



## A comparative study on vibhitakaadi ghrita tarpana and putapaka in the management of vataja timira with special reference to astigmatism

Dr. Shwetha R<sup>1\*</sup>, Dr S M Pasha<sup>2</sup>

<sup>1</sup>Final Year PG scholar, Dept. of Shalaky Tantra, G.A.M.C, Bengaluru

<sup>2</sup>HOD, Dept. of Shalaky Tantra, G.A.M.C, Bengaluru.

\*Corresponding Author: Dr. Shwetha R

### ABSTRACT

#### Background

Astigmatism is a refractive error where in the refraction varies in different meridians, resulting in blurriness & distorted of vision. The increase in the incidence of astigmatism along with other refractive errors is due to the present life style, where in there is excessive use of computers, television and junk food<sup>1</sup>. *Avyakta darshana, vyavidha darshana* is the symptom mentioned in *vataja timira*<sup>2</sup>, which is seen in astigmatism, where in the patient experiences blurriness and distorted of vision. Our acharyas have mentioned number of *kriyakalpas, yogas* and *chakshushya* regime for curing *Timira*. *Tarpana* is one such *kriya kalpa*, which is non-invasive and cost effective, *Vibhitakaadi ghrita* is described as a potent yoga, which cures many *netra rogas* including *timira*. So in present study an attempt is made to evaluate the effect of *Vibhitakaadi ghrita tarpana* and *putapaka* in *vataja timira*. The assessment of the result was done based on the subjective and objective parameters.

#### Results

It is statistically proved that overall effect of *Vibhitakaadi ghrita tarpana* and *Putapaka* (group B) showed better results in comparison to *tarpana* with *Vibhitakaadi ghrita* (group A).

**Keywords:** Vatajatimira, Akshitarpana, Prasadana putapaka, Astigmatism.

### INTRODUCTION

*Netra* is one of the *uttama indriya*, there by our *acharyas* have described the *netra shareera, kriya, rogas* and its management in detail.

According to NCBI survey, refractive errors are the second main cause of curable blindness in India, which accounts to about 37.6% of total blindness. Astigmatism is one among them.

Astigmatism is a refractive error where in the refraction varies in different meridians, resulting in blurriness of vision. The increase in the incidence of astigmatism along with other refractive errors is due to the present life style, where in there is excessive use of computers, television and junk food.

Astigmatism is corrected using spectacles, contact lens, surgical procedures like LASIK, Keratectomy

etc., but these measures neither cures the disease nor checks its progression and all of these treatment have their own complications like, spectacles causes cosmetic problems, contact lenses causes corneal abrasions and surgeries like LASIK can cause keratitis, corneal perforation etc and are expensive too.

Our acharyas have mentioned number of *kriyakalpas*, *yogas* and *chakshushya* regime for curing *Timira*. *Tarpana* is one such *kriya kalpa*, which is non-invasive and cost effective, *Vibhitakaadi ghritha* is described as a potent yoga, which cures many *netra rogas* including *timira*.

The present comparative study was conducted to evaluate the effect of *Tarpana* with *Vibhitakadi ghritha* and *putapaka* in the management of *timira* with special reference to Astigmatism.

## OBJECTIVES

- To evaluate the efficacy of *Tarpana* with *Vibhitakaadi Ghritha* in the management of *Vataja timira* with respect to Astigmatism.
- To evaluate the efficacy of *Prasadana Putapaka* in the management of *Vataja timira* with respect to Astigmatism.
- To evaluate the combined effect of *Vibhitakadi ghritha*, *Tarpana* and *Prasadana Putapaka* in the management of *Vataja timira* with respect to Astigmatism.
- To prevent Astigmatism from further progression and deterioration.

## METHOD OF COLLECTION OF DATA

Patients presenting with clinical symptoms of simple Myopic Astigmatism were taken for the study irrespective of sex, religion, socioeconomic status and occupation.

