

## NETRATARPANA: ROLE IN SIMPLE MYOPIA – A REVIEW ARTICLE

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### ABSTRACT

Eyes are the most precious gift of the God to the living beings and a good vision is prerequisite for an active and healthy life. Uncorrected refractive errors are considered as major cause of impaired vision and significant cause of blindness. Myopia has its significance as a global public health concern for the very reason W.H.O prioritizes its treatment in order to eliminate causes of avoidable blindness in Vision 2020. In spite of remarkable progress of modern ophthalmology the effective control of myopia is still a challenge. *Ayurveda* can be explored to find better alternative to manage this. In *Ayurvedic* classics, symptoms of myopia can be compared with *PrathamPatalgat Timira* which is one among *DristigatRogas*. *Tarpana* is the most revered *Kriyakalpa* procedure which gives nourishment to eyes and has curative as well as preventive effect and is extensively used in *DrishtigataRoga*.

**Keywords:** Myopia, *Tarpana*, *Kriyakalpa*, *Triphala ghrta*

### INTRODUCTION

Myopia a common refractive error in which the optical power of the eye is too strong for the corresponding axial length. Light rays from an object at infinity entering a non-accommodating myopic eye are converged too strongly and focus in front of the retina<sup>1</sup>. Uncorrected myopia is the leading cause of distance vision impairment globally. Myopia is highly prevalent disease. Nearly five billion people, that is about half the world's population, are poised to become myopic or short-sighted by the end of 2050, indicates a study according to the Indian express. Various surveys in India have found the myopia prevalence ranging from 6.9% to 19.7%<sup>2,3</sup>. Due to the significance of myopia as a global public health concern, it was chosen as a priority for Vision 2020,

World Health Organization's global initiative for the elimination of avoidable blindness by year 2020<sup>4</sup>. Most common method of myopia correction is spectacles but correction with spectacles is only palliative, as they cannot check further progression of the condition. Moreover, it keeps varying as the condition advances and also is not cosmetically accepted. Apart from spectacles the other options are contact lenses, refractive surgeries like LASIK which is both costly and unsuitable for children's eyes. Methods for the correction of myopia are not without complications, including corneal infections due to contact lens wearing, corneal scarring and persistent corneal haze from refractive surgery. Hence, the *Ayurvedic* science can be explored to find a better alternative to

manage this condition. Clinical *Shalakyatantra* manages eye ailments via topical and systemic measures and among these, topical therapy or *Kriyakalpa* plays more important role. As quoted in *AshtangaHridaya*, sincere efforts should be made by every individual to preserve vision till the last breath of life, because for an individual who is blind, day and night are the same and this beautiful world is of no use to him even if he possesses a lot of wealth. All efforts should be made for the strength of eyes, by resorting to *Nasya*, *Anjana*, *Tarpana* etc. Once vision is lost the versatility of the world will all become merged to one, of unified darkness.

#### AIM:

To study effect of *Tarpana karma* in simple myopia w.s.r to *pratham patalgatamiras* given in ayurvedic classical texts

#### OBJECTIVES:

1. Collection of various references of *tarpana karma* from available ayurvedic texts.
2. Enlightening the use, procedure and duration of *Tarpana* in ayurvedic texts.

#### MATERIAL AND METHODS:

All references were collected from original text of *Shusruta Samhita*, *Ashtanga Hridayam*, *Sharangdhar Samhita*.

#### KRIYAKALPA:

*BastiChikitsa* happens to be the *Chikitsardha* in *KayaChikitsa*, *Rakthamokshana-Chikitsardha* in *ShalyaChikitsa*, similarly *Kriyakalpa* form *Chikitsardha* in *Shalakyachikitsa*. When we refer to our classics for the therapeutic measures adopted in the management of eye diseases, we find that the management includes many of the topical treatments along with systemic ones. The reason might be that the drugs administered systematically may not cross the blood aqueous, blood-vitreous and blood-retinal barriers. *Kriyakalpa* is main therapeutic process for *netra roga*.

