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**A COMPARATIVE CLINICAL STUDY TO EVALUATE EFFICACY OF
TARPARNA WITH TRIPHALA GHRITA AND CHAKSHUSYA COMPOUND IN
THE MANAGEMENT OF PRATHAMA PATALGATA TIMIRA W.S.R. TO
SIMPLE MYOPIA**

BAMOLA P^{1*} AND GUPTA H²

- 1: Associate Professor, Department of Shalaky Tantra, FIMS, SGT University, Gurugram
2: Associate Professor, Department of Prasuti Tantra evum Stree Roga, FIMS, SGT University,
Gurugram

***Corresponding Author: Dr Poonam Bamola: E Mail: Poonam.bamola@gmail.com**

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ABSTRACT

Eyes are gateways of external world, visual defects tantamount to the obliteration of the world. Among all eye diseases, *Timira* is considered as *Paramdaruna Vyadhi*, causing difficulty in vision. It is categorized under *Drishtigata Rogas*. When vitiated *Doshas* are localized in *Prathama Patala* of eye, the disorder is known as *Prathama Patalagata Timira*, sign and symptoms of which correlates it with simple myopia in modern parlance. Myopia (near sightedness) is an ocular disorder in which the optical power of the eye is too strong for the corresponding axial length. Myopia has become increasingly common over the past 50 years. Considering the requirement for developing some Ayurvedic formulation for management of *Prathama Patalgata Timira*/ Simple Myopia, the present research work entitled “A Comparative Clinical Study to Evaluate Efficacy of *Tarparna* with *Triphala Ghrita* and *Chakshushya* Compound in Management of *Prathama Patalgata Timira* w.s.r. To Simple Myopia”, was undertaken. 30 clinically diagnosed patients of *Prathama Patalgata Timira*/simple myopia were randomly selected from OPD/IPD of Rishikul Campus, Haridwar and were divided into two groups of 15 patients each. In **Group A** oral administration of *Chakshusya* compound for 28 days and in **Group B** *Tarparna* with *Triphala Ghrita* was given

for a duration of 28 Days i.e 2 Sittings of *Tarpana* for alternate 7 days. On completion of study, the statistical analysis of results was done by adopting Wilcoxon Signed Rank Test and Mann Whitney U test. Trial concluded that all assessment parameters improved significantly except visual acuity and dioptric power in Group A where no significant result was found. No significant adverse effects were observed in both groups. It can be concluded that *Tarpana with Triphala Ghrita* is more efficient in management of *Prathama Patalgata Timira* in comparison to *Chakshusya* compound.

Keywords: Prathama Patalgata Timira, Simple Myopia, Tarpana, Chakshusya Compound

INTRODUCTION

Eyes are the most precious gift of the God to the living beings. It is the most privileged organ of human body because it enlightens one as sun on this earth. Acharaya Vagbhata have described importance of eye in following *Shloka* very beautifully:

चक्षुरक्षायां सर्वकालं मनुष्यैर्यत्नःकर्तव्यो जीविते
यावदिच्छा I

व्यर्थो लोकोअयं तुल्यरात्रिदिवानां

पुंसामन्धानांविध्यमानो अपिचित्ते II [1]

Eye disorders are far more significant than any other kind of physical impairment. For *Drishtigata Rogas*, or sight disease, one chapter in the *Sushruta Samhita Uttratantra* offers a detailed description. 27 *Drishtigata Roga* was elucidated by Acharya Vagbhata [2]. "Timira" is stated to be a "Param Daruna Vyadhi" in all of these disorders, which eventually results in blindness [3]. The pathophysiology of *Netra Rogas (Timira)* is mostly influenced by *Prakupit Doshas'* *Vimargagamana* towards *Drishti*. Pathogenesis advances by the participation of successive *Patala*. One of the key

symptoms of simple myopia is difficulty seeing objects clearly, or blurring of the vision, which is reported when vitiated *Doshas* are located in *Pratham Patala* [4].

