WELCOME TO INTERNATIONAL VISION EXPO!

We know you have choices where you take your education. On behalf of the entire Vision Expo event, we sincerely thank you for attending this session and being with us this year.

THE PEDIATRIC RED EYE (Handout)

Ida Chung, OD, MSHE, FCOVD, FAAO
Western University College of Optometry
Associate Professor/Assistant Dean of Learning
309 E. Second Street, Pomona, CA 91766
Office: 909-938-4140
Email: ichung@westernu.edu
Course Description:

This course provides a practical clinical approach to diagnosing and treating many common red eye disorders in your pediatric patients. Additionally, you will learn to recognize more serious, vision-threatening red eye disorders for prompt referral. Covered will be diseases of the external eye and orbit, including the lids, orbits, lacrimal system, conjunctiva, and cornea. This course will also cover the safety and efficacy of topical ophthalmic drugs as they relate to the treatment of pediatric red eyes.

Learning Objectives:

1. The clinician will be able to develop differential diagnoses for a pediatric patient presenting with a red eye
2. The clinician will be able to recognize serious, vision-threatening red eye disorders requiring comanagement
3. The clinician will know the pediatric safety profile of commonly prescribed topical ophthalmic drugs

Course Outline:

I. Red Eye and Child Abuse

- PHTHIRIASIS PALPEBRUM
  - Infestation of eyelashes with pubic lice
  - Treatments
- Petrolatum/ bland ointment TID 7-10 days
- Permethrin cream
- Forceps

- CHLAMYDIA TRACHOMATIS
  - Most common infectious cause of neonatal conjunctivitis is Chlamydia trachomatis, which infant acquires from the mother during birth
    - symptoms begin 5-14 days after birth
    - range from mild conjunctival inflammation to severe eyelid edema
    - Diagnosis: culture
    - Treatment: systemic erythromycin 50 mg/kg/day x14 days

a. GONOCOCCAL CONJUNCTIVITIS
  - in newborns is much less common due to prophylactic use of silver nitrate and erythromycin
    - appears 2 – 5 days after birth
    - profuse purulent discharge and severe eyelid edema
    - Diagnosis: culture for Neisseria gonorrhoeae
    - Treatment: IV or intramuscular penicillin G or third-generation cephalosporin

- Reporting child abuse
  - State toll-free number for reporting
    - NYC Administration for children’s services 1-800-635-1522
    - NJ Department of children and families 1-877-NJ ABUSE
  - Mandated reporters and others

II. HORDEOLUM

- Causes:
  - Internal is infection in a meibomian gland
  - External is infection in a gland of Moll or Zeiss
  - Staphylococcus aureus is major organism

- Treatment:
  - Hot soaks 5-7 times a day for 15 minutes
• PRECEPTAL CELLULITIS: inflammation of skin and subcutaneous tissue around the eye anterior to the orbital septum
  
  • Causes:
    o internal hordeolum, sinusitis, dacryocystitis, upper respiratory infection
    o Hemophilus influenzae most common in children
  
  • Treatment:
    o Oral antibiotic: broad spectrum + H. Influenza
      ➢ Augmentin (amoxicillin/clavulanic) 20-40mg/kg/day for 10 days
    o If allergic to penicillin
      ➢ Clindamycin 20-40mg/kg/day (poor H. Influenza coverage)
    o Under 1 year: Hospitalization for intravenous antibiotics

• ORBITAL CELLULITIS: inflammation of the soft tissue of the orbit posterior to the orbital septum

  • Ddx from preceptal
    o proptosis, ocular motility restriction & systemic symptoms (fever, nausea, lethargy)

  • Causes:
    o sinusitis, dental work, trauma, ear infection

  • Treatment:
    o May spread to dural sinus, cavernous sinus, and meninges
    o Referral for intravenous antibiotics in the hospital

III. NASOLACRIMAL DUCT OBSTRUCTION

• Cause:
  o Persistent congenital membranes in the nasolacrimal duct block outflow of tears into the nose (dacryostenosis)

