International Journal of Web of Multidisciplinary Studies
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
website: *http://ijwos.com*
Volume.03 Issue.01.
OPEN ACCESS
E-ISSN : 3049-2424
DOI: https://doi.org/10.71366/ijwos

HERBAL TREATMENT FOR CONJUCTIVITIS : A REVIEW

Rajeshwari Khairnar[1], Shruti Gaikwad[2], Dr. Rupali R. Tasgaonkar [3]
[1] *Assistant Professor (Yadavrao Tasgaonkar Institute Of Pharmacy)*
[2] *Student (Yadavrao Tasgaonkar Institute Of Pharmacy)*
[3] *Principle & professor (Yadavrao Tasgaonkar Institute Of Pharmacy).*

Article Info

Article History:

Published:15 Jan 2026

Publication Issue:
Volume 3, Issue 01
January-2026

Page Number:
328-340

Corresponding Author:
Shruti Gaikwad

Abstract:

Conjunctivitis, commonly known as pink eye, is one of the most prevalent ocular disorders worldwide, characterized by inflammation of the conjunctiva resulting in redness, itching, discharge, and irritation. It may arise due to bacterial, viral, allergic, or irritant causes and represents a significant burden on public health systems. Conventional treatment mainly involves antibiotics, antivirals, antihistamines, and corticosteroids; however, prolonged use of these agents is associated with adverse effects such as ocular toxicity, drug resistance, and hypersensitivity reactions. In recent years, there has been growing interest in herbal and traditional medicine as safer and cost-effective alternatives for the management of conjunctivitis. Medicinal plants are rich sources of bioactive compounds including flavonoids, alkaloids, terpenoids, and glycosides that exhibit antimicrobial, anti-inflammatory, antioxidant, and anti-allergic properties. Herbs such as Euphrasia officinalis, Matricaria chamomilla, Azadirachta indica, Ocimum sanctum, and several ethnomedicinal plants have demonstrated promising therapeutic potential in both experimental and clinical studies. This review comprehensively discusses the etiology, epidemiology, pathophysiology, types, and current treatment approaches for conjunctivitis, with a special focus on herbal and Ayurvedic remedies. Additionally, commonly used medicinal plants, their parts utilized, mechanisms of action, preventive strategies, patient education, and future market scope are highlighted. The findings suggest that herbal treatments offer an effective, safer, and sustainable alternative for conjunctivitis management and provide a strong foundation for future research and formulation development.

Keywords: conjunctivitis, management, preventions , herbal medicines

1. INTRODUCTION

Conjunctivitis, commonly referred to as "pink eye," is a prevalent ocular condition defined by the inflammation of the conjunctiva—the thin, transparent membrane lining the eyelid and covering the white part of the eye. Its hallmark clinical features include conjunctival hyperemia (redness), edema (swelling), ocular discharge, and persistent irritation. While modern medicine relies heavily on synthetic antibiotics, corticosteroids, and antihistamines, there is a global shift toward exploring herbal alternatives due to the potential side effects of long-term pharmaceutical use, such as ocular toxicity, rebound redness, and antibiotic resistance.

Throughout history, herbal medicine has served as a cornerstone of primary healthcare, with the World Health Organization estimating that approximately 70–80% of the global population still relies on traditional plant-based remedies. Medicinal plants are rich in bioactive compounds—specifically

alkaloids, glycosides, terpenoids, and flavonoids—which provide potent anti-inflammatory, antimicrobial, and antioxidant properties.

In recent decades, standardized herbal eye drops have gained recognition for their ability to manage symptoms effectively while being gentler on ocular tissues. Key herbs such as Euphrasia officinalis (Eyebright), Matricaria chamomilla (Chamomile), Azadirachta indica (Neem), and Ocimum sanctum (Tulsi) have been extensively studied for their ability to inhibit mast cell degranulation and modulate inflammatory pathways, offering a viable, low-cost, and safe alternative for managing both infectious and allergic conjunctivitis.

ETIOLOGY :-

The etiology of conjunctivitis refers to the diverse range of causative agents—both infectious and non-infectious—that trigger the inflammation of the conjunctival tissue. In the context of herbal research, etiology is categorized to identify which phytochemicals (like the antimicrobial properties of Neem or the anti-allergic properties of Eyebright) are most suitable for the specific cause

EPIDEMIOLOGY :-

The epidemiology of conjunctivitis illustrates its status as the most frequent cause of "red eye" worldwide, placing a heavy economic and clinical burden on global healthcare systems.

