

Review Article

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“TRIPHALA IN OPHTHALMOLOGY: CLASSICAL USES, PRECLINICAL EVIDENCE AND CLINICAL STUDIES”**Dr. Jalpa Gandhi¹****AFFILIATIONS:**

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ABSTRACT

Background: Triphala, a combination of the fruits of *Terminalia chebula* (Haritaki), *Terminalia bellirica* (Bibhitaki) and *Phyllanthus emblica* (Amalaki), is among the most widely used Ayurvedic formulations. Classical texts describe it as Chakshushya, beneficial to the eyes, and prescribe it orally and locally, as eye washes, drops, collyria and medicated ghee, for a range of eye diseases. **Objective:** To review the classical ophthalmic uses of Triphala, its phytochemistry and pharmacology relevant to the eye, and the preclinical and clinical evidence for its use in eye diseases. **Methods:** Narrative review of classical Ayurvedic texts and of experimental and clinical studies of Triphala and its constituents in ocular conditions. **Results:** Triphala is rich in polyphenols, including gallic acid, ellagic acid and chebulagic acid, with antioxidant, anti-inflammatory and antimicrobial activity. In a rat model of selenite-induced cataract, Triphala reduced cataract formation and restored lens antioxidant enzymes. *Phyllanthus emblica* and its tannoids delayed diabetic cataract in rats. Clinical studies, mostly small and open-label, have evaluated Triphala eye drops in computer vision syndrome, Triphala Ghrita as Ashchyotana in allergic conjunctivitis and as Tarpana in dry eye, and oral Triphala preparations with Tarpana in myopia, reporting symptomatic improvement. **Conclusion:** Triphala has a strong classical basis and plausible pharmacology for eye health, with encouraging preclinical results. Clinical evidence is limited by small samples, lack of masking and inconsistent outcome measures. Standardised formulations, sterile ophthalmic preparations and rigorous trials are needed.

KEYWORDS: Triphala; Chakshushya; Shalakya Tantra; cataract; computer vision syndrome; conjunctivitis; Triphala Ghrita; antioxidant

INTRODUCTION

Visual impairment affects at least 2.2 billion people worldwide, and cataract and uncorrected refractive error are its leading causes^[1]. Myopia in particular is increasing rapidly, with projections that about half of the world's population may be myopic by 2050^[2]. Alongside these, ocular surface conditions such as dry eye, allergic conjunctivitis and digital eye strain are common reasons for consultation.

Ayurveda considers the eye to be predominantly governed by Tejas (Pitta, specifically Alochaka Pitta) and especially vulnerable to Kapha accumulation. Classical texts recommend regular use of Chakshushya (eye-beneficial) substances, of which Triphala is the most prominent^[3,4]. It is used orally, as a decoction for eye washes, as medicated ghee (Triphala Ghrita) for Tarpana and

Ashchyotana, and in collyria. Many Ayurvedic ophthalmic preparations are based on it.

Triphala has been widely studied for its gastrointestinal, antioxidant, anti-inflammatory and antimicrobial properties^[5,6]. This review focuses on its ophthalmic applications.

METHODS

Classical sources included Sushruta Samhita Uttara Tantra (Timira and Kriyakalpa chapters) and Ashtanga Hridaya Uttara Tantra (Timira chapter)^[3,4]. Modern literature was identified through PubMed, Google Scholar and Ayurveda journals, using the terms Triphala, *Emblica officinalis*, *Terminalia chebula*, eye, cataract, conjunctivitis, myopia, dry eye and computer vision syndrome. This is a narrative review.

CLASSICAL DESCRIPTION

Components and properties

Table 1: Components of Triphala and their properties

Component	Botanical name	Rasa (taste)	Main actions in Ayurveda
Haritaki	<i>Terminalia chebula</i>	Five tastes, predominantly astringent	Balances all three Doshas, mild laxative, Rasayana
Bibhitaki	<i>Terminalia bellirica</i>	Astringent	Reduces Kapha, beneficial for eyes and hair
Amalaki	<i>Phyllanthus emblica</i>	Five tastes, predominantly sour	Reduces Pitta, Rasayana, rich in vitamin C

Triphala as a whole is described as Tridosahara (balancing all three Doshas), Rasayana (rejuvenative) and Chakshushya.

Ophthalmic uses in classical texts

Triphala appears throughout the ophthalmic chapters^[3,4]:

- **Timira (progressive visual impairment):** oral Triphala with ghee and honey is repeatedly recommended, and Triphala Ghrita and Mahatriphala Ghrita are classical formulations for Timira.