*Kriya* means to do, to perform (or) to practice; the word *Kriya* refers here to therapeutic procedures, which cures the disease without causing any adverse effects. *Kalpa* indicates the specific formulations adopted for the therapeutic procedures. Hence, the word *Kriyakalpa* means to perform proper treatment. *Kriyakalpas* are meant to alleviate the *Sthanika Khavaigunya* resulted out of vitiated *Doshas* & their impact on *Netra-Avayavas*. *KriyaKalpa's* can also be used as *Swasthya Sanrakshaka Prayoga* to maintain functional integrity of the sense organs & overcome age related disorders. *KriyaKalpas* includes *Seka*, *Aschyothana*, *Tarpana*, *Putapaka*, *Anjana*, *Vidalaka*, and *Pindi*<sup>5</sup>. Among all *Kriyakalpas*, *Netra Tarpana* is the foremost procedure for eye disorders.

#### NETRATARPANA

*NetraTarpana* is one of the specialized treatments for various eye disorders. The *Netra Tarpana* acts as both preventive and curative therapy for maintaining normal healthy condition of eye.

#### INDICATION<sup>6</sup>:

- If patient seeing darkness in front of eyes
- Dry eyes
- Hard lids with falling eyelashes
- Dirty eyes
- Squinting eyes
- Eyes badly affected with disease
- Vata* –*Pitta* predominant diseases

#### CONTRAINDICATIONS<sup>7</sup>:

- On a cloudy (or) very hot (or) cold days.
- In persons suffering from anxiety, tiredness, giddiness.
- In the condition of acute pain, inflammation, redness.
- In the eyes where complications have not abated.

#### PROCEDURE

*Tarpana* should be administered only after *Samshodhana* of *Shira* and *Kaya*<sup>8</sup>. *Tarpana* can be done either in early morning or evening only after

the digestion of any food taken previously. The patient is asked to lie down on his back, in a chamber free from direct sun rays, wind and dust, and is given mild fomentation with a cotton soaked in lukewarm water, then the eyes are encircled with firm, compact wall made up of paste of powdered Masha pulse (black gram). The height of this wall should be 2 *Angula*. The patient is asked to close the eyes and over the closed eyes, liquefied *Ghritamanda* is poured very slowly till the entire eyelashes are under the liquefied *Ghrita*. Patient is instructed to close and open his/her eyes (*Unmesha & Nimesha*). After retaining for the stipulated time, the liquid is drained out through the hole made near the outer canthus and the eye is irrigated by lukewarm water fomentation<sup>9</sup>. After finishing the main procedure of *Akshitarpana*, *Dhoompana* i.e. medicated smoke is given to the patient. Then patient is advised to avoid direct exposure to excessive cold, heat, wind, lustrous & shiny things.

#### MODIFICATION IN PROCEDURE OF TARPANA:

Nowadays, time is money and patients don't have so much time to undergo this traditional procedure. So, a new technique was developed. A swimming goggle is taken and its upper glasses are removed for

pouring medicine. There is no chance of leakage of the medicine in this method. This gives good results but is somewhat uncomfortable to the patient.

#### COURSE OF PROCEDURE:

*Sushruta*, without clarifying the condition of the eye, simply asks to perform the procedure for one day, three days and five days or till the proper satiating features are attained<sup>10</sup>. According to *AcharyaJejjata* for *Vataja* diseases *Tarpana* has to be done for 1 day, for *Pittaja* diseases *Tarpana* has to be done for 3 days, and for *Kaphaja* diseases *Tarpana* has to be done for 5 days. According to *AcharyaVideha*, *Tarpana* can be carried out daily or *Niranthara* or alternate day or with two days break or three days break depending on *Dosha & Teevratha* of *Vyadhias* well as *Swasthya*. According to *AcharyaVagbhatta*, *Tarpana* should be done daily in vitiation of *Vata*, on alternate days in *Pitta*, with an interval of two days in *Kapha* and in *Swastha* (healthy person) or till the eyes become fully satiated<sup>11</sup>.

#### PERIOD OF RETENTION:

*Tarpana* should be retained for a period, which is taken for counting the number of syllables mentioned according to the healthiness or unhealthiness of the eye. It can be summarized as below-

**Table 1: According to doshas**

Condition of eye	<i>Shusrutasamhita</i>	<i>Ashtangsamgraha</i>	<i>Astangahridya</i>	<i>Bhaavprakash</i>	<i>Sharangdharasamhita</i>
Healthy	500	500	500	500	500
<i>Kapha</i> predominant	600	500	500	500	500
<i>Pitta</i> predominant	800	600	600	600	-
<i>Vata</i> predominant	1000	1000	1000	1000	1000

