

www.ijprems.com

editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE
RESEARCH IN ENGINEERING MANAGEMENT
AND SCIENCE (IJPREMS)e-ISSN :
2583-1062AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)Impact
Factor :
7.001

A BRIEF REVIEW ON CONJUNCTIVITIS

Aditya Ashok Bahir¹, Mr. Pratik B. Bhanage², Dr. Megha T Salve³

^{1,2,3}Department of Pharmacy, Shivajirao Pawar College of Pharmacy, Pachegaon, Ahilyanagar-413725. DOI: https://www.doi.org/10.58257/IJPREMS37136

ABSTRACT

Conjunctivitis, commonly known as pink eye, is a prevalent and highly contagious eye infection that affects people of all ages. This inflammation or infection of the conjunctiva, the thin membrane covering the white part of the eye and the inside of the eyelids, can be caused by viruses, bacteria, allergens, or irritants. Symptoms include redness, discharge, itching, burning, and blurred vision.

Treatment options vary depending on the underlying cause, ranging from supportive care and antiviral medication for viral conjunctivitis to antibiotic eye drops or ointment for bacterial conjunctivitis. Allergic conjunctivitis requires avoidance of allergens and treatment with antihistamine eye drops or mast cell stabilizers. Prompt treatment and proper hygiene practices can help alleviate symptoms, prevent transmission, and reduce the risk of complications. Eye allergies are one of the most common conditions faced by allergists and ophthalmologists.

Allergic conjunctivitis is often underdiagnosed and therefore undertreated. Basic and clinical research has improved our understanding of the cells, mediators, and immunological events that occur in ocular allergy. New drugs have improved the effectiveness and safety of ocular allergy treatment. Understanding the immune mechanisms, clinical features, differential diagnosis, and treatment of ocular allergies may be of benefit to all professionals working with these patients. The purpose of this review is to focus on all forms classified as ocular allergy, including seasonal allergic conjunctivitis, perennial allergic conjunctivitis, spring allergic conjunctivitis, atopic keratoconjunctivitis, contact allergy, and giant papillary conjunctivitis. A systematic review of the literature.

Keywords: conjunctivitis, pink eye, eye infection, inflammation, treatment options.

1. INTRODUCTION

The conjunctiva is a thin, translucent membrane that lines the front of the sclera and theinside of the eyelids. It consists of 2, Parts, bulbar and lid. The bulbous part begins at the edge of the cornea and covers the visible part of the sclera; The palpebral part Defines the inner surface of the eyelids (Fig. 1). Inflammation or infection of the conjunctiva is called conjunctivitis and is characterized by dilation of the conjunctival vessels, resulting in hyperemia and swelling of the conjunctiva, usually accompanied by discharge.1,Conjunctivitis affects many people and represents a financial and economic challenge.Social contributions.Acute conjunctivitis affects an estimated 6 million,People per year in the United States.2 The cost of treating bacterial conjunctivitis alone is estimated at \$377,857,Million per year.3 Many state health departments in the United States Regardless of the cause of conjunctivitis, students must use topical antibiotic eye drops before returning to school [1]

Conjunctivitis is a collective term for a diverse group of diseases that are characterized by inflammation of the conjunctiva.1 The most common cause of infectious conjuncti- vitis is viral infection (~80% of cases), followed by bacterial.1,2 The noninfectious forms are allergic, mechanical/irritative/toxic, immune-mediated, and neoplastic.1 Of noninfectious conjunctivitis, the allergic form is the most common, affecting approxi- mately 40% of the US population.2 Conjunctivitis can also be classified as acute, chronic, or recurrent,1,2 according to the mode of onset and severity of the clinical response.2 Most cases of viral and bacterial conjunctivitis are considered acute and, less frequently, as hyperacute. The mechanical/irritative/toxic, immune-mediated, and neo- plastic forms are typically associated with chronic inflammation,1 and the toxic form can have an acute onset. Allergic conjunctivitis can be chronic, with possible onset in childhood, and present with acute exacerbations related to seasonal factors or contact lens use, for example.[2] Conjunctivitis, commonly known as "pink eye," refers to inflammation or infection of the conjunctiva. The conjunctiva is a thin mucous membrane that lines the inside of the eyelids and the surface of the eyeball up to the limbus, where the sclera and cornea are located. Is divided into the following two parts: the bulbar part, which covers the globe, and the tarsal part , which covers the eyelids. It is generally transparent; However, when it becomes infected it can turn pink or red, hence the colloquial term "pink eye". The severity of conjunctivitis .[3]