When the optical power of the eye is larger than its corresponding axial length, an ocular disease known as myopia, or nearsightedness, results. When light rays from an infinite object enter an unaccommodating myopic eye, they converge too much and focus in front of the retina [5]. Myopia is a major source of visual impairment in both industrialized and developing countries, while prevalence varies by country, age, and ethnicity. According to studies, myopia affects as much as 70–90% of Asian populations [6, 7]. According to several assessments, the prevalence of myopia in India ranges from 6.9% to 19.7% [8].

Due to its importance as a global public health issue, myopia was made a priority for Vision 2020, the World Health Organization's global initiative to end preventable blindness by 2020 [9].

Although pathological myopia can result in blindness due to retinal tears and detachments, myopia is generally not a fatal eye condition. The most popular way to cure myopia is using glasses, although this is merely a palliative measure because they cannot stop the condition's further growth. Furthermore, it changes as the illness worsens and is not regarded as attractive. In addition to spectacles, additional choices include contact lenses and expensive refractive operations like LASIK, which is inappropriate for young patients' eyes. Complications associated with myopia correction techniques include ocular infections from wearing contact lenses, corneal scarring, and persistent corneal haze from refractive surgery. Thus, Ayurveda may hold out hope for the therapy of myopia. Considering these details, myopia was selected for present study.

Timira was regarded by Acharya Sushruta as "Sadhya Vyadhi" [10]. Ayurvedic literature offer several yoga poses for the treatment of Timira. The Kriyakalpa comprises of Tarpana, Putpaka, Seka, Aschyotana, and Anjana, and is a set of unique techniques for applying drugs topically to the eye to treat eye conditions. The most important technique for Timira is Akshi-Tarpana, which has a Vata Shamaka effect, nourishes the eyes, and enhances visual acuity. Similarly, several medications with Chakshusya, Balya, and Rasayana qualities

(Bhavaprakasha), such as ashwagandha, Shatavari, Guduchi, Triphala, Tagara, and Yashtimadhu, are recommended in ancient literature for the treatment of Timira. These natural medicines are said to strengthen Patalas and enhance vision because of these qualities. In light of this, the Triphala Ghrita Tarpana and Chakshusya compound—which contains the traditional medicines Ashwagandha, Shatavari, Guduchi, Triphala, Yashtimadhu, and Tagara—has been chosen for the current investigation.

At the Netra Roga Vibhag of Shalakyia Tantra, Rishikul Govt. P.G. Ayurvedic College and Hospital, Haridwar, Uttarakhand Ayurved University, Dehradun, Uttarakhand, research on "A Comparative Clinical Study To Evaluate Efficacy Of Tarpana With Triphala Ghrita And Chakshusya Compound In The Management Of Prathama Patalagata Timira w.s.r. to Simple Myopia" is being done as of this writing.

AIMS & OBJECTIVES

- To evaluate the effects of *Triphala Ghrita* and *Chakshusya* compound on *Prathama Patalagata Timira/simple myopia*.
- To study adverse effect of this formulation if any.

MATERIAL & METHOD

Clinically diagnosed and verified myopia cases were chosen from Shalakyia Deptt.'s OPD and IPD for the trial.

1) Source of Literature: Found in every Ayurvedic Samhita.

2) Sample Source: Patients between the ages of 15 and 35 were chosen from the O.P.D. and I.P.D. departments of the Department of Shalaky Tantra at the Rishikul Campus in Haridwar (U.K.), India, without consideration for caste, creed, race, or religion.

4) Sample Size: 15 patients each group, divided into two groups.

5) Data Collection Method: Patients who met the included criteria were chosen.

6) Random sampling is the method of sampling.

7) Criteria for inclusion:

- Following appropriate screening, the patients presenting with conventional characteristics of Prathama Patalagata Timira/simple myopia.
- A patient in the 15–35 age range.
- Individuals with simple myopia, have eyesight between -0.25D and -1D.
- The distance vision Snellen chart reading was = or better than 6/24.

8) Exclusion criteria:

- Myopia pathological.
- Individuals with more than -1D of eyesight;
- Congenital myopia
- Refractive errors elsewhere.
- A patient with any other ocular condition, such as retinal disease, iridocyclitis, cataract, or corneal opacity.

- Hypertension, diabetes mellitus, T.B., and other systemic disorders associated with myopia.