• Signs/symptoms:
  o Usually appears when infant is 3 to 12 weeks old
  o Conjunctival hyperemia when have associated blepharitis
• Treatment:
  o Lacrimal massage
    ▪ Teach parent to massage the lacrimal sac
    ▪ 90% resolves
  o Presence of significant discharge or mattering
    ▪ Prescribe topical antibiotic
    ▪ Polytrim (TRIMETHOPRIM AND POLYMYXIN B) up to 6x daily (for 2 months and older)
  o Refer for probing and irrigation of nasolacrimal duct:
    ▪ If persistent tearing and discharge beyond 6-8 months of age
    ▪ Can refer for in-office probing and irrigation of the nasolacrimal duct before age 1 year
    ▪ After 1 year of age, probing and irrigation is performed in hospital under anesthesia
  o Timing of referral dilemma:
    ▪ observation/deferred facility-probing

• DACRYOCYSTITIS:
  o Is an infection of the nasolacrimal sac

• Sign/symptom:
  o Pain, swelling and redness over the lacrimal sac at medial canthus
  o Epiphora, crusting, discharge
  o Mucocele is a fluid-filled sac that can form from fluid retention

• Treatment:
  o Tx of infection: erythromycin, polytrim, tobramycin
  o Tx of cause: digital massage, surgical probing

IV. ALLERGIC CONJUNCTIVITIS

• Causes:
  Pollen/mold/ dust mite/ animal dander / hair/ atopic dermatitis

• Treatment:
  1. Avoiding allergen whenever possible
  2. Cold compresses applied to the eyes
3. Topical ophthalmic solutions approved for age 2 years and older
   - Select once daily dosing
   - Patanol (OLOPATADINE HYDROCHLORIDE 0.2%)
   - Lastacaft (ALCAFTADINE 0.25%)
   - Pazeo (OLOPATADINE HYDROCLORIDE 0.7%)
   - If OTC Alaway for 10ml

- Pediatric safety
  - Anti-allergy meds:
    - 2 yrs: Pazeo, Alomide, Bepreve (10ml), Lastacaft (qd)
    - 3 yrs: Optivar, Elestat, Patanol, Pataday (qd), Zaditor, Alocril*, Emadine, Acular LS (NSAID)
    - OTC: Zaditor, Alaway, Claritin Eye, Refresh
    - 4 yrs: Crolom*
    - 6 yrs: OTC Naphcon A, Vasocon A

- Corticosteroids
  - 2 yrs: FML, Fluor-Op, Flarex
  - 12 yrs: Alrex

V. BACTERIAL CONJUNCTIVITIS:

- Causes:
  1. Most common cause of acute conjunctivitis in children and most frequently associated with purulent discharge
  2. Haemophilus influenzae (gram -) and Streptococcus pneumoniae (gram +) most frequent causative organisms in acute bacterial conjunctivitis in children
  3. Can find other organisms such as Escherichia coli because children rub their eyes with contaminated fingers

- Treatment:
  - Prescribe antibiotic with gram- and gram + coverage
    - Polytrim (TRIMETHOPRIM AND POLYMIXIN B) 4-6 times daily x 7-10 days

- Pediatric safety
  - Anti-Infective meds:
    - 2 months: erythromycin, tobramycin, polytrim
    - 4 months: Moxeza
1 yr: Quixin, Ocuflor, Ciloxan, Zymar, Vigamox, AzaSite, Besivance, Zymaxid
2 yrs: Ciloxan ointment

- Avoid erythromycin which is effective against gram + only
- Polysporin ung NE (children) but used
- Neosporin is NE for pediatric safety but used. Avoid if sulfate allergy and watch out for delayed hypersensitivity.

