

# Ask the Pharmacist

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## 4<sup>th</sup> Generation Fluoroquinolone

- Besivance (besifloxacin)
- Covers MRSA
- Durasite vehicle
- Good gram positive, gram negative, and anaerobic coverage
- Use peri-operatively
- Use for contact lens related ulceration
  - Central/severe—alternate q30min/1hr with fortified 3<sup>rd</sup> generation cephalosporin (Fortaz) or fortified tobramycin
  - Peripheral/less severe-Besivance qid to q2h

## Intraoperative injection with cataract surgery

- Vigamox (moxifloxacin)
  - Non-preserved
  - Injected into the anterior chamber at the time of surgery
  - We no longer use topical antibiotic around cataract surgery
    - Unless patient is allergic to fluoroquinolones and then we prescribe tobramycin or polytrim pre and post
  - Also use Vigamox for prophylaxis of abrasions with vegetative material
  - Also use Vigamox if suspect possible fungal ulcer while awaiting culture results

## 2nd Generation Fluoroquinolone

- Ocuflox (ofloxacin)
- Peri-operatively
- Post-intravitreal injections (in office)
- Prophylaxis for corneal abrasions, foreign body removal, bandage lens use
- Bacterial conjunctivitis

## Other antibiotics

- Polytrim
  - in place of Besivance for corneal ulcers if cost issues to cover MRSA
  - If allergic to fluoroquinolones for peri-operative prophylaxis
- Tobramycin
  - Fortify in office for severe corneal infections after hours or self-pay patients
  - Use in pregnant or nursing patients when antibiotic necessary
- Erythromycin or bacitracin ophthalmic ointment
  - Used for antibiotic coverage on abrasion if patching
  - Used for treatment of eyelids with anterior blepharitis and staph exotoxin sensitivity
  - Used for treatment of irregular cornea, dry eye as a bland ointment instead of OTC ointments
  - Used for bedtime coverage if mild bacterial keratitis or healing severe bacterial keratitis

## Topical steroids

- Durezol—GENERIC!!!!
  - Starting q1-2h for severe iritis, qid to 6X day for less severe
  - Steroid of choice for intraocular inflammation
  - With post-op recurrent pterygium, long taper
  - Along with oral steroids for scleritis
- Lotemax gel
  - Use after LASIK/PRK/CXL
  - Steroid of choice for mild/moderate surface inflammation
    - Episcleritis
    - Dry eye
    - Mild anterior chamber inflammation
    - CL sterile infiltrates
  - Steroid of choice for known steroid responder or glaucoma patient needing steroid

## Topical steroids

- Lotemax suspension
  - For Medicaid or self-pay coverage of Lotemax (they cover suspension, not gel in Texas)
- Prednisolone acetate 1%
  - My drug of choice for SEIs and pseudomembranes due to viral conjunctivitis
  - Also my choice for severe staph exotoxin sensitivity
  - My drug of choice if Durezol unavailable
  - Cataract surgery/pterygium surgery/retinal surgery
  - Store generic formulation upside down and then shake before use to get increased concentration of medication from bottle tip

## Antibiotic/steroid combo

- Maxitrol ung
  - For eyelid infections/inflammation
  - Corneal inflammation that needs antibiotic coverage
- Tobradex suspension
  - Epiphora x 2 weeks tid to qid to see if punctal flow will improve
  - Canaliculitis tid to qid
  - Conjunctival abrasion
  - Post-foreign body removal
- Triamcinolone 0.1% cream/ung 15 gram—steroid only
  - dermatologic prep-great for periorbital contact dermatitis

## Topical NSAIDs

- Ketorolac 0.5%
  - Most common generic NSAID used
  - Order 0.5% as it is most commonly stocked in pharmacy
  - All NSAIDs sting/burn
  - Used as the generic NSAID of choice for cataract surgery, retinal surgery/treatments
  - I do not use topical NSAIDs on irregular corneal surface
- Prolensa/Ilevro
  - Commonly used brand name NSAIDs
  - Once-twice daily therapy for most conditions
    - Non-foveal/mild foveal ME, ERM, VMT,
  - Used up to qid for CSR treatment
- Bromsite
  - Used as brand NSAID of choice for cataract surgery
  - 5ml bottle and qd dosing allows for same bottle both eyes
  - Good coupon coverage
  - Durasite vehicle

