



A CLINICAL STUDY OF ROLE OF SHATAVARI GHRITA TARPAN IN THE MANAGEMENT OF TIMIR WITH SPECIAL REFERENCE TO MYOPIA

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ABSTRACT

Sushruta classified the eye diseases according to the lesion's site. 'Drishtigata Rogas' (diseases related to vision) are responsible for visual impairment, both partial and complete. *Timira* (myopia) comes under this group of diseases. *Sushruta* considers *Timira*, *Kacha* (myopia), and *Linganasha* (cataract) to be the progressive clinical stages of the disease *Linganasha*, whereas *Vagbhata* enumerates six types of *Timira* as separate entities. *Timira* is considered the most important one, causing difficulty in vision. A good deal of care must be exercised in carrying out its proper diagnosis and treatment. *Sushruta*, the father of ancient Indian surgery, has recommended 'Kriyakalpa' (medicinal therapies used for eye diseases) for managing *Timira* and other treatment forms. The term *Kriyakalpa* refers to the local treatment, which can be applied to almost all types of eye diseases, and it comprises *Tarpana*, *Pu-tapaka*, *Anjana*, *Ashchyotana* and *Seka*. Much of the work has been performed by *Timira Yoga* and *Kriyakalpa*. But none of them has an excellent modern objective parameter to diagnose the exact role of *Kriyakalpa* in the prognosis of *Timira* or Myopia. So, in this study, we have taken corneal topography as an objective test to assess the corneal changes responsible for myopia's prognosis. A controlled Clinical trial with 30 patients of *Timira* (myopia) was carried out for 15 days. Corneal Topography was done before and after the treatment. The Subjective criteria were *Vivhala Darshana* (Blurred vision), *Netratana* (Eye Strain), *Shirobhitapa* (Headache), *Durastha Avyakta darshana* (Indistinct Vision), *Netra srava* (Watering of the eye) and *Netra Daha* (Burning sensation). The objective criteria were Visual acuity, Refraction under mydriasis and Topography. According to statistical

analysis, it can be concluded that *Shatavari Ghrita Tarpana* (Use of Shatawari Ghrit in a medicinal procedure) is effective in Myopia. No side effects or adverse reactions were seen during treatment. *Netra Tarpana* with *Shatavari Ghrita* makes positive topographic changes, which is suggestive of flattening of the cornea and reduction of myopia. The Wilcoxon signed-rank test was used for all subjective criteria $|W| > W_{cr}$, hence $Z > 1.96$, $P < 0.05$. Therefore, *Shatavari ghrita tarpana* is significantly effective in decreasing this study's subjective criteria. For Visual acuity, $t=16.9$ for both eyes hence $p < 0.05$, For refraction under mydriasis, $t=12.78$ for the right and 9.61 for the left eye. $P < 0.05$ for both the eyes. The prognosis of Corneal topography is also significant as $t=3.75$ for both eyes, hence $p < 0.05$. Therefore, after completion of treatment, acceptance of glasses was increased significantly as $t=3.17$ for the right eye and 8.09 for the left eye, hence $p < 0.05$.

Keywords: *Linganasha, Kriyakalpa, Tarpan, Corneal Topography, Visual acuity, Refraction, Shatavari Ghrita*

INTRODUCTION

Sushruta classified the eye diseases according to the lesion's site.¹ 'Drishtigata Rogas' are responsible for visual impairment, both partial and complete.² Timira comes under this group of diseases. Sushruta considers *Timira, Kacha, and Linganasha* to be the progressive clinical stages of the disease *Linganasha*, whereas *Vagbhata* enumerates six types of *Timira* as separate entities.³ *Timira* is considered the most important one, causing difficulty in vision. A good deal of care must be exercised in carrying out its proper diagnosis and treatment.

