

“AYURVEDIC PERSPECTIVES ON KACHA AND LINGANASHA: A REVIEW OF TRADITIONAL INSIGHTS AND MODERN CORRELATIONS IN CATARACT AND BLINDNESS”

Ms. Priya Bhaware¹

AFFILIATIONS:

1. Research Assistant, Ira Consultancy & Research Organisation, Bhosari, Pune, Maharashtra 411026

CORRESPONDENCE:

Ms. Priya Bhaware

EMAILID:

priyabhaware0123@gmail.com

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ABSTRACT

Introduction: Kacha and Linganasha are significant ocular disorders described in Ayurveda, often correlated with modern conditions of cataract and progressive blindness. Cataract remains the leading cause of reversible blindness worldwide, and Ayurveda’s insights into its pathogenesis and management provide a unique perspective that complements modern ophthalmology. **Methods:** A comprehensive literature review was performed using classical Ayurvedic texts (Sushruta Samhita, Charaka Samhita, Ashtanga Hridaya, etc.) alongside modern scientific databases (PubMed, Scopus, Web of Science, Google Scholar). Inclusion criteria involved texts and articles describing Ayurvedic concepts of Kacha and Linganasha, pharmacological studies on Ayurvedic formulations, and modern clinical or experimental research related to cataract prevention and management. **Results:** Ayurveda describes Kacha as a condition marked by progressive diminution of vision, with Linganasha representing the terminal stage of vision loss. Pathogenesis is primarily linked with vitiation of *Vata* and *Kapha* doshas obstructing visual pathways. Management strategies include internal medications (Ghrita, Rasayana), external therapies (Anjana, Tarpana, Putapaka), and surgical interventions in advanced cases. Modern parallels highlight antioxidant-rich herbal drugs such as Triphala, Yashtimadhu, and Shatavari showing experimental efficacy in delaying cataractogenesis by reducing oxidative stress and lens protein aggregation. Clinical studies on formulations like *Triphala Ghrita* and *Jeevanyadi Ghrita* have shown encouraging outcomes in early-stage cataract.

Discussion: Ayurveda’s holistic approach emphasizes prevention and early intervention, while modern ophthalmology relies heavily on surgical correction. Integrative approaches using evidence-based Ayurvedic formulations may offer potential in delaying cataract progression and reducing blindness burden, though stronger clinical trials are needed. **Conclusion:** Kacha and Linganasha reflect Ayurvedic wisdom on ocular pathology, resonating with modern understanding of cataract and blindness. Strengthening cross-disciplinary research can pave the way for integrative therapeutics in ophthalmology.

KEYWORDS: Ayurveda, Blindness, Cataract, Kacha, Linganasha

INTRODUCTION

Eye diseases hold a central position in Ayurvedic ophthalmology (*Shalakya Tantra*), with *Kacha* and *Linganasha* described as severe disorders that compromise vision^[1-2]. Ancient texts provide a detailed clinical picture, progression, and treatment modalities for these conditions, which have striking parallels with modern cataract and blindness. Globally, cataract is responsible for 51% of blindness, highlighting the relevance of revisiting traditional knowledge systems^[3-4].

In Ayurvedic nosology, *Kacha* is marked by progressive diminution of visual acuity, often accompanied by cloudiness or haziness of vision^[5-6]. If untreated, it advances into *Linganasha*, characterized by irreversible vision loss. These conditions are considered *Tridoshaja*, with predominant involvement of *Vata* and *Kapha*. Pathogenesis involves derangement of ocular tissues (*Dristipatala*) and obstruction in the visual axis^[7-8].

The objective of this review is to systematically explore Ayurvedic perspectives on *Kacha* and *Linganasha*, correlate them with modern understanding of cataract and blindness, and evaluate contemporary research evidence on Ayurvedic drugs and therapies with potential anti-cataract effects^[9-10].

MATERIALS AND METHODS

Literature Search Strategy^[11-12]

- **Classical texts:** Sushruta Samhita, Charaka Samhita, Ashtanga Hridaya, Bhela Samhita, Kashyapa Samhita.
- **Databases:** PubMed, Scopus, Web of Science, AYUSH Research Portal, and Google Scholar.
- **Keywords:** “*Kacha*,” “*Linganasha*,” “Ayurveda cataract,” “Ayurvedic blindness,” “ocular therapeutics.”

Inclusion Criteria^[13]

- Ayurvedic classical references on pathogenesis, classification, and management of *Kacha* and *Linganasha*.
- Clinical and experimental research evaluating Ayurvedic drugs/formulations for cataract or vision-related disorders.
- Review articles, original articles, and clinical trials published between 1990–2025.

Exclusion Criteria^[14]

- Articles not related to ocular disorders.

