

1 **Commonly prescribed medication for children**

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2 **Topical Antibiotics**

- Ilotycin (Erythromycin)
- Polysporin / Neosporin
- Tobrex
- Polytrim
- Fluoroquinolones
 - 1st generation: Ciloxan / Ocuflax
 - 3rd generation: Quixin
 - 4th generation: Vigamox / Zymar / Besivance
- AzaSite

3 **Ilotycin**

(Erythromycin 0.5%)

- Ointment only, generics available
- FDA approved for prophylaxis of neonatal gonococcal or chlamydial ophthalmia
- ≥ 2 months, apply 1/2" strip 4 times / day
(Max 6 times / day)

4 **Tobrex**

(Tobramycin 0.3%)

- Solution and Ointment, generics available
- For superficial ocular infection in children ≥ 2 months
- 1 - 2 drops every 4 hrs.
- Apply every 8-12 hrs.

5 **Polysporin / Neosporin**

- Polysporin ung: Bacitracin and Polymyxin B
- Neosporin ung: Bacitracin, Polymyxin B, Neomycin
- Neosporin sol'n: Neomycin, Polymyxin B, gramicidin
- No pediatric indication
- Apply every 3 - 4 hours for 7 - 10 days

6 **Polytrim**

- Solution only, generics available
- Trimethoprim and Polymyxin B
- FDA approved for ≥ 2 months
- 1 drop every 3 hours (max. 6 doses/day) for 7 - 10 days

7  **Zymar**

(Gatifloxacin 0.3%)

- Solution only, no generics
- Days 1 - 2:
Instill 1 drop every 2 hrs. while awake, up to 8 times daily.
- Days 3 - 7:
Instill 1 drop up to 4 times daily while awake

8  **Vigamox**

(Moxifloxacin 0.5%)

- Solution only, no generics
- Non-preserved
- Dosage: 3 times / day for 7 days
- Surv Ophthal. (Nov. 2005): Safe and well tolerated in 918 pediatric subjects (3 days–17 years of age)

9  **Besivance**

(0.6% besifloxacin suspension)

- Clinically equivalent to Vigamox in the tx of bacterial conjunctivitis
Ophthalmology. 2009 Jul 28
- Fifth generation?
- Evaluated in rabbits infected with MRSA
Curr Eye Res. 2008 Nov;33(11): 923-32
- Dosage: 3 times / day for 7 days
(Space doses at least 4 hrs apart)
- Shake 1x before use
- FDA approved for ≥ 1 year

10  **AJO 2006 Nov; 143(5): 726-729**

MRSA in-vitro resistance rates:

- Gatifloxacin (71%)
- Moxifloxacin (68%)
- Ciprofloxacin (94%)
- Ofloxacin (94%)
- Vancomycin (0%)
- Gentamicin (3%)

11  **AzaSite**

(Azithromycin 1%)

- Solution only, no generics

- Approved for use \geq 1 yr.
- Day 1 – 2:
1 drop every 8 - 12 hrs.
- Day 3 – 7:
1 drop every day
- Alternative, if Erythromycin 0.5% is not available (FDA Sept 2009)

12  **Clinical Pearls**

- Don't taper
- F/U 1-3 days if severe and 7 days if mild
- If the red eye does not respond in 3-5 days, suspect non-compliance or misdiagnosis
- Culture in cases of ocular surface infection when 1st-line tx fails, or when there is suspicion of atypical organisms

13  **Anti-allergy**

Antihistamine & Mast cell stabilizer

- Patanol / Pataday
- Zaditor
- Optivar
- Elestat
- Bepreve

14  **Patanol / Pataday**

- 1st on the market
- 2 times / day and
now 1 time / day
- Recommended therapy up to 12 weeks

15  **Zaditor / Alaway**

- Berdy et al (2000):
Patanol is more effective than Zaditor in reducing the itching *Clin Ther.* 2000 Jul;22(7):826-33.
- Aguilar (2000):
Patanol controlled SAC sx and signs more rapidly and to a greater extent than Zaditor
Acta Ophthalmol Scand Suppl. 2000;(230):52-5.

16  **Optivar**

- Recommended therapy up to 8 weeks
- Spangler et al. (2001):
Patanol significantly more effective at reducing itching than Optivar
Clinical Therapeutics Volume 23, Issue 8, August 2001, Pages 1272-1280

17  **Elestat**

- Recommended therapy up to 8 weeks
- Lanier et al. (2004):
Patanol less itching than Elestat (p<0.001)

Current Medical Research and Opinion 2004,

Vol. 20, No. 8 : Pages 1227-1233

18 **Bepreve**

- Dosage: 2x / day
- FDA approved for 2 years and older
- Rapid onset of action (within 3 min) and a durable response (8 hours)
- Highly selective antagonist of the histamine (H1) receptor, mast cell stabilizer, and suppresses the migration of eosinophils into inflamed tissues
- Oral bepotastine previously was approved in Japan for the systemic treatment of allergic rhinitis and urticaria/pruritus
- The safety of BEPREVE™ was evaluated in a randomized clinical study of 861 subjects over a period of 6 weeks (72 subjects between 3 to 9 yrs of age).