### STAPHYLOCOCCAL BLEPHAROCONJUNCTIVITIS

- Most common chronic conjunctivitis in children
  - Blepharitis reported to occur in up to 30% of children with Down syndrome
  - Gram + organism

- Treatment:
  - Erythromycin and lid hygiene (warm compresses are effective for acute eyelid infections)
  - Tobradex ST (TOBRAMYCIN 0.3% AND DEXAMETHASONE 0.05%) q4-6hrs
  - Or Tobradex (TOBRAMYCIN 0.3% AND DEXAMETHASONE 0.1%) q3-4hrs
  - Maxitrol (NEOMYCIN 0.35%, POLYMYXIN B, DEXAMETHASONE 0.1%) not drug of choice because of neomycin allergy

- Pediatric safety

  - Anti-Infective/Anti-Inflammatory Combo
    1. 2 yrs: Tobradex ST, Tobradex, Maxitrol, FML-S
    2. 6 yrs: Blephamide, Vasocidin

### VI. VIRAL CONJUNCTIVITIS

- Signs/symptoms:
  - redness, itchiness, and sometimes nonpurulent, serous discharge in one or both eyes

- Causes:
  - Adenovirus types 8, 19, and 37 are most common in school-aged children
- PCF TRIAD: pharyngitis, conjunctivitis, and fever
- EPIDEMIC KERATOCONJUNCTIVITIS more severe form

- Treatment:
  1. Self-limiting and lasts up to 7 to 10 days
  2. Frequent hand washing is best way to prevent dissemination of the infection
  3. Betadine

- HERPES SIMPLEX INFECTION
  1. Primary herpes virus type 1
     - bilateral conjunctivitis
     - vesicles on skin and eyelids
     - history of recent viral illness
  2. Secondary herpes infection:
     - febrile illness
     - almost always unilateral
     - red eye and severe pain with no history of trauma
     - vesicles may be present but are not pronounced
  3. Treatment: herpes keratitis
     - Viroptic (TRIFLURIDINE 1%) Q2H 9XDAY1, TAPER 5XDAILY X7DAYS
     - (compliance may be issue because of frequent dosing)
     - Zirgan (GANCICLOVIR 0.15%) 5X DAILY, TAPER TIDX7DAYS
     - Fewer instillations, more comfortable and less toxic

- Pediatric safety
  - Anti-Virals:
    1. 2 yrs: Zirgan
    2. 6 yrs: Viroptic
  - NSAIDs:
    1. 3 yrs: Acular LS
    2. 10 yrs: Navanac
VII. SYSTEMIC MANIFESTATIONS OF RED EYES

- Juvenile idiopathic arthritis
  - Disorder of peripheral arthritis with onset before 16 years of age
  - Eye: red eye later, unequal pupils, eye pain, usually asymptomatic

- Kawasaki’s disease
  - Aka lymph node syndrome is a self-limited vasculitis
  - Eye: conjunctival injection

- Lyme disease
  - A tick-borne disease
  - Eye: conjunctivitis, uveitis, optic neuritis

- Mestastatic neuroblastoma
  - Orbital tumor
  - Eye ecchymosis

VIII. PRACTICAL TIPS FOR PEDIATRIC PRESCRIBING

- Examination tools:
  - Eidolon Bluminator®, Eidolon hand held slit lamp

- Choice of topical ophthalmic drug:
  - Infrequent instillation, long lasting, least sting, ointment form

- Minimize systemic absorption with punctal occlusion

- Uncooperative:
  - With closed eyes instill on inner canthus

- Drugs to avoid in children:
  - Tetracyclines associated with discoloration of developing teeth in children under the age of 8 years

- Calculation of dosages for oral medications:
  - Work with pharmacist/pediatrician to determine
  - Total daily dose (mg/day) = (weight in kg) x (rec. dosage in mg/kg)
  - 40 lbs = 18.14 kg
  - For all medications 5 ml = 1 tsp
**TABLE OF TOPICAL OPHTHALMIC DRUGS AND PEDIATRIC USE**

Notations for pediatric safety:
- “NE” = not established (no information available)
- “NR” = not recommended (due to reports of adverse reactions published)

