



## “ANJANA KALPANA IN SAMHITAS: CLASSICAL INSIGHTS AND MODERN RELEVANCE”

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### ABSTRACT

**Introduction:** Anjana Kalpana, the application of collyrium formulations, is an important ocular therapeutic modality described in classical Ayurvedic texts (*Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*). These formulations are used for prevention and management of various eye disorders, including conjunctivitis, cataract, and chronic ocular infections. The therapeutic rationale emphasizes purification, strengthening of ocular tissues, and restoration of visual function. **Methods:** A systematic literature review was conducted using classical texts and modern databases (PubMed, Scopus, Web of Science, Google Scholar). Keywords included “Anjana,” “Ayurvedic ocular therapy,” “Samhita eye formulations,” and “ocular diseases Ayurveda.” Inclusion criteria included classical descriptions, preclinical and clinical studies on Anjana formulations. Exclusion criteria included anecdotal or non-peer-reviewed reports. **Results:** Samhitas describe various Anjana formulations based on herbs (Triphala, Haridra, Yashtimadhu) and mineral preparations (Parada, Gandhaka), prepared as powdered, paste, or paste-suspension forms. Therapeutic indications include corneal and conjunctival disorders, night blindness, and visual fatigue. Modern pharmacological studies demonstrate antimicrobial, anti-inflammatory, antioxidant, and immunomodulatory properties. Clinical studies report improvement in visual acuity, reduced ocular irritation, and prevention of infection. **Discussion:** Anjana formulations illustrate the integration of preventive and curative ophthalmic care in Ayurveda. Despite promising classical and modern evidence, challenges remain in standardization, formulation stability, and large-scale clinical validation. Evidence-based studies and analytical standardization can bridge classical knowledge with modern ophthalmology. **Conclusion:** Anjana Kalpana provides scientifically rational and clinically relevant ocular therapeutics. Standardization, safety evaluation, and translational research are essential for their integration into modern clinical practice.

**KEYWORDS:** Anjana, Ayurvedic ophthalmology, Eye disorders, Samhita, Therapeutics



## INTRODUCTION

The eye is considered a vital organ in Ayurveda, and its health is essential for overall well-being. Anjana Kalpana, or collyrium application, is a therapeutic intervention aimed at maintaining ocular health and managing diseases<sup>[1-2]</sup>. Classical Samhitas extensively describe different types of Anjana based on herbs, minerals, and metals, emphasizing the principles of purification, rejuvenation, and ocular tissue strengthening<sup>[3-4]</sup>.

Samhitas classify Anjana as preventive (*Netradushti Nivarana*), curative (*Chikitsa Anjana*), and rejuvenative (*Brimhana Anjana*)<sup>[5]</sup>. These formulations are prepared using single or polyherbal ingredients, minerals, or combination preparations, applied in various forms such as powder, paste, or suspension. The therapeutic goal is to improve visual function, prevent ocular diseases, and restore ocular health in patients of all ages<sup>[6-7]</sup>.

To critically review Anjana Kalpana described in Samhitas and assess their clinical relevance. Compile classical descriptions of Anjana formulations, their ingredients, and preparation methods<sup>[8-9]</sup>. Evaluate modern pharmacological and clinical evidence supporting these formulations. Identify gaps and suggest directions for standardization and evidence-based clinical application<sup>[10]</sup>.

## MATERIALS AND METHODS

### Literature Search Strategy:<sup>[11-12]</sup>

- Classical sources: *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, and relevant commentaries.
- Databases: PubMed, Scopus, Web of Science, Google Scholar.
- Keywords: “Anjana,” “Ayurvedic eye therapy,” “Samhita ocular formulations,” “eye disorders Ayurveda.”

### Inclusion Criteria:<sup>[13]</sup>

- Classical Anjana formulations with preparation methods and indications.
- Preclinical studies evaluating pharmacological properties.
- Clinical trials assessing efficacy and safety.

### Exclusion Criteria:<sup>[14]</sup>

- Anecdotal reports or non-peer-reviewed sources.
- Non-ocular Ayurvedic formulations.

### Data Synthesis:<sup>[15]</sup>

- Formulations categorized by ingredients (herbal, mineral, or combined) and therapeutic application.
- Thematic summary of pharmacological evidence, clinical outcomes, and safety.

## OBSERVATION AND RESULTS

### 1. Classical Descriptions and Types of Anjana

#### Herbal Anjana:

- *Triphala Anjana*: Used for chronic conjunctivitis, red eye, and night blindness. It is known for antioxidant and antimicrobial activity.
- *Haridra Anjana*: Contains turmeric (*Curcuma longa*) and is used for its anti-inflammatory, antibacterial, and wound-healing properties, useful in corneal ulcers and ocular irritation.
- *Yashtimadhu Anjana*: Provides soothing action and alleviates ocular inflammation, redness, and dryness.

#### Mineral Anjana:

- *Parada (Mercury) Anjana*: Applied in purified form, recommended for chronic ocular infections, corneal ulcers, and vision fatigue.
- *Gandhaka (Sulfur) Anjana*: Has antimicrobial and cleansing properties; used in corneal disorders, chronic conjunctivitis, and prevention of infection.

#### Preparation Forms:

- *Powder (Churna Anjana)*: Dry powdered form, often applied with honey or ghee as a medium.
- *Paste (Varti or Avaleha Anjana)*: Prepared by grinding herbs or minerals into a smooth paste with suitable media.
- *Suspension (Pradeha Anjana)*: Fine powder suspended in ghee or honey for application.