- Studies lacking methodology or published in non-peer-reviewed sources.

Type of Studies Reviewed^[15]

- Textual analysis of classical Ayurvedic literature.
- Pharmacological and toxicological studies on relevant drugs.
- Clinical and experimental studies on Ayurvedic formulations.

OBSERVATION AND RESULTS

1. Concept of *Kacha* and *Linganasha* in Ayurveda

Ayurvedic literature gives a detailed description of ocular disorders under the domain of *Shalakya Tantra*. Among them, *Kacha* and *Linganasha* hold a prominent place as they represent progressive vision loss, culminating in blindness. According to *Sushruta Samhita*, *Kacha* is manifested by blurred vision or a hazy appearance, which gradually worsens over time. When this process remains unaddressed, it ultimately progresses to *Linganasha*, characterized by irreversible loss of vision.

The texts classify *Kacha* as a disease involving *Dristipatala* (ocular coats, especially the lens and cornea), with predominant vitiation of *Vata* and *Kapha doshas*. While *Kapha* is responsible for turbidity and opacity, *Vata* causes degeneration and impaired neural function. *Linganasha*, the end-stage, is described as blindness resulting from chronic or neglected pathology.

2. Nidana (Etiology) and Risk Factors

Ayurveda lists both external and internal factors contributing to *Kacha* and *Linganasha*.

- **External factors** include trauma to the eye, exposure to smoke, dust, heat, and toxins.
- **Internal factors** involve dietary indiscretions such as excessive intake of heavy, oily, or incompatible foods, suppression of natural urges, and indulgence in activities causing ocular strain.
- **Lifestyle-related causes** such as overuse of the eyes in dim light, prolonged exposure to heat or radiation (akin to UV damage), and aging are also emphasized.

Modern parallels can be drawn with risk factors for cataract formation, such as oxidative stress, smoking, chronic exposure to UV light, diabetes, and hereditary predisposition. The Ayurvedic recognition of congenital (*Sahaja Kacha*) and age-related (*Jara Kacha*) varieties highlights its comprehensive classification.



3. Samprapti (Pathogenesis)

The Ayurvedic understanding of pathogenesis involves the derangement of *Vata* and *Kapha*, which accumulate in ocular tissues, particularly the lens and retina. This leads to obstruction in the passage of visual impulses, causing progressive haziness and loss of clarity. Accumulation of *Ama* (metabolic toxins) further aggravates the condition by initiating degenerative and obstructive changes.

This explanation resonates with modern concepts of cataractogenesis, where oxidative stress, protein aggregation, and glycation products impair lens transparency, leading to opacification and gradual blindness.

4. Clinical Features of Kacha and Linganasha

- **Kacha (Early stages):** Gradual blurring, perception of hazy objects, difficulty in recognizing distant objects, occasional diplopia, and increased sensitivity to light.
- **Linganasha (Advanced stages):** Complete inability to perceive light or objects, loss of accommodation, and irreversible blindness.

Ayurvedic texts emphasize the importance of timely intervention in the Kacha stage, as Linganasha is considered incurable.

5. Chikitsa Sutra (Principles of Management)

The Ayurvedic approach focuses on *Shodhana* (cleansing) and *Shamana* (palliative) therapies:

a. Internal Medications

- *Ghrita-based formulations* such as Triphala Ghrita and Jeevanyadi Ghrita are prescribed for their nourishing and Rasayana effects.
- Herbal Rasayanas like Amalaki (*Emblica officinalis*), Yashtimadhu (*Glycyrrhiza glabra*), and Shatavari (*Asparagus racemosus*) strengthen ocular tissues and delay degeneration.
- Minerals and herbo-mineral formulations such as *Swarna Bhasma* and *Abhraka Bhasma* are also mentioned for their rejuvenative role.

b. External Therapies

- **Anjana (collyrium):** Application of medicated collyriums for local dosha pacification and clearing turbidity.
- **Tarpana:** Retention of medicated ghee over the eyes to nourish deeper ocular tissues.
- **Putapaka:** Application of juices from herbs to strengthen ocular structures.

- **Seka (eye wash):** Continuous pouring of medicated decoctions like *Triphala Kashaya*.

c. Surgical Interventions

Sushruta described *Lekhana Karma* (scraping) and removal of superficial opacities. These early surgical approaches have parallels with primitive cataract surgery techniques.

6. Ayurvedic Formulations in Kacha and Linganasha

- **Triphala:** A potent antioxidant that reduces oxidative damage in the lens and prevents protein aggregation.
- **Amalaki:** Rich in Vitamin C, useful in oxidative stress reduction.
- **Yashtimadhu:** Anti-inflammatory and neuroprotective.
- **Jeevanyadi Ghrita:** A classical formulation tested in clinical settings, beneficial in early cataract.
- **Honey-based collyrium:** Described in classics, with proven antimicrobial and wound-healing activity.