19 **Anti-allergy**

Mast cell stabilizer

- Alocril
 - Alamast
- “Soft” Steroid
- Lotemax
 - Alrex

20 **Mast Cell Stabilizer**

- Alamast and Alocril: Advanced formulations
- Labeling indicates treatment for itching associated with allergic conjunctivitis
- Low systemic absorption (>90%)
- Need to be taken at least 1 week prior to exposure to allergen

21 **Steroid**

Melton and Thomas (2007) recommended pulse dose:

- Alrex every 2 - 4 hrs. for 4 days
- Patanol and Alrex both
2 times / day for 1 week
- Patanol 2 times / day

Alrex: FDA approved for temporary relief of the signs and symptoms of allergic conjunctivitis

22 **Oral Antihistamines and Steroids**

- Topical typically faster acting than oral agents
- Patanol + Claritin produced greater relief of ocular itching and redness within 20 minutes than Claritin alone (*Ann Allergy Asthma Immunol.* 2001;86:641–648)

23  **Clinical Pearls**

- Non-pharmacological methods:
 - Wash hands, shower at night, don't rub eyes, wash sheets, towels, and clothes frequently, cold compress, artificial tears
- Topical anti-allergy meds have minimal systemic absorption
- Consider cost of treatment
- Follow-up in 1 week after initiation of tx

Antibiotics

Brand Name	Generic Name	Recommended Dosage	Age of Approved Pediatric Use	Cost
Ilotycin	erythromycin 0.5%	1/2 in. ribbon 4x / day (Max: 6x / day)	≥ 2 months	\$12.99 / 3.5 g tube
Tobrex	tobramycin 0.3%	<u>Drops</u> 1-2 drops every 4 hrs. <u>Ointment</u> 1/2 in. ribbon 2-3x/day	≥ 2 months	\$15.99 / 5 mL bottle \$15.99 / 3.5 g tube
Polysporin	bacitracin, polymyxin B	1/2 in. ribbon every 3-4 hrs for 7-10 days	n/a	\$17.99 / 3.5 g tube
Neosporin	<u>Solution</u> gramicidan, polymyxin B, neomycin <u>Ointment</u> bacitracin, polymyxin B, neomycin	<u>Drops</u> 1-2 drops every 4 hrs for 7-10 days <u>Ointment</u> 1/2 in. ribbon every 3-4 hrs for 7-10 days	n/a	\$26.00 / 10 mL bottle \$18.51 / 3.5 g tube
Polytrim	trimethoprim/ polymyxin B	1 drop every 3 hrs. (Max: 6x / day) for 7-10 days	≥ 2 months	\$41.98 / 10 mL bottle
Zymar	gatifloxacin 0.3%	<u>Day1-2:</u> 1 drop ever 2 hrs. (Max: 8x / day) <u>Day 3-7:</u> 1 drop 4x / day	≥ 1 year	\$83.36 / 5mL bottle
Vigamox	moxifloxacin 0.5%	1 drop 3x/day for 7 days	≥ 1 year	\$83.25 / 3 mL bottle
Besivance	besifloxacin 0.6%	1 drop 3x/day for 7 days	≥ 1 year	\$87.61 / 5 mL bottle
Azasite	azithromycin 1%	<u>Day1-2:</u> 1 drop ever 8-12 hrs. <u>Day 3-7:</u> 1 drop / day	≥ 1 year	\$82.82 / 2.5 mL bottle

Anti-allergy

Brand Name	Generic Name	Recommended Dosage	Age of Approved Pediatric Use	Cost
Patanol	olopatadine 0.1%	1 drop every 6-8 hrs.	≥ 3 years	\$96.30 / 5 mL bottle
Pataday	olopatadine 0.2%	1 drop every day	≥ 3 years	\$96.83 / 2.5 mL bottle
Zaditor Alaway	ketotifen 0.025%	1 drop every 8-12 hrs.	≥ 3 years	\$13.99 / 5 mL bottle \$12.99 / 5 mL bottle
Optivar	azelastine 0.05%	1 drop 2x / day	≥ 3 years	\$109.06 / 6 mL bottle
Elestat	epinastine 0.05%	1 drop 2x / day	≥ 3 years	\$102.18 / 5 mL bottle
Bepreve	bepotastine 1.5%	1 drop 2x / day	≥ 2 years	~\$103-116 / 10 mL bottle
Alocril	nedocromil 2%	1-2 drops 2x / day	≥ 3 years	\$90.29 / 5 mL bottle
Alamast	pemirolast 0.1%	1-2 drops 4x / day	≥ 3 years	\$64.00 / 10 mL bottle
Lotemax	loteprednol 0.5%	1 drop 4x / day (adult)	n/a	\$67.71 / 5 mL bottle
Alrex	loteprednol 0.2%	1 drop 4x / day (adult)	n/a	\$77.74 / 5 mL bottle

Online Resources:

FDA: www.fda.gov

Online drug index: www.rxlist.com

Journal search: www.pubmed.gov

Drug prices: www.pharmacychecker.com