9) Diagnostic Phase of Study: Based on clinical presentations, laboratory investigations, and results, a diagnosis was made for each patient.

External Examination: To rule out any anomalies, a thorough examination of the head, forehead, eyebrows, eye lids, lid margins, conjunctiva, cornea, and eye movements was performed.

The current study's parameters were as follows:

1) Subjective Measure

- a) Avyakta Darshana, or trouble seeing far away.
- b) Symptoms of asthenopia, such as headache, eye strain, and watering.
- c) A burning feeling.

Objective Parameter

- a) Unassisted visual acuity for far vision as determined by the Snellen Chart.
- b) Using an autorefractometer or retinoscopy for clinical refraction (spherical dioptric power).

A) Fundoscopy: Complete mydriasis preceded its completion.

B) Slit lamp examination: This was carried out to rule out any anomalies in the lens, aqueous humor, cornea, or iris.

C) Inquiries:

- Leukocyte counts, both total and differential.

- Hb%.
- ESR.
- Estimating blood sugar (FBS & PPBS).

The study was intervened by the treatment *Tarpana Karma* with *Triphala Ghrita* and oral administration of *Chakshusya* compound.

10) Interventional Phase of Study-

A) Table 1: Plan of work:

Drug used	Mode of administration	Preparation of drug	Dose	Duration
<i>Triphala Ghrita</i>	Local (<i>Tarpana</i>)	<i>Ghrita</i>	As required	28 days
<i>Chakshusya</i> Compound	Orally	<i>Churna</i>	3gms B.D	28 days

B) Method of Tarpana:

Poorva Karma –

- *Abhyanga*.
- *Mridu Svedan*.

Pradhan Karma –

- On auspicious day in forenoon or afternoon, the patient was asked to lie down supine, in a chamber inaccessible to direct sun rays, wind and dust, and was given mild fomentation with a cotton soaked in lukewarm water, then the eyes were encircled with firm, compact wall made up of freshly prepared dough of *Masha* (black gram). The height of boundary was kept 2 *Angula*.
- The patient was asked to close the eyes and over the closed eyes, liquefied *Ghrita* was poured very slowly upto the tip of eyelashes. Patient was instructed to close and open his / her eyes (*Unmesha* & *Nimesha*).
- After retaining for the stipulated time, the liquid was drained out

through the hole made near the outer canthus.

Pashchat Karma-

- *Mridu Snehana*.
- *Dhoompana*.

C) Duration of the treatment: 28 Days (2 Sittings for 7days each with 7 days intervals).

D) Follow up: after completion of therapy for 1 month interval (at 15 days gap).

11) Assessment Phase-

Observation of patients was carried out before, during & after the treatment.

Subjective Symptoms were assessed with the help of following scoring pattern:

A) *AVYAKTA* *DARSHANA* (BLURRING OF DISTANT VISION)

Grade 0 – No such problem.

Grade 1 – Occasional blurring or disturbance of vision.

Grade 2 – Regular blurring without disturbing routine work.

Grade 3 – Regular blurring disturbing day to day work.

B) EYE STRAIN:

- Grade 0 – After >6 hours of near work.
- Grade 1 – After 4 – 6 hours of near work.
- Grade 2 – After 2 – 4 hours of near work.
- Grade 3 – Before 2 hours of near work.

C) HEADACHE:

- Grade 0 – No headache.
- Grade 1 – Very occasional headache.
- Grade 2 – Episodic headache.
- Grade 3 – Regular headache.

D) WATERING:

- Grade 0 – No watery discharge.
- Grade 1 – Mild watery discharge.
- Grade 2 – Moderate watery discharge.
- Grade 3 – Severe watery discharge.

E) BURNING SENSATION:

- Grade 0– No burning sensation in eyes.

Grade 1– Occasional burning sensation in eyes.

Grade 2 – Regular burning sensation in eyes without disturbing routine work.

Grade 3 - Regular burning sensation in eyes disturbing routine work.