* History and clinical examination How to diagnose conjunctivitis, Conjunctival injection or "red eye" is a shared presentation for many ophthalmic diseases, and it accounts for up to 1% of all primary care office visits The clinicians, whether ophthalmologist or not, must be aware that "red eye" may be the presenting sign for serious eye conditions such as uveitis, keratitis, or scleritis, or it may be secondary to more benign conditions that are limited just to the conjunctival tissue (e.g., conjunctivitis or subconjunctival hemorrhage). Traditionally, it was believed that more harmful ophthalmic disorders are associated with disturbances in vision, disabling pain, and photophobia However, in a recent large meta-

Analysis ,anisocoria and mild photophobia were significantly associated with "serious eye conditions"; the presence of these two signs could discover 59% of cases of "serious eye conditions", including anterior uveitis and keratitis. [5]

Table 1. Guideline to help differentiate the major etiologies	in conjunctivitis
Clinical history and exam findings	Most probable etiologies
Alarming si	igns and symptoms
Decreased vision, severe pain, painful pupillary reaction, anisocoria, orbital signs	Uveitis, scleritis, keratitis, glaucoma, orbital, or parasellar pathology
c	Chronicity
Sudden onset, lasting less than four weeks	Infectious conjunctivitis, allergic conjunctivitis, acute system reactions (SJS/TEN)
Insidious onset, chronic course	Conjunctivitis associated with systemic diseases, toxic conjunctivitis, allergic conjunctivitis
Recurrent course	Allergic conjunctivitis, conjunctivitis associated with system diseases
Associa	ated symptoms
Skin lesions, arthropathy, genito-perineal involvement, oropharyngeal lesions	Conjunctivitis associated with systemic diseases, infectious diseases
Dr	rug history
Long-term eye drop usage	Toxic conjunctivitis, allergic conjunctivitis
Recent initiation of a systemic medication	Acute systemic reactions (SJS/TEN)

SJS, Stevens-Johnson syndrome; TEN, toxic epidermal necrolysis

Etiology Conjunctivitis is a more common cause of eye redness and eye discharge. The etiology of conjunctivitis can be infectious or non-infectious in nature. The most common causes of conjunctivitis are viral and bacterial conjunctivitis, and among non-infectious diseases, allergic and toxin-related conjuctivitis are the most common. The presence of bacteria, fungi, viruses and parasites can cause infectious conjunctivitis. However, 80% of acute conjunctivitis episodes are caused by viruses, and Of them are the most common triggers. Adenoviruses are responsible for 65–90% of cases of viral conjunctivitis Other common viral pathogens include herpes zoster, herpes simplex and enteroviruses. Children are Times more likely to suffer from bacterial conjunctivitis than adults, and the microbes that cause it vary by age group. Staphylococcus species, particularly Staphylococcus aureus, followed by Haemophilus influenza and Streptococcus pneumoniae, are the most common causes in adults.[6]