The anatomical considerations of the *Patalas* (considered anatomical structure in eye) and symptoms of the vitiated *Doshas* (basic principles of Ayurveda) situated in these *Patalas* reveal that the word 'Timira', described as an ocular pathology in Ayurveda, is nothing but errors of refraction.⁴ So, a detailed conceptual and clinical study is needed to explore the disease's aetio-pathogenesis and symptomatology in Ayurveda using modern parameters. Myopia, a form of refractive error where the distant vision is compromised, embraces a large section of the Present-day population. Myopia and other refractive errors account for about 7% of the causes of blindness in India.⁵ It is clinically classified into simple or low myopia and pathological or progressive myopia. The future of each patient with myopia should be considered as a threatened loss of vision, as progressive high myopia leads to rapid deterioration of vision, sharply reduces the range of professional accessibility to a person, and often ends in disability. So, many educational estab-

lishments and high technical institutions only accept persons with high myopia. Sushruta, the father of ancient Indian surgery, has recommended 'Kriyakalpa' for managing *Timira and other treatment forms*.⁶ The term *Kriyakalpa* refers to the local treatment, which can be applied to almost all types of eye diseases, and it comprises *Tarpana, Putapaka, Anjana, Ashchyotana* and *Seka*. Much of the work has been performed according to *Timira roga* and *Kriyakalpa*. But none of them has an excellent modern objective parameter to diagnose the exact role of *Kriyakalpa* in the prognosis of *Timira* or Myopia. So, in this study, we have taken corneal topography as an objective test to assess the corneal changes responsible for myopia's prognosis. Corneal topography, or photo keratoscopy or video-keratography, is a non-invasive medical imaging technique for mapping the cornea's surface curvature, the eye's outer structure. Since the cornea is usually responsible for some 70% of the eye's refractive power, its topography is critical in determining the quality of vision and corneal health.

AIM AND OBJECTIVES: AIM: To assess the efficacy of Shatavari Ghrita in the management of Timira and Myopia.

OBJECTIVES:

1. To study *Timira Vyadhi* in detail.
2. To study Myopia in detail.
3. To study *Shatavari Ghrita* in detail.
4. To investigate the efficacy of *Shatavari Ghrita*.

MATERIAL AND METHODS:

Type of Study: A controlled randomised clinical trial was performed at the Shalakyatantra Netraroga Department OPD College Hospital.

Sample Size: 30 Patients from OPD who were diagnosed with Timira (Myopia) were selected randomly, and *Netratarpan* with *Shatavari Ghrita* was performed for seven days. All patients were followed up on the 1st, 7th and 15th day.

Inclusion Criteria:

- 1) Patients who had signs and symptoms of Timir (myopia) were selected.
- 2) Patients from the age group 10 years to 40 years were selected.
- 3) Patients up to -6D power
- 4) Regardless of gender, religion, or socioeconomic status.

Exclusion Criteria:

- 1) Congenital anomalies of an eye.
- 2) Patients with other known ocular pathology, e.g. bacterial conjunctivitis, corneal involvement, etc.
- 3) High myopia with degenerative and retinal changes, Lenticular myopia
- 4) Patients are suffering from systemic disorders.
- 5) Patients who have undergone any of the refractive surgery.

Withdrawal Criteria:

- 1) Any adverse effect of medicine seen in patients at any study stage.
- 2) The patient is not willing to continue treatment and follow-up.
- 3) Any local injury or local infection occurred during the study.