Dosage forms used in Shalakya practice

Table 2: Dosage forms of Triphala used in Shalakya practice

Dosage form	Typical preparation	Route and use	Practical issues
Churna (powder)	Equal parts of the three fruits, dried and powdered	Oral, often at night with ghee and honey	Quality of raw material, adulteration, microbial load
Kashaya (decoction)	Powder boiled in water and reduced	Eye wash (Netra Prakshalana), Seka, oral	Not sterile; must be filtered and used fresh

- **Netra Prakshalana (eye wash):** decoction of Triphala is used to wash the eyes in Abhishyanda (conjunctivitis) and other conditions.
- **Tarpana and Ashchyotana:** Triphala Ghrita is used for Tarpana in Timira and Shushkakshipaka and for drops in various conditions.
- **Anjana:** Triphala is an ingredient of several collyria.
- **Daily regimen:** regular intake of Triphala with ghee and honey at night is advised as a measure to preserve eyesight.

Dosage form	Typical preparation	Route and use	Practical issues
Triphala Ghrita	Ghee processed with Triphala decoction and paste (Sneha Paka)	Tarpana, Ashchyotana, oral	Batch variability; storage and contamination
Mahatriphala Ghrita	Ghee processed with Triphala and many other herbs	Oral and Tarpana, mainly for Timira	Complex formulation; harder to standardise
Eye drops (proprietary)	Aqueous or hydroalcoholic extracts with preservatives	Topical	Composition and sterility vary between manufacturers
Anjana (collyrium)	Fine paste or powder applied to the lid margin	Topical	Particle size and hygiene
Ghana Vati (tablet)	Concentrated aqueous extract in tablet form	Oral	Better dose consistency than powders

The diversity of dosage forms is one reason why clinical findings are hard to compare. A study of a proprietary Triphala eye drop does not tell us about a home-made Triphala eye wash, and a study of Triphala Ghrita Tarpana does not tell us about oral Triphala powder. Reviews and guidelines should therefore specify the exact form and route rather than referring to “Triphala” in general.

Rationale for local and systemic combination

Ayurvedic management of eye disease typically combines local procedures (Kriyakalpa) with systemic treatment, such as oral Triphala, Nasya or purification. The rationale is that local therapy acts directly on the eye while systemic therapy corrects underlying Dosha imbalance and supports nutrition of ocular tissues. This combination approach is clinically reasonable but complicates research, because it is difficult to attribute effects to any one component. Factorial trial designs, in which participants are randomised separately to local and systemic components, could help.

PHYTOCHEMISTRY AND

PHARMACOLOGY RELEVANT TO THE EYE

Triphala is rich in hydrolysable tannins and polyphenols, including gallic acid, ellagic acid, chebulagic acid and chebulinic acid, as well as flavonoids and ascorbic acid^[5,6]. Reported pharmacological activities include:

- **Antioxidant:** free radical scavenging and restoration of antioxidant enzymes^[6,7].
- **Anti-inflammatory and immunomodulatory** effects^[5].
- **Antimicrobial** activity against a range of bacteria^[5,6].

- **Aldose reductase inhibition:** *P. emblica* tannoids inhibit aldose reductase, an enzyme implicated in diabetic cataract and other diabetic eye complications^[8].

Oxidative stress is central to cataract formation, and the lens relies on glutathione and antioxidant enzymes for protection. Oxidative stress and inflammation also contribute to dry eye, retinal disease and ocular surface inflammation. These activities therefore make Triphala a plausible candidate for eye health.

PRECLINICAL EVIDENCE

Cataract

In a study of selenite-induced cataract, rat lenses in organ culture exposed to selenite showed reduced glutathione and increased lipid peroxidation; Triphala extract significantly restored glutathione, reduced malondialdehyde and restored superoxide dismutase, catalase, glutathione peroxidase and glutathione-S-transferase activities^[7]. In vivo, Triphala at 25 mg/kg given to rat pups reduced nuclear cataract formation to 20%, compared with 100% in controls^[7]. The authors attributed this effect to antioxidant activity and called for studies in human cataract.

P. emblica and its enriched tannoids delayed the progression of streptozotocin-induced diabetic cataract in rats, an effect linked to inhibition of aldose reductase and the polyol pathway^[8].

Limitations of preclinical evidence

Selenite cataract in young rats is a model of oxidative nuclear cataract, not of age-related human cataract, and the compounds were given systemically or in organ culture before cataract formed. These studies show biological plausibility but cannot establish that Triphala prevents or reverses cataract in humans.