**ANTIBIOTICS**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZASITE</td>
<td>AZITHROMYCIN 1%</td>
<td>MERCK</td>
<td>1 YEAR</td>
<td>BIDX2DAYS, QDX5DAYS</td>
</tr>
<tr>
<td>BACITRACIN</td>
<td>BACITRACIN 500U/G</td>
<td>PERRIGO</td>
<td>NE</td>
<td>UNG QD-TID</td>
</tr>
<tr>
<td>AZYTER</td>
<td>AZITHROMYCIN 1.5%</td>
<td>THEA LABORATORIES</td>
<td>1 YEAR</td>
<td>BIDX3DAYS</td>
</tr>
<tr>
<td>BESIVANCE</td>
<td>BESIFLOXACIN 0.6%</td>
<td>BAUSCH&amp;LOMB</td>
<td>1 YEAR</td>
<td>TID (SUSPENSION)</td>
</tr>
<tr>
<td>CILOXAN</td>
<td>CIPROFLOXACIN 0.3%</td>
<td>ALCON (GENERIC)</td>
<td>1 YEAR</td>
<td>2gt Q15MINX6HRS, TAPER; CONJ Q2HRSX2DAYS, TAPER</td>
</tr>
<tr>
<td>GARAMYCIN</td>
<td>GENTAMICIN 0.3%</td>
<td>PERRIGO (GENERIC)</td>
<td>NE</td>
<td>Q4HRS, UNG2-3DAILY</td>
</tr>
<tr>
<td>ILOTYCN</td>
<td>ERYTHROMYCIN 0.5%</td>
<td>PERRIGO (GENERIC)</td>
<td>2 MONTHS</td>
<td>UNG 1 CM STRIP QD - QID</td>
</tr>
<tr>
<td>MOXEZA</td>
<td>MOXIFLOXACIN 0.5%</td>
<td>ALCON</td>
<td>4 MONTHS</td>
<td>BID X 7 DAYS</td>
</tr>
<tr>
<td>NEOSPORIN (OINTMENT)</td>
<td>POLMYXIN B SULFATE/ BACITRACIN/ NEOMYCIN</td>
<td>GENERIC</td>
<td>NE</td>
<td>UNG Q3-6HRS X7-10DAYS</td>
</tr>
<tr>
<td>NEOSPORIN (SOLUTION)</td>
<td>POLMYXIN B SULFATE/ GRAMICIDIN/ NEOMYCIN</td>
<td>GENERIC</td>
<td>NE</td>
<td>Q1-4HRS X7-10DAYS</td>
</tr>
<tr>
<td>OCUFLOX</td>
<td>OFLOXACIN 0.3%</td>
<td>ALLERGAN (GENERIC)</td>
<td>1 YEAR</td>
<td>Q2-4HRSX2DAYS, THEN QIDX5DAYS</td>
</tr>
<tr>
<td>POLYSPORIN</td>
<td>BACITRACIN AND POLMYXIN B</td>
<td>GENERIC</td>
<td>NE</td>
<td>UNG Q3-6HRS</td>
</tr>
<tr>
<td>POLYTRIM</td>
<td>TRIMETHOPRIM AND POLMYXIN B</td>
<td>ALLERGAN (GENERIC)</td>
<td>2 MONTHS</td>
<td>Q3-6HRSX7-10DAYS, MAX6DAILY</td>
</tr>
<tr>
<td>TOBREX</td>
<td>TOBRAMYCIN 0.3%</td>
<td>ALCON (GENERIC)</td>
<td>2 MONTHS</td>
<td>Q1-4HRS, UNG2-4DAILY</td>
</tr>
<tr>
<td>VIGAMOX</td>
<td>MOXIFLOXACIN 0.5%</td>
<td>ALCON</td>
<td>1 YEAR</td>
<td>TID X 7DAYS</td>
</tr>
<tr>
<td>ZYMAXID</td>
<td>GATIFLOXACIN 0.5%</td>
<td>ALLERGAN (GENERIC)</td>
<td>1 YEAR</td>
<td>Q2HX1DAY, BID-QIDX6DAYS</td>
</tr>
<tr>
<td>ZYMAR</td>
<td>GATIFLOXACIN 0.3%</td>
<td>ALLERGAN</td>
<td>1 YEAR</td>
<td>Q2HX2DAYS, QIDX3-7DAYS</td>
</tr>
</tbody>
</table>
