



A CLINICAL STUDY ON THE EFFECT OF *MARMA THERAPY* IN *PRATHAMA PATALAGATA TIMIRA* WSR MYOPIA

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ABSTRACT

PrathamapatalgataTimira/Myopia is becoming a more widespread problem in general population. In India Prevalence of myopia is bringing into being 6.9%. In fact one of the objectives of WHO run Vision 2020 program is to control and treat uncorrected refractive errors. There are reputable and acceptable treatment modalities for management of Myopia. But indisputably there may be some pitfalls that give a way to *Ayurveda* to deal with this hitch. *Ayurveda* the science of life gives the way to live a healthy life with some preventive and curative therapies. There are many therapeutic options in *Ayurveda* both internal medicines and local procedures that are frequently used to treat *PrathamapatalgataTimira*. Usually such patients are diagnosed because of the asthenopic symptoms they complaint like headache, eyestrain etc. So here in this study, the hidden treasure of *Ayurveda Marma* Therapy was selected for management of *PrathamapatalgataTimira*/simple myopia. An open clinical trial was planned for 20 patients presenting with clinical features of *PrathamapatalgataTimira*/ simple myopia and *Marma* therapy was done. On assessment of the selected criteria significant results were found in subjective parameters like eyestrain, headache, watering whereas insignificant results were found in objective parameters like visual acuity, dioptric power and axial length.

Keywords: *PrathamapatalgataTimira*, Simple myopia, *Marma* therapy.

INTRODUCTION

Timira word defines itself as darkness. *Acharya Sushruta* mentioned *Timira* as a disease among *Drishtigata Rogas*, which are 12 in numberⁱ and *Acharya Vagbhata* also described it among 27 *Dristigata rogas*.ⁱⁱ *Acharya Sushruta* quoted the word "*ParamdarunVyadhi*"ⁱⁱⁱ(difficult to cure) for *Timira* as it is progressive and ultimately ends in blindness. *Acharyas* have described that disease *Timira* inflicts four *Patalas* causing *Prathama*, *Dwitiya*, *Tritiya* and *chaturtha patalagata Timira*. Among these "*Avyaktani Saroopani Sarvanyav Prapashyati*"^{iv} is said for *PrathamPatalgata Timira*. *Acharya vagbhata* also "*Avyaktamikshata Roopam Vyaktamapy Animittam*"^v These symptoms resemble to a refractive error i.e. Simple myopia

also known as nearsightedness. Global estimate says that more than 2.3 billion people in world suffer from poor vision due to refractive errors.^{vi} According to WHO, about 123.7 million people have vision impairment that is due to uncorrected refractive errors.^{vii} Most advanced treatment modalities include Radial keratotomy (RK), photorefractive keratectomy (PRK), and laser in-situ-keratomileusis (LASIK).^{viii} All these modalities present some limitations like refractive surgeries are not pocket friendly, spectacles are cosmetically unaesthetic and many more. *Ahmad Morad et al.* concludes that certain complications like sensitivity to sun, dry eye sensation and foreign body sensation occurred after one of the refractive surgery.^{ix}

Acharya's described *Timira* as "Aushadha Sadhya Vyadhi"^x; i.e. medically treatable disease. Treatment encompass *Samshodhana Chikitsa (Virechana karma), Kriyakalpa, Nasya, Dhoom, Tarpana, Putpaka and Anjana*. Acharya Vagbhatta in *Sarvakshiroga Pratishedha Adhyaya* mentioned that there are two vessels in feet that reach upto eyes. So, applying *Abhyanga, Alepa* etc on feet would be having beneficial effect on eyes.^{xi} *Padabhyanga* is also mentioned to be *Chakshushya* by Acharyas.^{xii},^{xiii} So, some *Marma* points on feet viz *Kshipra* and *Talahridya* were considered. *Apanga* and *Avarta* are the *Marmas* mentioned in context of *Drishti* by Acharya Sushruta.^{xiv} *Sthapani Marma* is also mentioned in context of *Netra*. Three of these control *Alochaka Pitta* which is responsible for vision.^{xv} Chen CH *et al* conducted a study on ear acupressure in improving visual health of children and found it effective in myopic progression.^{xvi} Here *Vihura Marma* point was considered. Keeping all these references in view *Marma* Therapy was selected.