### Inclusion criteria

- Patients presenting with the clinical symptoms of *vatajatimira* namely, defective vision, blurring of objects with or without asthenopic symptoms.
- Patients between the age group of 6-30 years.
- Refractive error ranging from -0.25D to -5D (cylindrical and spherico cylindrical).

- Visual acuity of the patient should be 6/6 with the best possible correction.

### Exclusion criteria

- Simple and Compound Hypermetropic, Irregular Astigmatism.
- Congenital, Progressive and Pathological Astigmatism.
- Keratoconus
- Patient suffering from Astigmatism associated with other systemic disorders.
- All other *Drishtigatavikaras* including *Timira* affecting 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>, *patalas*.

### Interventional phase

Patients were randomly divided into 2 groups on basis of management as Group A and Group B, consisting of 20 patients each.

- **Group A:** 20 patients were treated with *Tarpana* with *Vibhitakaadighritha*, which was prepared by myself in the *Shalakyatantra* department. Procedure was done once a day in the morning for 5 days, with a gap of 30 days and the same procedure was repeated consecutively for 3times.
- **Group B:** 20 patients were treated with *Tarpana* with *Vibhitakaadighritha* was done once a day in the morning for 5days, followed by *Prasadana putapaka* for 2days and the same procedure was repeated for 3times with a gap of 30days.

Out of 40 patients in group A and group B, 21 patients were Male and 19 patients were females. Students 75%, software 15% and business 10%, 40% patients were vegetarians and 60% patients had mixed diet habit, 12.5% belonged to lower middle class, 75% were from middle class and 12.5% were from upper class, 87.5% were belonged to Hindu religion and 10% belonged to Muslim religion.

Maximum number of patients had the etiology of *Sukshma nireekshana* 12 (30%), followed by dietary abnormalities 17(42.5%), suppression of natural urge 1 (2.5%), worries 4(10%), disturbed sleep 5 (12.5%) and anger 1 (2.5%).

Among 40 patients, 40 patients (100%) presented with the symptom of *Avyaktadarshana*, 40 patients (100%) presented with *Vyavidddadarshana*, 19 patients (47.5%) had eye strain, 27 patients (67.5%) had Headache and 4 patients (10%) had watering eyes.

**Observation****Comparative results of group A and group B****Table: Comparative results of Group-A and Group-B**

Characteristics	Group-A			Group-B		
	Mean score		Percentage of relief	Mean score		Percentage of relief
	BT	AT		BT	AT	
AVYAKTA DARSHANA	2.200	0.850	61%	2.000	0.550	72%
VYAVIDDA DARSHANA	2.200	0.800	63%	2.000	0.850	57%
EYES STRAIN	0.900	0.200	77%	1.250	0.150	88%
HEADACHE	0.850	0.1000	88%	1.450	0.0500	96%
WATERING OF EYES	0.300	0.0500	83%	0.0500	0.000	100%
VISUAL ACUITY	3.250	1.500	53%	3.350	1.350	59%
AUTO REFRACTION	2.150	1.200	44%	1.700	0.800	52%

The percentage of improvement in Group A on *Avyakta darshana* is 61%, *Vyavidda darshana* is 63%, Eyes Strain is 77%, Headache is 88%, Watering of Eyes is 83%, Visual Acuity is 53% and Auto Refraction is 44%.

The percentage of improvement in Group B on *Avyakta darshana* is 72%, *Vyavidda darshana* is 57%, Eyes Strain is 88%, Headache is 96%, Watering of Eye sis 100%, Visual Acuity is 59%, and Auto Refraction is 52%.