## ANTI-ALLERGY MEDICATIONS (* INDICATES CHRONIC CARE)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACULAR LS</td>
<td>KETOROLAC TROMETHAMINE 0.4%</td>
<td>ALLERGAN</td>
<td>3 YEARS</td>
<td>QID</td>
</tr>
<tr>
<td>ALAWAY (OTC)</td>
<td>KETOTIFEN FUMARATE 0.025%</td>
<td>BAUSCH&amp;LOMB</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>ALOCRIL*</td>
<td>NEDOCROMIL SODIUM 2%</td>
<td>ALLERGAN (GENERIC)</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>ALOMIDE*</td>
<td>LODOXIMIDE TROMETHAMINE 0.1%</td>
<td>ALCON</td>
<td>2 YEARS</td>
<td>QID UP TO 3 MONTHS</td>
</tr>
<tr>
<td>ALREX</td>
<td>LOTEPREDNOL ETABONATE 0.2%</td>
<td>BAUSCH&amp;LOMB</td>
<td>NE</td>
<td>QID</td>
</tr>
<tr>
<td>BEPREVE</td>
<td>BEPOTASTINE BESILATE 1.5%</td>
<td>ISTA PHARM.</td>
<td>2 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>CLARITIN EYE (OTC)</td>
<td>KETOTIFEN FUMARATE 0.025%</td>
<td>SCHERING-PLOUGH</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>CROLOM*</td>
<td>CROMOLYN SODIUM 4%</td>
<td>BAUSCH&amp;LOMB (GENERIC)</td>
<td>4 YEARS</td>
<td>QID</td>
</tr>
<tr>
<td>ELESTAT</td>
<td>EPINASTINE HCl 0.05%</td>
<td>ALLERGAN (GENERIC)</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>EMADINE</td>
<td>EMEDASTINE DIFUMARATE 0.05%</td>
<td>ALCON</td>
<td>3 YEARS</td>
<td>QID</td>
</tr>
<tr>
<td>LASTACAFT</td>
<td>ALCAFTADINE 0.25%</td>
<td>ALLERGAN (GENERIC)</td>
<td>2 YEARS</td>
<td>QD</td>
</tr>
<tr>
<td>OPTICROM*</td>
<td>CROMOLYN SODIUM 4%</td>
<td>ALLERGAN (GENERIC)</td>
<td>4 YEARS</td>
<td>QID</td>
</tr>
<tr>
<td>OPTIVAR</td>
<td>AZELASTINE HYDROCHLORIDE 0.05%</td>
<td>MEDA (GENERIC)</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>PATADAY</td>
<td>OLOPATADINE HYDROCHLORIDE 0.2%</td>
<td>ALCON (GENERIC)</td>
<td>3 YEARS</td>
<td>QD</td>
</tr>
<tr>
<td>PATANOL</td>
<td>OLOPATADINE HYDROCHLORIDE 0.1%</td>
<td>ALCON (GENERIC)</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>PAZEO</td>
<td>OLOPATADINE HYDROCHLORIDE 0.7%</td>
<td>ALCON</td>
<td>2 YEARS</td>
<td>QD</td>
</tr>
<tr>
<td>REFRESH (OTC)</td>
<td>KETOTIFEN FUMARATE 0.025%</td>
<td>ALLERGAN</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
<tr>
<td>ZADITOR (OTC)</td>
<td>KETOTIFEN FUMARATE 0.025%</td>
<td>ALCON</td>
<td>3 YEARS</td>
<td>BID</td>
</tr>
</tbody>
</table>
## ANTI-INFLAMMATORY - CORTICOSTEROIDS