Marma Chikitsa / Marma Therapy is an ancient practice whose focus is the manipulation of subtle energy (*Prana*) in the body for the purpose of supporting the healing process.^[xvii] It is the art of touching an entity at exactly the same point so that energy blocked over there can be released.^{xviii} This is utilization of 107 points in the body which are considered to be access points to body, mind and consciousness. It is being proved scientifically that in acupuncture and acupressure on pressing the Acupoints it stimulates the nerve fibers there and causes Hypothalamic-pituitary-adrenocortical axis that releases endorphins, cortisol and serotonin like hormone which in turn release anxiety, reduces pain, improves blood circulation and causes a relaxation response.^[xix]

AIMS AND OBJECTIVES:

1. To study conceptual resemblance between *Prathama Patalagata Timira* and simple myopia.
2. To evaluate the efficacy of *Marma Therapy* in *Prathama Patalagata Timira/ Simple Myopia*

MATERIAL AND METHODS:

Selection of patients –

The patients presenting with clinical features of *Prathama Patalagata Timira / simple myopia* were selected from the O.P.D. of the Department of *Shalaky Tantra (Netra Roga Unit)* of Rishikul

campus Uttarakhand Ayurveda University, Haridwar. A total of 20 patients were registered irrespective of their sex, religion, occupation, education etc. Approval from institutional ethical committee was taken before commencing trial (UAU/R/C/IEC2016-17/2) Informed and written consent were taken from all the patients.

Inclusion criteria:

- The patients presenting with classical features of *Prathama Patalagata Timira*/simple myopia after proper screening.
- Patient aged between 10 to 40 years.
- Patients having -0.25D to -1.5D of vision (simple myopia)
- Snellen's chart reading for distant vision should be = or < 6/24

Exclusion criteria:

- *Dwitiya ,Tritiya and Chaturtha Patalagata Timira*
- Pathological Myopia or progressive Myopia
- Congenital Myopia
- Patients more than -1.5D of vision.
- Refractive errors like Hypermetropia, Astigmatism and other ocular pathologies
- Myopia with systemic diseases like T.B, Hypertension, Diabetes Mellitus

Investigations:-

Blood examinations - Hb gm %, Total and Differential leukocyte count was done to rule out systemic disorders.

Plan of study:-

Clinical study was accomplished in three phases – Diagnostic phase, interventional phase and Assessment phase.

1. Diagnostic phase

All the patient of *Prathama Patalagata Timira*/simple myopia were diagnosed on the basis of various clinical presentation, laboratory investigation and findings.

Subjective Parameter

- a) Blurred vision for distance.
- b) Asthenopic symptoms i.e.

Eye strain

Headache

Watering

Objective Parameter

- a) Visual acuity measured by **Snellen's Chart** for distant vision

b) **Clinical refraction** (spherical dioptric power) done by Retinoscopy or Auto Refractometry

c) **Fundoscopy:** It was done under full mydriasis

d) **Slitlamp examination:** it was done to rule out any abnormality of cornea, iris, aqueous humour and lens

e) **A- Scan:** Keratometry reading were taken than axial length was calculated with the help of A-Scan.

2. Interventional phase:

Study design: The method adopted for the study was open clinical study.

Sampling: A total number of 20 patients with clinical features of *Prathama PatalagataTimira* /simple myopia were registered and treated through *Marma therapy*.

Proforma: A special proforma was prepared on the basis of classical features of *Prathama PatalagataTimira*/simple myopia to maintain the records of all findings (before and after treatment) regarding all patients.

Informed consent: The purpose of the study, nature of the study drugs, the procedures to be carried out and the potential risks and benefits were explained to the patients in detail in non-technical terms. There after their written consent was taken before starting the procedure.

Technique of Marma Therapy-

Marma Points: *Apanga, Avarta, Sthapani, Vidhura, Kshipra (feet), Talahridaya (feet)*

Patient is made to sit in relaxed position and said to exhale while pressing the *Marma* points and inhale while the pressure was released in rhythmic manner. Selected points were pressed with the pulp of the finger or thumb creating adequate pressure for 20 times twice a day. Each *Marma* point was pressed for about 15 seconds. The pressure applied on *Apanga Marma* was the least as it is a *Sira Marma*. Mild pressure was applied of approximately (3 lb) on the *Apanga Marma* by the pulp of the index finger. *Sthapani Marma* was pressed with the pulp of thumb between two eyebrows. 7-8 pound pressure was applied on *Vidhura Marma* with the pulp of index finger. The *Talahridaya Marma* of feet was pressed with the thumb of both the hands together; being *Mamsa Marma* adequate pressure of approximately 10 lb was applied on plantar aspect of feet at distance of four fingers away from junction of first toe and second toe. *Kshipra Marma* was stimulated by

placing the index finger on the plantar aspect for support, while pressing dorsally with pulp of thumb at a distance of one and half fingers from the webbing of first toe and second toe.