@International Journal Of Progressive Research In Engineering Management And Science



causes of Conjuctivites Pathophysiology Infective Conjuctivitis Conjunctivitis occurs when the conjunctiva becomes inflamed due to an infection or an irritant. As a result of this inflammation, the blood vessels in the conjunctiva dilate, causing redness or hyperemia, and the conjunctiva can also become swollen. The inflammation affects the entire conjunctiva, and depending on the cause, discharge may also be present. Bacterial conjunctivitis occurs when the eye's surface tissues are colonized by normal flora like Staphylococci sp., Streptococci, and Corynebacteria. The epithelial covering of the conjunctiva is the primary defense mechanism against infection, and any disruption in this barrier can lead to infection.[39] Secondary defense mechanisms include immune reactions carried out by the tear film immunoglobulins and lysozyme, conjunctival vasculature, and the rinsing action of blinking and lacrimation.[7]

or plants

& Chronic dacryocystitis

Pathophysiology

Microbes enter the eye on contact with infected objects



Types of conjuctivitis

- 1.Allergic conjuctivitis
- 2. Viral conjuctivitis
- 3.Bacterial conjunctivitis
- 4.Herpes conjunctivitis
- 1.Allergic conjuctivitis

Allergic reaction to some irritants such as pollen, animal dander and dust mites. It usually affects both eyes and is not as contagious as other forms. The secretions associated with allergic conjunctivitis are usually clear and watery, in contrast to the thick secretions associated with bacterial conjunctivitis. Because allergens are more common in spring and summer, allergic conjunctivitis is more common during this time. This form can occur as an immediate reaction to the allergen or can appear hours or days later. The best way to prevent and treat this type of pink eye is to avoid the allergens that cause it.[8]





2. Viral conjuctivitis

Viral conjunctivitis is the most common form of conjunctivitis, accounting for approximately 80% of cases. It is caused by a virus like a cold. It can affect either eye and is spread through contact with the secretions of an infected person, coughing, or sneezing. "Any virus that causes a cold or flu can also enter the eye and cause eye inflammation," says Arthur Lavin, M.D.FAAP, pediatrician at Akron Children's Hospital in Beachwood[9]



3.Bacterial conjunctivitis Patients with bacterial conjunctivitis often complain of redness, tearing, and discharge from one or both eyes. Clinicians should ask patients about the duration of symptoms, as disease progression can be divided into hyperacute, acute (less than 3–4 weeks), and chronic (more than four weeks). Associated pain, pruritus, vision loss, and photophobia also contribute to clinical decision making. A complete medical history should also include history of trauma, previous similar episodes, any previous treatments, contact lens use, immune status, and sexual history. Any middle ear problems should also be clarified, as children with bacterial conjunctivitis can also develop an accompanying middle ear infection.(10).

4.Herpes conjuctivitis

Herpes simplex (HSV) virus is ubiquitous and its associated conjunctivitis is often difficult to distinguish from adenovirus-related conjunctivitis and may be present in 1-5 % of all conjunctivitis cases .Clinical diagnosis becomes challenging without the presence of skin lesions, highlighting the importance of a thorough history, which may elicit prior evidence of suggestive cold sores. Unilateral presentation is more common and discharge is thin and watery. Blepharoconjunctivitis is the Most common single form of HSV in children, accounting for 41.5 % of HSV-infected patients in one study. The goal of treating HSV conjunctivitis is to prevent infection of the cornea. Topical or oral treatment is recommended. Ganciclovir gel 0.15% 3 to 5 times daily and trifluridine 1% 5 to 9 times daily are topical options; Ganciclovir is preferred due to its lower corneal toxicity compared to trifluridine . Oral acyclovir is often prescribed at a dose of 200-400 mg five timesdaily, but valacyclovir or famciclovir may also be used.[10]



	INTERNATIONAL JOURNAL OF PROGRESSIVE	e-ISSN :
IIPREMS	RESEARCH IN ENGINEERING MANAGEMENT	2583-1062
	AND SCIENCE (IJPREMS)	Impact
www.ijprems.com	(Int Peer Reviewed Journal)	Factor :
editor@ijprems.com	Vol. 04, Issue 11, November 2024, pp : 1982-1988	7.001