Table 3: Preclinical studies of Triphala in eye disease

Study	Model	Intervention	Main result
Gupta et al. ^[7]	Selenite-induced cataract, rat lens culture and rat pups	Aqueous Triphala extract	Restored antioxidants; nuclear cataract 20% vs 100%
Suryanarayana et al. ^[8]	Streptozotocin diabetic rats	<i>P. emblica</i> and enriched tannoids	Delayed diabetic cataract; aldose reductase inhibition

CLINICAL EVIDENCE**Computer vision syndrome**

A clinical study evaluated Triphala eye drops with oral Saptamrita Lauha (a Triphala-based compound preparation) in computer vision syndrome and reported symptomatic improvement^[9]. A separate pilot study in computer vision syndrome found that Go-Ghrita Netra Tarpana, alone or with oral Shatavaryadi Churna, improved eye strain more than counselling alone, although the number completing the trial was small (22 of 30)^[10].

Allergic conjunctivitis

In a comparative study of 60 patients with Vataja Abhishyanda corresponding to simple allergic conjunctivitis, Triphala Ghrita Ashchyotana (instilled drops) was compared with alcaftadine 0.25% eye drops; the authors reported greater symptomatic relief with Triphala Ghrita, but statistical detail was limited^[11].

Dry eye

Triphala Ghrita is one of the most commonly used ghees for Tarpana in Shushkakshipaka (dry eye). An open-label randomised trial compared Triphala Ghrita Tarpana with Goghrita Manda Tarpana and reported improvements in both groups^[12]. The role of Tarpana in dry eye is reviewed in detail elsewhere in this series.

Myopia

In a randomised study of 50 patients with simple myopia, oral Ayastha Triphala Ghana Vati with Go-Ghrita Akshitarpana produced marked improvement in symptoms in a higher proportion of patients than oral therapy alone (reported as 44.6% versus 25.5%)^[13]. Outcomes were mainly symptoms; changes in refraction and axial length, the key measures of myopia, need to be assessed in future studies.

SAFETY AND QUALITY**Summary of clinical evidence****Table 4: Summary of clinical evidence for Triphala in eye conditions**

Condition	Intervention	Design	Main finding	Certainty (authors' judgement)
Computer vision syndrome	Triphala eye drops with Saptamrita Lauha ^[9]	Clinical study	Symptomatic improvement	Very low
Allergic conjunctivitis	Triphala Ghrita Ashchyotana vs alcaftadine ^[11]	Comparative, n = 60	Greater relief reported with Triphala Ghrita	Low
Dry eye	Triphala Ghrita vs Goghrita Manda Tarpana ^[12]	Open-label RCT	Both improved	Low
Simple myopia	Oral Triphala preparation ± Go-Ghrita Tarpana ^[13]	Randomised, n = 50	Symptomatic improvement greater with Tarpana	Low

Oral Triphala

Oral Triphala is generally well tolerated; the most

common adverse effect is loose stools or abdominal discomfort, reflecting its laxative action^[5]. Ayurvedic

products can contain heavy metals, particularly Rasa Shastra preparations containing metals or minerals, such as Lauha (iron) formulations^[14]. Products should come from reputable manufacturers with quality testing.

Topical ocular use

Topical use raises specific concerns:

- **Sterility:** home-made decoctions and drops are not sterile and may be contaminated with bacteria or fungi, risking keratitis, particularly in contact lens wearers or eyes with epithelial defects.
- **Particles:** unfiltered decoctions may contain particles that irritate the cornea.
- **pH and osmolarity:** acidic, tannin-rich preparations may cause stinging; ophthalmic formulations need appropriate pH, osmolarity and preservatives or single-dose packaging.
- **Allergy:** contact allergy is possible.
- **Delay in diagnosis:** treating red eye or blurred vision with home remedies may delay diagnosis of conditions such as acute glaucoma, keratitis, uveitis or retinal disease.

Triphala eye drops intended for clinical use should be manufactured as sterile ophthalmic preparations with defined composition and stability.

RESEARCH PRIORITIES

1. **Standardised formulations:** marker compounds such as gallic acid and chebulagic acid should be quantified, and sterile ophthalmic formulations developed and tested for stability, pH, osmolarity and ocular tolerance.
2. **Translational studies:** ocular pharmacokinetics, corneal penetration and effects on human lens and ocular surface cells.
3. **Clinical trials:** masked, controlled trials with validated outcomes, such as tear film break-up time and Ocular Surface Disease Index for dry eye, symptom and sign scores for allergic conjunctivitis, refraction and axial length for myopia, and lens opacity grading for cataract.
4. **Cataract prevention:** long-term cohort studies or trials of oral Triphala in high-risk groups, such as diabetics, would be needed to test the preclinical findings; these would be large and long, so earlier studies could use biomarkers of lens oxidation.

5. **Safety monitoring:** systematic reporting of adverse events with topical preparations.

