

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)

Christine Wagner, MSN, RN, CPNPPC, FNP-BC,
AE-C, QOE

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-trimeton®)
- 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®)
- Tripelennamine (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 propionate (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
- Ipatropium (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
- Oxymetazaoline (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 furarate (Claritin Eye®, Refresh Eye Itch Relief®) Available OTC
- Perirolast (Alamast®)
- Nedocromil (Alocril®)
- Cromolyn (Crolom®)

Antihistamines

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

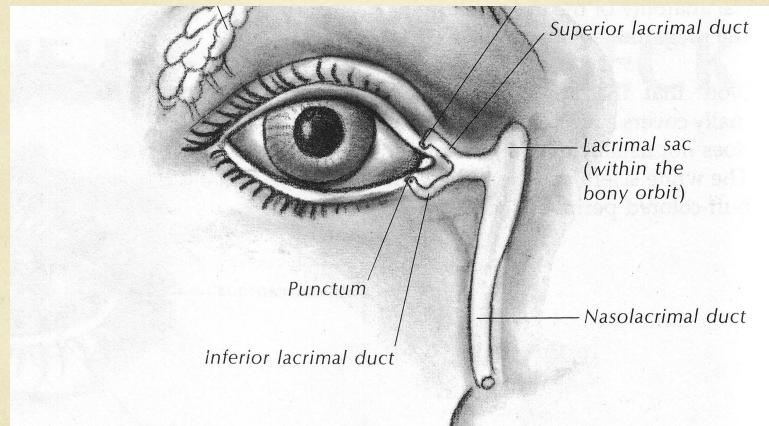
Antihistamine/Decongestant

- 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 Ketatoconjunctivitis
 - 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”