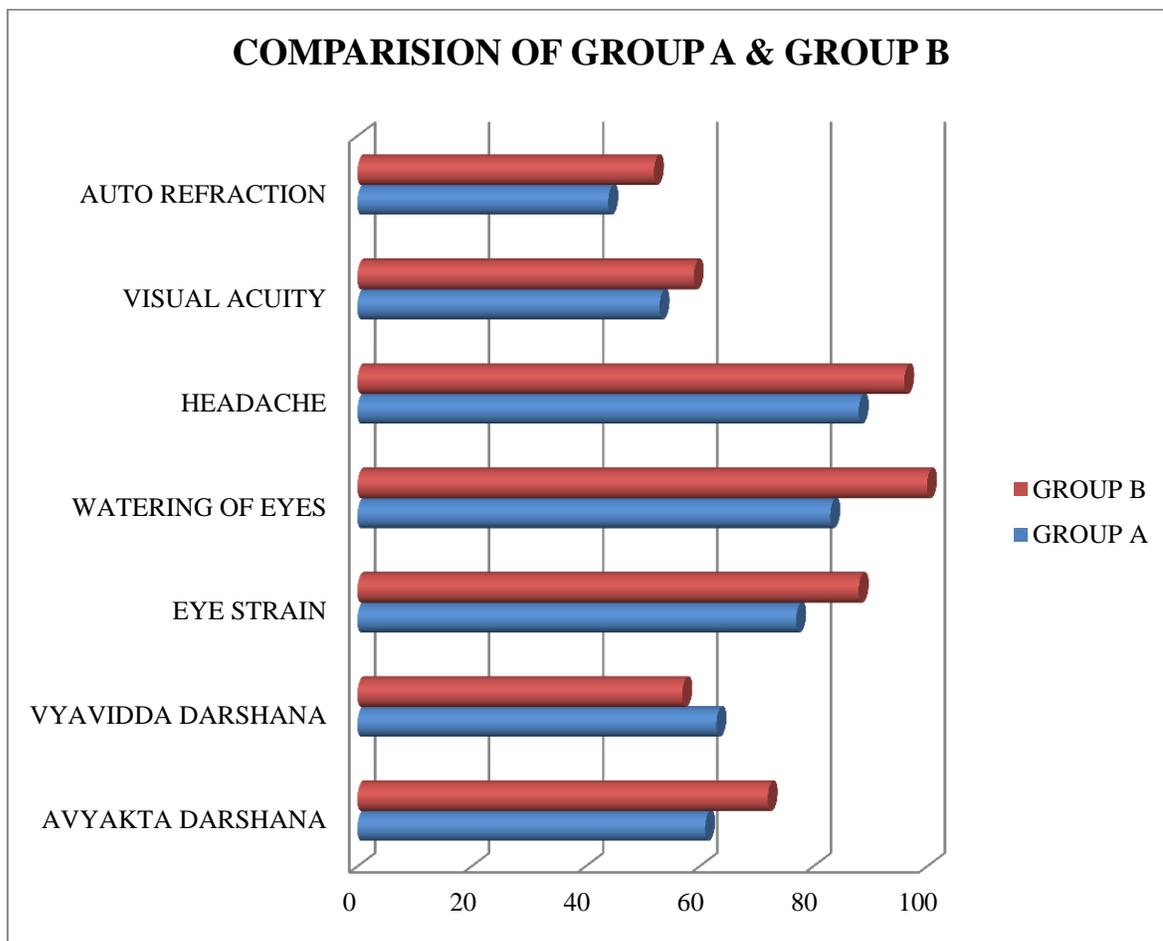
**Table: Comparative results of Group A and Group B**

Group A	Group B	Mean Difference	SE ( $\pm$ )	T value	P value
63.4	70.0	6.600	3.192	1.160	<0.05

Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with paired t test. The test shows that

the treatment is statistically significant in Group B when compared to Group A. Group A overall result is 63.4% and Group B overall result is 70%.

**Diagram: Comparative results of Group A & Group B**



**DISCUSSION**

Discussion forms a very important and crucial part of any scientific research. It is nothing but the logical reasoning of observations. It helps in the rational analysis and interpretation of the data collected and results obtained. This ultimately helps in drawing proper conclusion also understanding and interpreting the subject with reference to its merits and demerits.

