



Bacterial Keratitis (Management Recommendations)

(Ratings: A: Most important, B: Moderately important, C: Relevant but not critical **Strength of Evidence:** I: Strong, II: Substantial but lacks some of I, III: consensus of expert opinion in absence of evidence for I & II)

Follow-up Evaluation

- Frequency depends on extent of disease, but follow severe cases initially at least daily until clinical improvement or stabilization is documented. **(A:III)**

Patient Education

- Inform patients with risk factors predisposing them to bacterial keratitis of their relative risk, the signs and symptoms of infection, and to consult an ophthalmologist promptly if they experience such warning signs or symptoms **(A:III)**
- Educate about the destructive nature of bacterial keratitis and need for strict compliance with therapy. **(A:III)**
- Discuss possibility of permanent visual loss and need for future visual rehabilitation. **(A:III)**
- Educate patients with contact lenses about increased risk of infection associated with contact lens, overnight wear, and importance of adherence to techniques to promote contact lens hygiene. **(A:III)**
- Refer patients with significant visual impairment or blindness for vision rehabilitation if they are not surgical candidates (see www.aao.org/smartsight). **(A:III)**

Antibiotic Therapy of Bacterial Keratitis (A:III)

Organism	Antibiotic	Topical Concentration	Subconjunctival Dose
No organism identified or multiple types of organisms	Cefazolin with Tobramycin or gentamicin or Fluoroquinolones	50 mg/ml 9-14 mg/ml 3 or 5 mg/ml Various**	100 mg in 0.5 ml 20 mg in 0.5 ml
Gram-positive Cocci	Cefazolin Vancomycin*** Bacitracin*** Fluoroquinolones*	50 mg/ml 15-50 mg/ml 10,000 IU Various**	100 mg in 0.5 ml 25 mg in 0.5 ml
Gram-negative rods	Tobramycin or gentamicin Ceftazidime Fluoroquinolones	9-14 mg/ml 50 mg/ml Various**	20 mg in 0.5 ml 100 mg in 0.5 ml
Gram-negative Cocci****	Ceftriaxone Ceftazidime Fluoroquinolones	50 mg/ml 50 mg/ml Various**	100 mg in 0.5 ml 100 mg in 0.5 ml
Nontuberculous Mycobacteria	Amikacin Clarithromycin Azithromycin***** Fluoroquinolones	20-40 mg/ml 10 mg/ml 10 mg/ml Various**	20 mg in 0.5 ml
Nocardia	Sulfacetamide Amikacin Trimethoprim/Sulfamethoxazole: Trimethoprim Sulfamethoxazole	100 mg/ml 20-40 mg/ml 16 mg/ml 80 mg/ml	20 mg in 0.5 ml

*Fewer gram-positive cocci are resistant to gatifloxacin and moxifloxacin than other fluoroquinolones.

**Ciprofloxacin 3 mg/ml; gatifloxacin 3 mg/ml; levofloxacin 15 mg/ml; moxifloxacin 5mg/ml; ofloxacin 3 mg/ml, all commercially available at these concentrations.

***For resistant Enterococcus and Staphylococcus species and penicillin allergy. Vancomycin and Bacitracin have no gram-negative activity and should not be used as a single agent empirically in treating bacterial keratitis.

**** Systemic therapy is necessary for suspected gonococcal infection.

***** Data from Chandra NS, Torres MF, Winthrop KL. Cluster of Mycobacterium chelonae keratitis cases following laser in-situ keratomileusis. Am J Ophthalmol 2001; 132:819-30.

* Adapted from the American Academy of Ophthalmology Summary Benchmarks, November 2010 (www.aao.org)