PATHOPHYSIOLOGY :-

The **pathophysiology** of conjunctivitis involves an intricate inflammatory cascade triggered by the colonization of pathogens or exposure to allergens on the ocular surface. This process disrupts the protective epithelial barrier and activates the body's innate immune response.

TYPES OF SORIASIS:

1. Allergic Conjunctivitis
2. Viral Conjunctivitis
3. Bacterial Conjunctivitis
4. Irritant and Chemical Conjunctivitis
5. Herpes Conjunctivitis
6. Giant papillary conjunctivitis
7. Keratoconjunctivitis

VIRAL CONJUCTIVITIS.

Fig1 - viral conjunctivitis

KERATOCONJUCTIVITIS.

Fig2 – keratoconjunctivitis

Treatment for eye infections :

The treatment for conjunctivitis focuses on eliminating the causative pathogen while soothing the ocular surface. Modern clinical research is increasingly validating Ayurvedic and polyherbal formulations as effective, non-toxic alternatives to standard antibiotics.

Herbal (Ayurvedic) Treatment :

Herbal treatments utilize a "synergistic" approach, combining multiple plants to provide antimicrobial, anti-inflammatory, and cooling effects simultaneously.

2. Herbal/Traditional plant used for conjunctivitis

1. Abelmoschus esculentus :-

Abelmoschus esculentus (commonly known as okra, bhindi or lady's finger) is a tropical/subtropical plant in the Malvaceae family.

• Traditional use for conjunctivitis :-

Traditional herbal medicine texts list Abelmoschus esculentus among plants used to prepare formulations for conjunctivitis and other eye ailments; both fruit and flower parts are recorded in such remedies.

• Parts of plant used : fruit and flower

• Phytochemistry of Abelmoschus esculentus (Okra) :-

Okra is rich in bioactive compounds that can have medicinal effects. Key phytochemicals include:

Polysaccharides: Especially mucilage, which is sticky and hydrophilic.

Flavonoids: Such as quercetin and isoquercetin; known for antioxidant and anti-inflammatory properties.

Phenolic compounds: Provide antimicrobial and anti-inflammatory effects.

Vitamins and minerals: Vitamin C, vitamin A precursors, calcium, and potassium.Terpenoids and sterols: Minor compounds with anti-inflammatory activity.

Abelmoschus esculentus are shown in (fig-1.1)

Fig 1.1 – Abelmoschus esculentus

2.Acacia arabica :-

Acacia arabica (synonymously classified in older texts as Acacia nilotica and commonly known as babul) is a tree whose various parts (especially leaves and bark) have been used in traditional medicine systems such as Ayurveda, Unani, and folk remedies for treating a wide range of ailments — including conjunctivitis (inflammation of the eye's conjunctiva).

• Traditional Use for Conjunctivitis

In several ethnobotanical reports and traditional medicine compilations, Acacia arabica is listed among plants used for eye ailment.

Bark and leaves of Acacia arabica are traditionally referenced as remedies for conjunctivitis — the bark in decoctions and the leaves in poultices or pastes applied locally.

Traditional texts describe using an infusion of the bark and leaf pastes applied to the affected eye to relieve symptoms such as redness, irritation, and discharge associated with conjunctivitis.

In inventories of medicinal plants for ocular conditions, Acacia arabica bark is explicitly noted for conjunctivitis among other herbal treatments.

•Parts used:- Bark

• Phytochemistry and therapeutic properties :-

Antimicrobial and antiviral properties: Crude extracts of Acacia arabica leaves have shown antiviral activity in laboratory models, which suggests potential to act against pathogens that cause eye infections.

Astringent and antibacterial activity: In related Acacia species and traditional formulations, astringent leaf pastes have been described in Unani medicine to be used over inflamed tissues, including for eye conditions.

Tannins and flavonoids: The plant contains tannins, flavonoids, and phenolics, compounds known for anti-inflammatory, antioxidant, and antimicrobial effects in various studies of Acacia species — factors theoretically supportive in reducing conjunctival inflammation.

Acacia arabica are shown in (fig-2.1)

Fig 2.1 – Acacia arabica

3.Ageratum conyzoides :-

Ageratum conyzoides (commonly called goat weed, billygoat weed, or mentrasto) is a small, fast-growing herb widely used in traditional medicine in parts of Africa, Asia, and Latin America.

• Traditional use for conjunctivitis :-

In herbal and folk medicine, Ageratum conyzoides has been used to manage conjunctivitis (eye inflammation) due to its perceived anti-inflammatory, antimicrobial, and soothing properties. The leaves are the most commonly used part.