Eye is one among the five sense organs which is most important to lead life for every individual on earth. Myopic Astigmatism is a condition with social, educational and economic consequences where the person cannot focus on distant objects without any optical devices. Children are the major sufferers and make them often feel handicapped and this even limits some of the professional choices. As long as there is complete vision achieved with optical devices, there might be a substantial psychological problem rather a real medical problem.

Modern science has many ways of intervention in managing myopia but some of it has own limitations. Contact lenses are usually needs to be cleaned regularly along with the risk of infection and corneal scarring. Latest surgical approach like LASIK, gives perfect sight to some of them but it’s not applicable to all. Also it has some complications like Ectasia, poor night vision, dry eyes etc.

So, looking into the above mentioned factors there is enough reason to find out the other ways to tackle the problem. In this regard ayurvedic approach can be beneficial in decreasing the Astigmatism in some, hold the progression in others and in some cases preventing it altogether.

Among 40 patients, maximum of 27.5% were in the age group of 6- 10 years and 21-25years, 17.5% in 11 -15yrs and 26-30years of age group and 10% under 16-20yrs of age group. In the present study age was limited from 6years to 30 years as the disease, Myopia Astigmatism is generally is at its

peak at 6yrs-10yrs and progresses gradually and stops progression by 22-25yrs. It is a significant observation that the disease manifests in young and teenagers.

The present clinical study on Astigmatism reveals that there is a male predominance. But according to textual reference predominance of female is more in Astigmatism. So, the present study data signifies that large number of samples is required to assess the exact ratio.

Religion wise distribution of 40 patients showed 87.5% were Hindus, 10% were Muslims. This reflects the geographical predominance of Hindu community in this particular region and signifies nothing.

This shows the predominance of middle socioeconomic class in the area of study. The *Vibhitakaadi ghrityoga* (formulation) is considered as '*Sarvanetrarogahara*'. In the present study (*Vatajatimira*) *vikrutadosha* is considered as '*vata*' but in spite of *vata* involvement burning sensation and watering of eyes could notice as symptoms so the responsible *dosha* for this symptomatic changes is *pitta* and *kapha* hence, only with the help of *vata* *shamana* drugs will not be helpful for the better result in the symptoms. So selection of *tridosahara* and *Chakshushya* drugs is considered as best therapeutic drugs for this condition.

Ghrita is the best among all JangamaSnehas and acts as Balavardhaka, Ojovardhaka, Vayasthapana, Agni deepana and Dhatuposhaka.

According to Charaka (Ch.Sam.Su. 13/14), Ghrita is effective in subsiding Pittaja and Vataja disorders, it improves Dhatus and is overall booster for improving Ojas<sup>3</sup>.

The Ghrita has the quality of trespassing into minutest channels of the body. Hence when applied in the eye, it enters into deeper layer of *Dhatus* and cleanses every minute part of them. Moreover, Ghrita due to its *Samsakaranuvartana* quality easily imbibes the properties of other drugs processed with it without leaving its own properties.

Also in the description of the *Drishti*, *Sushruta* has mentioned that *Sheetadravyas* are *Satmya* (Wholesome) for *Drishti*. Ghrita is also *SheetaVirya*, hence the eye being the site of *Alochaka Pitta* can be effectively managed by constantly using Ghee. Ghee also possesses properties like Balya, Brimhana and Rasayana, so it

gives strength to the overall tissues of the eyeball as well as to the nervous tissues.

*Ghrita* contains approximately 8% lower saturated fatty acids which makes it easily digestible. It contains Vit A, Vit E and  $\beta$  carotene which are anti-oxidants and are helpful in reducing ketone bodies and prevents the oxidative injury to the body. Mainly Vit A keeps the epithelial tissue of the body intact, keeps the outer layer of the eyeball moist and prevents blindness.

#### Vibhitakaadi ghrita [4]

**Triphala** : Amalaki, Vibhitaki and Haritaki together it is called as triphala, Acharya's have mentioned triphala as *chakshushya*.

