



Herbal Traditional Remedies for Treatment of Conjunctivitis

Mandawade AN¹, Aher KN¹, Nikam AV¹, Surana KR^{1*}, Mahajan SK¹ and Sonawane DD²

¹Department of Pharmaceutical Chemistry, Divine College of Pharmacy, India

²Department of Pharmaceutics, Divine College of Pharmacy, India

***Corresponding author:** Dr. Khemchand R Surana, Department of Pharmaceutical Chemistry, Shreshakti Shaikshanik Sanstha, Divine College of Pharmacy, Satana, Nashik, Affiliated to Savitribai Phule Pune University, Pune, Maharashtra 423301, India, Tel: +91 7972232972; Email: khemchandsurana772@gmail.com

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Abstract

People emphasize financial gain over personal well-being in today's fast-paced environment, frequently ignoring their health in the process. They put wealth before all else, which causes several important organs to succumb to different illnesses. Since the eye is among the most delicate organs in the body, keeping it healthy is essential to avoiding illnesses. The eye is one of the most delicate organs in the human body, and it is continually exposed to many environmental substances. The health of the eye is the most vital organ in our body since it is the "window of the soul" and is therefore of utmost importance. Numerous environmental factors might cause common ailments such as glaucoma, allergies, inflammation, conjunctivitis, etc. Conjunctivitis is the most common one at the moment, which as of right now, the most prevalent illness is conjunctivitis, which is mostly brought on by bacteria and is usually treated with antibiotics. However, long-term usage of antibiotics might result in bacterial resistance, which can be harmful to one's health. This can cause burning, itching, irritation, and pain. Consequently, we have found an efficient way to lessen these negative effects: using herbal remedies. India is known for having a rich traditional culture involving the use of herbal medicines. These therapeutic plants are essential for maintaining human health as well. The significance of herbal or conventional treatments for conjunctivitis is discussed in this review.

Keywords: Conjunctivitis; Natural Remedies; Viral Conjunctivitis; Bacterial Conjunctivitis; Turmeric; Neem

Abbreviations

WHO: World Health Organization; PECI: Parent Experience of Child Illness; IgE: Immunoglobulin E; COX: Cyclooxygenase.

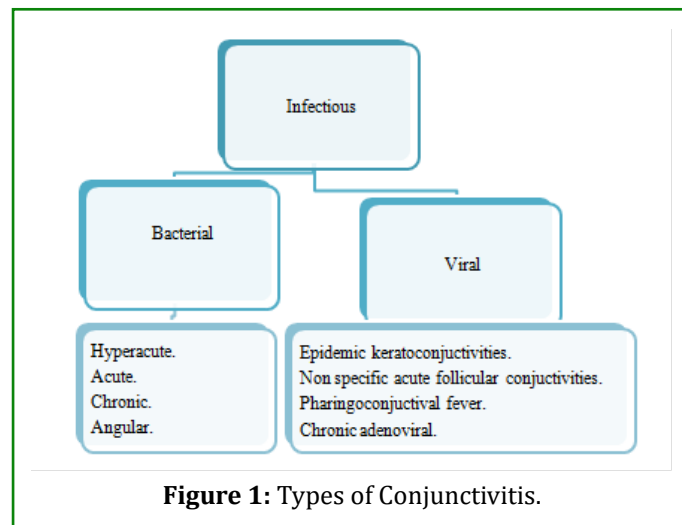
Introduction

Usually, an infection or inflammation of the conjunctiva—the outermost layer of the eye—causes conjunctivitis. With a cold or being around someone with one, it may happen. Conjunctivitis can affect both eyes and spread easily, despite

the fact that it is usually not harmful. Conjunctivitis is sometimes described as having "pink" or "red" eyes [1]. The World Health Organization (WHO) published the first-ever World Report on Vision in 2019. It raised awareness of the growing significance of ocular health care and its part in accomplishing the Sustainable Development Goals [2]. The report recommends focused, coordinated, and global effort to address inequalities in the accessibility and provision of eye care services to the general public and to enhance the integration of eye care into health systems [3]. The WHO is developing a package of evidence-based interventions for eye