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALREX</td>
<td>LOPETREDNOL ETABONATE 0.2%</td>
<td>BAUSCH&amp;LOMB</td>
<td>NE</td>
<td>QID</td>
</tr>
<tr>
<td>DUREZOL</td>
<td>DIFLUPREDNATE 0.05%</td>
<td>ALCON</td>
<td>NE</td>
<td>QIDX2WKS, BIDX1WK</td>
</tr>
<tr>
<td>FLAREX</td>
<td>FLUOROMETHOLONE ACETATE 0.1%</td>
<td>ALCON</td>
<td>NE</td>
<td>QID</td>
</tr>
<tr>
<td>FML</td>
<td>FLUOROMETHOLONE 0.1%</td>
<td>ALLERGAN (GENERIC)</td>
<td>2 YEARS</td>
<td>2-4XDAILY</td>
</tr>
<tr>
<td>FML OINTMENT</td>
<td>FLUOROMETHOLONE 0.1%</td>
<td>ALLERGAN</td>
<td>2 YEARS</td>
<td>UNG 1-3XDAILY</td>
</tr>
<tr>
<td>LOTE MAX</td>
<td>LOPETREDNOL ETABONATE 0.5%</td>
<td>BAUSCH&amp;LOMB</td>
<td>NE</td>
<td>QID (GEL) UNG QID</td>
</tr>
<tr>
<td>OMNIPRED</td>
<td>PREDNISOLONE ACETATE 1%</td>
<td>ALCON</td>
<td>NE</td>
<td>QID</td>
</tr>
<tr>
<td>PRED FORTE</td>
<td>PREDNISOLONE ACETATE 1%</td>
<td>ALLERGAN (GENERIC)</td>
<td>NE</td>
<td>ACUTE Q1-2HRS; MILD Q4-6HRS, TAPER</td>
</tr>
<tr>
<td>PRED MILD</td>
<td>PREDNISOLONE ACETATE 0.12%</td>
<td>ALLERGAN</td>
<td>NE (NOT RECOMMENDED)</td>
<td>BID TO QID, TAPER</td>
</tr>
<tr>
<td>PREDNISOLONE</td>
<td>PREDNISOLONE SODIUM PHOSPHATE 1%</td>
<td>NOVARTIS</td>
<td>NE (NOT RECOMMENDED)</td>
<td>BID TO QID, TAPER</td>
</tr>
<tr>
<td>SODIUM PHOSPHATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEXOL</td>
<td>RIMEXOLONE 1%</td>
<td>ALCON</td>
<td>NE (NOT RECOMMENDED)</td>
<td>QHX7DAYS, Q2HX7DAYS, TAPER (SUSPENSION)</td>
</tr>
</tbody>
</table>