Tretament

Your doctor may prescribe an antibiotic, usually given topically as eye drops or ointment, for bacterial pink eye. Antibiotics may help shorten the length of infection, reduce complications, and prevent the spread to others. Antibiotics may be necessary in the following cases: With discharge [11]

1. Supportive care:

Apply warm compresses to loosen crust, use artificial tears for comfort. (Source: American Academy of Ophthalmology [AAO]) [12]

2. Antiviral medication: May be prescribed for certain types of viral conjunctivitis, such as herpes simplex. (Source: National Institute of Allergy and Infectious Diseases [NIAID]) [13]

3. Bacterial Conjunctivitis

- 1. Antibiotic eye drops or ointment: Prescribed to treat bacterial infection. (Source: AAO)
- 2. Warm compresses: Help loosen crust and promote healing. (Source: Mayo Clinic)
- 3. Artificial tears: Relieve dryness and discomfort. (Source: AAO) [14]

4. Allergic Conjunctivitis

1. Avoid allergens: Identify and avoid triggers, such as pollen or dust. (Source: American College of Allergy, Asthma, and Immunology [ACAAI])

2. Antihistamine eye drops: Relieve itching, redness, and swelling. (Source: AAO)

3. Mast cell stabilizers: Long-term treatment to prevent allergic reactions. (Source: ACAAI) [15]

5. Irritant Conjunctivitis

- 1. Flush eyes: Rinse eyes with water to remove irritant. (Source: Mayo Clinic)
- 2. Artificial tears: Soothe and moisturize eyes. (Source: AAO)
- 3. Avoid irritant: Identify and avoid trigger. (Source: Occupational Safety and Health Administration [OSHA]) [16]

6. Pediatric allergic conjunctivitis

allergic conjunctivitis is common in childhood, peaking in late childhood and adulthood. Patients often have other atopic diseases such as eczema, asthma, and most commonly rhinitis. Symptoms include bilateral lesions, pruritus, lacrimation, mucus discharge, erythema, mild lid edema, and edema. AKC and VKC occur less frequently but can be more severe. Therefore, involvement of a pediatric ophthalmologist may be necessary to prevent avoidable vision loss in severe cases,[17]Treatment of herpes zoster conjunctivitis includes a combination of oral antivirals and topical steroids; however, steroids should only be part of therapy in consultation with ophthalmology. Antiviral doses differ from those used for herpes simplex and consist of acyclovir 800 mg PO 5 times a day, famciclovir 500 mg PO 3 times a day, or valacyclovir 1 g PO 3 times a day, each for 7 to 10 days. A study by Wilkins et al observed the effect of topical steroids compared with hypromellose in comforting patients with acute presumed viral conjunctivitis. They reported that a short course of topical dexamethasone in acute follicular conjunctivitis cases thought to have viral origin was not harmful.[18]

Steroid use with antibiotics is controversial, and studies report mixed results in reducing corneal scarring. Unfortunately, steroids may slow the healing rate, increase the risk of corneal melting, and increase the risk of elevated intraocular pressure.[19] Lastly, the treatment for allergic conjunctivitis consists of allergen avoidance, artificial tears, cold compresses, and a wide range of topical agents. Topical agents include topical antihistamines alone or in combination with vasoconstrictors, topical mast cell inhibitors, and topical glucocorticoids for refractory symptoms. Oral antihistamines can also be used in moderate to severe cases of allergic conjunctivitis.[20] Patients with moderate to severe pain, vision loss, corneal involvement, severe purulent discharge, conjunctival scarring, recurrent episodes, lack of response to therapy, or herpes simplex virus keratitis should receive a prompt referral to an ophthalmologist. In addition, those requiring steroids, contact lens wearers, and patients with photophobia should also be referred.[21]

7. Differential Diagnosis

There are many emergent and non-emergent causes of eye redness. When diagnosing conjunctivitis, ruling out the emergent causes that can lead to vision loss is essential. The differentials for conjunctivitis include:[22]