care (PECI) that countries will use to plan, fund, and adopt strategies for eye care into national health insurance plans and contracts in order to facilitate the integration of eye care into health systems [4]. The WHO developed and published the methodology for developing the PECI in collaboration with. Conjunctivitis is a prevalent problem in urgent care, emergency departments, and primary care settings since it is often the source of redness in the eyes. Any age group, any demographic, and any financial situation could be affected. More than 80% of acute cases are often diagnosed by non-ophthalmologists such as internists, primary care physicians, pediatricians, and nurse practitioners [5]. This accounts for a substantial portion of clinic visits

in a variety of medical specializations and puts a heavy financial burden on the healthcare system. The yearly cost of treating bacterial conjunctivitis in the US is 857 million USD. Although conjunctivitis usually resolves on its own and does not cause vision loss, it is crucial to rule out other potentially harmful causes of red eye as a possible diagnosis. Transparent, lubricating conjunctivitis is characterized by pain, vascular engorgement, discharge from the eyes, and inflammation of the conjunctival tissue. It may be infectious or non-infectious, acute or chronic [6]. In contrast to chronic conjunctivitis, which usually only lasts one to two weeks, acute conjunctivitis is characterized by symptoms that last three to four weeks after presentation [7] Figure 1.



The eye is considered the most significant sense organ because it is known as the “window of the soul.” Even with abundant wealth, this lovely world would be useless without vision, because day and night are the same. The conjunctiva is a thin membrane that covers the eyelids inside surface as well as the sclera, or white portion of the eyeball. We refer to the inflammation of the conjunctiva as conjunctivitis [8]. When conjunctivitis, or inflammation of the conjunctiva, occurs, the eyes’ whites appear red. Conjunctivitis refers to an infection or inflammation of the conjunctiva, the clear membrane that covers the white portion of the eyeball and lines the eyelid. As the conjunctiva becomes irritated, tiny blood vessels become more visible [9]. Conjunctivitis is typically caused by a specific group of bacteria belonging to the *Staphylococcus* genus. These are Gram-positive cocci bacteria. *Staphylococcus* infections can result in diseases caused by the bacteria’s direct infection or toxin generation. One of the signs of a localized staph infection is an accumulation of pus, such as an abscess, boil, or furuncle. In addition to being red and swollen, the region is typically uncomfortable or painful. *Staphylococcus* infection is a frequent bacterial condition that affects the eyelids [10]. Typically, the nose releases *Staphylococcus*

bacteria, which are present in both human and animal skin. Cuts and abrasions that contact or penetrate one another’s skin are the most prevalent way for humans to contract infections. The most common non-infectious etiologies of conjunctivitis are allergy and toxin-induced conditions, but bacterial and viral infections are the most common causes. Bacteria, viruses, fungi, and parasites can cause infectious conjunctivitis [11]. However, viruses cause 80% of acute episodes of conjunctivitis, with adenovirus being the most common culprit. Adenoviruses account for 65% to 90% of viral conjunctivitis cases. Other frequent viruses include enterovirus, herpes zoster, and herpes simplex. Bacterial conjunctivitis is significantly more common in children than in adults, and the germs that cause it vary according to age group. *Staphylococcal* species—in particular, *Staphylococcus aureus*, *Streptococcus pneumoniae*, and *Haemophilus influenzae* in adults—are the most common causes [12]. However, *S. pneumoniae*, *H. influenzae*, and *Moraxella catarrhalis* more often cause the sickness in children. Other bacterial culprits include *Corynebacterium diphtheriae*, *N. gonorrhoea*, and *Chlamydia trachomatis*. In infants and sexually active adults, gonorrhoea is the most common cause of bacterial conjunctivitis. Toxins, local irritants, and allergens can all induce non-infectious

conjunctivitis [13]. The Reason and Occurrence Allergic conjunctivitis is the inflammatory response of the conjunctiva to allergens such as pollen, animal dander, and other environmental antigens. It affects up to 40% of Americans. Only 10% of individuals with allergic conjunctivitis seek medical attention, leading to frequent misdiagnosis of the illness [14]. Redness and itching are the most prevalent, enduring symptoms. Seasonality accounts for 90% of allergic conjunctivitis cases in the United States. *Staphylococcus aureus*, *Haemophilus influenza*, and *Streptococcus pneumonia* primarily cause acute bacterial conjunctivitis. *Pseudomonas aeruginosa*, *Moraxella lacunata*, *Streptococcus viridians*, and *Proteus mirabilis* also cause acute sickness [15].