Traditionally, leaf preparations are used externally to help reduce:

Eye redness

Swelling of the conjunctiva

Mild irritation or discharge

These effects are attributed to plant compounds such as flavonoids, alkaloids, tannins, and essential oils, which have shown antimicrobial and anti-inflammatory activity in laboratory studies.

•Parts used :- Leaf

• Phytochemistry

Ageratum conyzoides extracts contain diverse secondary metabolites that are responsible for pharmacological activities:

Major Classes of Phytochemicals

Alkaloids — including pyrrolizidine alkaloids (note: some are hepatotoxic) .

Flavonoids — e.g., methoxylated flavones (ageconyflavones, sinensetin) .

Terpenoids & essential oils — including precocene I and II, monoterpenes, sesquiterpenes .

Chromenes & benzofurans — compounds with antimicrobial/anti-inflammatory potential .

Sterols and phenolic compounds — implicated in membrane interactions and inflammation modulation .

Tannins, saponins, glycosides, phenols — broad spectrum of bioactivities.

Ageratum conyzoides are shown in (fig- 3.1)

Fig 3.1 - Ageratum conyzoides

4.Boerhavia diffusa :-

Boerhavia diffusa (commonly known as Punarnava in Ayurveda) is a perennial herb widely used in traditional medicine in India and other regions for various ailments, including conjunctivitis and other eye conditions.

• Traditional Use for Conjunctivitis :-

Folk remedies: In Indian traditional herbal practice, Boerhavia diffusa leaves or root preparations have been used for eye ailments, including conjunctivitis (an inflammation of the conjunctiva causing redness and discharge). Traditionally, fresh leaf juice or decoctions were instilled as eye drops to alleviate symptoms of conjunctivitis and purulent discharges.

Root paste: Some folk sources recommend applying root paste mixed with honey externally to the eye area for chronic conjunctivitis and related inflammatory conditions.

Oral decoction: Ethnobotanical records also mention taking a decoction of the plant orally for general health and internal infections, reflecting a holistic herbal approach.

• Parts used :- Leaf , root

• Phytochemistry (Chemical Constituents) :-

Boerhavia diffusa is chemically rich, containing multiple classes of secondary metabolites that underlie its pharmacological activities. Specific phytochemicals identified include:

Major Compound Classes :

Alkaloids: Punarnavine and related compounds.

Rotenoids: Boeravinones A–H (and more) — characteristic rotenoid skeletons with bioactivity.

Flavonoids & Flavonols: Including quercetin, kaempferol and other C-methyl flavones.

Glycosides: Punarnavoside and other phenolic glycosides.

Lignans: Liriodendrin and syringaresinol glycosides.

Phenolic acids & polyphenols: Rutin, syringic acid, and epicatechin (reported especially in root extracts).

Other constituents: Triterpenoids, saponins, tannins, terpenoids, proteins and amino acids have also been reported.

Boerhavia diffusa are shown in (fig- 4.1)

Fig 4.1 – Boerhavia diffusa

5.Borago officinalis :-

Borago officinalis L., commonly called borage or starflower, is an annual herb in the Boraginaceae family, native to the Mediterranean but naturalized widely. It has bright star-shaped flowers and hairy leaves. In traditional herbal medicine, various parts — especially leaves and seeds — are used for their medicinal properties.

• Traditional use for conjunctivitis :-

Borage has a long history in European herbal medicine for inflammatory conditions, respiratory complaints, skin disorders, and general “cooling” remedies.

In some traditional ophthalmic herbal systems, an infusion of Borago officinalis leaves has been cited for treating conjunctivitis (pink eye). This use appears in ethnobotanical surveys of Mediterranean and Near Eastern medicinal plants, where aqueous leaf infusions were traditionally applied as washes or compresses to soothe eye irritation and inflammation.

• Parts used :- Leaf and flower

• Phytochemistry :-

Borago officinalis contains a diverse array of biologically active compounds — many of which are linked to its traditional medicinal properties:

Fatty Acids (especially in seed oil):

Gamma-linolenic acid (GLA): Borage seed oil is one of the richest plant sources of GLA (about 20–38%). GLA is an omega-6 fatty acid that can be metabolized into anti-inflammatory prostaglandins (such as prostaglandin E1 precursors).

Other fatty acids include linoleic, oleic, palmitic, and stearic acids.