## Cataract surgery protocol

- No drops pre-op; only using drops post-operatively
- Antibiotic
  - Vigamox injected into the anterior chamber at time of surgery
  - Non-preserved; broad spectrum coverage
  - Use polytrim peri-operatively if fluoroquinolone allergy
- NSAID
  - For 3 weeks post-op
- Steroid
  - Tid x 1 week, bid x 1 week, qd x 1 week

## Extended taper post-phaco

- Extended taper of NSAIDs and steroids post-op for high risk patients
  - History of chronic iritis
  - History of retinal surgery
  - History of macular disease
    - Including epiretinal membrane
  - History of diabetic macular edema/severe diabetes
- 3 more weeks of NSAID and steroid
  - NSAID tid for 6 weeks total
  - Steroid continue taper for 6 weeks total

## Glaucoma agents

### Prostaglandins

- First-line treatment for most open angle and secondary glaucomas/ocular hypertension except for
  - Uveitic glaucomas
  - Glaucoma associated with retinal disease
  - Peri-operative pressure spikes

# Glaucoma agents

## Prostaglandins

- Lumigan
  - Gets lowest IOPs in high tension and low tension glaucoma against other prostaglandins (IMO equal to Vyzulta)
  - Less redness than older 0.03% version
- Latanoprost
  - If insurance requires, difficulty with paying for Lumigan, self-pay, complains of redness with Lumigan
  - Medicaid
- Preservative-free tafluprost (generic Zioptan)
  - If need preservative free prostaglandin option

# Glaucoma agents

## Combination products

- Combigan—now generic
  - Alphagan plus timolol
    - No in patients where beta-blockers contraindicated
  - First-line agent if prostaglandin contraindicated
  - As add-on to prostaglandin for increased effect
- Cosopt
  - Dorzolamide plus timolol
    - No in patients where beta-blockers contraindicated
  - Available in generic
  - Taste complaints/burning complaints
  - Have PF option

## Glaucoma agents

### Combination products

- Simbrinza
  - Alphagan plus brinzolamide
  - If beta blocker contraindicated
  - Complaints regarding suspension

## Glaucoma agents

### Alphagan products

- Alpha-agonist
  - Additive choice to other agents for treatment of most open angle and secondary glaucoma/OHTN
  - Choice for additive or first-line treatment for LTG as neuroprotective—usually additive to prostaglandin
- Alphagan P 0.1%
  - Choice over generic brimonidine as only 10% vs 30% allergy rate
  - Less systemic side effects of somnolence, hypotension
  - Now in generic
- Brimonidine 0.2% generic
  - Increased risk of ocular allergy
  - Cheapest option of brimonidine products
  - More systemic side effects



## Glaucoma agents

### CAI products

- Dorzolamide (Trusopt)
  - Used for additive treatment bid to tid
  - Complaints of stinging
  - Complaints of bad taste
- Brinzolamide (Azopt)
  - Less often prescribed than dorzolamide
  - Now available in generic
  - Also complaints of stinging and bad taste
  - Suspension not well received by patients

## Glaucoma agents

### Beta blocker products

- Timolol 0.5%
  - Used mostly in combination products
  - Contraindicated in patients with respiratory disease
    - Asthma
    - COPD
    - Chronic bronchitis
  - Relative contraindication with heart failure
  - OK in HTN
  - OK in patients with pacemaker
  - OK in patients with history of heart attack if not heart failure

## Glaucoma agents

- Vyzulta®
  - Latanoprost plus nitric oxide releasing agent
  - Uveoscleral outflow enhancement primary MOA
    - Enhancement of TM outflow-secondary MOA
    - Enhancement of Schlemm's canal outflow-secondary MOA
  - Dilation of blood vessels for neuroprotection?
  - No inflow mechanism only outflow
  - 1.2 mmHg lower than latanoprost alone

## Glaucoma agents

- Rhopressa®
  - Rho kinase inhibitor
  - Enhances trabecular pathway outflow
    - Lowers episcleral venous pressure as secondary MOA
    - Results in aqueous suppression as secondary MOA
  - Usually as third line or fourth line additive
  - Severe hyperemia—50% of patients
  - Alone at qd dosing it is comparable to timolol bid so additive not first-line
  - Option over timolol and combinations with timolol
  - ? Better for low-tension glaucoma
  - Better for patients with Fuch's?