The conjunctiva, a thin, transparent membrane, lines the anterior part of the sclera and the inside of the eyelids. Its two components are bulbar and palpebral. The bulbar section begins at the edge of the cornea and covers the visible portion of the sclera, whereas the palpebral portion lines the interior of the eyelids [16]. Conjunctivitis, an infection or inflammation of the conjunctiva, is characterized by dilation of the conjunctival vessels, resulting in hyperaemia and edema in the conjunctiva, usually accompanied by discharge. Conjunctivitis affects a lot of people, and it has

detrimental social and economic implications. An estimated six million Americans suffer from acute conjunctivitis each year. General-care physicians, not eye care specialists, treat most individuals with conjunctivitis. Conjunctivitis initially connects with general care physicians in the United States. Firstly, urgent care and primary care clinics see 70% of patients with acute conjunctivitis [17]. The patient's age and the season can influence the underlying cause of conjunctivitis, which in turn determines how common the ailment is. Viral conjunctivitis, more common in the summer, is the most common cause of infectious conjunctivitis in adults and the general population. Bacterial conjunctivitis is the second-most prevalent cause of this condition, accounting for 50% to 75% of cases in children [18]. It is more prevalent from December to April. The most frequent cause is allergic conjunctivitis, which affects 15% to 40% of people and is more common in the spring and summer. The conjunctiva comprises the purple-labeled bulbar conjunctiva and the blue-labeled palpebral conjunctiva, which are located inside the eyelids. An algorithmic method that uses a focused ocular history and a penlight eye examination may be helpful for diagnosis and treatment. "Red eye" can be a symptom of various ocular disorders, including conjunctivitis [19] Figure 2.

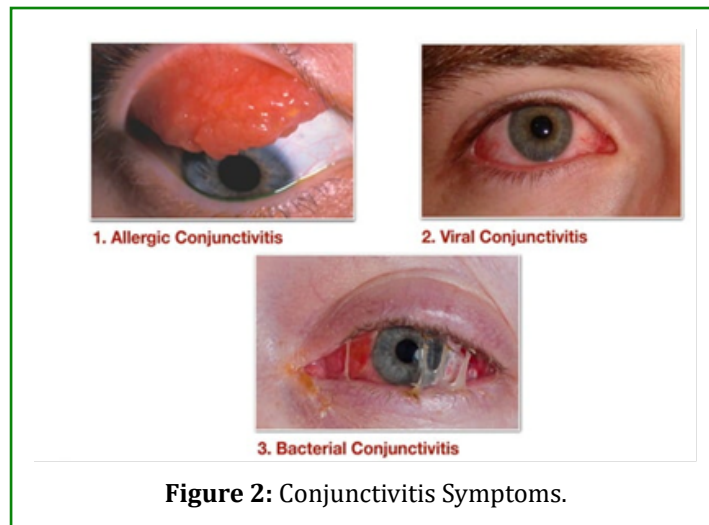


Figure 2: Conjunctivitis Symptoms.

Viral Conjunctivitis

Viral infections cause up to 80% of cases of acute conjunctivitis. The clinical accuracy rate for identifying viral conjunctivitis is less than 50% when compared to test confirmation. In many cases, bacterial conjunctivitis is incorrectly diagnosed. Pharyngoconjunctival fever and epidemic keratoconjunctivitis are two common clinical entities associated with viral conjunctivitis, accounting for between 65% and 90% of cases, respectively. A sudden high fever, pharyngitis, bilateral conjunctivitis, and periauricular lymph node enlargement are all signs of

pharyngoconjunctival fever. On the other hand, epidemic keratoconjunctivitis has more severe symptoms, such as ipsilateral lymphadenopathy, hyperaemia, chemosis, and watery discharge. Viral conjunctivitis is more common in lymphadenopathy cases than bacterial conjunctivitis, which occurs in as many as 50% of cases [20-22].