Phenolic Compounds and Flavonoids

These are known for antioxidant and anti-inflammatory effects:

Phenolic acids: rosmarinic, caffeic, chlorogenic, ferulic, syringic, and p-hydroxybenzoic acids

Flavonoids: quercetin, kaempferol derivatives, rutoside, vitexin, astragalin

These compounds can modulate inflammatory pathways, inhibit pro-inflammatory enzymes (e.g., COX-2, lipoxygenase), and scavenge free radicals.

Alkaloids:

Pyrrolizidine alkaloids (e.g., lycopsamine, intermedine, amabiline) are present but toxic to the liver at high levels. This is why PA-free extracts or processed seed oil are recommended for medicinal use.

Other Constituents:

Mucilage: Soothes and protects mucous membranes, potentially useful in reducing irritation.

Tannins, saponins, sterols, and essential oils: Contribute to the plant's complex biological effects

Borago officinalis are shown in (fig 5.1)

Fig 5.1 – Borago officinalis

6.Flacourtia indica :-

Flacourtia indica is a shrub/tree in the Salicaceae family traditionally used across Asia and Africa in folk medicine. Different parts (fruit, leaves, bark, roots) have been used to treat a variety of ailments including inflammatory conditions, infections, cough, pneumonia, diarrhea, rheumatoid symptoms, and skin problems. It is not widely documented in modern scientific literature specifically for conjunctivitis (inflammation of the eye), but local traditional practices sometimes include its use for eye problems and infections.

• Traditional use for conjunctivitis :-

Eye Wash: A decoction (liquid made by boiling the plant parts) of the leaves or bark is prepared and allowed to cool. This infusion is then used as a gentle wash to cleanse the eyes, reducing redness and discharge.

Steam Inhalation: The roots are boiled, and the resulting steam is directed toward the affected eyes. This is believed to help reduce swelling and clear infection.

Fruit Pulp: While less common for the eyes specifically, the pulp of the fruit has cooling properties and is sometimes applied as a poultice around the orbital area (on the eyelids) to draw out heat and reduce inflammation associated with "pink eye."

• Parts used :- leaf

• Phytochemistry of Flacourtia indica :-

Multiple studies have identified a range of bioactive compounds in Flacourtia indica extracts, many of which have general antimicrobial, antioxidant, or anti-inflammatory activity — properties that in theory could be useful in managing inflammatory or infectious processes like conjunctivitis if properly formulated and tested.

Major Phytochemical Constituents

Phenolic glycosides such as flacourtin and flacourside — reported from fruit and plant extracts.

Flavonoids: quercetin, kaempferol — which are known for antioxidant and anti-inflammatory effects.

Hydrolyzable tannins: ellagic acid, gallic acid — with antimicrobial and antioxidant activity.

Sterols: β-sitosterol and derivatives — reported in phytochemical profiles.

Butyrolactone lignans and other phenolics.

Saponins and phenolics: identified in screening assays.

Flacourtia indica are shown in (fig 6.1)

Fig 6.1 – Flacourtia indica

7.Iris germanica :-

Iris germanica (commonly called German iris or the source of orris root) is a plant in the Iridaceae family whose dried rhizomes (roots) and sometimes other parts have a long history in traditional herbal medicine. However, there is no solid scientific evidence supporting its use specifically for conjunctivitis (inflammation/infection of the conjunctiva), and herbal use for eye conditions in formal clinical practice is not established.

• Traditional use for conjunctivitis:-

Anti-inflammatory Properties :

Orris root was believed to reduce inflammation. In some folk practices, infusions or decoctions of the rhizome were applied externally to soothe irritated tissues. This may have included mild eye inflammation like conjunctivitis, although such use was not widespread in mainstream herbal medicine.

Eye Treatments:

In certain European herbal traditions, crushed or powdered iris rhizomes were sometimes made into a very diluted infusion or wash for eye irritation.

The intent was to reduce redness and irritation, but because the plant contains iridin, a compound that can be irritating, care was taken to dilute it heavily.

• Parts used :- flower

• Modern Perspective & Caution :-

Irritation Risk: The rhizome contains compounds that can cause irritation if used directly in the eye. Today, herbalists rarely recommend Iris germanica for conjunctivitis because safer alternatives (like chamomile or eyebright) exist.

External Use Only: Any historical references to eye washes would have involved extremely careful preparation; raw powders or essential oils are too strong for the eyes.