Duration: 28 days

3. Assessment phase:

Criteria for Assessment of Result:

Grading and scoring system was adopted for assessing each clinical feature before the commencement of trial and after completion of trial as under-

1. Blurring of vision

- 0 No problem
- 1 Occasional blurring
- 2 Regular blurring without disturbing work
- 3 Regular blurring disturbing day to day work

2. Eye Strain

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

3. Headache

- 0 No headache
- 1 Occasional dull aching pain
- 2 Off and on headache that interferes with routine work but doesn't require any medication
- 3 Severe headache experienced often & requires medication

4. Watering

- 0 No watering
- 1 Slight watering of eyes on strain
- 2 Off & on watering of eye even without any strain needs handkerchief at the interval of 3 or more hours
- 3 Excess irritable watering of eye require frequent use of handkerchief

5. Visual Acuity (According to parson)

- 6/6100%
- 6/990%
- 6/1280%
- 6/1860%
- 6/2450%
- 6/3640%
- 6/6020%

6. Dioptric Power

- 0 0
- 1 0.25 - 0.50D
- 2 0.75 – 1.00D
- 3 1.25 – 1.50D

7. Axial Length

- 0 23.00 - 23.50

- 1 23.50 – 24.00
- 2 24.00 – 24.50
- 3 24.50 – 25.00

STATISTICAL ANALYSIS:

The information regarding demographic data was given in percentage. All the parameters were analyzed in terms of median for qualitative data and subjected to Wilcoxon's signed rank-Test (W-value) for evaluating the effect of therapy before and after treatment and finally results were incorporated in terms of probability (p) as - $p > 0.05$ – Insignificant, $p < 0.05$ – Significant, $P < 0.01$ – Significant, $p < 0.001$ - Highly significant.

Overall effect of Therapy was assessed on basis of:

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: 50% to 75% improvement in signs and symptoms.

Mild improvement: >25% improvement in signs and symptoms.

Unchanged: <25% reduction in signs and symptoms.

Follow up-Follow up study was conducted for 1 month (at 15 days interval) after completion of the treatment.

RESULTS:**Percentage effect of therapy on subjective parameters:**

Statistically significant results (p -value<0.05) were found in watering in both eyes and headache (% relief 100%), eye strain in LE(% relief 89.5%) RE(% relief 81%). Also in blurring of vision statistically significant results (p -value<0.01) were found in LE (% relief 32%) and RE (% relief 25%)(Table 1)

Percentage effect of therapy on Objective Parameters:

Statistically insignificant results (p -value>0.05) were found in Axial length (% relief 20%) both eyes, Dioptric power RE(% relief 18.4%) LE(% relief 15.6%) and visual acuity RE(% relief 1.3%) LE(% relief 0.5%).(Table 2)

Overall effect of therapy:

Out of 40 eyes 1 (2.5%) were cured, marked improvement in 3 (7.5%) eyes, moderate improvement in 18 (45%) eyes, mild improvement in 13 (32.5%) eyes and there was no improvement in 5 (12.5%) eyes.

(Table3)

Table1:

Symptoms	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Blurring of Vision RE	1.00	0.50	-3.000 ^a	<0.05	25.0	Significant
Blurring of Vision LE	1.00	0.50	-3.162 ^a	<0.05	32.3	Significant
Eye Strain RE	0.00	0.00	-3.690 ^a	<0.05	81.0	Significant
Eye Strain LE	0.00	0.00	-3.690 ^a	<0.05	89.5	Significant
Headache	0.00	0.00	-2.873 ^a	<0.05	100.0	Significant
Watering RE	0.00	0.00	-2.000 ^a	<0.05	100.0	Significant
Watering LE	0.00	0.00	-2.000 ^a	<0.05	100.0	Significant

BT- Before treatment AT- After treatment RE - Right eye LE - Left eye

Table 2:

Parameter	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Visual Acuity RE	0.75	0.9	-1.000 ^a	>0.05	1.3	NS
Visual Acuity LE	0.85	0.9	-1.000 ^a	>0.05	0.6	NS
Dioptric Power RE	1	1	-1.000 ^a	>0.05	18.4	NS
Dioptric Power LE	2	2	-1.000 ^a	>0.05	15.6	NS
Axial Length RE	0	0	-1.000 ^a	>0.05	20	NS
Axial Length LE	0	0	-1.000 ^a	>0.05	20	NS