**Nimba, Patola and Vasa** which contain *tikta rasa*, does *shamana* of *pitta* & *kaphadosha* there by promoting the vision, increasing vascularity in eye.

According to *AcharyaCharaka*, *Timira* is *VataNanatmajaaVyadhi*, so mainly *Vata* predominant causative factors are responsible for *Timira*.

*Acharya* also said that *Avyaktavastha* is prodromal sign of *NanatmajaVyadhi*. It means that there is no specific *Rupa* of the disease. The only clinical feature of (*vatajatimira*) first *Patala* pathology is indistinct vision, and distorted vision. As the *Doshas* vitiate the superficial *Dhatus* only, the prognosis is good.

*Kriyakalpa* is one such group of special methods of drug administration locally into the eyes for the treatment of eye diseases, in which *Tarpana* is foremost procedure for *Timira* and provides *Vatashamaka* effect and nourishment to the eyes and improves visual acuity.

**Poorva karma**: Just mild *sthanika swedana* was administered to the patients.

#### Effects of Swedana

*AcharyaCharaka* has described mechanism of *Swedana Karma* as given below:

- ✓ It helps to dissolve *Shleshma*.
- ✓ It makes the channels soft, by which *Vatadi Doshas* and other contents can flow in their normal directions.
- ✓ It increases the secretion of vitiated *Shleshma* through the channel.

So, due to *Ushna Guna* of *Swedana*, there will be pseudo inflammatory changes in the tissues and thus help's in easy absorption of *tarpana* drugs.

**Pradhana karma:** *Tarpana* is one among the *kriyakalpas* mentioned by *acharyas* in management of *netraroga*, and *tarpana* is carried out with the help of various *ghrita* preparations only. As discussed earlier the disease *timira* is *vatapradhana tridoshaja vyadhi*. When we look at above said qualities of *Ghrita*, mode of action for *Akshitarpana Kriya* can be understood.

### Considering the modern pharmacological action

Penetration of ocular drugs takes place through cornea, conjunctiva and sclera. As the corneal epithelium is rich in cellular membranes, it is susceptible to penetration of drugs which are lipophilic in nature. Thus drug with ghee as a base used in *tarpana* is easily absorbed and also penetration of fat soluble substances is high through cornea.

Ghee preparation is in the form of suspension containing different sized particles of the drugs and the particles do not leave the eye as quick as solution. The viscous nature of Ghee prevents it from disposal through nasolacrimal route which is the major problem with conventional eye drops in the form of solutions; hence the desired absorption of the active principles can be obtained.

Tissue contact time and bioavailability is more, hence desired therapeutic effect can be obtained. Conjunctiva is highly vascular structure so, by using warm ghee it produces transient vasodilatation of blood rich conjunctiva and as the surface area is more, absorption of the drugs will also be more.

According to modern pathology the clinical condition of Astigmatism is majorly produced due to the changes in the refractive index or curvatural changes in the cornea.

*Tarpana* may produce its action at the level of axis, and corneal curvature probably by:

- 1) Pressure effect
- 2) Drug absorption into deeper tissues.

The medicated Ghee is placed over the eyeball directly for specified time. This may produce soothing effect and pressure on the cornea and thus brings uniformity in its curvature. The absorbed drug is transported into anterior ciliary and posterior ciliary vessels and through it later on enters the choroidal and retinal circulation. The absorption of *gritha* into deeper layers is responsible for strengthening the retina and posterior segment of eye

and thereby preventing the damage caused on to the eye.

Through cornea the drug diffuses into the aqueous and may show changes in the refractive index. Later drug enters the retinal circulation via retinal capillaries.

Desired therapeutic action is because of the increased bioavailability of the drug, prolonged use of drug with large area of tissue contact and decreased disposal of the drugs through nasolacrimal passage owing to the viscosity of ghee.

### Mode of action of *putapaka*

The procedure of *Putapaka* is similar to *Tarpana*, but the ingredients, preparation of medicine and durations are different. Just as body becomes fatigued after *snehana* therapy, eyes become fatigued after *tarpana* therapy; in order to restore the strength to the eyes, *putapaka* therapy should be done.

