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International Council of Ophthalmology/  
International Federation of Ophthalmological Societies

## ICO International Clinical Guidelines

### Bacterial Keratitis (Initial Evaluation)

**(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)

#### Initial Exam History

- Ocular symptoms (**A:III**)
- Circumstances surrounding onset of symptoms (**A:III**)
- Prior ocular history (**A:III**)
- Systemic history (**A:III**)
- Current ocular medications and medications recently used (**A:III**)
- Medication allergies (**A:III**)

#### Initial Physical Exam

- General appearance of patient (**B:III**)
- Facial examination (**B:III**)
- Visual acuity (**A:III**)
- Eyelids and eyelid closure (**A:III**)
- Conjunctiva (**A:III**)
- Nasolacrimal apparatus (**B:III**)
- Corneal sensation (**A:III**)
- Slit-Lamp biomicroscopy
  - Eyelid margins (**A:III**)
  - Conjunctiva (**A:III**)
  - Sclera (**A:III**)
  - Cornea (**A:III**)
  - Anterior chamber (**A:III**)
  - Anterior vitreous (**A:III**)

International Council of Ophthalmology  
Jean-Jacques DeLaey, MD, Secretary General  
Department of Ophthalmology, Ghent University Hospital, de Pintelaan 185, B-9000  
Ghent, Belgium  
Fax: (+32-9) 240-49-63 E-mail: [info@icoph.org](mailto:info@icoph.org) Web: [www.icoph.org](http://www.icoph.org)

## Diagnostic Tests

- Manage majority of community-acquired cases with empiric therapy and without smears or cultures. **(A:III)**
- Indications for smears and cultures:
  - Sight-threatening or severe keratitis of suspected microbial origin prior to initiating therapy **(A:III)**
  - A large corneal infiltrate that extends to the middle to deep stroma **(A:III)**
  - Chronic in nature **(A:III)**
  - Unresponsive to broad spectrum antibiotic therapy **(A:III)**
  - Clinical features suggestive of fungal, amoebic, or mycobacterial keratitis **(A:III)**
- The hypopyon that occurs in eyes with bacterial keratitis is usually sterile, and aqueous or vitreous taps should not be performed unless there is a high suspicion of microbial endophthalmitis. **(A:III)**
- Corneal scrapings for culture and smears should be inoculated directly onto appropriate culture media and slides in order to maximize culture yield. **(A:III)**. If this is not feasible, place specimens in transport media. **(A:III)**. In either case, immediately incubate cultures or take promptly to the laboratory. **(A:III)**

## Care Management

- Topical antibiotic eye drops are preferred method in most cases. **(A:III)**
- Use topical broad-spectrum antibiotics initially in the empiric treatment of presumed bacterial keratitis. **(A:III)**
- For severe keratitis (deep stromal involvement or a defect larger than 2 mm with extensive suppuration), use a loading dose every 5 to 15 minutes for the first hour, followed by applications every 15 minutes to 1 hour around the clock. **(A:III)** For less severe keratitis, a regimen with less frequent dosing is appropriate. **(A:III)**
- Use systemic therapy for gonococcal keratitis. **(A:III)**
- In general, modify initial therapy when there is a lack of improvement or stabilization within 48 hours. **(A:III)**
- For patients treated with ocular topical corticosteroids at time of suspected bacterial keratitis, reduce or eliminate corticosteroids until infection has been controlled. **(A:III)**
- When the corneal infiltrate compromises the visual axis, may add topical corticosteroid therapy following at least 2 to 3 days of progressive improvement with topical antibiotics. **(A:III)** Continue topical antibiotics at high levels with gradual tapering. **(A:III)**
- Examine patients within 1 to 2 days after initiation of topical corticosteroid therapy. **(A:III)**

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\* Adapted from the [American Academy of Ophthalmology Summary Benchmarks, November 2006 \(www.aao.org\)](http://www.aao.org)

(For more ICO International Clinical Guidelines, see [www.icoph.org/guide](http://www.icoph.org/guide))

### **Preface to the Guidelines:**

International Clinical Guidelines are prepared and distributed by the International Council of Ophthalmology on behalf of the International Federation of Ophthalmological Societies.

These Guidelines are to serve a supportive and educational role for ophthalmologists worldwide. These guidelines are intended to improve the quality of eye care for patients. They have been adapted in many cases from similar documents (Benchmarks of Care) created by the American Academy of Ophthalmology based on their Preferred Practice Patterns.

While it is tempting to equate these to Standards, it is impossible and inappropriate to do so. The multiple circumstances of geography, equipment availability, patient variation and practice settings preclude a single standard.

Guidelines on the other hand are a clear statement of expectations. These include comments of the preferred level of performance assuming conditions that allow the use of optimum equipment, pharmaceuticals and/or surgical circumstances.

Thus, a basic expectation is created and if the situation is optimum, the optimum facets of diagnosis, treatment and follow up may be employed. Excellent, appropriate and successful care can also be provided where optimum conditions do not exist. Simply following the Guidelines does not guarantee a successful outcome. It is understood that, given the uniqueness of a patient and his or her particular circumstance, physician judgment must be employed. This can result in a modification in application of a guideline in individual situations.

Medical experience has been relied upon in the preparation of these guidelines, and they are whenever possible, evidence-based. This means these Guidelines are based on the latest available scientific information. The ICO is committed to provide updates of these guidelines on a regular basis (approximately every two to three years).

(Also see the Introduction to the ICO International Clinical Guidelines at [www.icoph.org/guide/guideintro.html](http://www.icoph.org/guide/guideintro.html) and the list of other Guidelines at [www.icoph.org/guide/guidelist.html](http://www.icoph.org/guide/guidelist.html).)