Complete Summary

GUIDELINE TITLE

Care of the patient with conjunctivitis. 2nd edition.

BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with conjunctivitis. 2nd ed. St. Louis (MO): American Optometric Association; 2002 Nov 8. 55 p. [80 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previously published version: Care of the patient with conjunctivitis. St. Louis (MO): American Optometric Association; 1995. 54 p.

According to the guideline developer, this guideline has been reviewed on a biannual basis and is considered to be current. This review process involves updated literature searches of electronic databases and expert panel review of new evidence that has emerged since the original publication date.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- September 11, 2007, Rocephin (ceftriaxone sodium): Roche informed healthcare professionals about revisions made to the prescribing information for Rocephin to clarify the potential risk associated with concomitant use of Rocephin with calcium or calcium-containing solutions or products.

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SCOPE

DISEASE/CONDITION(S)

Conjunctivitis, including the following types:

- Allergic conjunctivitis (atopic keratoconjunctivitis, simple allergic conjunctivitis, seasonal conjunctivitis, vernal conjunctivitis, giant papillary conjunctivitis)
- Bacterial conjunctivitis (hyperacute, acute, chronic)
- Viral conjunctivitis (adenoviral, herpetic)
- Chlamydial conjunctivitis
- Other forms of conjunctivitis (contact lens-related, mechanical, traumatic, toxic, neonatal, Parinaud's oculoglandular syndrome, phlyctenular, secondary)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Optometry

INTENDED USERS

Health Plans
Optometrists

GUIDELINE OBJECTIVE(S)

- To identify patients at risk of developing conjunctivitis
- To accurately diagnose conjunctivitis of diverse origins
- To improve the quality of care rendered to patients with conjunctivitis
- To initiate appropriate treatment for conjunctivitis
- To reduce the potentially adverse effects of conjunctivitis
- To inform and educate patients and other health care practitioners about the diagnosis, treatment, and management of conjunctivitis.

TARGET POPULATION

Patients with suspected or diagnosed conjunctivitis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Patient history
2. Ocular examination
    - Visual acuity
    - Neuro-ophthalmic screening
    - External examination
    - Biomicroscopy
    - Tonometry
    - Fundus examination
3. Supplemental testing
    - Cultures, smears, and scrapings
    - Immunoassay
    - Conjunctival biopsy

Management

1. Identify and remove causative antigen or organism
2. Supportive therapy (nonpreserved lubricants, cold compresses)
3. Appropriate regimen of pharmacologic agents, depending on the etiology
4. Co-management with physician for treatment of underlying ocular or systemic condition
5. Patient counseling and education regarding condition and proper hygiene

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches using the National Library of Medicine's Medline database and the VisionNet database.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Reference Guide for Clinicians was reviewed by the American Optometric Association (AOA) Clinical Guidelines Coordinating Committee and approved by the AOA Board of Trustees.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

A. **Diagnosis of Conjunctivitis**

A detailed examination should be performed on patients presenting with acute or chronic conjunctivitis. Additional testing to diagnose routine cases of conjunctivitis is generally not necessary. A comprehensive eye examination with dilation of the pupil should be performed in those patients with conjunctival hyperemia accompanied by proptosis, optic nerve dysfunction, decreased visual acuity, diplopia, or evidence of anterior chamber inflammation. In addition, visual field testing may be indicated for these patients.

1. Patient History

   The diversity of etiologies for conjunctivitis makes a detailed patient history the most important step in the differential diagnosis of conjunctivitis. The patient history includes the chief complaint, ocular history, general health history and review of systems, social history, and family ocular and medical history (see Table 3 in the original guideline document).

2. Ocular Examination

   The ocular examination may include, but is not limited to, the following procedures:

   - *Visual acuity*: Documentation of baseline best corrected visual acuity is standard practice.
   - *Neuro-ophthalmic screening*: Pupillary responses, confrontation visual fields, and extraocular motility should be evaluated in patients with conjunctivitis because several important ophthalmic disorders can masquerade as conjunctivitis.
   - *External examination*: Successful diagnosis of conjunctivitis requires complete examination of the external eye and regional anatomy. Table 4 in the original guideline document lists the important components and relevant clinical findings of the external examination.
   - *Biomicroscopy*: Careful biomicroscopy should be performed on all patients with conjunctivitis. Table 5 in the original guideline document lists the important biomicroscopic clinical observations in diagnosing patients with conjunctivitis.
   - *Tonometry*: In cases that have clinical evidence of infectious conjunctivitis but no evidence of acute angle closure glaucoma or prior history of glaucoma, tonometry may be deferred until a follow-up examination.
   - *Fundus examination*: Fundus evaluation is recommended for all patients with conjunctivitis. Dilated fundus examination is not required at the presenting examination unless specifically indicated.