Glaucoma Iritis Keratitis Episcleritis Scleritis

	INTERNATIONAL JOURNAL OF PROGRESSIVE	e-ISSN :
LIPREMS	RESEARCH IN ENGINEERING MANAGEMENT	2583-1062
	AND SCIENCE (IJPREMS)	Impact
www.ijprems.com	(Int Peer Reviewed Journal)	Factor :
editor@ijprems.com	Vol. 04, Issue 11, November 2024, pp : 1982-1988	7.001

2. CONCLUSION

Conjunctivitis, commonly known as pink eye, is a prevalent and highly contagious eye infection that affects people of all ages. It occurs when the conjunctiva, the thin membrane covering the white part of the eye and the inside of the eyelids, becomes inflamed or infected. The term "allergic conjunctivitis" is an umbrella term that encompasses a variety of clinical entities and is based on the assumption that the classic type I hypersensitivity mechanism is responsible for all clinical forms of allergic eye disease. However, IgE and non-IgE-mediated mechanisms are involved in the development of allergic eye diseases. A large number of mediators, cytokines, chemokines, receptors, proteases, growth factors, intracellular signals, regulatory and inhibitory pathways, and other unknown factors and pathways are differentially expressed in different allergic diseases, leading to different clinical aspects, yield diagnostic features and response to treatment. Therefore, a new classification system is desired, preferably derived from the diverse pathophysiological mechanisms that operate in different forms of ocular allergy.

3. REFERENCE

- [1] Azari, A. A., & Barney, N. P. (2013a).Conjunctivitis: A systematic review of diagnosis and treatment. JAMA: The Journal of the American Medical Association, 310(16), https://doi.org/10.1001/jama.2013.280318
- [2] American Academy of Ophthalmology Cornea/External Disease Preferred Practice Pattern Panel. Conjunctivitis Preferred Practice Pattern®. San Francisco, CA: American Academy of Ophthalmology; 2018. Available from https://www.aao.org/preferred-practice-pattern/conjunctivitis-ppp-2018. Accessed November 26,2018 Before you continue. (n.d.). Google.com.
- [3] Retrieved November 21, 2023, from https://www.google.com/imgres?imgurl=h ttps%3A%2F%2Fi1.rgstatic.net%2Fpublication%2F370464000_Pediatric_Conjunctivitis_A_Review_Clinical_ Manifestations_Diagnosis_and_Management%2Flinks %2F6451272597449a0e1a704d69%2Flarg epreview. png&tbnid=k62NZlhSXw4YlM &vet=1&imgrefurl=https%3A%2F%2Fw
- [4] www.researchgate.net%2Fpublication%2F3 70464000_Pediatric_Conjunctivitis_A_Re view_ of_ Clinical_ Manifestations_ Diagno sis_ and_Management&docid=s9YAY- r9iprS0M&w=850&h=1203&hl=en-
- [5] US&source=sh%2Fx%2Fim%2Fm1%2F4 & shem=uvafe2 Mayo Clinic. (2020). Pink eye (conjunctivitis).
- [6] Narayana S, McGee S. Bedside diagnosis of the 'Red Eye':a systematic review. Am J Med 2015;128:1220– 1224.e1221.Everitt H, Little P. How do GPs diagnose and manage acute infective conjunctivitis? A GP survey. Fam Pract 2002;19:658–660.
- [7] N.d.). Researchgate.net. Retrieved November 21, 2023, from https://www.researchgate.net/publication/343538969_Conjunctivitis_A_Systematic
- [8] https://www.ncbi.nlm.nih.gov/books/NBK541034/#:~:text=Conjunctivitis%20occurs%20when%20the%20conj unctiva,conjunctiva%20can%20also%20become%20swollen.
- [9] La Rosa, M., Lionetti, E., Reibaldi, M., Russo, A., Longo, A., Leonardi, S., Tomarchio, S., Avitabile, T., & Reibald
- [10] La Rosa, M., Lionetti, E., Reibaldi, M., Russo, A., Longo, A., Leonardi, S., Tomarchio, S., Avitabile, T., & Reibaldi, A. (2013). Allergic conjunctivitis: a comprehensive review of the literature. Italian Journal of Pediatrics, 39(1), 18 https://doi.org/10.1186/1824-7288-39-18
- [11] Mehta, J. S., Chen, W.-L., Cheng, A. C. K., Cung,L. X., Dualan, I. J., Kekunnaya, R., Khaliddin,N., Kim, T.-I., Lam, D. K., Leo, S. W., Manurung, F., Tesavibul, N., & Bremond-Gignac, D.(2022). Diagnosis, management, and treatment of Vernal Keratoconjunctivitis in Asia:Recommendations from the management of Vernal Keratoconjunctivitis in Asia Expert Working Group. Frontiers in Medicine
- [12] https://doi.org/10.3389/fmed.2022.882
- [13] https://images.app.goo.gl/Tesi7KX1khGx9Jd76
- [14] Occupational Safety and Health Administration. (2020). Eye and Face Protection.
- [15] Borkar DS, Acharya NR, Leong C, Lalitha P Srinivasan M, Oldenburg CE, Cevallos V, Lietman TM, Evans DJ, Fleiszig SM. Cytotoxic clinical isolates of Pseudomonas aeruginosa identified during the Steroids for Corneal Ulcers Trial show elevated resistance to fluoroquinolones. BMC Ophthalmol. 2014 Apr 24;14:54. [PMC free article] [PubMed]
- [16] Abelson MB, Granet D. Ocular allergy in pediatric practice. Curr Allergy Asthma Rep, 2006; 6(4): 306-311.
- [17] Wilkins MR, Khan S, Bunce C, Khawaja A, Siriwardena D, Larkin DF. A randomised placebo-controlled trial of topical steroid in presumed viral conjunctivitis. Br J Ophthalmol. 2011 Sep;95(9):1299-303. [PubMed]
- [18] Srinivasan M, Mascarenhas J, Rajaraman R, Ravindran M, Lalitha P, O'Brien KS, Glidden DV, Ray KJ, Oldenburg CE, Zegans ME, Whitcher JP, McLeod SD, Porco TC, Lietman TM, Acharya NR., Steroids for Corneal Ulcers Trial Group.