## Glaucoma agents

- Rocklatan®
  - Latanoprost plus Rhopressa
  - Great combination drop
  - Increases uveoscleral outflow as primary MOA from effects of prostaglandin
  - Rho kinase inhibitor
    - Enhances trabecular pathway outflow
    - Reduces episcleral venous pressure
    - Decrease aqueous production

## Preservative Free Glaucoma Drops

- Ocudose timolol
- Zioptan (tafluprost)—available generic
- Iyuzeh (latanoprost)
- Cosopt PF ---available generic

## Dry eye prescription products

- Restasis
  - Available generic
  - Increases tear production as an immunomodulator
  - Available non-preserved vials and non-preserved bottle
  - Often initiate with steroid BID - QID
    - Treatment of moderate to severe dry eye
    - Treatment of irregular topography due to dry eye pre-op phaco
  - Treatment of corneal epithelial dysplasia/EBMD/other dystrophies
  - If patients using artificial tears daily 2 or more times a day
  - Can take up to 6 months to see full effect
  - Can burn in 15% of patients—keep in refrigerator, do AT before and after

## Dry eye prescription products

- Cequa
  - Second line agent for dry eye
  - Cyclosporine 0.09%
  - Utilizes nanocell delivery technology
- Xiidra
  - Second line agent for dry eye
  - Indicated for signs and symptoms of dry eye
  - Lymphocyte antigen (LFA-1) antagonist
  - Patient complaints of bad taste
  - Episodes of corneal erosions/dense epithelial loss with product in our office with multiple patients

## Topical Antivirals

- Zircan
  - For treatment of herpes simplex keratitis
  - Usually in addition to oral antivirals for severe cases; otherwise can use orals alone
  - 5x a day to start, taper with improvement
- Rare use of trifluridine topically
- Betadine treatment in office for EKC with topical steroid to follow

## Topical antifungal

- Natamycin 5%
  - Only commercially available antifungal ophthalmic product
  - Once confirmed fungal with culture, start q1h
  - Often use oral fluconazole or voriconazole in addition to topical natamycin

## Allergy products

- Lastacaft OTC
  - 5 ml bottle cheaper than 2.5ml Pataday
- Olapatadine generic/OTC Pataday
- OTC Zaditor/Alaway
  - Mast-cell stabilizer/antihistamine
  - Alaway cheaper and bigger bottle
- Zerviate
  - Histamine receptor antagonist
  - Bid
  - Does not worsen/can improve dry eye

## Cycloplegics

- Cyclopentolate
  - In office for wet refractions
  - Rare use for ocular disease treatment
- Atropine
  - Keep a bottle for in-office use
    - Hyphema
    - Corneal ulcer
    - Foreign body removal
    - Corneal abrasion
    - Break synechiae along with 10% phenylephrine
  - Prescribe bid to tid for severe iritis
  - Atropine qd with pred forte qd for blind, painful eyes

## Oral antibiotics

- Amoxicillin
  - For most skin and soft tissue infections
    - 875 mg bid adult dose
    - 20-40mg/kg/day pediatric dose
  - No with PCN allergy
- Augmentin (amoxicillin plus clavulanic acid)
  - As an alternative to Amoxicillin for skin and soft tissue infections
    - 875 mg bid
    - 20-40mg/kg/day pediatric dose
  - If haemophilus influenzae is suspected in children with preseptal
  - No with PCN allergy

## Oral antibiotics

- Doxycycline
  - For skin and soft tissue infections
  - Option for PCN allergy
  - No in children less than 8, nursing mothers, pregnancy
  - For suspected MRSA infections
  - 100mg bid for antibiotic dosing for skin/soft tissue infections
  - Also use 100mg bid for cat-scratch neuroretinitis treatment
  - 50mg qd to bid for anti-inflammatory uses
    - Ocular rosacea, meibomian gland dysfunction

## Oral antibiotics

- Septra DS (aka Bactrim DS)
  - For skin and soft tissue infections
  - Option for PCN allergy
  - No in sulfa allergy
  - For suspected MRSA infections
  - For treatment of ocular toxoplasmosis
  - 1 DS tablet bid

## Oral antibiotics

- Azithromycin
  - 1000mg one time dose for suspected Chlamydia
    - I personally Rx 500mg #4 pills, take 2 now and repeat 2 more in 2 weeks
  - Z-pack for mild skin and soft tissue infections
  - 250mg qd for meibomian gland dysfunction in patients who cannot take/tolerate doxycycline—CAREFUL WITH HEART PATIENTS
- Avelox
  - For therapeutic levels of antibiotic into the vitreous
  - 400mg qd
    - If infectious blebitis suspected
    - If intraocular foreign body
    - Suspected endophthalmitis