3. Supplemental testing, such as:
   - *Cultures, smears, and scrapings*: Conjunctival cultures and smears or scrapings should be obtained in cases of chronic, neonatal, hyperacute, or recurrent conjunctivitis. They should also be considered for cases in which acute conjunctivitis is unresponsive to treatment and for immunocompromised patients. Appendix Figure 2 in the original guideline document describes procedures for obtaining conjunctival cultures, smears, and scrapings.

     Hyperacute conjunctivitis has the potential for serious and blinding complications. Identification of the etiologic agent and determination of antibiotic sensitivities are essential for proper management. Cultures, smears, and scrapings, which should be

obtained prior to beginning treatment, can help guide the selection of the initial treatment regime.

- *Immunoassay*: Direct fluorescein-conjugated monoclonal antibody tests are used to detect chlamydial antigens in conjunctival scrapings.
- *Conjunctival biopsy*: Conjunctival biopsy is occasionally useful in refractory or atypical conjunctivitis and is mandatory in cases of suspected neoplasm.

B. **Management of Conjunctivitis**

1. Available Treatment Options

- *Allergic Conjunctivitis*

  Treatment of allergic conjunctivitis is based upon identification and elimination of specific antigens, when practical, and upon the use of medications that decrease or mediate the immune response. The use of supportive treatment, including nonpreserved lubricants and cold compresses, may provide symptomatic relief. A variety of pharmacologic agents, listed below and described in greater detail in the guideline document, may be useful in treating allergic conjunctivitis:

  - Topical steroids
  - Topical vasoconstrictor/antihistamines
  - Topical antihistamine
  - Topical nonsteroidal anti-inflammatory drugs
  - Topical mast-cell stabilizers
  - Agents with multiple mechanisms of action
  - Immunosuppressants
  - Systemic antihistamines
- *Bacterial Conjunctivitis*

  The ideal method of treating bacterial conjunctivitis is to identify the causative organism and initiate the specific antimicrobial treatment known to be effective against the offending organism. Table 7 in the original guideline document lists the commonly available topical antimicrobial drugs, their spectrum of activity, and drug dosage recommendations. In the absence of a culture or smear, the etiologic agent should be considered with respect to the patient's age, environment, and related ocular findings. In most cases, broad-spectrum topical antibiotics are the treatment of choice. Although most cases of bacterial conjunctivitis are self-limiting, treatment with antibiotics can lessen the patient's symptoms and the duration and chances of recurrence of the disease.

  Hyperacute conjunctivitis requires special consideration because of potential blinding from inadequately treated gonococcal infections. Conjunctival smears and cultures should be obtained before beginning treatment. The administration of systemic antibiotics that are effective against the identified

organisms should be started immediately. Saline lavage may be beneficial in removing purulent discharge. In the case of gonococcal infection, the Centers for Disease Control and Prevention (CDC) recommends the administration of a single dose of intramuscular ceftriaxone. Although the CDC does not recommend topical treatment, practitioners may wish to consider the addition of a topical fluoroquinolone as adjunctive therapy. Patients should also be evaluated for co-infection with other sexually transmitted diseases. Care of the patient with sexually transmitted disease should be coordinated with the patient's primary care physician.

- *Viral Conjunctivitis*

  Supportive therapy for adenoviral infection includes the time-honored treatment options: cold compresses, lubricants, and ocular decongestants.

  Topical antibiotics are not routinely used to treat viral conjunctivitis unless there is evidence of secondary bacterial infection. The risk of toxic and allergic reactions may outweigh the potential benefit of antibiotic use. The use of steroids in the management of adenoviral conjunctivitis remains controversial. Because of the potential side effects of topical ophthalmic corticosteroids, practitioners may wish to limit the use of these agents to patients who are significantly symptomatic or who develop visual loss from inflammatory keratitis.

  The treatment of herpes simplex conjunctivitis may include the use of antiviral agents such as trifluridine, although there is no evidence that this therapy results in a lower incidence of recurrent disease or keratitis. Supportive therapy, including lubricants and cold compresses, which may be as effective as antiviral drugs, eliminates the potential for toxic side effects. Topical steroids are specifically contraindicated for treating herpes simplex conjunctivitis.

  Herpes zoster conjunctivitis treatment includes the use of topical antibiotic/steroid combinations to reduce the risk of secondary bacterial infection and decrease the inflammatory response. In contrast to their effect on herpes simplex infections, topical steroids do not exacerbate herpes zoster infections. In addition to topical therapy, systemic antiviral treatment reduces the duration of both viral shedding and post-herpetic neuralgia. To be most effective in reducing the duration of post-herpetic neuralgia, systemic antiviral therapy should be started within 72 hours of the first signs of herpes zoster infection.

