

A CONCEPTUAL STUDY OF PRATHAMA AND DWITIYA PATALAGATA TIMIRA CORRELATED WITH SIMPLE MYOPIA

Priyanka S. Bolke¹, Pravin M. Bhat²

¹PG Scholar, IInd Year, Shalakyatantra, Sumatibhai Shah Ayurveda Mahavidyalaya, Hadapsar, Pune, Maharashtra, India

²Associate Professor, Department of Shalakyatantra, Sumatibhai Shah Ayurveda Mahavidyalaya, Hadapsar, Pune, Maharashtra, India

Email: piuutu2015@gmail.com

ABSTRACT

Shalaky Tantra is branch of *Ayurveda* also called as '*Urdhvanga Chikitsa*' since it deals with upper body part. In *Ayurveda*, Clinical features related to visual disturbances are generally seen in *Drishtigata Rogas*. Hence, all the cases of visual disturbance can be correlated under the broad umbrella of *Timira-Kacha-Linganasha* complex. A detailed conceptual and clinical study is the need of time to explore the pathophysiology and symptomatology of the disease *Timira* in *Ayurveda*, in accordance with modern parameters. The anatomical consideration of the *Patalas* and symptoms of the vitiated *Doshas* situated in these *Patalas* reveals that the word '*Timira*' which is described as an ocular pathology in *Ayurveda*, is nothing but error of refraction. The part of clinical features of *Timira* (*Prathama* and *Dwitiya Patalagata Timira*) can be correlated to myopia. When the vitiated *Doshas* are located in the 1st and 2nd *Patala*, there is a complaint of difficulty in seeing objects distinctly. This is a common complaint of all refractive errors. Myopia is a common refractive condition that can affect clarity of vision. So, *Prathama* and *Dwitiya Patalagata Timira* are *Drishtigata Roga* can be correlated with in modern science with Simple Myopia.

Keywords: *Shalaky Tantra, Drishti, Prathama and Dwitiya Patalagata Timira, Myopia.*

INTRODUCTION

Shalaky Tantra is one among the *Ashtanga Ayurveda* which deals with prevention and management of *Jatrurdhwagata Vikaras*. It is unique in its own way as it deals with *Uttamanga*. In this branch the prime importance is given to *Netra*¹, as it is considered as *Pradhan* among all *Indriyas*. Importance of vision has been explained in *Samhitha* as: A person who desires for a long life must take care of his eyes throughout the life, as for a blind man there is no difference be-

tween day and night. Hence forth even though he has wealth, he will not be able to enjoy the life. So, protection of eyesight is the topmost priority of *Shalaky Tantra*, since the loss of vision completely disables a person. *Netra* - Which takes or drives one towards knowledge. *Netra Shareera- Chakshuindriya* occupies the key position among the other *Jnanendriyas*. *Nayana-* One which drives objects towards its subject. *Lochana-* The tool with which one sees. The term

Chakshu is derived from the root ‘*Chaksh*’ denoting *Darshna* (sight) and *Karan* (organ responsible for sight)². The Knowledge gained by all the other *Indriyas* is also called *Pratyaksha*. The word *Prati* and *Aksha* which means ‘along with the eye’. This term actually denotes perception of visual objects through the eye (knowledge of visual objects)³. According to *Charaka*, *Chakshu* is one among *Panchajnanendriyas*, which is responsible for ‘*Roopgrahana*’. Whereas *Sushruta* defines *Chakshu* as a *Buddhindriya* originating from ‘*Rupatanmatra*’ performing visual perception with the dominance of ‘*Tejomahabhuta*’⁴.

Timira: The term *Timira* is derived from root ‘*Tim*’ (meaning the increase of watery substance in the eye or loss of light perception) with ‘*Unadi*’ suffix ‘*Kirach*’ to form the *Timira*⁵. *Timira* has been mentioned in *Uttantantra*, in terms of involvement of successive *Patalas*.

