

Treatment for Bacterial Conjunctivitis

Rationale, current evidence, and consensus statement:

In a Cochrane Review (2009) five trials, with a total of 1034 adult and pediatric patients, were analyzed to determine the literature support for antibiotics versus placebo in acute bacterial conjunctivitis. Treatment options of the various studies included: polymyxin and bacitracin, ciprofloxacin, norfloxacin, fusidic acid and chloramphenicol. Included studies were heterogeneous in terms of treatment options, and the data meta-analyses found that treatment with topical antibiotics were beneficial in improving early (days 2 to 5) clinical and microbiological remission. Late remission (days 6 to 10) also showed a benefit, but the results were only marginally improved when the intervention was compared to placebo. Overall, most cases that received the placebo resolved spontaneously with clinical remission in 65% of patients on days 2 to 5 with no serious outcomes. Sight threatening complications were also infrequently reported. The Cochrane review was updated in 2012 to include 6 new studies and increased the total randomized number of patients studied to 3673. The updated 2012 review again concludes that bacterial conjunctivitis typically is a self-limiting disease. The findings suggest that the use of antibiotic eye drops is associated with moderate rates of clinical and microbiological improvement when comparing intervention to placebo.

Two studies published in the *Journal of Pediatric Ophthalmology and Strabismus* argue that moxifloxacin is the superior antibiotic choice in the treatment of conjunctivitis. When comparing moxifloxacin to other antibiotic solutions, two reasons provided in these articles are: 1) a faster rate of kill of *S. pneumonia* in vitro and 2) a quicker reduction in clinical symptoms. However, significant limitations were present in both of these studies: 1) both were funded by the manufacture of moxifloxacin, 2) the structure of the studies found an incomplete description of the blinding and randomization process and 3) power calculations and confidence intervals were not reported. These limitations raise concerns for significant bias and therefore, do not allow us to recommend a broad-spectrum fluoroquinolone ophthalmic antibiotic. These recommendations are re-affirmed based on a 2013 randomized control trial comparing Polytrim (Polymyxin B-trimethoprim) to moxifloxacin for the treatment of acute conjunctivitis in children. Polytrim was found to have a similar treatment response rate to moxifloxacin with significant cost savings.

As with the discussion for delayed or no treatment options, Hovdig (2008) also established “pros and cons” for initial antibiotic treatment of suspected bacterial conjunctivitis. Again, the provider, in conjunction with the infant/child’s caregiver, should weigh their options and consider a **pragmatic** approach.

Immediate antibacterial treatment

Pros:

- More rapidly reduced bacterial growth

- Possible reduced transmission rates
- Possible reduced risk of keratitis and other complications
- Increased early clinical remission
- Reduced time out of work or education
- Earlier restart of contact lens wear
- Reduced symptoms and worries
- Early return to kindergarten or school
- Less parental time out of work

Cons:

- Increased 'burden' on the healthcare system
- Socioeconomically unfavorable (if society pays medication)
- Often unnecessary use of topical antibiotics
- Patient adverse effects
- Negative influence on the normal flora
- Increased risk of bacterial resistance

Based on current literature the Care Process Model team recommends that if the provider chooses to treat the infant or child with an antibiotic, which a narrow spectrum, short course be provided, depending on the medication allergy profile of the patient, as well as the ophthalmic antibiotic choice available. Potential treatment options include: 5 day course of either Erythromycin ophthalmic ointment or 5 day course of Polytrim eye drops with re-exam if not improved in 3 to 5 days. Again, the CPM team does not recommend routine bacterial cultures, but bacterial cultures may be helpful in cases where the conjunctivitis has not responded to medication.

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These guidelines do not establish a standard of care to be followed in every case. It is recognized that each case is different and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare guidelines for each. Accordingly these guidelines should guide care with the understanding that departures from them may be required at times.

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