- *Chlamydial Conjunctivitis*

The primary treatment for adult inclusion conjunctivitis is systemic antibiotics; topical therapy alone is inadequate. The recommended systemic treatment, based on the patient's age, weight, and medical history, is either of two equally efficacious options: a single dose of azithromycin 1 g or doxycycline 100 mg twice daily for 7 days. Azithromycin is the preferred treatment, especially when patient compliance is a potential problem. Patients' sexual partners should also be evaluated for the presence of the infection, and treatment should be initiated as indicated. In cases of chlamydial infection affecting preadolescent children, the clinician should consider the possibility that sexual abuse has occurred.

- *Contact Lens-Related Conjunctivitis*

  The primary treatment of contact lens-related conjunctivitis involves discontinuing contact lens wear and determining the underlying etiologic mechanism for the conjunctivitis. Solution allergies, hypoxic conditions, giant papillary conjunctivitis (GPC), bacterial infections, or contact lens-related trauma should be identified and corrected prior to resuming contact lens wear.

- *Mechanical Conjunctivitis*

  Removal of the offending trauma-inducing agent (e.g., misdirected lash, exposed suture) and subsequent lubrication usually constitute adequate treatment of mechanical conjunctivitis. In addition to lubricants, prophylactic broad-spectrum antibiotic ophthalmic drops should be considered in cases of significant epithelial disruption (staining) until the epithelial defects have resolved.

- *Traumatic Conjunctivitis*

  The treatment of traumatic conjunctivitis depends upon the nature of the trauma. Conjunctival abrasions may be treated with topical antibiotics, cycloplegia, and pressure patching. Topical antibiotics may be used in cases of epithelial disruption, and oral analgesics should be prescribed for pain as needed. The initial treatment of chemical injuries should include copious irrigation with normal saline or balanced salt solution until the pH of the conjunctival cul-de-sac has returned to normal. Chemical injuries, particularly alkali burns, have the potential for significant ocular morbidity and require aggressive management.

- *Toxic Conjunctivitis*

  Most cases of toxic conjunctivitis result from overuse of topical medications and/or cosmetics, or both. Occasionally, environmental exposure to noxious agents results in toxic

conjunctivitis. Treatment involves identifying and removing the offending agent. Molluscum lesions on the lids should be excised. Symptomatic patients may benefit from using cold compresses or topical ophthalmic antibiotic/corticosteroid combinations, or both. The treatment of toxic conjunctivitis from overuse of topical preparations should be to stop all topical medications initially, when possible, and use preservative-free topical lubricants 4 to 8 times a day for 3 to 5 days. Patients who show no sign of clinical improvement after this treatment should be reevaluated for another underlying cause.

- *Neonatal Conjunctivitis*

  The optometrist should consider comanaging neonatal conjunctivitis with a pediatrician, neonatologist, or pediatric infectious disease specialist. Treatment should begin immediately upon diagnosis. Initially, antimicrobial therapy should be directed at the organism identified in conjunctival smears. The guideline document summarizes the current therapeutic approaches to the most common causes of neonatal conjunctivitis.

- *Parinaud's Oculoglandular Syndrome*

  Because the vast majority of cases are self-limiting, the aim of therapy for Parinaud's oculoglandular syndrome is symptomatic relief of preauricular lymphadenopathy. The application of a mild topical vasoconstrictor/lubricant and warm soaks of the inflamed preauricular area are generally sufficient. Biopsy of conjunctival granuloma not only provides diagnostic information regarding the etiologic agent but may have therapeutic benefits; however, this procedure is indicated only in severe cases.

- *Phlyctenular Conjunctivitis*

  The treatment of phlyctenular conjunctivitis is directed at the underlying mechanism, to eradicate the sensitizing agent when possible. This generally means eliminating chronic lid disease, which serves as a reservoir for *Staphylococcus aureus*. The conjunctivitis itself responds favorably to the topical use of an antibiotic/corticosteroid combination applied 4 times a day for several days and then tapered. When there is associated blepharitis or other dermatologic disorder (e.g., acne rosacea), oral doxycycline can be helpful. In children younger than 8 years of age or in pregnant women, erythromycin should be used rather than doxycycline. When the patient's history is significant for potential mycobacterium tuberculosis exposure, the practitioner should consider and rule out tuberculosis as the etiologic agent.

- *Secondary Conjunctivitis*

  The management of secondary conjunctivitis requires identification and treatment of the underlying ocular or systemic conditions. Patients who develop conjunctivitis as a manifestation of systemic disease should be evaluated and comanaged with an appropriate medical specialist.