Iris germanica are shown in (fig 7.1)

Fig 7.1 – Iris germanica

PREVENTIONS OF CONJUNCTIVITIS:

Maintaining proper sanitation is crucial for preventing infective conjunctivitis. Although rare, bacterial conjunctivitis can be transmitted through the hands or through upper respiratory tract infections. This is a major violation of standard hygiene.

This is very contagious and requires the application of rigorous cleanliness standards. Towels, face cloths, hands, and applanation tonometers are all instances of how readily this can spread. Preventing allergic conjunctivitis is impossible unless the patient can modify his or her surroundings or job, or find and eliminate the substance that is cause the allergy, such as pollen or animal fur. Drugs can create an allergy, which can be reversed by discontinuing the drug. Atropine, neomycin, and eye drop preservatives are all prominent causes of such medication responses.

PATIENT EDUCATION :

This should cover topics such as proper hand hygiene and avoiding touching the eyes, particularly after coming into contact with infectious people. The greatest method to prevent conjunctiva from spreading is to teach the person suffering about preserving a healthy lifestyle is crucial. Patients should be instructed rather than employ other people's eye cosmetics or personalized dermatological products, especially mascara. Interaction lens wearers with bacterial conjunctivitis should be advised to temporarily remove their spectacles while the illness is present. If necessary, an ophthalmologist can provide guidance to the patient. If wearing contact lenses causes conjunctivitis, an ophthalmologist should be consulted.

An ophthalmologist may propose modifying the contact lens prescription to one which can be replaced more frequently. This will assist to prevent conjunctivitis from returning. Patients facing infection from bacteria ought to avoid rubbing their eyes.

Patients should also change their towels and washcloths regularly and not share them with others. Patients must follow their ophthalmologist's guidelines for optimal contact lens care.

4. CONCLUSION

To sum up, we confirm that ayurveda has a practical method, high-quality Process, and a large supply of herbal medications that may be used to treat Conjunctivitis. The remedy most Commonly available on the market right now is medication. Its appeal stems from the fact that life has become so fast-paced and mundane in Contemporary society that only pharmaceutical treatments are effective for the General people. Prompt action, to great availability, and ease of continuing Improvement are the reasons. Even if it blends is its surroundings, it has a Lasting influence in the form of serious adverse effects. The common name, scientific name, family, portion used, and references of the Herbs employed to treat conjunctiva are all included in this review. Researchers May use this review to create novel treatments for corneal conditions and Conjunctiva that will benefit society in the long run.

References

1. Salaman, D. S., Singh, O., Jain, S., Velmurugan, R., & Patel, S. (2025). Exploring Herbal Alternatives for Conjunctivitis Management: Opportunities and Challenges. Traditional and Integrative Medicine, 10(3), pp. 142–156.
2. Salaman, D. S., Singh, O., Jain, S., Velmurugan, R., & Patel, S. (2025). Exploring Herbal Alternatives for Conjunctivitis Management: Opportunities and Challenges. Traditional and Integrative Medicine, 10(3), p. 144.
3. Kumar, S., & Singh, R. (2014). Herbal Significance and Home Remedies to Treat Conjunctivitis: An Overview. Research Journal of Topical and Cosmetic Sciences. This review discusses the historical use of herbal infusions (e.g., Eyebright compresses) to strengthen ocular glands and kill infective pathogens.
4. World Journal of Pharmaceutical Research (2024). Formulation and Evaluation of Ayurvedic Eye Drops. This research details the efficacy of multi-herb blends involving Neem and Tulsi, noting their antibacterial and calming qualities in clinical settings.
5. Kim, J. H., et al. (2022). Comparison of the Effectiveness of Herbal Medicine Eye Drops on Conjunctivitis: A Systematic Literature Review and Meta-Analysis. This meta-analysis concluded that herbal eye drops can be as effective as, or even more effective than, western medicine for acute viral conjunctivitis with significantly fewer reported side effects.
6. Maurya, R. K. (2024). Formulation and evaluation of Ayurvedic eye drop for the treatment of eye flu, using Tulsi, Chameli, Babool & Neem. World Journal of Pharmaceutical Research, 13(8), pp. 1247–1250.
7. Jain, D. L., Baheti, A. M., Jain, S. R., Khandel-Wal, K. R., 2010. Use of medicinal plants Among tribes in Satpura region of Dhule and Jalgaon districts of Maharashtra- An ethnobo-Tanical survey. Indian Journal of Traditional Knowledge, 9,152-157.
8. Venkata, R. K., Reddy, T. G., Raju, V. R. R.,2010. Herbal remedies foreye infections Used by the tribals of Nallamala forests, Andhra Pradesh.IndianJournal of Traditional Knowledge,9, 765-767.
9. Ndenecho, E. N., African Journal of Pharmacy and Pharmacology2009, 3, 78-86.
10. Venugopal, S. N., 2002. Simple Formulations For PrimaryHealth Care uses based on Ayurveda.Foundation forRevitalisation of Local Health Traditions (Frlht), 1-38.
11. Tene, V., Malagon, O., Finzi, P. V., Vidari, G.,Armijos, C., Zaragoza, T., 2007. An ethno-Botanical survey of medicinal plants used in Loja and Zamora-Chinchipe, Ecuador.Journal ofEthnopharmacology,111, 63–81.

