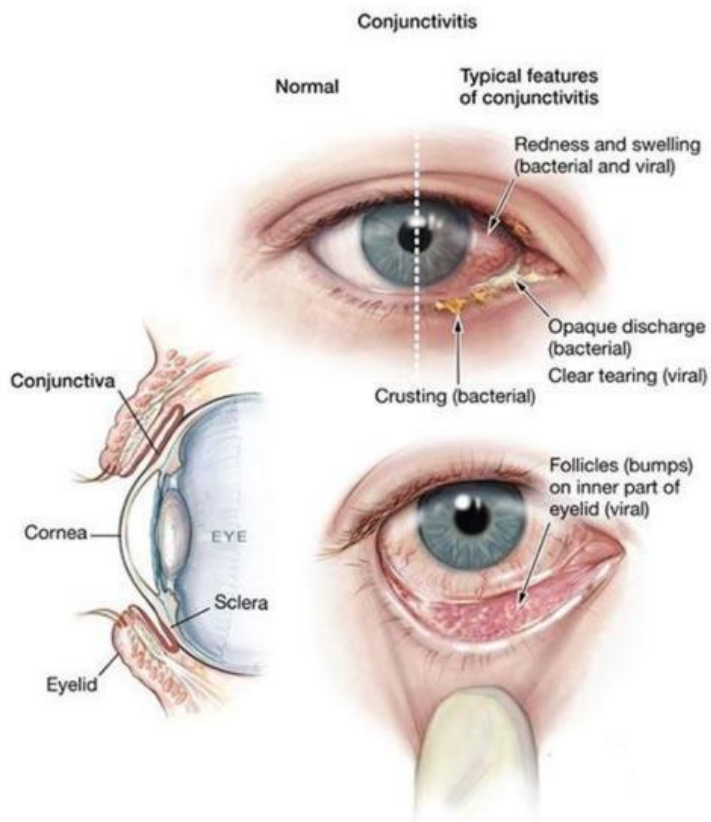


Conjunctivitis: A Systematic Review of Diagnosis and Treatment



Introduction

Conjunctivitis is the inflammation or infection of the conjunctiva, a thin, translucent membrane lining the sclera and eyelids. It manifests through conjunctival vessel dilation, hyperemia, and edema, often accompanied by discharge. The condition is prevalent and imposes significant economic and social burdens.

Epidemiology and Economic Impact

- Annually, acute conjunctivitis affects **6 million people** in the

United States.

- Treatment costs for **bacterial conjunctivitis** range from **\$377 million to \$857 million per year**.
- **70% of conjunctivitis cases** are managed in primary or urgent care settings.

Classification of Conjunctivitis

1. Infectious Conjunctivitis

- **Viral Conjunctivitis:** Most common in adults, peaking in summer.
- **Bacterial Conjunctivitis:** Common in children, prevalent from December to April.

2. Noninfectious Conjunctivitis

- **Allergic Conjunctivitis:** Affects **15%-40% of the population**, more frequent in spring and summer.
- **Toxic, cicatricial, immune-mediated, and neoplastic conjunctivitis.**

Diagnosis and Differentiation

History and Physical Examination

- **Bacterial Conjunctivitis:** Purulent/mucopurulent discharge.
- **Viral Conjunctivitis:** Watery discharge, often with lymphadenopathy.
- **Allergic Conjunctivitis:** Itching, redness, and watery discharge.

Laboratory Investigations

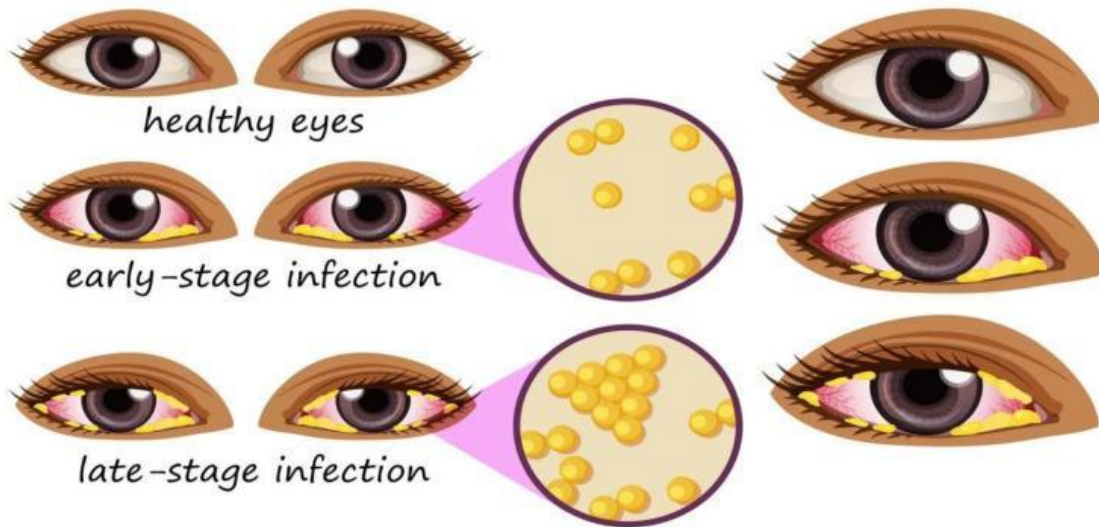
- **Conjunctival cultures** for severe cases.
- **Rapid antigen testing** for adenoviruses (89% sensitivity, 94% specificity).