2. Patient Education

   Effective management of conjunctivitis requires appropriate patient education. Thorough education may help relieve the patient's anxiety about the condition and increase his or her compliance with therapy. Good patient education is also crucial for preventing the spread of infectious conjunctivitis, which in many cases is highly contagious. The practitioner should stress the importance of frequent hand washing by patients and family members, of using separate linens, towels, and washcloths, and of avoiding direct contact with infected material or individuals.

3. Prognosis and Follow-Up

   Once conjunctivitis has been diagnosed and treatment has been initiated, the patient requires follow-up care. The frequency of follow-up visits varies with the severity of the condition, the diversity of etiologies considered, and the potential for ocular morbidity. Follow-up should be designed for careful monitoring of disease progression and verification that the selected treatment regime is effective. Alteration of therapy, when needed, as well as recognition of adverse side effects and reevaluation of the condition and its response to treatment at regular intervals, are integral to successful patient management (see table below).

Frequency and Composition of Evaluation and Management Visits for Conjunctivitis

Type of Patient	Frequency of Follow-Up	History	Visual Acuity	Slit Lamp Biomicroscopy	Ophthalmoscopy	M
Allergic Conjunctivitis	Mild: every 5 to 7 days Moderate: every 3 to 5 days Severe: every 1 to 3 days	Yes	Yes	Yes	As indicated	Ide all Pre un lub co top ph sys

Type of Patient	Frequency of Follow-Up	History	Visual Acuity	Slit Lamp Biomicroscopy	Ophthalmoscopy	M
						ant Edu pat
Bacterial Conjunctivitis	Mild: every 5 to 7 days Moderate: every 3 to 5 days Severe - every 1 to 3 days	Yes	Yes	Yes	As indicated	Ide org spe ant age Hy for sm cul sal Pre and ant Ob con eva tre und sys con Edu
Viral Conjunctivitis	Mild: every 5 to 7 days Moderate: every 3 to 5 days Severe - every 1 to 3 days	Yes	Yes	Yes	As indicated	Pre con lub ocu dec and pha age app Edu
Chlamydial Conjunctivitis	Mild: every 5 to 7 days Moderate - every 3 to 5 days Severe -	Yes	Yes	Yes	As indicated	Pre sys ant Ob con eva tre

Type of Patient	Frequency of Follow-Up	History	Visual Acuity	Slit Lamp Biomicroscopy	Ophthalmoscopy	M
	every 1 to 3 days					un sys co Ed

CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for Optometric Management of the Patient with Conjunctivitis.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Conjunctivitis is a common multifaceted disease process that has a variety of etiologies, clinical features, and treatments. Professional care is needed for accurate diagnosis and effective treatment. Optometrists play an integral role in the diagnosis and treatment of conjunctivitis.
- Appropriate treatment for conjunctivitis may increase patient comfort, reduce the duration of infection, help prevent the spread of infection, reduce the socioeconomic cost of conjunctivitis, and reduce the incidence of associated adverse complications in untreated cases.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Clinicians should not rely on this Clinical Guideline alone for patient care and management. Please refer to the references and other sources listed in the original guideline for a more detailed analysis and discussion of research and patient care information.

- The components of patient care described within this guideline are not intended to be all inclusive, because professional judgment and individual patient symptoms and findings may have a significant impact on the nature, extent, and course of the services provided. Some components of care may be delegated.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with conjunctivitis. 2nd ed. St. Louis (MO): American Optometric Association; 2002 Nov 8. 55 p. [80 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 (revised 2002 Nov 8; reviewed 2007)

GUIDELINE DEVELOPER(S)

American Optometric Association - Professional Association

SOURCE(S) OF FUNDING

Funding was provided by the Vision Service Plan (Rancho Cordova, California) and its subsidiary Altair Eyewear (Rancho Cordova, California)

GUIDELINE COMMITTEE

American Optometric Association Consensus Panel on the Care of the Patient with Conjunctivitis

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

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According to the guideline developer, this guideline has been reviewed on a biannual basis and is considered to be current. This review process involves updated literature searches of electronic databases and expert panel review of new evidence that has emerged since the original publication date.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Optometric Association Web site.

Print copies: Available from the American Optometric Association, 243 N. Lindbergh Blvd., St. Louis, MO 63141-7881.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on December 1, 1999. The information was verified by the guideline developer on January 31, 2000. This summary was updated by ECRI on April 16, 2004. The information was verified by the guideline developer on May 10, 2004. This summary was updated by ECRI Institute on October 3, 2007 following the U.S. Food and Drug Administration (FDA) advisory on Rocephin (ceftriaxone sodium).

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