12. Nafees, S., Akhtar, J., & Kaur, J. (2022). Indian traditional medicinal plants in ophthalmic diseases. Avicenna Journal of Phytomedicine, 12(6), 566-575.
13. Agarwal, R., et al. (2008). Oculohypotensive effects of Foeniculum vulgare in experimental models of glaucoma. Indian Journal of Physiology and Pharmacology, 52(1), 77–83.
14. Azari, A. A., & Barney, N. P. (2013). Conjunctivitis: A systematic review of diagnosis and treatment. JAMA, 310(16), 1721-1729.
15. Aggarwal, R. (2004). A clinical study of the effect of Rasanjana Madhu eye drops in the treatment of Netra Abhishyanda w.s.r. to infective conjunctivitis. Journal of Ayurveda, 36, 89–92.
16. Sangeetha, J., & Asokan, S. (2018). A Review on Traditional Medicine used as treatment for Conjunctivitis. International Journal of Pharmaceutical and Drug Analysis, 6(2), 191-196.
17. Shakeel Ali, F., & Shankar, U. (2014). Diversity and distribution of ethnomedicinal flora for conjunctivitis from Lucknow, Uttar Pradesh, India. International Journal of Current Microbiology and Applied Sciences, 3(11), 356-364.
18. Anitha, T. S., et al. (2011). Prevention of selenite-induced cataractogenesis by an ethanolic extract of Cineraria maritima. Biological Trace Element Research, 143(1), 425-436.
19. Sharma, R., & Pamnani, S. (2015). Clinical study on the role of Aschyotan Karma and Shaman Aushadh in Allergic Conjunctivitis. Global Journal of Research on Medicinal Plants & Indigenous Medicine, 4(5), 89-98.
20. Bhat, A., & Jhanji, V. (2021). Bacterial conjunctivitis. In: Infections of the Cornea and Conjunctiva. Springer, pp. 1-16.
21. Latif, A., et al. (2009). Evaluation of the efficacy of a Unani formulation in conjunctivitis. Journal of Biological Sciences, 9, 214-221.
22. Cronau, H., Kankanala, R., & Mauger, T. (2010). Diagnosis and management of red eye in primary care. American Family Physician, 81(2), 137-144.
23. Abelson, M., et al. (2015). Advances in pharmacotherapy for allergic conjunctivitis. Expert Opinion on Pharmacotherapy, 16, 1219-1231.
24. Messmer, E. M., et al. (2006). In vivo confocal microscopy of normal conjunctiva and conjunctivitis. Cornea, 25, 781-788.
25. Sthapit, P. R., & Tuladhar, N. R. (2014). Conjunctival flora of normal human eye. JSM Ophthalmology, 2, 1021.
26. Ambroziak, A. M., et al. (2009). Evaluation of effectiveness and tolerance of treatment with azithromycin 1.5% eye drops in bacterial conjunctivitis. Klinika Oczna, 111(1-3), 46-49.
27. Solano, D., Fu, C., & Czyz, C. N. (2019). Viral Conjunctivitis. StatPearls Publishing.
28. Dalhanacharya, S. (2003). Sushruta Samhita, Uttaratantra (12th ed.). Varanasi: Chaukhamba Surbharati Prakashan.
29. Zaman, S., & Basar, S. N. (2013). A review on Cichorium intybus: A potential Unani drug. International Journal of Pharmaceutical and Biological Archives, 4(3), 441-445.
30. Dhanda, R. P., & Kalevar, V. (1993). A Text Book of Clinical Ophthalmology (4th ed.). Delhi: Galgotia Publications.
31. Nafees, S., et al. (2024). Natural medicaments in ophthalmology: A review on Ayurvedic and Unani perspectives. World Journal of Pharmaceutical Research, 13(9).