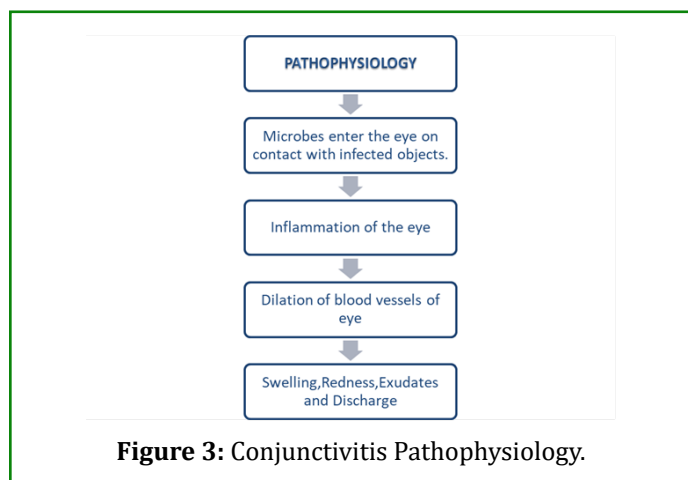
Bacterial Conjunctivitis

According to one study, there were 135 occurrences of bacterial conjunctivitis for every 10,000 individuals. Bacterial conjunctivitis can result from direct contact with

infected individuals, or aberrant proliferation of the natural conjunctival flora can result in the development of bacterial conjunctivitis. Contaminated food sources, oculogenital spread, and contaminated fingers are all common methods of transmission. Additionally, certain factors such as inadequate tear production, damage to the natural epithelial barrier, issues with adrenal structure, trauma, and a weakened immune system can increase your risk of developing bacterial conjunctivitis. Staphylococcal species most frequently infect adults with bacterial conjunctivitis, followed by *Haemophilus influenza* and *Streptococcus pneumonia*. Children are usually susceptible to the sickness due to *Moraxella catarrhalis*, pneumonia, and *H. influenza* [22,23].

Allergic Conjunctivitis

Allergic conjunctivitis is the inflammatory response of the conjunctiva to allergens such as pollen, animal dander, and other environmental antigens. It affects up to 40% of Americans. Only 10% of individuals with allergic conjunctivitis seek medical attention, leading to frequent misdiagnosis. Redness and itching are the most prevalent symptoms. In the US, seasonal factors account for 90% of allergic conjunctivitis cases. The inflammatory response of the conjunctiva to an allergen is known as allergy-induced conjunctivitis. It is a part of the larger atopic response spectrum. It is usually seasonal. It is characterized by symptoms related to the upper respiratory tract: conjunctival redness and swelling, severe itching, and increased lacrimation. People frequently refer to this illness as allergic rhino conjunctivitis when rhinitis is present [24,25] Figure 3.



Herbal Treatments

Ayurveda, an ancient Indian medical system that is part of the Hindu tradition, is one of the most prominent systems of complementary and alternative medicine. Hindu mythology credits Dhanvantari, the physician of the gods, with the development of ayurvedic medicine. Ayurveda emphasizes the

use of locally derived plant-based medicines to heal ailments and has its roots in the Vedas, notably the Atharvaveda [26].

Turmeric: Curcumin, administered an hour before the ovalbumin challenge, demonstrated anti-inflammatory and anti-allergic effects. It lowered the levels of iNOS production in the conjunctiva of mice and the inflammation that was caused by eosinophils and immunoglobulin E (IgE). Analgesic, anti-inflammatory, and anti-arthritis qualities: Curcumin soothes pain and swelling by blocking the arachidonic acid cascade through the lipoxygenase and cyclooxygenase (COX) pathways. You can use a diluted raw turmeric decoction with water to treat conjunctivitis and other eye diseases. *Curcuma longa's* volatile oils and curcumin together produce strong anti-inflammatory effects. Oral curcumin is half as effective in treating chronic inflammation as cortisone or phenylbutazone is for treating acute inflammation. Add some cotton or a piece of cloth, bring some turmeric to a boil, and then let it cool. Cover your eyes with warm cotton and hold it there for a short period of time. This can speed up the healing process and significantly lessen ocular irritation. A typical spice with natural anti-inflammatory and restorative qualities is turmeric. Turmeric contains a compound called curcumin, which reduces the intensity of inflammatory diseases like conjunctivitis. Turmeric's ability to treat pink eye is among its many health benefits [27,28].