	INTERNATIONAL JOURNAL OF PROGRESSIVE	e-ISSN :
LIPREMS	RESEARCH IN ENGINEERING MANAGEMENT	2583-1062
	AND SCIENCE (IJPREMS)	Impact
www.ijprems.com	(Int Peer Reviewed Journal)	Factor :
editor@ijprems.com	Vol. 04, Issue 11, November 2024, pp : 1982-1988	7.001

[19] The steroids for corneal ulcers trial (SCUT): secondary 12-month clinical outcomes of a randomized controlled trial. Am J Ophthalmol. 2014 Feb;157(2):327-333.e3. [PMC free article] [PubMed]

[20] Srinivasan M, Mascarenhas J, Rajaraman R, Ravindran M, Lalitha P, Ray KJ, Zegans ME, Acharya NR, Lietman TM, Keenan JD., Steroids for Corneal Ulcers Trial Group. Visual recovery in treated bacterial keratitis. Ophthalmology. 2014 Jun;121(6):1310-1. [PMC free article] [PubMed]

[21] https://doi.org/10.1001/jama.2013.280318

[22] Borkar DS, Acharya NR, Leong C, Lalitha P, Srinivasan M, Oldenburg CE, Cevallos V, Lietman TM, Evans DJ, Fleiszig SM. Cytotoxic clinical isolates of Pseudomonas aeruginosa identified during the Steroids for Corneal Ulcers Trial show elevated resistance to fluoroquinolones. BMC Ophthalmol. 2014 Apr 24;14:54. [PMC free article] [PubMed]

[23] Wood M. Conjunctivitis: diagnosis and management. Community Eye Health. 1999;12(30):19-20