Objective Parameters were assessed on following scoring pattern:

A) Visual acuity:

Grade 0-6/6

Grade 1-6/9

Grade 2-6/12

Grade 3-6/18

Grade 4-6/24

It was recorded as numerical convention and later converted into percentage as per the method of Kaith Lyle *et al.*

Distant vision chart reading	Efficiency Percentage
6/60	-00.00
6/36	-20.00
6/24	-48.00
6/18	-64.00
6/12	-83.00
6/9	-91.50
6/6	-100.00

Dioptric Power

Grade 0- 0.00.

Grade 1- -0.25.

Grade 2- -0.50.

Grade 3- -0.75.

Grade 4- -1.00.

12)

Overall Effect of Therapy was Assessed on Basis of:

A) Subjective Parameter:

The assessment was done by adopting the following scoring pattern for subjective symptoms-

Cured: >90 % relief in signs and symptoms and no recurrence during follow up study.

Marked improvement: 76% to 90 % improvement in signs and symptoms.

Moderate improvement: 51% to 75% improvement in signs and symptoms.

Mild improvement: 26% -50% improvement in signs and symptoms.

No improvement: <25% reduction in signs and symptoms.

Cured: 1D reduction in spherical dioptric power or complete remission.

Marked improvement: 0.75D reduction in spherical dioptric power.

Moderate improvement: 0.50D reduction in spherical dioptric power.

Mild improvement: 0.25D reduction in spherical dioptric power.

No improvement: No reduction in spherical dioptric power.

B) Objective Parameter :

OBSERVATIONS

Table 2: Symptom wise distribution:

Occupation	Group A		Group B		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<i>Avyakta Darshana</i> (Blurring of vision)	15	100	15	100	30	100
Eye strain	14	93.3	12	80	26	86.6
Headache	12	80	8	53.3	20	66.6
Watering	10	66.6	4	80	14	46.6
Burning sensation	7	46.6	5	33.3	12	40

In this study Blurring of vision was found in 100% patients, eye strain in 86.6%, headache in 66.6%, watering in 46.6% and

burning sensation was found in 40% patients.

Table 3: Visual Acuity wise Distribution

V.A	Group A		Group B		Total	
	R E	L E	R E	L E	Frequency	Percentage
6/6	2	0	2	0	4	6.6
6/9	5	7	5	6	23	38.3
6/12	5	5	5	6	21	35
6/18	1	2	1	1	5	8.3
6/24	2	1	2	2	7	11.6

Analysing the data shows that maximum patient i.e 38.3% were having un aided visual acuity 6/9,35% had visual acuity

6/12,11.6% had visual acuity 6/24.,8.3% had visual acuity 6/18 and 6.6% had visual acuity 6/6.

Table 4: Clinical Refraction (myopic spherical) wise Distribution:

Dioptric power	Group A		Group B		Total	
	R E	L E	R E	L E	FREQUENCY	%
-0.00	1	-	2	-	3	5
-0.25	6	7	2	2	17	28.3
-0.50	5	4	3	7	19	31.6
-0.75	1	3	5	2	11	18.3
-1.00	2	1	3	4	10	16.6

Analysing the data shows that maximum patients i.e 31.6% were having dioptric power -0.50,28.3% had dioptric power - 0.25,18.3% had dioptric power -0.75 and 16.6 % had dioptric power -1.00.

RESULT

Effect of Therapy on Group A:

1) Subjective Parameters

Table 5: Percentage of Improvement in Subjective Parameters of Group A

Symptoms	Mean		S.D.		Wilcoxon W	p-Value	% Effect	Result
	B.T.	A.T.	B.T.	A.T.				
<i>Avyakta Darshan (Blurring)</i>	1.93	1.47	0.8	0.64	-2.646 ^a	0.008	24.1	Significant
Eye Strain	1.53	1.2	0.83	0.77	-2.236 ^a	0.025	21.7	Significant
Headache	1.4	1.07	0.99	0.88	-2.236 ^a	0.025	23.8	Significant
Watering	0.8	0.6	0.68	0.63	-2.732 ^a	0.003	25	Significant
Burning Sensation	0.53	0.4	0.64	0.63	-2.414 ^a	0.007	25	Significant

Blurring: Before treatment mean score of Blurring was 1.93 which after treatment reduced to 1.47 with a relief of 24.1% which was statistically significant.