Neem: The ability of neem (*Azadirachta indica*) plants to break down microbial cell walls and impede microbial development is two examples of its antibacterial qualities. A powerful antibiotic called azadirachtin is present in seeds. It is a complex tetranortriterpenoid limonoid that acts as both a poison and an antifeedant against insects. Neem strengthens the immune system and treats inflammatory skin diseases. Traditional medicine has used neem to treat blood- and skin-purifying illnesses. The most well-known benefit of Neem is probably how it affects the skin. People use preparations from the tree's leaves or oils as general antibiotics. Neem's antibacterial properties allow it to efficiently treat a wide range of epidermal disorders, such as acne, psoriasis, and eczema. Strong antimicrobial qualities. Neem also offers many benefits for your eyes. Ayurveda claims that Neem aids in improving vision. The cooling impact helps lessen inflammation and soothe watery, irritated eyes. Neem Soak: Boil some water with some neem leaves, filter it, and use the liquid to cleanse your eyes. Neem's antiviral and antibacterial qualities can treat bacterial eye infections. The DIY eyewash's antibacterial qualities will aid in the healing of the eyes [29,30].

Aloe: The plant produces a minimum of six antimicrobial compounds, which are lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols, and sulfur. These compounds, which are also known as antiseptics because they either

kill or inhibit mold, bacteria, fungus, and viruses, allow plants to remove a wide range of internal illnesses. *Aloe vera* activates fibroblast, which creates collagen and elastin fibers, making the skin less wrinkly and more elastic. It also has cohesive actions that soften the skin by holding the seemingly peeling epidermal cells together. *Aloe vera* is a fantastic natural anti-inflammatory and sedative that aids in the healing of eye infections. After extracting the fresh aloe vera gel, briefly refrigerate it. Dab a small amount of the cold gel on the area around the inflamed eye, taking care not to get any of it into the eye. After letting it sit for ten to fifteen minutes, rinse it off with cool water. *Aloe vera* gel can aid in reducing inflammation and accelerating recovery [31,32].

Tulsi: We studied the antimicrobial activities of *Ocimum sanctum* leaf extracts in oil, alcoholic, chloroform, and aqueous extracts against *S. aureus*, *P. aeruginosa*, *S. typhimurium*, and *E. coli*. The *O. sanctum* extract showed equal vulnerability to both gram positive and gram negative pathogenic bacteria. Fresh tulsi essential oil leaves had more potent antibacterial properties than dried leaves, whereas the opposite was true for fungus. Additionally, studies have demonstrated that tulsi alleviates metabolic stress by restoring normal blood pressure, cholesterol, and blood sugar levels, and it also alleviates psychological stress by improving memory and cognitive performance. It also possesses antidepressant and anxiolytic properties. *Ocimum sanctum* leaf oil, alcoholic, chloroform, and aqueous extracts have antimicrobial properties. Antibacterial and antioxidant properties of tulsi, often known as holy basil, aid in the treatment of eye infections. Additionally, it helps ease eye pain or burning. To relieve Tulsi's discomfort, soak basil leaves in water overnight. In the morning, wipe your eyes with this solution. As a result, many people experience eye issues, for which Tulsi offers a quick solution. The herb that calms the eyes is tulsi. When you use Tulsi eyewash, your eyes will feel less stressed [33,34].

Fennel: The ability of antioxidant molecules to restore imbalances caused by oxidative stress is becoming more and more important for treating and preventing a variety of eye disorders. Eye drops with an aqueous extract from *Foeniculum vulgare* seeds helped rats with sodium selenite-induced cataracts get better and kept them from getting worse. A rise in scanning electron microscopy and a decrease in the lens's turbidity score demonstrate this. The antioxidant impact of the *Foeniculum vulgare* extract makes therapeutic and preventive benefits on the eyes possible. More than 87 volatile chemicals, including the polyphenol antioxidants rosmarinic acid, chlorogenic acid, quercetin, and apigenin, are present in the plant's essential oil. Polyphenol antioxidants, which are potent anti-inflammatory agents, have a big effect on your health. Traditional medicine has long used fennel to treat conjunctivitis and soothe irritated, itchy eyes. Fennel soothes the eyes. Add one teaspoon

of fennel seeds or two fennel teabags to a teacup. Boil the water in the cup until it reaches halfway full. After letting it cool, strain. After submerging the eyes completely in the fennel solution, cover them with cotton wool pads. Give a different cotton pad to each eye if there is an infection. Use it frequently throughout the day to help calm the eyes. Vitamin A is present and is beneficial for the eyes. These teas could aid in clearing your eyes of any extra moisture [35,36].

