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Review Article

RESTORING OCULAR HOMEOSTASIS IN MENOPAUSAL AGE WOMEN: A REVIEW OF *SHALAKYA TANTRA* THERAPEUTICS

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ABSTRACT
Menopausal dry eye syndrome DES is considered as multifactorial ocular surface disorder commonly associated with aged female population, primarily triggered by declining of hormones like estrogen and androgen. This hormonal imbalance leads to lacrimal gland dysfunction and meibomian gland atrophy, result in instability of tear film. From Ayurvedic point of view this clinical entity has close resembles *Shushkashipaka* or *Vata pitta* dominant ocular dysfunction associated with *Rasakshyaya*, *Dhatu kshaya*. While modern science manages this clinical entity with lubricating drops and anti-inflammatory agents which often provide transient relief, Ayurvedic management comprises of local therapy like *Netra Tarpana*, *Parisheka*, *Aschyotana*, *Nasya* well as systemic therapy like internal administration of *Rasayana* and *Vayasthapana Dravya*. They work by pacifying *Vata Pitta* imbalances, enhance tear film stability, improve ocular surfaces, and contribute to tissue regeneration. This article explores the ayurvedic therapeutic potential as a comprehensive system for restoring ocular homeostasis in menopausal dry eye disorder in women.

INTRODUCTION

Menopause is considered as a major biological transition in women life where ocular manifestation occurs due to declining ovarian hormones like estrogen and androgen, systemic aging and mucosal and epithelial physiology alteration. This hormonal shift makes ocular surface more sensitized because hormonal and inflammatory balance responsible for tear film stability, meibomian gland function, conjunctival health, corneal integrity and neurosensory signaling in normal state. In menopausal and post-menopausal state, dry eye comes out with most frequent entity manifests as burning sensation, grittiness, foreign body sensation, blurred vision and intermittent discomfort which frequently interfere with reading, screen use and overall quality of life. [1]

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Modern science considers menopausal dry eye not a simple tear deficiency, but it reflects a disturbance off ocular surface homeostasis driven by normal imbalance, immune inflammatory activation, reduced lipid secretion from meibomian gland and altered tear film dynamics. Earlier estrogen deficiency is considered more important cause but recently androgen depletion and broader endocrine inflammatory axis appear to be equally responsible in several patients. These factors make condition more towards integrative management approach which address both symptoms relief and systemic imbalances.[2]

In Ayurveda, eye is considered as supreme sense organ and *Shalakya tantra* a branch in Ayurveda deals with disorder related to above clavicle i.e. eyes, ear, nose, throat and head. The symptoms of menopausal dry eye close resemblance with *Shuskashipaka* and clinically related to Vata pitta imbalance with disturbance of *Snigdha* quality of ocular tissues. Ayurvedic external procedures like *Netra Tarpan*, *Ashyotana, Parisheka, Nasya* and internal administration of *Rasayana* and *Vayasthapana dravya* supports are traditionally in practice to restore

lubrication, nourishment and tissues resilience. This review reports modern and Ayurvedic perspective related to menopausal dry eye and for restoration of ocular homeostasis in women.[3]

AIM

To explore the role of *Rasayana* herbs and *Netra kriyakalpa* in restoring ocular homeostasis in menopausal patients.

MATERIAL AND METHOD

A conceptual and literature review was carried out based on classical Ayurvedic texts, journals and contemporary articles related to therapeutic role of *Rasayana* and *Netra kriyalalpa*

Pathophysiology [4,5]

Pathophysiology of menopausal dry eye is multifactorial, driven by several intersecting physiological mechanisms. Ovarian hormones like estrogen, androgen decline which alters ocular surface epithelial integrity, meibomian gland secretion and tear film composition.