Table 3:

Overall Effect	n=40	
	N	%age
Cured	1	2.5
Marked Improvement	3	7.5
Moderate Improvement	18	45
Mild Improvement	13	32.5
No Improvement	5	12.5

DISCUSSION:

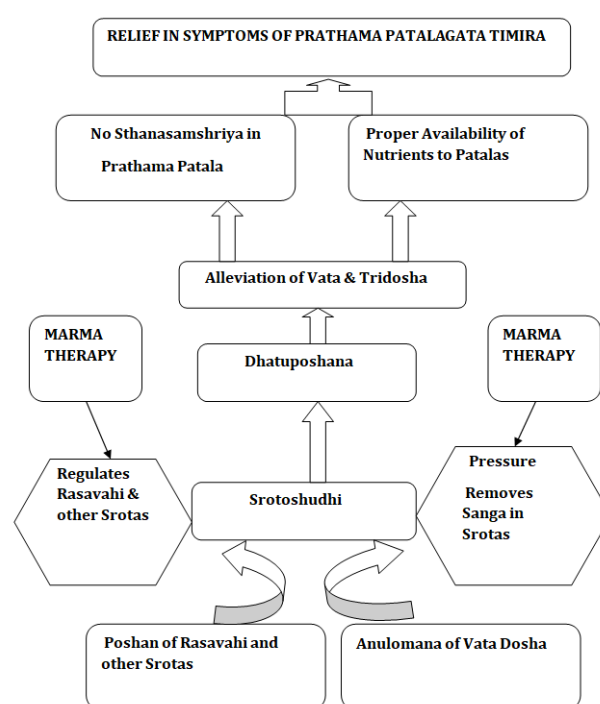
Timira is being quoted as *Paramdaruna vyadhi* that at a final point drops person into blindness as per *Acharya sushruta. Prathamapatalagata Timira* has *Avyakta Darshan* as lakshana i.e blurring of vision which is the cardinal symptom of simple myopia. Thus the *Prathamapatalagata Timira* can be easily correlated with simple myopia. Probably hypothetical *Samprapti* can be that due to *Nidana sevan* there is vitiation of *Doshas* leading to *Sanga* and *Vimargagaman* as *Strotodushti*. As *Prathama Patala* is *Tejojalaashrita* in which *Teja* indicates *Raktadhatu* and *Jala* indicates *Tvakashrita Rasa Dhatu*^{xx}. Probably due to *Sanga* there is deficiency of nutrients to the *Patalas* causing *Dhatukshaya* which in turn causes asthenopic symptoms like eyestrain, headache and watering. On *Ayurvedic* perspective, hypothetical mode of action of *Marma* Therapy can be explained as–

As, *Srotodushti* in *Prathama Patalagata Timira* was *Sanga* and *Vimargagamna*, here *Marma* Therapy when acts on *Vimargamana* in *Roopvahi, Rasavahi, Raktavahi Srotas*, there is *Poshan* of these *Srotas*. On the other hand *Marma* therapy removes *Sanga* on application of pressure on respective points that leads to *Anulomana* of *Vata Dosh*. Both of these causes *Srotoshudhi* that causes alleviation of *Tridosha* with predominance of *Vata*. Ultimately there is elimination of *Sthanasamshriya* of vitiated *Doshas* in *Patalas* and easy availability of nutrients to *Patalas* that causes relief in sign and symptoms of *Prathama Patalagata Timira* /myopia. (Fig.1)

On the other side we can say that on applying pressure on *Marma* Points, stimulation of these points leads to a complex neurohormonal responses.^{xxi} On pressing these *Marma* points may be there is stimulation of Hypothalamo-pituitary-adrenocortical axis that leads to production of an antistress hormone that is cortisol causing a relaxation response.^{xxii} There is increased

production of endorphins and serotonin such that endorphins reduce the transmission of pain signals and serotonin causes calmness and relaxation. All these factors lead to decrease in asthenopic symptoms.

FIG.1



CONCLUSION:

In present study it can be concluded that *Prathama Patalagata Timira* and simple myopia both are nearly same entities. *Marma* therapy was found effective in relieving subjective parameters to great extent whereas there were no effects in objective parameters. Also there were no side effects during therapy time and during whole trial.

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