Subjective Criteria:

1. *Vivhala Darshana:* a) Absent – 0 - D/V till 6/6 b) Mild – 1- D/V till 6/9 c) Moderate - 2 - D/V till 6/18
d) severe – 3 - D/V above 6/18
2. *Netra tana:* a) Absent – 0 - starts after 6 hours of continuous work b) Mild – 1- starts after 4 hours of continuous work c) Moderate - 2 - starts after 2 hours of continuous work d) Severe -3 - starts before 2 hours of continuous work.
3. *Shirobhitapa:* a) Absent – 0 - No Headache b) Mild – 1- occasional Headache c) Moderate - 2 - Irregular attacks of frequent headache d) severe – 3 - Continuous Headache

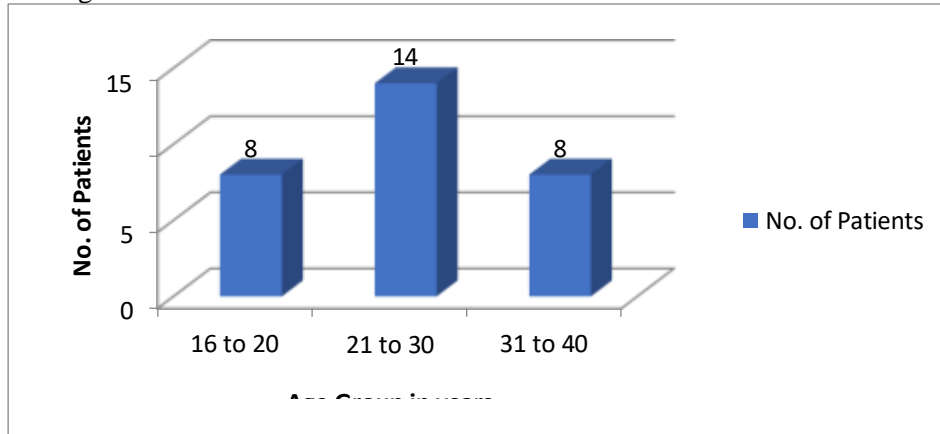
4. *Netrasrava:* a) Absent – 0 - No watering b) Mild – 1- frequent watering not interrupting the regular work c) Moderate - 2 - frequent watering interrupting the regular work d) severe – 3 - continuous watering.
5. *Doorasth-avyaktani-darshana:* a) Absent – 0 - D/V till 6/6 b) Mild – 1- D/V till 6/9 c) Moderate - 2 - D/V till 6/18 d) severe – 3 - D/V above 6/18
6. *Netradaha:* a) Absent – 0 - No burning b) Mild – 1- frequent burning not interrupting the regular work.
c) Moderate - 2 - Frequent burning interrupts the regular work d) severe – 3 – Continuous burning.

Objective Criteria:

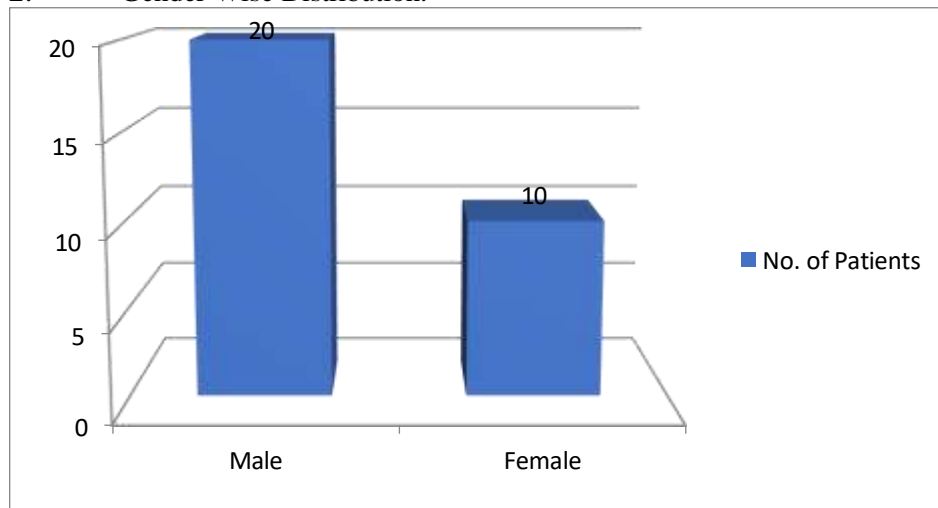
- 1) Visual Acuity
- 2) Refraction under mydriasis
- 3) Topography