Infectious Conjunctivitis

Viral Conjunctivitis

- **Adenoviruses** cause **65%-90%** of cases.
- **Transmission:** Direct contact, contaminated hands, medical instruments, and swimming pools.
- **Treatment:** No effective antivirals; symptomatic relief with **artificial tears, antihistamines, cold compresses.**
- **Herpes Conjunctivitis:** Managed with **topical/oral antivirals**, avoiding corticosteroids.

Bacterial Conjunctivitis (pink eye)



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Bacterial Conjunctivitis

- **Common pathogens:** *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Haemophilus influenzae*.
- **Hyperacute conjunctivitis:** Often caused by *Neisseria gonorrhoeae*, requiring ceftriaxone.
- **Chronic conjunctivitis:** Lasting >4 weeks, requiring ophthalmology referral.

Antibiotic Use in Bacterial Conjunctivitis

- 60% of cases resolve spontaneously within 1-2 weeks.
- Antibiotics reduce duration but may not significantly impact outcomes.
- Severe cases, contact lens users, and immunocompromised patients require antibiotics.

Chlamydial Conjunctivitis

- 1.8%-5.6% of all acute conjunctivitis cases.
- Concurrent genital infection is common.

- **Treatment:** Oral azithromycin/doxycycline, treating both patient and sexual partners.

Gonococcal Conjunctivitis

- Common in neonates and sexually active individuals.
- Requires both topical and systemic antibiotics.

Noninfectious Conjunctivitis

Allergic Conjunctivitis

- **Prevalence:** Up to 40% of the population.
- **Treatment:** Avoid allergens, use saline solution, artificial tears, antihistamines, mast cell stabilizers, NSAIDs, corticosteroids.
- Antihistamines are superior for short-term relief.

Conclusion

Conjunctivitis is a common and often self-limiting condition. Understanding its types and appropriate treatments helps reduce unnecessary antibiotic use and optimize patient outcomes. **Early differentiation of bacterial, viral, and allergic conjunctivitis is key to effective management.**



Answer the following questions. Choose the correct answer.

1. What is conjunctivitis?

- A) Inflammation or infection of the cornea
- B) Inflammation or infection of the conjunctiva
- C) A bacterial infection of the retina
- D) A viral infection of the optic nerve

2. How many people in the United States are affected by acute conjunctivitis annually?

- A) 2 million
- B) 4 million
- C) 6 million
- D) 10 million

3. Which type of conjunctivitis is most common in adults?

- A) Bacterial
- B) Viral
- C) Allergic
- D) Gonococcal

4. What is a key symptom of bacterial conjunctivitis?

- A) Watery discharge
- B) Purulent/mucopurulent discharge
- C) Itching
- D) Photophobia

5. Which virus is responsible for 65%-90% of viral conjunctivitis cases?

- A) Herpes simplex virus
- B) Influenza virus
- C) Adenovirus
- D) Rhinovirus

6. What is the first-line treatment for viral conjunctivitis?

- A) Antibiotics
- B) Antivirals
- C) Symptomatic relief with artificial tears, antihistamines, and cold compresses
- D) Corticosteroids

7. In which season is bacterial conjunctivitis more prevalent?

- A) Spring
- B) Summer
- C) Fall
- D) Winter (December to April)

8. How is chlamydial conjunctivitis typically treated?

- A) Topical antibiotics
- B) Oral azithromycin or doxycycline
- C) Antihistamines
- D) Corticosteroids

9. What percentage of conjunctivitis cases resolve spontaneously within 1-2 weeks without antibiotics?

- A) 30%
- B) 45%
- C) 60%
- D) 80%

10. Which of the following is NOT a common treatment for allergic conjunctivitis?

- A) Antihistamines
- B) Mast cell stabilizers
- C) Corticosteroids
- D) Antibiotics

VOCABULARY

Activity 1: Matching Definitions

Match each term with its correct definition.

Term	Definition
1. Conjunctivitis	A) Medication used to treat bacterial infections.
2. Conjunctiva	B) A condition characterized by eye redness and irritation.
3. Hyperemia	C) A virus responsible for most viral conjunctivitis cases.
4. Epidemiology	D) The scientific study of diseases in populations.
5. Adenoviruses	E) A mucous membrane that lines the sclera and eyelids.
6. Bacterial	F) A type of conjunctivitis caused by bacteria.
7. Allergic	G) A type of conjunctivitis caused by allergens.
8. Antibiotics	H) Thick, yellow-green eye discharge.
9. Purulent	I) Increased blood flow leading to eye redness.
10. Corticosteroids	J) A medication that should be avoided in herpes conjunctivitis.

Activity 2: Fill in the Blanks

Use the correct word from the box to complete each sentence.

Word Bank: *Conjunctivitis, Conjunctiva, Hyperemia, Epidemiology, Adenoviruses, Bacterial, Allergic, Antibiotics, Purulent, Corticosteroids*

1. _____ is the inflammation or infection of the conjunctiva.
2. The _____ is a thin membrane lining the sclera and eyelids.
3. One of the signs of conjunctivitis is _____, which refers to increased blood flow causing redness.
4. The study of the occurrence and impact of conjunctivitis in different populations is part of _____.
5. _____ are responsible for 65%-90% of viral conjunctivitis cases.
6. _____ conjunctivitis is common in children and usually has a purulent discharge.
7. _____ conjunctivitis is triggered by environmental allergens and is more frequent in spring and summer.
8. Some bacterial conjunctivitis cases require _____ to speed up recovery.
9. A thick, yellow-green _____ discharge is a sign of bacterial infection.
10. In viral conjunctivitis caused by herpes, _____ should be avoided as they can worsen the condition.

T. Sue