Coriander: The essential oil from *C. sativum* L. can kill two strains of *Acinetobacter baumannii* that are clinically resistant to multiple drugs. It can also kill two strains of *E. coli*, *Klebsiella pneumoniae*, *Salmonella typhimurium*, and *P. aeruginosa*, which are all Gram-negative bacteria. Coriander essential oil primarily causes cell death by damaging bacterial cell membranes. We used different bacterial strains to extract essential oils from *L. sativum* using the microdilution method. The essential oils of *Coriandrum sativum* L. demonstrated strong antibacterial action against most investigated bacterial strains, including *Streptococcus pyogenes*. Compared to gram-negative bacteria, gram-positive bacteria were less vulnerable to *Coriandrum sativum* L.'s antibacterial qualities. The antibacterial activity against gram-positive bacteria, specifically *Staphylococcus aureus*, had an inhibition zone diameter of 8.67 ± 0.32 mm, while the antibacterial activity against *Klebsiella* had a somewhat closer inhibition zone diameter of 7.20 ± 0.17 mm. It addresses both eye discomfort and conjunctivitis. It also heals watery eyes and soothes irritated eyes. It is believed that a decoction of coriander can reduce burning, swelling, and discomfort associated with conjunctivitis. Use this to cleanse your eyes. Boil 60 cups of water with a few coriander seeds added. Use it to cleanse your eyes for a few days while it's warm. Coriander is included in this natural conjunctivitis cure because it has strong chemicals that can help with the illness [35,37].

Liquorice: Research has already demonstrated the medicinal benefits of the *Glycyrrhiza glabra* herb for conjunctivitis. *Staphylococcus* species cause conjunctivitis. A thorough investigation has established the theoretical foundations for this observation. We identified and evaluated the phytochemicals (such as phloretin, rosmarinic acid, isocoumarin, cortison, tannic acid, liquidritigenin, harmalol, glycyrrhizin, alpha-terpene, etc.) that significantly interact with the essential enzyme, isocitrate dehydrogenase, in a molecular docking operation using the Biovia software's Discovery Studio modu Catechine and rosmarinic acid firmly bound the enzyme, effectively blocking the microbe's metabolic cycle. We found that geraniol, alpha-terpineol, or hajaralol could not significantly inhibit the microorganism's enzyme. Combine the herb with a skin-friendly gel, like aloe vera gel, to treat eczema. Brewing tea for a sore throat involves steeping loose herbs in boiling water. You can take

Liquid Licorice extract sublingually or add it to a drink to cure ulcers. You can also consume chewable tablets and pills of licorice [38,39].

Honey: Weather changes are one of the most common times for eye infections to occur. The eye swells, turns red, and becomes quite irritating as a result. The antibacterial and anti-inflammatory properties of honey's flavonoids, phenolic acid, and lysozyme aid in the repair of injured tissues and cells, as well as the reduction of inflammation. Research has proven that honey is an effective remedy for eye infections, even when prescription eye drops fail to work. Most people treat allergic conjunctivitis with a cool compress. Many people propose using honey as a treatment for various ailments, including conjunctivitis. To make a poultice, place the honey side down onto each eye and cover with gauze or cheesecloth. Pink eye can spread; therefore, it's important to treat both eyes with treatment. Allow the poultice to remain on your eyes for ten to fifteen minutes. Honey is a treatment for dry eyes. The eye's inability to generate enough tears to sustain its own hydration can cause irritation, discomfort, and even redness in the eyes. Here, you can produce an eye wash by combining equal parts water and honey [40,41].

Chamomile: Chamomile is a good remedy for conjunctivitis. This plant is well known for its anti-inflammatory, anti-irritant, and anti-microbial properties. This has been our go-to solution for years, and it never fails. You don't have to spend a fortune at the pharmacist or risk putting chemicals in your children's eyes! I also love simple cures that you can get at your local health food store. In both positive and negative trials, *M. chamomilla* has shown bactericidal efficacy against *Salmonella typhimurium*, *Staphylococcus aureus*, and *Mycobacterium tuberculosis*. The anti-inflammatory properties of chamomile can soothe dry, inflamed eyes. Boil the water for five minutes, then let it cool before you add a tablespoon of honey. Next, apply a handkerchief, dipped in the mixture, over your eyes. If you have dry eye syndrome, applying chamomile tea bags over your eyes can help reduce symptoms and discomfort [42,43].