Observation and Results:

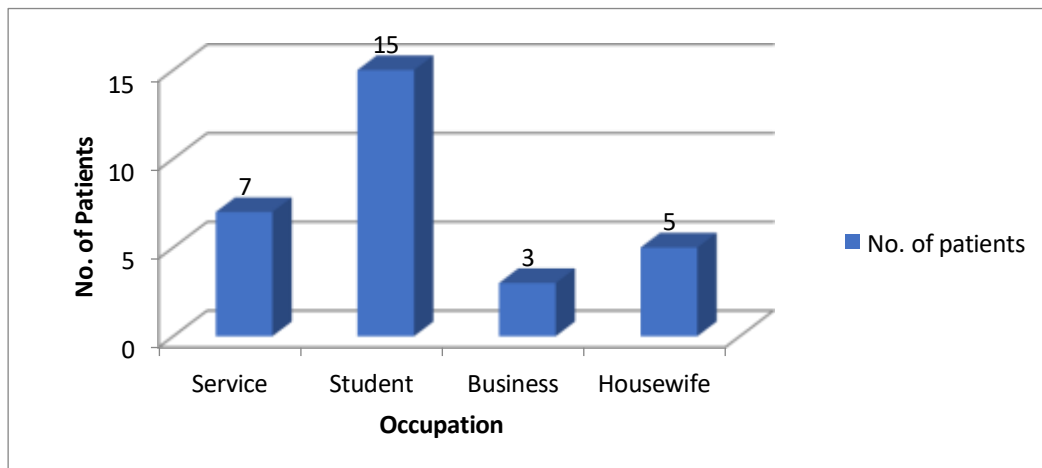
1. Age-wise Distribution:



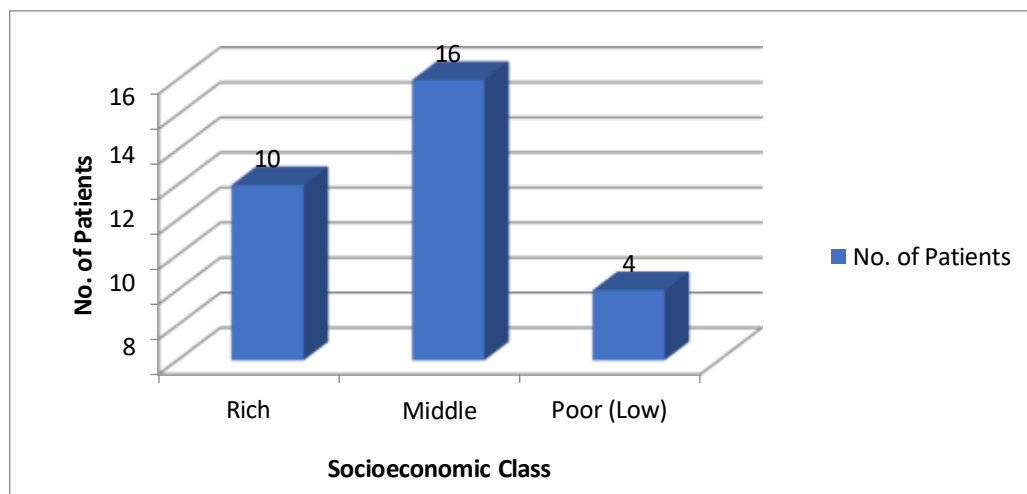
2. Gender Wise Distribution:



3. Occupation wise Distribution:



4. Socioeconomic Status-wise Distribution:



1. *Vivhal Darshana* (Blurred Vision):

	N	W	WCr	σW	Z	Significance
Right Eye	30	415	151	97.23	4.18	Significant
Left Eye	30	415	151	97.23	4.18	Significant

2. *Netratana* (Eye Strain):