**Table 2: According to site of lesion**

Site	<i>Shusrutasamhita</i>	<i>Ashtangsamgraha</i>	<i>Astangahridya</i>	<i>Bhaavprakash</i>	<i>Sharangdharasamhita</i>
<i>Sandhigata</i>	300	300	300	500	500
<i>Vartmagata</i>	100	100	100	100	100
<i>Shuklagata</i>	500	500	500	-	600
<i>Krishnagata</i>	700	700	700	700	700
<i>Drishtigata</i>	800	800	800	800	800
<i>Adhimantha</i>	1000	1000	1000	1000	1000

**SIGNS AND SYMPTOMS OF PROPER TARPANA<sup>12</sup>:**

Sound sleep, Blissful awakening, cessation of secretion, clearness of vision, discernment of individual color's, agreeable sensation, lightness of the eye and proper functioning of eye, ability of the eye to tolerate sunlight.

**COMPLICATIONS OF EXCESSIVE TARPANA<sup>13</sup>:**

Features of heaviness, indistinct vision, excessive oiliness, lacrimation, itching, stickiness and aggravation of *Doshas* especially *KaphaDosha* results from excessive *Tarpana*.

**EFFECT OF INADEQUATE TARPANA<sup>14</sup>:**

Dryness, indistinct vision, excessive lacrimation, intolerance to light and aggravation of the disease are the features of insufficient *Tarpana*.

**TREATMENT OF INADEQUATE AND EXCESSIVE TARPANA<sup>15</sup>:**

In these two conditions, treatment will be applied according to predominance of *Doshas* with *Dhoompana*, *Nasya*, *Anjana* and *Seka* either *Snigdha* or *Ruksha* are to be used for them. *Snigdha* in diseases of *Vata*, *Ruksha* in *Kapha* and *Sheeta* in *Pitta*.

**FORMULATIONS USED FOR TARPANA:**

- TriphalaGhrita*
- MahatriphlaGhrita*
- PatoladiGhrita*
- JeevantyadiGhrita*

**DISCUSSION**

Aqueous solutions and aqueous suspensions are the two forms of drug instillation in eye. In aqueous solution form the drug is totally dissolved, so the drug is completely available for immediate action. But it gets quickly diluted by tears and drains through naso-lacrimal duct. Hence, it causes low tissue contact time. Whereas in suspension forms the drug is

present as small particles suspended in aqueous medium and these do not leave the eye as early as solution. Hence it increases the tissue contact time. In cornea the epithelium and endothelium is lipid permeable i.e. lipophilic whereas stromal layer is hydrophilic. Hence the lipophilic and hydrophilic drugs are effectively delivered to cornea, whereas the drug permeability across the sclera depends upon the molecular size and weight of the drug.

The drugs used in *Tarpana* procedure is the combination of *Ghrita* and decoction of medicines, hence the drug can easily cross the corneal epithelium (being lipophilic) and endothelium (being hydrophilic). Also due to more contact time the active component of drug used in *Tarpana* will be absorbed more to cure the diseases. By virtue of *Sanskaranuvartana* property of *Ghrita*, it attains the properties of ingredients without losing its own. Also other drugs used with *ghrita* have *Chakusya* property (*Jeevantyadi ghrita*, *Triphla ghrita*, *Mahatriphla grita* etc) *.Ghrita* also contains properties like *Balya*, *Brimhana* and *Rasayana*, so it gives strength to the overall tissues of the eyeball as well as to the nervous tissues.. Moreover, the medicine preparations used in *Netra Tarpana* is in the form of suspension containing different particles of the drug and the particles do not leave the eye as quick as a solution. Tissue contact time and bioavailability is more and hence therapeutic concentration is achieved by *Netra Tarpana*. This facilitates the action of drug by two ways - one by allowing more absorption of the drug by corneal surface and secondly by exerting direct pressure upon the cornea. There may be changes in the refractive index of the cornea causing less convergence of light rays

**CONCLUSION**

*Ayurveda* has stated the importance of an eye with quote “*Sarvendriyanam nayanam pradhanam*” i.e. eye is the prime sense organ among the all sense organs, So sincere efforts should be made by every individual to preserve vision till the last breath of

life. *Ayurveda*, the ancient system of medicine gives valuable guide lines not only in treatment aspects but also in preventive line. *NetraTarpana karma* is one of the local therapeutic procedures which if properly used shows excellent response as a preventive as well as therapeutic measure in simple myopia. As existing management techniques are either cosmetically non-viable or non-affordable hence *Tarpana* can be explored as alternative for conventional therapies in refractive errors.

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