Eye Strain: Before treatment mean score of Eye Strain was 1.53 which after treatment reduced to 1.2 with a relief of 21.7% which was statistically significant.

Headache: Before treatment mean score of Headache was 1.4 which after treatment reduced to 1.07 with a relief of 23.8% which was statistically significant.

Watering: Before treatment mean score of Watering was 0.8 which after treatment reduced to 0.6 with a relief of 25% which was statistically significant.

Burning Sensation: Before treatment mean score of Burning Sensation was 0.53 which after treatment

DISCUSSION

1. Overall Effect of Therapy:

On analyzing the data for overall therapy on subjective parameters obtained results were as follows:

Group A: Marked improvement was in 1 (6.6%) patient, moderate improvement in 13.3% i.e 2 patients, mild improvement was found in 60 % patients whereas 3 patients i.e 20 % had no improvement.

Group B: 1 patient was cured, marked improvement was in 2 (13.3%) patients, moderate improvement in 40% i.e 6 patients, mild improvement was found in 26.6 % patients whereas 2 patients i.e 20 % had no improvement.

On analyzing the data for overall therapy on objective parameters obtained results were as follows:

Group A: Mild improvement was found in 33.3 % patients whereas 66.6% patients were unchanged.

Group B: marked improvement was in 2 (6.6%) patients, moderate improvement in 26.6% i.e 8 patients, mild improvement was

found in 46.6 % patients whereas 20 % had no improvement.

2. Probable mode of action of *Chakshusya* Compound: Oral Administration

Poorva Karma:

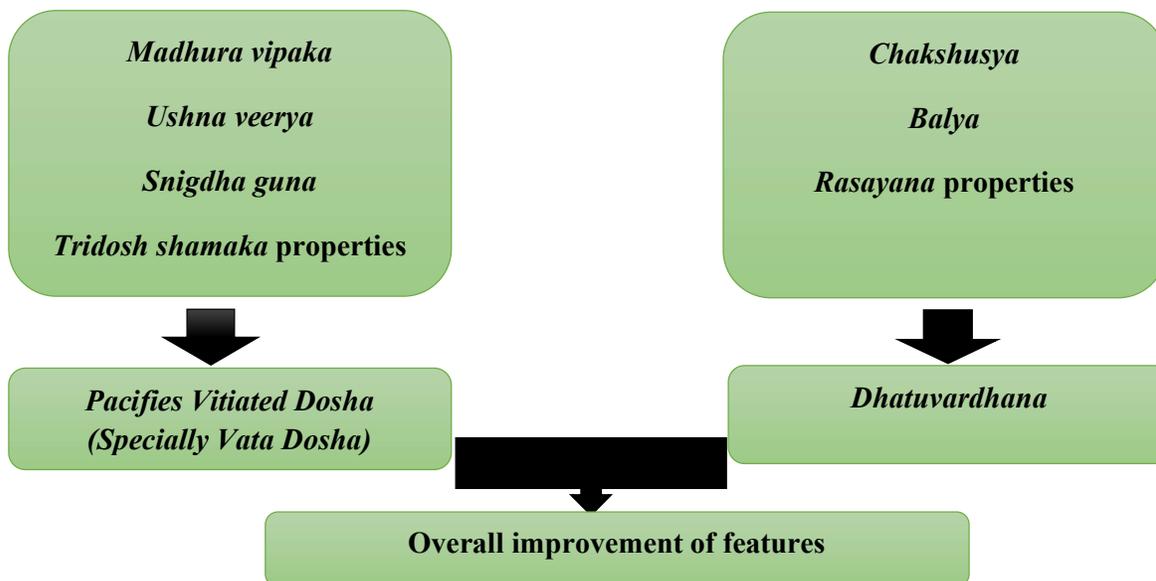
Kostha Shuddhi:

For the *Kostha-Shuddhi* purpose, triphala was chosen. Given that Pachaka Pitta is found in *Kostha* and that it provides nourishment to all other Pittas, including *Alochaka Pitta*, at their respective locations, *Kaya Shuddhi* / *Koshtha Shuddhi* undoubtedly breaks the *Samprapti* of the illness *Timira*. It is therefore strongly advised to take *Kostha Shudhi* for at least three days.