	N	W	WCr	σW	Z	Significance
Right Eye	30	405	151	97.23	3.78	Significant
Left Eye	30	405	151	97.23	3.78	Significant

3. *Shirobhitapa* (Headache):

	N	W	WCr	σW	Z	Significance
Right Eye	28	406	130	87.83	4.62	Significant
Left Eye	28	406	130	87.83	4.62	Significant

4. *Durastha Avyakta Darshana* (Indistinct distant vision):

	N	W	WCr	σW	Z	Significance
Right Eye	30	465	151	97.23	4.78	Significant
Left Eye	30	435	151	97.23	4.47	Significant

5. *Netra Strava* (Watering):

	N	W	WCr	σW	Z	Significance
Right Eye	15	120	30	97.23	3.40	Significant
Left Eye	15	120	30	97.23	3.40	Significant

6. *Netra Daha* (Burning sensation of eyes):

	N	W	WCr	σW	Z	Significance
Right Eye	25	325	100	97.23	4.37	Significant
Left Eye	25	325	100	97.23	4.37	Significant

7. Visual Acuity:

Criteria	Eye Side	A.M.	S.D.	S.E.	t cal	Significance
Visual Acuity	Right	0.9	0.31	0.06	16.9	Significant
	Left	0.9	0.31	0.06	16.9	Significant

8. Refraction under mydriasis:

Criteria	Eye Side	A.M.	S.D.	S.E.	t cal	Significance
Refraction under mydriasis	Right	0.37	0.16	0.03	12.78	Significant
	Left	0.37	0.20	0.04	9.61	Significant

9. Topography:

Criteria	Eye Side	A.M.	S.D.	S.E.	t cal	Significance
Topography	Right	0.47	0.68	0.12	3.75	Significant
	Left	0.47	0.68	0.12	3.75	Significant

10. Acceptance of glasses:

Criteria	Eye Side	A.M.	S.D.	S.E.	t cal	Significance
Acceptance of glasses	Right	0.28	0.49	0.09	3.17	Significant
	Left	0.36	0.24	0.04	8.09	Significant

DISCUSSION

Timira is a disease when the vitiated *Doshas* are situated in the first and second *Patala*. The disease progresses to *Kacha* and *Linganasha* when the *Doshas* involve the third and fourth *Patala*.⁷ The clinical picture of vitiated *Doshas* in the first and second *Patalas*, which are analysed here, simulates very much with refractive errors, including myopia. So, the disease myopia was selected as *Timira* for the clinical study and treatment was given accordingly.⁸

Myopia or shortsightedness is a refractive error in which parallel rays of light from infinity are focused in front of the retina when accommodation is at rest. Reduced unaided visual acuity is a possible indication of myopia, mainly when unaided near visual acuity is average or better than unaided distance acuity. Myopia can be detected by visual acuity testing, retinoscopy, autorefraction or photorefraction during vision screening or clinical examination. There is no universally accepted method of preventing myopia. Therefore, corrective and curative approaches should be found for myopia.

Corneal topography, or photokeratoscopy or videokeratography, is a non-invasive medical imaging technique for mapping the cornea's surface curvature, the eye's outer structure. Since the cornea is usually responsible for some 70% of the eye's refractive power, its topography is critical in determining the quality of vision and corneal health. Corneal topography is used in the diagnosis and management of various corneal curvature abnormalities and diseases, such as:

1. Myopia: Planning refractive surgery such as LASIK
2. Keratoconus, a degenerative condition that causes a thinning of the cornea.

3. Post cataract surgery.
4. Limbal relaxing incision surgery
5. Corneal scars or opacities
6. Fitting contact lenses
7. Corneal deformities
8. Corneal transplant or keratoplasty surgery

Therefore, this is an excellent method to diagnose and assess the prognosis of Myopia due to different treatment modalities.