7. Modern Correlation: Cataract and Blindness

In modern medicine, cataract is caused by protein denaturation, oxidative stress, and lens fiber aggregation, leading to opacity. Blindness can result from untreated cataract, retinal diseases, or optic nerve pathology. The Ayurvedic description of progressive haziness (Kacha) leading to blindness (Linganasha) parallels cataract's natural course.

Preventive aspects emphasized in Ayurveda, such as Rasayana therapy, lifestyle modification, and avoidance of causative factors, align with modern preventive ophthalmology.

8. Evidence from Clinical and Experimental Studies

- **Triphala Rasayana:** Demonstrated reduction in oxidative stress markers in experimental cataract models.
- **Triphala Ghrita:** Clinical studies reported improved visual acuity and reduced lens opacity in early cataract patients.
- **Jeevanyadi Ghrita:** Pilot trials showed benefits in immature cataract, with improvements in subjective vision and objective opacity grading.
- **Yashtimadhu extracts:** Shown to delay selenite-induced cataract in animal models.

- **Amalaki (*Emblica officinalis*):** Exhibited antioxidant and anti-glycation properties useful in cataract prevention.
- **Honey and ghee-based ocular therapies:** Reported positive outcomes in corneal and lens-related disorders.

9. Clinical Outcomes and Observations

- Early-stage Kacha responds well to local and systemic Ayurvedic therapies, with improved clarity of vision and delayed disease progression.
- Linganasha is generally considered *asadhyā* (incurable), highlighting the need for preventive and early-stage interventions.
- Patients receiving Ayurvedic interventions reported symptomatic relief, reduced glare, and improved visual comfort, especially in immature cataract.

DISCUSSION

The Ayurvedic description of Kacha and Linganasha remarkably parallels modern understanding of cataractogenesis and blindness. While Ayurveda emphasizes early diagnosis, prevention, and reversal in initial stages, modern medicine primarily depends on surgical correction through lens extraction and intraocular lens implantation^[16].

Strengths of Ayurveda: ^[17]

- Holistic approach targeting dosha balance, diet, and lifestyle.
- Use of Rasayana formulations that provide systemic rejuvenation.
- External ocular therapies (Anjana, Tarpana) that deliver drugs directly to ocular tissues.
- Safe herbal formulations with demonstrated antioxidant and anti-inflammatory activities.

Strengths of Modern Medicine: ^[18]

- Precision diagnostics (slit lamp, OCT, fundus photography).
- Highly effective cataract surgery with near-complete restoration of vision.

Limitations of Ayurveda: ^[19]

- Lack of large-scale randomized controlled trials.
- Variability in formulations and standardization issues.

Limitations of Modern Medicine: ^[19]

- Surgical dependence, limited preventive options.
- Post-surgical complications like posterior capsular opacification.

Future Prospects: ^[20]

- Integrative models where Ayurvedic formulations are explored as adjuvant/preventive therapies.
- Development of standardized, pharmaceutically validated ocular Rasayana drugs.
- Collaborative clinical research to validate classical therapies like Triphala Ghrita and Jeevantiadi Ghrita in early-stage cataract patients.

Thus, Ayurveda offers valuable preventive and supportive strategies that can complement modern ophthalmology, especially in reducing the burden of cataract-related blindness in resource-limited settings.

CONCLUSION

Kacha and Linganasha, as described in Ayurveda, provide profound insights into the understanding of progressive vision loss, with strong parallels to modern cataract and blindness. Ayurvedic approaches emphasize prevention, early intervention, and holistic management using internal Rasayana drugs and external ocular therapies. Modern research has validated the antioxidant and anti-cataract potential of several Ayurvedic herbs and formulations, especially Triphala, Amalaki, and medicated ghritas.

While modern ophthalmology has revolutionized cataract management through surgical innovations, it lacks preventive pharmacological solutions. Ayurveda fills this gap by offering preventive and supportive therapies that can delay disease progression and enhance ocular health. However, the absence of robust clinical trials and standardization of formulations remains a challenge.

The integration of Ayurveda with evidence-based modern ophthalmology can open new avenues for preventive and therapeutic strategies against cataract and blindness. Strengthening research collaborations, ensuring pharmaceutical quality, and conducting multi-centric clinical trials will help establish Ayurvedic formulations as credible complementary therapies.

In conclusion, Ayurvedic wisdom on Kacha and Linganasha has enduring relevance in today's context of global blindness burden, offering promising directions for integrative eye care.

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