Purification processes (*Shodhana*) of ingredients are emphasized to eliminate toxicity, improve efficacy, and enhance shelf-life. Classical texts highlight correct dosage, duration of application, and time of administration for optimal therapeutic outcomes.

### 2. Therapeutic Indications

- **Preventive:** *Netradushti Nivarana Anjana* prevents vision deterioration, protects against ocular fatigue, and maintains clarity of vision.
- **Curative:** Treats conjunctivitis, keratitis, corneal ulcers, cataract, and night blindness.
- **Rejuvenative:** Strengthens ocular tissues, nourishes the eyes, and delays degenerative changes associated with aging.

### Specific Indications from Texts:

- *Sushruta Samhita*: Recommends Haridra and Triphala Anjana for red eye, itching, and corneal ulcers.
- *Charaka Samhita*: Emphasizes Yashtimadhu and herbal Anjanas to remove toxins and enhance ocular strength.

### 3. Pharmacological Evidence

- **Antimicrobial Activity:** Triphala Anjana demonstrates inhibitory effects on *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Candida albicans*, pathogens commonly associated with ocular infections.
- **Anti-inflammatory Effects:** Haridra and Yashtimadhu reduce ocular inflammation, edema, and redness, confirmed in in vivo studies.
- **Antioxidant Potential:** Triphala and Haridra Anjanas protect ocular tissues from oxidative stress, which is linked to cataract and retinal degeneration.
- **Immunomodulatory Effects:** Herbal Anjana enhances local immune defense in conjunctival and corneal tissues, reducing susceptibility to infection.

### 4. Clinical Applications

- **Visual Acuity Improvement:** Studies report improvement in early cataract patients using Triphala Anjana over weeks of application.
- **Ocular Irritation Reduction:** Patients with chronic conjunctivitis experienced decreased redness, itching, and discharge after consistent use.
- **Infection Prevention:** Regular application in high-risk populations (e.g., schoolchildren, elderly) prevents ocular bacterial and fungal infections.

Modern clinical trials support traditional claims, but sample sizes are often small, highlighting the need for larger, randomized controlled trials.

### 5. Safety and Standardization

- Purification (*Shodhana*) of minerals and metals is essential to prevent toxicity.
- Proper storage, sterile preparation, and correct dosing are emphasized in classical texts and modern guidelines.
- Challenges include formulation reproducibility, shelf-life determination, and consistency in raw material quality.

Anjana Kalpana demonstrates a multi-targeted approach to ocular health, integrating preventive, curative, and rejuvenative strategies. Classical and modern evidence supports their efficacy, but standardization and translational research are needed.

### DISCUSSION

Anjana Kalpana represents a scientifically rational, holistic approach to ocular care, with preventive, therapeutic, and rejuvenative applications. The synergy between herbal and mineral ingredients addresses multiple pathophysiological mechanisms: infection control, inflammation reduction, oxidative stress prevention, and tissue nourishment<sup>[16]</sup>.

### Modern Correlates:<sup>[17]</sup>

- Antimicrobial and anti-inflammatory activities observed in Triphala, Haridra, and Yashtimadhu support classical indications for conjunctivitis, keratitis, and corneal ulcers.
- Antioxidant effects prevent oxidative damage, supporting the use of Anjana in cataract and degenerative ocular conditions.
- Immunomodulatory properties align with classical claims of strengthening ocular defenses and preventing infections.

### Advantages:<sup>[18]</sup>

- Topical application minimizes systemic adverse effects.
- Combines preventive and therapeutic actions in a single modality.
- Potentially cost-effective, culturally acceptable, and accessible in rural populations.

### Challenges:<sup>[19]</sup>

- Variation in preparation methods, ingredient quality, and application techniques can affect efficacy.
- Lack of large-scale, controlled clinical trials limits evidence-based adoption.
- Safety concerns with mineral-based Anjana require strict adherence to purification methods.

### Future Directions:<sup>[20]</sup>

- Standardization of classical formulations with modern pharmaceutical techniques.
- Analytical validation (e.g., HPLC, microbial sterility tests) to ensure quality and safety.
- Large multicentric clinical trials to assess efficacy, safety, and patient compliance.
- Integration with modern ophthalmology for preventive and early-stage ocular care.



Anjana formulations bridge classical Ayurvedic wisdom with modern ocular pharmacology. Evidence-based validation, standardization, and translational research are essential for their safe and effective integration into contemporary eye care.

### CONCLUSION

Anjana Kalpana is a classical Ayurvedic ophthalmic therapy with extensive applications for ocular health maintenance, disease prevention, and treatment. Herbal (Triphala, Haridra, Yashtimadhu) and mineral (Parada, Gandhaka) formulations demonstrate antimicrobial, anti-inflammatory, antioxidant, and immunomodulatory properties. Clinical evidence supports their efficacy in improving visual acuity, alleviating ocular irritation, and preventing infections.

Despite classical and preliminary modern evidence, challenges persist in formulation standardization, stability, quality control, and large-scale clinical validation. Translational research and evidence-based studies are essential for integrating Anjana into modern ophthalmology safely. Standardized formulations with correct purification, sterilization, dosage, and storage can enhance reproducibility, safety, and clinical efficacy.

In conclusion, Anjana Kalpana is a scientifically rational, clinically relevant ocular therapeutic modality. Bridging classical knowledge with modern scientific validation will enable safe incorporation into preventive, curative, and rejuvenative ophthalmic care, optimizing visual health and reducing the burden of ocular diseases.

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