Shatavari is *Tikta*, *Kashaya* and *Madhura rasatmaka*, it is *Shita* in *Virya*, *Daha Shamaka*, *Rakta prasadana* and *Chakshushya*.⁹ *Timira* is a disease of the First and Second *Patalagata dosha*. The First *Patala* of the eye is *Tejo-Jalashrita* (*Rasa*, *Rakta*), and the *Second Patala* is *Mansashrita*. According to *Charakacharya*, when *doshas* accumulate at *Indriya* due to their *Vridhi* and *Vimargagamana*, it produces impaired function of that *indriya* or irritation. So, the significant events of *Samprapti* of *Timira* can be enumerated as

1. *Tridosha Dushti* at their sites due to their own *Doshaprapakopaka hetus*.
2. *Vimargagamana* of *tridoshas* to *Drishti* due to *Khavaigunya* or *Sanga* in *Rupavaha sira* due to *Ama* formation.
3. *Prathama Patala dushti* – *Avyakta Darshana*
4. *Dvitiya patala dushti* – *Vivhala Darshana*
5. Production of other symptoms.

Ghrita is a medicine with a very specialised property of *Sanskaranuvartana*, i.e. it carries all the properties of all *padarthas* to which it comes in to contact during any *Sanskara*. Also, it has the *Sukshma* property to reach the smallest element of the body. Also, it gets absorbed at all places of the body, being a *sneha*. Therefore, it is a perfect medium for delivering the specific dosages of medicines at particular sites. *Vivhala Darshana* and *Durastha Avyakta Darshana*

are the two symptoms caused by the vitiation of the site, i.e. *Prathama* and *Dwitiya Patala*. The First *Patala* is *Rasa* and *Raktashrita*, and the second *Patala* is *Mansashrita*. *Shatavari Ghrita* has *Tridosha Shamaka*, *Rakta Doshahara*, *Rasa Rakta Prasadana*, *Shaithilyahara* and *Chakshushya* properties, which can improve *Rasa*, *Rakta* and *Mansa Dhatu* at *Drishti* also can improve *Rasarakta Sanvahana* at the site which may cause improvement of the site. *Netratana*, *Shirobhitapa* and *Netra Daha* are the symptoms caused by vitiated *Vata* and *Pitta Dosha*. *Ghrita* itself is a *Vatapitta Nashaka*, and *Shatavari Ghrita* is *Tridosha Nashaka* so that it may reduce vitiation of *Vata* and *Pitta Doshas* also *Tikta*, *Kashaya* and *Madhura Rasa*, *Shita virya*, *Snigdha* and *Daha-shamaka guna* and *Raktaprasadana* property helps to reduce *Vata-Pitta prakopa*. *Netrastrava* is the symptom which arises due to *Kapha* and *Vata prakopa*. *Ghrita* itself is strong *Vata shamaka*. Due to *Tikta* and *Kashaya Rasa* and *Laghu Guna*, it becomes *Kaphanashaka*. During the *Tarpana* procedure, we use warm *Ghrita* in contact with the eye for up to 20 minutes. Being a lipid, it can be absorbed by skin, mucosa, sclera, etc. Also, due to the warmth of the oil, blood circulation increases towards the eye during the *Tarpana* procedure. It causes an increased nutritional supply towards the eye. Also, the excretion of some part of *ghrita* through the *Nasolacrimal duct* causes improvement in the excretion of tears and improves the immunity of the eye. *The Tarpana procedure improves tear formation and its excretion and helps the eye to rejuvenate all the time*. Due to the normalisation of excretion, it causes a decrease in excess pressure, and due to the action of *Ghrita*, the elasticity of the cornea may increase, which together may cause flattening of the cornea and thus show improvement in *Corneal Topographical Readings*.

CONCLUSION

Netratarpana with *Shatavari Ghruta* is very effective in treating *Timira*, i.e. *Myopia*. *Netratarpana* increases the elasticity of the cornea and normalises the excretion at the eyesight, hence causing flattening of the cornea, thus improving myopia.

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