## Oral antivirals

- Valacyclovir
  - 1000 mg tid for herpes zoster (shingles)
    - Often with oral steroid dose pack
  - 500 mg tid for treatment of herpes simplex keratitis
    - NO TOPICAL STEROIDS
  - 500 mg tid for treatment of herpes simplex conjunctivitis or periocular lesions
    - NO TOPICAL STEROIDS
  - 500 mg tid suspected herpes disciform keratitis
    - With topical steroids
  - 500 mg tid for suspected herpetic uveitic glaucoma
    - With topical steroids and glaucoma agents
  - 1000 mg tid for Bell's Palsy (diagnosis of exclusion)
  - 500 mg qd for prevention of recurrences in patients with history of multiple herpes simplex keratitis episodes/disciform keratitis

## Oral steroids

- Medrol dosepak
  - Methylprednisolone 4mg tablets
  - I tell patients to take all pills for each day at breakfast
    - With food and/or milk
  - Along with antihistamines and mast-cell stabilizers for severe allergic reactions
  - With oral antivirals for severe cases of herpes zoster
  - Along with Durezol for severe anterior uveitis
  - Along with Durezol for severe DLK

## Oral steroids

- Prednisone 20mg
  - We usually prescribe 20mg making tapering easier
    - Generally start 60-80 mg/day
  - Non-infectious posterior uveitis
  - Scleritis
  - Arteritic ischemic optic neuropathy
  - Post-intravenous steroids for optic neuritis
  - Inflammatory orbital pseudotumor

## Pain meds

- Use cycloplegia for most ocular pain
- OTC acetaminophen
- OTC ibuprofen
- Tylenol #3 (acetaminophen 300mg and codeine 30mg)
  - 1-2 q4-6h prn pain
  - Contains codeine
  - Schedule 3 narcotic
- Ultram (tramadol)
  - 50mg tablet
  - 1-2 q4-6h prn pain
  - Synthetic opioid

## Oral glaucoma agents

- Acetazolamide (Diamox)
  - Comes in 125mg, 250mg, 500mg sequels
  - Angle closure
    - (2) 250mg tablets initially—order iridotomy
  - Use occasionally for max medical glaucoma therapy or post-op spikes
    - More often use methazolamide for longer term therapy
- Pseudotumor cerebri
  - 500mg bid sequels up to 2 grams total daily

## Oral glaucoma agents

- Methazolamide (Neptazane)
  - Comes in 25mg and 50mg
  - Use in addition to maximum topical glaucoma treatment up to 50mg tid
    - Often before initiating trabeculectomy/XEN

## Other orals

- Loratadine and pseudoephedrine 12-hr
  - Generic Claritin D 12-hr
  - Take qam dose only x 10 days for pain on eye movements secondary to suspected sinus congestion
- Diphenhydramine 25mg
  - Generic Benadryl
  - OTC for sleep

## Meds in pregnancy

- OK to dilate
- Augmentin, erythromycin, Zpack, amoxicillin
- Tylenol #3, Vicodin
- Prednisone (oral and topical) when necessary
- Acyclovir and other oral antivirals

## Newer Stuff

- Upneeq
  - Oxymetazoline stimulates Mueller muscle
  - Ptosis, unilateral or bilateral
  - Once daily
  - Will lift approximately 1mm in most patients
- Tyrvaya
  - Varenicline-cholinergic agonist
  - Stimulates trigeminal nerve and parasympathetic basal tear production pathway
  - One spray each nostril bid

## Newer Stuff

- Xdemvy
  - Lotilaner 0.25%
  - Demodex blepharitis
  - Bid for 6 weeks
  - Causes paralysis and death of mites
- Miebo
  - Targets tear evaporation
  - First FDA approved for tear evaporation

## In-office use

- Atropine 1%
- Phenylephrine 10%
- Muro-128 5% solution
- Pilocarpine 2%
- Topical glycerin
- Tobramycin vials and drops to make fortified tobramycin
- Acetazolamide 250mg
- Diphenhydramine 25mg
- Prochlorperazine 10mg
- Aspirin 81mg tablets
- Ibuprofen 600mg tablets