Guava: Guava leaves are rich in antioxidant, antibacterial, and anti-inflammatory properties. It has antioxidant, antimicrobial, and anti-inflammatory properties. These leaves also include substances called tannins, flavonoids, carotenoids, and polyphenols, which are particularly beneficial in treating a range of diseases. It is also a very effective treatment for eye infections. In fact, its antibacterial properties help combat the microorganisms that cause wounds and skin diseases. This causes the wound to heal more quickly. This article examines the potential use of guava leaf decoction as a topical antibacterial eye therapy. In vitro experiments have demonstrated the efficacy of a

two percent decoction against *Pseudomonas aeruginosa* and *Staphylococcus aureus*. When applied to a gel hand sanitizer, the leaves of *Psidium guajava* have an inhibitory effect against *Staphylococcus aureus* germs. The bacteria's impermeability to penetrate any lipopolysaccharide membrane in the presence of tannins, the active element in *Psidium guajava*, leads to the bactericidal activity of the formed gel. Bacteria cannot grow on tannin-containing substrates. Furthermore, it actively prevents bacteria from phosphorylating their cell walls, which promotes bacterial proliferation. The cell wall breaks down, halting the bacterial growth process. The *Psidium guajava* gel's bactericidal effect prevents *Staphylococcus aureus* from growing. Guava leaves are rich in antioxidant, antibacterial, and anti-inflammatory properties. Take some guava leaves and give them a little warmth. To treat recurrent styes, use these warm guava leaves. This medication can effectively alleviate an eye infection. Guava leaves are helpful for treating wounds because of their medicinal properties. Indeed, its antibacterial properties help combat germs [44,45].

Castor Oil: *Ricinus communis* exhibited strong antimicrobial activity against dermatophytic and pathogenic bacterial strains, including *Streptococcus* progenies, *Staphylococcus aureus*, *Klebsiella pneumoniae*, and *Escherichia coli*. The findings indicated that ethanolic extract had antibacterial activity only at higher concentrations, while petroleum ether and acetone extracts had good zones of inhibition³⁰. Using the well diffusion method, it was found that the various solvent extracts of *Ricinus communis* roots (200 mg/ml) have antimicrobial activity against pathogenic microorganisms like *Aspergillus niger*, *Bacillus subtilis*, *Candida albicans*, *Escherichia coli*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium*. The antimicrobial activity of the hexane and methanol extracts was at its peak, whereas the aqueous extracts exhibited negligible antimicrobial activity [46].

Cut a soft absorbent cloth (preferably disinfected or sterile if acquired from a drug store) to a size where, when folded to four thicknesses, it will be large enough to cover the eye. Saturate this cloth with castor oil and apply it to the eye. Apply a hot compress over the cloth. Apply the castor oil pack for 20 minutes. Do this three times a day, so that the pack is used for a total of one hour a day [47,48].

Curry Leaves: *Murraya koenigii*, rich in beta-carotene and vitamin A, are essential for treating eye conditions and enhancing vision. It reduces the risk of xerophthalmia and night blindness by preventing the cornea from drying out and forming a cloudy front of the eyes. The fresh juice of curry leaves can also treat certain eye conditions, particularly stopping the progression of cataracts. Curry leaves demonstrated strong antimicrobial activity against lactobacilli and *Streptococcus mutans*. Curry leaf oil has

antibacterial and antifungal properties, too. It assists in reducing both fungal and bacterial infections. It is also effective at reducing eye infections. Curry leaves have antibacterial, antifungal, antiinflammatory, and antioxidant properties. Curry leaf juice, when consumed fresh, can help avoid eye conditions like cataracts. When applied topically, the fresh juice of curry leaves brightens the eyes and delays the onset of cataracts [49,50].

Conclusion

Ayurveda is one of the traditional treatments for healthy life and longevity. A wide variety of herbs are available for conjunctivitis. In this review the information is provided as common name, scientific name, family, part used & reference of the plants used in treatment of conjunctivitis. This review may help the researcher to develop new formulations for conjunctivitis and ocular diseases which are beneficial for the society in future. As is true for many herbal medicines, there is plenty of literature regarding traditional uses of various herbs for conjunctivitis, but very little systematic work has been done on the clinical aspects of the plants. The authors state that it is likely that many traditional herbal eye remedies are safe, and some may be beneficial. However, they stress the need for standardization as well as formulation with purity of herbal ophthalmic preparations to ensure their safety and reduce the possibility of toxic side effects or complications. This comprehensive review can provide the starting point for any researcher interested in studying the use of herbs in conjunctivitis treatment.

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