Pradhaan Karma:

Any drug's mode of action is mostly determined by its chemical structure,

characteristics, and other related elements. A comprehensive understanding of the pathophysiology, *Samprapti*, and physiology of a certain organ or system is necessary to explain the action of a medicine on that disease. Additionally, the created formulation must possess the ability to deconstruct the disease's "*Samprapti*." Since *Timira* is a *Vata Pradhana Tridoshaja* disease, any compound medication used to treat it needs to possess *Tridoshaghna* properties as well in order to fight vitiated *Doshas* and break down the disease's pathology. According to Ayurvedic texts, a drug's action is determined by its *Rasapanchaka*. Based on the medication's *Rasapanchaka*, the probable mode of the action of the drug is:



Probable mode of action of Akshi-Tarpana:

Poorva Karma

Leads to *Anulomana* of *Doshas* and prepare the organ for better absorption of the drug.

1) *Kostha Suddhi*:

Koshtha Shuddhi undoubtedly breaks the Samprapti of the illness Timira.

2) *Abhyanga*:

Abhyanga is specifically done in *Murdha Pradesha* which causes vasodilatation in the skin and muscles by stimulating receptors of the sympathetic nervous system. Vasodilation increases blood flow and helps to remove the toxic products.

3) *Swedana*:

The following is how Acharya Charaka explained the Swedana Karma mechanism:

- It softens the channels, allowing Vatadi Doshas and other contents to pass through in their regular paths.
- It aids in dissolving Shleshma.
- It causes vitiated Shleshma to secrete more through the channel. Thus, Swedana's Ushna Guna causes Kapha Dosha to melt.

Pradhana Karma

- In Jangama Sneha, ghritha holds the highest rank and is associated with Balavardhaka, Ojovardhaka, Vayasthapana, Agni Deepana, and Dhatuposhaka. In Sutrasthana Snehadhyaya, Acharya Charaka expounded that Snehana is the ultimate remedy for Vata Dosha,

referring to it as "SNEHOANILAMHANTI."

Charaka claims that ghritha is useful in reducing Pittaja and Vataja problems, enhancing Dhatus, and acting as a general enhancer of Ojas.