The *prasadana putapaka*<sup>5</sup> involves use of animal fats or part like liver which are rich in proteins, minerals like Ca, P, Zn, K, Vit C & K these help for tissue regeneration. And *Tikta dravyas* enhance their respective function.

Basically, the idea behind this procedure is to use cooked medicine by the use of convection cooking and closed chamber cooking retaining all the essential elements, using fat and water soluble extracts from the herbs and other ingredients, keep them in contact with the epithelium of cornea. There by transferring essential elements to them. This method should be perceived as soothing and healing method.

Both *tarpana* and *putapaka* are the *santarpana* methods for the eye. Excessively nourished eye or oiled eye is brought to normal Ph by the help of *putapaka*. Hence *putapaka* always follows *tarpana*.

### CONCLUSION

Astigmatism is the most prevalent condition in the present era. It limits the occupational choices with substantial social, educational, economic impact and contributes to increased risk of vision threatening conditions.

Astigmatism can be correlated with the *Vataja Timira* explained in our classics clinically and pathologically to some extent.

Going through the observations and results of Group A & B it can be concluded that patients of

Group B who were treated with *Vibhitakaadi ghrita tarpana* and *Prasadana Putapaka* better results. All the groups were effective in treating the *ayavkta darshana*, *vyavidadarshana*, eyestrain, watering of the eyes, headache and visual acuity but changes in the autorefraction has showed statistical significant result after treatment.

Overall assessment of results in percentage is, in Group A- 63.4 %, Group B- 70 %. Hence, Null hypothesis is rejected and Reasearch hypothesis is accepted. *Vibhitakaadi ghrita tarpana* showed better results in reducing the severity of the visual acuity parameter and also helps in overcoming the damage caused by myopic strain and stops the further progression of disease.

*Tarpana* along with *Putapaka* showed slightly better result in treating the subjective parameters i.e. *avyaktadarshana*, eyestrain, watering of eyes and headache. It signifies more on relaxation effect of the therapy.

Better results may be obtained by following the *purvakarmas* like *shareerashodhana*, *shirovirechana* and also if patients do *nidana parivarjana*.

No untoward effects were observed in any of the treatment groups except some discomfort on the first day of *tarpana* and during *putapaka*.

Thus early diagnosis and adequate treatment definitely relieves the complaints without leading to much complication.

## REFERENCES

- [1]. A. K. Khurana. InduKhurana. Anatomy and physiology of eye. New Delhi: CBS Publishers and Distributors; 2, 2007. 514.
- [2]. Sushruta. SushrutaSamhita-- with the Nibandhasangraha Commentary of Sri Dalhanacharya and the NyayachandrikaPanjika of Sri Gayadasacharya on Nidanasthana. Edited by VaidyaJadavjiTrikamjiAcharya and Narayan Ram Acharya 'Kavyatirtha', New ed. Varanasi: Chaukambhasurbharatiprakashan; 2008, 824.
- [3]. Agnivesha. Carakasamhita—Elaborated by Charaka and Dridhabala with the Ayurveda – Dipika commentary by Chakrapanidatta, edited by VaidyaYadavajiTrikamjiAcharya, Varanasi: ChaukhambaSurbharatiPrakashan; Reprint 5, 2000, 738.
- [4]. Yogarathnakara. With Vaidyaprabha Hindi Commentary. Commentator, VaidyaIndradevTripathi, VaidyaDaya Shankar Tripathi, Edited by Bhishagratna Sri Brahma Shankar Shastri, reprinted. Varanasi: Chowkambha Sanskrit Samsthana; 2005.
- [5]. Vagbhata. AshtangaSangrahaUttartantra – English translatin by Prof. K. R. Srikanta Murthy. 2<sup>nd</sup> Ed. Varanasi: ChukhambaOrientalia; 6, 2000, 654.