Declining in lipid layer quality promotes faster evaporation, which causes tear film instability and increases osmolar stress. Simultaneously, inflammatory mediators raise goblet cell may decrease and corneal and conjunctival surface become more prone to microtrauma**.**

Due to age related co-morbidities, medication use, screen exposure, diabetes, autoimmune disorder and environmental dryness amplify this clinical entity. Some women complaint of intermittent symptoms rather than constant dryness due to instable tear film that produces fluctuating vision and discomfort that worsen during prolonged reading and digital work. From Ayurvedic point of view, this clinical entity aligns with *Vata* aggravation, ocular surface dryness and unctuousness, while aggravated *Pitta* may contribute to burning sensation and irritation when inflammatory symptoms predominate**.**

Ayurvedic Correlation[6,7]

Shuskashipaka shows close resemble as ayurvedic counterpart with dry eye syndrome and manifest as ocular dryness, discomfort and reduce natural lubrication. The pathophysiology can be interpreted as disorder of *Sneha-hani* including impaired moisture, depleted *dhatu* support and disturbed *Vata-Pitta* balance. In menopausal age women, this clinical entity amplifies as menopausal age itself as stage of natural *Vata* predominance, tissue depletion and altered metabolic support.

From Ayurvedic perspective, the therapeutic goal is not only symptomatic relief but also restoration of ocular nourishment, stability and functional clarity. This therapeutic intervention shows similarity with modern ocular surface homeostasis which include tear film integrity, epithelial repair neurosensory function and meibomian gland functions. The ayurvedic management includes layered approach like external procedure *Tarpan*, *Parisheka*, *Ashyotana* for ocular soothing, nasal administration and internally *Rasayana* and *Vayasthapana Dravya* for tissue nourishment and life style measure that decline further depletion.

Therapeutic Principles [8,9]

Management of menopausal dry eye includes local, systemic and supportive therapies. Choice of drug for this condition is *Vata-Pitta shamana Dravya*. Externally these *Dravya* use in the form of medicated *Ghrita* in *Netra tarpan* procedure which restore unctuous quality of ocular surface as it provides prolong contact of lipid and *Ghrita* based medicine with ocular surface which enhances lubricating and tissue unctuous properties. Procedure like *Parishaeka*, *Ashyotana* may help with soothing, cleansing and reducing irritation of ocular surface. Traditionally, Nasya is considered gateway of *Shironasa*, i.e. for all *Urdwajatrugata* (above clavical) disorders, medicine through nasal route supports in maintain ocular surface homeostatis by maintaining higher centre balanced condition.

Internally, *Rasayan* and *Vayasthapana Dravya* is considered more beneficial and recommended to improve dhatu nourishment and resistance. Ayurvedic *dravya* like *Shatavari, Amrita, Yastimadhu, Abhaya, Dhatri, Punarnava, Jivanti* and many more can be use in the form of *Ghrita, Churna* or *Vati* which has properties like rejuvenation, cooling, anti-inflammatory, eye tonic, *Medya rasayan* (brain tonic). These also have *Vata-Pitta* pacifying properties that are commonly described in practice.

Modern science also supports multimodal management in this condition. Along with topical therapy, hormonal therapy may support ocular surfaces function in some post-menopausal women. Therefore, an integrated and conservative ocular management must require emphasizing lubrication, inflammation control and tissue support which will establish as long term care.

Table 1: Clinical correlation between menopausal dry eye and *Shushkakshipaka*

Modern clinical feature	Likely biological basis	Ayurvedic correlation
Dryness	Reduced tear production or evaporation	*Shushkakshipaka, Sneha-hani*
Burning sensation	Ocular surface inflammation	*Pitta* association
Foreign body sensation	Tear film instability	*Vata* aggravation
Fluctuating vision	Irregular tear film breakup	*Vata*-dominant derangement
Redness and irritation	Surface stress and inflammation	*Pitta-Vata* involvement
Morning heaviness or stickiness	Meibomian dysfunction	*Kapha-Vata* imbalance