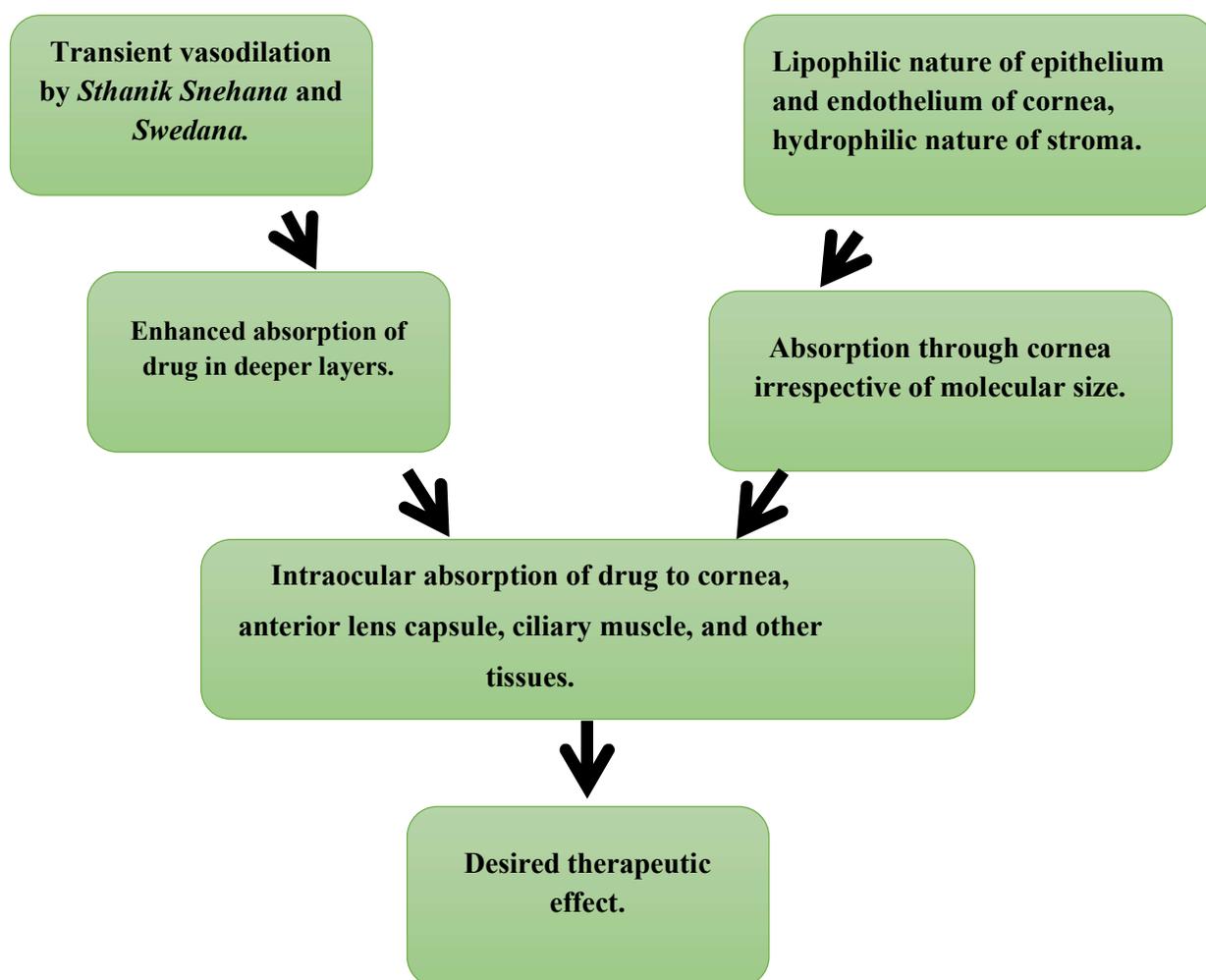
- Sanskaranuvartana is its property that gives it the qualities of components without sacrificing its own. In addition, triphala, which has Chaksusya properties, is another medication utilized with ghritha here. Thus, these collectively possess Chaksusya characteristic.
- Taking into account Doshakarma, Tridosha Shamaka (80%) and V-P Shamaka (20%) are the trial drugs. As a result, the compound drug's overall effect is Vata Pradhana Tridoshashamaka, which breaks down the disease's pathology in Timira.
- The Ghritha have the ability to infiltrate even the smallest bodily pathways. As a result, when applied topically, it reaches the deeper layer of Dhatus and thoroughly removes every particle of them. Additionally, Sheeta Dravyas are Satmya for Drishti, according to Sushruta's description of the Drishti. Since Ghritha is also Sheeta Veerya, the eye, which is where Alochaka Pitta is

located, can be efficiently handled by regularly doing Akshi Tarpana with Ghee. Additionally endowed with qualities such as Balya, Brimhana, and Rasayana, ghrita fortifies both the neural and overall tissues of the ocular.

- In addition, the ghrita preparation used in Akshi-Tarpana is a suspension made up of several drug particles, which take longer to leave the eye than a solution does. • Since tissue contact duration and

bioavailability are increased, Akshi-Tarpana can obtain therapeutic concentration. This promotes the drug's activity in two ways: first, by increasing the drug's absorption by the corneal surface, and second, by applying direct pressure to the cornea. Less light ray convergence could be the result of changes in the cornea's refractive index.

PROBABLE MODE OF ACTION OF TARPANA KARMA



CONCLUSION:

- Based upon the detailed conceptual description, it can be concluded that *Pratham Patalgata Timira* and simple myopia, both are nearly same entities.
- *Chakshusya* compound and *Triphala Ghrita Tarpana* showed statistically significant result on subjective parameters.
- Results of *Tarpana* therapy showed significant result in improving objective parameters i.e visual acuity and clinical refraction (dioptric power) whereas *Chakshusya* compound was not effective in improving objective parameters.
- *Chakshusya* compound as well as *Triphala Ghrita* had no side effects.

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