed
- Be specific with patients as to duration of treatment
- Be specific with follow-up instructions

Patient Education

- Demonstrate techniques with return demonstration from patient
- Do not assume that because patient is adult they can/will do eye drops appropriately
- Patient may need several options offered to determine which will work best for the patient

Direct Application into Eye

- Wash hands!!
- Clean eyelids with disposable cloth/gauze
 - Clean healthy eye first, inner canthus to outer
 - Clean gauze for each eye
 - One wipe per cloth/gauze
- Apply drops
 - Tilt head back
 - Hold dropper above eye, do NOT touch eye or lid with dropper
 - Always start with healthy eye if drops are ordered bilaterally

Patient Education

- Teach the patient that some forms of conjunctivitis can be sight threatening
- Some eye diseases are contagious
- Eye drops only work if they get into the eye
- With all eye drops, contact lenses must first be removed and not reinserted for at least 10 minutes after administering eye drops

Cup Technique

- Wash hands
- Clean eyes as previously discussed
- Pull lower lid out to form pocket with lid
- Look in mirror and place drop into pocket of lower lid
- Close eye for a few seconds
- Repeat in second eye

Closed Eye Technique

- Requires two people-wash hands
- Clean eyes
- Have patient lie on back with eyes closed
- Have second person apply drops in inner canthus
- Have patient open and close eyes several times to allow drops into eyes

Pediatric Restraint

- Wash hands
- Clean eyes
- Have patient lie on back on floor or bed
- Have parent sit with child's head between parents legs
- Place legs over child's arms and hold head with thighs
- Apply drops and have child open eyes or manually open the eyes for patient
- Give treat or reward after application!

Treatment of Lids

- Treatment of dry, excoriated lids often neglected
- Instruct patient to:
 - Do warm compresses for 15-20 minutes
 - Blot lids
 - Apply eye cream
 - Apply moisture barrier (Vaseline) at night

Additional Patient Education

- Remind patient to have annual eye exams
- To report sudden changes in vision to health care provider
- To avoid prolonged use of Over the Counter eye drops unless recommended by a health care professional

It Isn't Las Vegas!

- Itchy eyes and nasal congestion can be perceived as more of a problem than asthma
- Can trigger asthma exacerbations if left untreated
- Patients may want to “choose” what to treat if they have concerns about “too many medicines”