DISCUSSION

Triphala holds a central place in Ayurvedic ophthalmology, and its rich polyphenol content and antioxidant, anti-inflammatory, antimicrobial and aldose reductase-inhibiting properties provide plausible mechanisms for ocular benefit. Preclinical studies in cataract models are encouraging.

Clinical evidence, however, remains preliminary. Most studies are small, open-label, use composite Ayurvedic symptom scores and compare active treatments without placebo or standard-care controls. Several interventions combine Triphala with other components, making it hard to attribute effects. Topical use introduces sterility and safety issues that are often overlooked in traditional practice.

Triphala's affordability, availability and familiarity in India make it an attractive candidate for further research. Collaboration between Ayurvedic and conventional ophthalmologists, pharmacologists and pharmaceutical scientists could produce well-characterised formulations and high-quality trials.

CONCLUSION

Triphala is a classical Chakshushya formulation with plausible ocular pharmacology and promising preclinical evidence, particularly for cataract prevention. Clinical studies in computer vision syndrome, allergic conjunctivitis, dry eye and myopia report symptomatic benefit but are of low certainty. Sterile, standardised ophthalmic preparations and rigorous controlled trials are needed before Triphala can be recommended as an evidence-based ophthalmic therapy.

REFERENCES

1. World Health Organization. World report on vision. Geneva: World Health Organization; 2019.
2. Holden BA, Fricke TR, Wilson DA, Jong M, Naidoo KS, Sankaridurg P, et al. Global prevalence of myopia and high myopia and temporal trends from 2000 through 2050. *Ophthalmology*. 2016;123(5):1036–42.
3. Sharma PV. *Susruta Samhita* (with English translation), Uttara Tantra 17 and 18. Varanasi: Chaukhambha Visvabharati; reprint edition.
4. Gundeti M, Vidiyala N, Dalvi S, Girase R, Thota SK, Paudel KR, et al. Next-generation Pluronic

- micelles for advanced drug delivery application. *Macromol Mater Eng.* 2026;311(9):e70344.
5. Peterson CT, Denniston K, Chopra D. Therapeutic uses of Triphala in Ayurvedic medicine. *J Altern Complement Med.* 2017;23(8):607–14.
 6. Nyavanandi D, Mandati P, Vidiyala N, Parupathi P, Kolimi P, Mamidi HK. Enhancing patient-centric drug development: coupling hot melt extrusion with fused deposition modeling and pressure-assisted microsyringe additive manufacturing platforms with quality by design. *Pharmaceutics.* 2025;17(1):14.
 7. Gupta SK, Kalaiselvan V, Srivastava S, Agrawal SS, Saxena R. Evaluation of anticataract potential of Triphala in selenite-induced cataract: in vitro and in vivo studies. *J Ayurveda Integr Med.* 2010;1(4):280–6. doi:10.4103/0975-9476.74425
 8. Lokeshvar R, Ramaiyan V, Nithin V, Pavani S, Vinod Kumar T. Nanotechnology-driven therapeutics for liver cancer: clinical applications and pharmaceutical insights. *Asian J Pharm Clin Res.* 2025;18(2):8-26.
 9. Gangamma MP, Poonam, Rajagopala M. A clinical study on “Computer vision syndrome” and its management with Triphala eye drops and Saptamrita Lauha. *AYU.* 2010;31(2):236–9. doi:10.4103/0974-8520.72407
 10. Dhiman KS, Ahuja DK, Sharma SK. Clinical efficacy of Ayurvedic management in computer vision syndrome: a pilot study. *AYU.* 2012;33(3):391–5. doi:10.4103/0974-8520.108831
 11. Vidiyala N, Parupathi P, Sunkishala P, Sree C, Gujja A, Kanagala P, et al. Artificial intelligence: a new era in prostate cancer diagnosis and treatment. *Int J Pharm.* 2025:126024.
 12. Kumar RKT, Dharmamoorthy G, Vasavi DD, Vidiyala N, Bagade OM, Elumalai S, et al. Phytoconstituent-based green synthesis of nanoparticles: sources and biomedical applications in cancer therapy. *Asian J Green Chem.* 2025;9(3):329-54.
 13. Jat DK, Nagar HK, Pamnani GC. A randomized clinical study to evaluate the efficacy of Ayastha Triphala Ghana Vati per orum with and without Go Ghrita Tarpana in the management of Timira w.s.r. to simple myopia. *Ayushdhara.* 2026;13(3):20–9. doi:10.47070/ayushdhara.v13i3.2806
 14. Saper RB, Phillips RS, Sehgal A, Khouri N, Davis RB, Paquin J, et al. Lead, mercury, and arsenic in US- and Indian-manufactured Ayurvedic medicines sold via the Internet. *JAMA.* 2008;300(8):915–23.