Table 2: *Shalakya Tantra* therapies for ocular homeostasis

Therapy	Probable role	Practical relevance in menopause
Netra Tarpana	Lubrication and nourishment	Useful for dryness, fatigue, and ocular discomfort
Ashchyotana	Immediate soothing and cleansing	Helpful mild to moderate symptoms
Parisheka	Cooling, anti-irritant effect	Useful when burning and irritation are prominent
Nasya	Head-eye pathway support	Considered useful in *Vata*-dominant ocular disorders
Ghrita-based internal support	*Rasayana* and *Sneha* replenishment	Helps systemic depletion and dryness
Diet and lifestyle regulation	Preventing further drying	Supports long-term symptom control

DISCUSSION [10-13]

The management of menopausal dry eye is often challenging as its manifestations are chronic, fluctuating and multifactorial. Many patients do not present as isolated ocular complaint but present with reduced reading comfort, difficulty in sustained work, burning sensation after screen exposure and tiredness feeling in eyes. This situation made disease highly relevant to quality of life especially middle-aged women who remain professionally and socially active. Dependent purely on lubricating strategy may offer temporary relief but it does not fully address the hormonal disturbances, inflammatory or tissue nourishing criteria of the disorders.

Addressing this challenge, *Shalakya tantra* offers an important conceptual contribution. Ayurvedic management does not only focus as local abnormality, but it considered as broader systemic and *Doshic* involvement. In menopausal aged women, the gradual decline in hormonal support interprets as *Vata* aggravation state which manifest as increase in ocular dryness, depletion and tear film instability whereas if burning sensation and irritation is involve aggravated *Pitta* may be involved.

This combines effect of both *Doshas* helps explain why some patients while management respond to cooling, oily and nurturing therapies than to purely drying and astringent measures.

External therapies like *Netra Tarpan* response better as it directly addresses the major symptoms of ocular dryness, irritation and visual fatigue. Theoretically, *Tarpan*, which *Ghrita* based procedure, enhances lubrication, protects epithelial integrity and reduces friction related discomfort that worsens with blinking and screen work.

Other procedures like *Parisheka* and *Ashyotana* are helpful in alleviating burning sensation and environmentally sensitive cases. Nasal administration medicines are clinically worthwhile in women with concurrent headache, nasal dryness or generalized *Vata* features. Although more clinical trials are still required.

The modern science focus on hormonal therapy along with lubrication therapy but not fully a definitive treatment. Studies shows limited effect of hormonal therapy and in some cases even worsening of meibomian gland dysfunction because of formulation and patient profile. This uncertainty in treatment required balanced individualized approach inspite of common management of all. Therefore, an integrated approach in which Ayurvedic management can be used as a low risk, symptoms oriented and constitution sensitive approach especially in women who prefer non hormonal treatment and required adjunctive care.

Limitation to current evidence based Ayurvedic management. Limited case report, small studies and descriptive review rather than large scale randomized controlled trials and management are also not always standardized. Validation of dry eye indices, tear breakup time, Schirmer testing, meibography where available should be done and quality of life tools to evaluate Ayurvedic management more rigorously.

CONCLUSION

Menopausal dry eye is therefore an ocular surfaces disorder in which there is disturbance in homeostasis mainly arising from hormonal decline, inflammatory condition and tear film instability. From Ayurvedic point of view, this condition has closely resembled with disease *Sushakshipaka* due to *Vata-Pitta* imbalances with depletion of ocular surface unctuousness quality. Management of this condition in ayurveda with external therapies as *Vata pitta shaman Dravya*, *Snehana, Tarpana, Nasya,* and internal use of *Rsasayana* and *Vayasthapana dravaya* helps in declining of symptoms of *Shusakshipaka* and also help un maintaining homeostatsis of ocular surfaces. Therefore, an integrated approach should be used for diagnosis as well for management level, lifestyle correction for preservation of ocular homeostasis, improve daily comfort and improve quality life.

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