## ANTIVIRALS

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETADINE 5%</td>
<td>Povidone-iodine</td>
<td>ALCON</td>
<td>NE</td>
<td>4-6DROPS</td>
</tr>
<tr>
<td>SOLUTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIROPTIC</td>
<td>Trifluridine 1%</td>
<td>MONARCH (GENERIC)</td>
<td>6 YEARS</td>
<td>Q2H 9XDAY1, TAPER 5XDAILY X7DAYS</td>
</tr>
<tr>
<td>ZIRGAN</td>
<td>Ganciclovir 0.15%</td>
<td>BAUSCH&amp;LOMB</td>
<td>2 YEARS</td>
<td>5XDAILY, TAPER 7DAYS (GEL)</td>
</tr>
</tbody>
</table>
## STEROID-ANTIBIOTIC COMBINATIONS

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLEPHAMIDE</td>
<td>SULFACETAMIDE 10%, AND PREDNISOLONE ACETATE 0.2%</td>
<td>ALLERGAN</td>
<td>6 YEARS</td>
<td>Q1-4HRS</td>
</tr>
<tr>
<td>CORTISPORIN</td>
<td>POLYMIXIN B, NEOMYCIN 0.35% AND HYDROCORTISONE 1%</td>
<td>MONARCH (GENERIC)</td>
<td>NE</td>
<td>Q3-4HRS; UNG1-4XDAILY</td>
</tr>
<tr>
<td>MAXITROL</td>
<td>NEOMYCIN 0.35%, POLYMIXIN B, DEXAMETHASONE 0.1%</td>
<td>NOVARTIS (GENERIC)</td>
<td>2 YEARS</td>
<td>Q3-4HRS; UNG1-4XDAILY</td>
</tr>
<tr>
<td></td>
<td>NEOMYCIN 0.35%, DEXAMETHASONE PHOSPHATE 0.1%</td>
<td>MERCK</td>
<td>NE</td>
<td>Q1-2H-DAY1, TAPER TO QID; UNG1-4XDAILY</td>
</tr>
<tr>
<td>PRED-G</td>
<td>PREDNISOLONE ACETATE 1%, GENTAMICIN 0.3%</td>
<td>ALLERGAN</td>
<td>NE (NOT RECOMMENDED)</td>
<td>BID-QID (SUSPENSION)</td>
</tr>
<tr>
<td>TOBRADEX</td>
<td>TOBRAMYCIN 0.3% AND DEXAMETHASONE 0.1%</td>
<td>NOVARTIS (GENERIC FOR SUSPENSION)</td>
<td>2 YEARS</td>
<td>Q3-4HRS (SUSPENSION) UNG 1-4XDAILY</td>
</tr>
<tr>
<td>TOBRADEX ST</td>
<td>TOBRAMYCIN 0.3% AND DEXAMETHASONE 0.05%</td>
<td>NOVARTIS</td>
<td>2 YEARS</td>
<td>Q4-6HRS (SUSPENSION)</td>
</tr>
<tr>
<td>ZYLET</td>
<td>LOTEPEREDNOL ETABONATE 0.5%, TOBRAMYCIN 0.3%</td>
<td>BAUSCH &amp; LOMB</td>
<td>NE</td>
<td>Q4H-Q6HRS, TAPER</td>
</tr>
</tbody>
</table>

## NSAIDs

<table>
<thead>
<tr>
<th>Brand</th>
<th>Generic name</th>
<th>Manufacturer</th>
<th>Pediatric use</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACULAR LS</td>
<td>KETOROLAC TROMETHAMINE 0.4%</td>
<td>ALLERGAN (GENERIC)</td>
<td>3 YEARS</td>
<td>QID</td>
</tr>
<tr>
<td>ACUVAIL</td>
<td>KETOROLAC TROMETHAMINE 0.45%</td>
<td>ALLERGAN</td>
<td>NE</td>
<td>BID, UNIT DOSE</td>
</tr>
<tr>
<td>BROMDAY</td>
<td>BROMFENAC 0.09%</td>
<td>BAUSCH+LOMB</td>
<td>18 YEARS</td>
<td>QD</td>
</tr>
<tr>
<td>ILEVRO</td>
<td>NEPAFENACO 0.3%</td>
<td>ALCON</td>
<td>10 YEARS</td>
<td>TID</td>
</tr>
<tr>
<td>NEVANAC</td>
<td>NEPAFENAC 0.1%</td>
<td>ALCON</td>
<td>10 YEARS</td>
<td>TID</td>
</tr>
<tr>
<td>PROLENSA</td>
<td>BROMFENAC 0.07%</td>
<td>BAUSCH+LOMB</td>
<td>NE</td>
<td>QD</td>
</tr>
<tr>
<td>VOLTAREN</td>
<td>DICLOFENAC SODIUM 0.1%</td>
<td>NOVARTIS (GENERIC)</td>
<td>NE</td>
<td>QID</td>
</tr>
</tbody>
</table>