In *Amarakosha*, the meaning of *Timira* is given as darkness. *Acharya Sushruta* mentioned *Timira* as a disease among *Drishtigata Rogas* which are 12 in number and *Acharya Vagbhata* also described it among 27 *Drishtigata Rogas*. *Acharya Sushruta* have described that diseases *Timira* inflicts four *Patalas* causing *Prathama*, *Dwitiya*, *Trutiya* and *Chaturtha Patalagata Timira*. According to *Dosha* involvement six types of *Timira* i.e. *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja*, *Sannipataja* and *Parimalayi*⁶.

Patala: *Patala* is one of the structures told by *Sushruta* in *Netra Shareera*. *3Pat+Klach Pratyaya*-which means a layer, covering chest, membrane especially of the eyes, a film over the eyes⁷. So, it can be considered as the layers of the eyeball. There are 6 *Patalas* in the eyeball- 2 *Vartma Patalas* and 4 *Akshi Patalas*. The pathogenesis of *Drishtigata Rogas*, especially *Timira* has been described in terms of involvement of successive *Patalas*⁸.

- 1) 1st *Patala* is called *Tejojalashrita*.
- 2) 3rd *Patala* is called *Medoshrita*.
- 3) 2nd *Patala* is called *Mansashrita*.
- 4) 4th *Patala* is called *Asthyashrita*.
- a) Features of affliction of 1st and 2nd *Patala*- Clubbed with 6 types of *Timira*.

- b) Features of affliction of 3rd *Patala*- Clubbed with 6 types of *Kacha*.
- c) Features of affliction of 4th *Patala*- Clubbed with 6 types of *Linganasha*.

The outermost first *Patala* is supported by *Tejas* and *Jala*; second one consists of *Mamsa*, the third *Patala* is described as ‘*Medoashrita*’ and the fourth *Patala* is ‘*Asthyashrita*’. Their thickness is equal to one-fifth of the *Drishti*⁹.

According to some scholars, the 1st *Patalas* can be taken as Cornea and Aqueous humor as they are the seat of *Tejas* and *Jala*. The 2nd *Patalas*, which is *Mamsashrita*, can be taken as Iris and Ciliary body; they are mesodermal in origin and contain muscles tissue. The 3rd *Patala* can be taken as Lens and vitreous humour; which resembles *Medas*. The 4th *Patala* can be taken as Retina as it is the seat for *Linganasha*.

Prathama Patalagata Dosha Dushti:

The only symptom produced when the *Doshas* are vitiated in the First *Patala* is *Avyakta Darshana*. The patient is not able to appreciate the exact nature of the object and there is slight blurring of vision.

Dalhana has described the first or outermost *Patala* as “*Tejojalashrita*”. The word *Teja* (Fire elements) means *Alochaka Pitta* and so *Siragata Rakta* can be taken as *Teja*. *Jala* (water elements) according to him implies *Rasa Dhatu*. So, it can be considered that the first *Patala* is the *Ashraya* for *Rasa* and *Rakta Dhatus*. These are the primary *Dhatus* and provides nutrition to the eyes. *Rasa* gives nutrition to transparent structures and *Rakta* gives nutrition to the vascular structures. *Pitta* helps in perception of objects of vision and involved in analyzing the *Indriyarthas*. It is the first medium or part of the eye which receives the light. *Vata* is the activating and controlling factor. So, *Pitta* and *Vata* are considered as the prominent *Doshas* in this part of *Drishti*¹⁰. Probable hypothetical Pathogenesis can be that due to *Nidana Sevana* there is vitiation of *Doshas* symptoms of *Prathama Patalagata Timira*. According to *Sushruta*, *Timira* causing *Dosha*, vitiated by various reasons, when reach internal orbital organs through *Sira* and occupies first *Patala* generate pathology there¹¹. *Timira* vitiates first *Patala*, followed by second, third and fourth *Patala*. These

Timirambhaka Dosha (Dalhana) causes mild blurring of vision¹².

Clinical feature of the *Prathama Patala* has been described by *Acharya Vagbhata* is blurred/ indistinct vision without any reason¹³.

Prathama Patala is limited to the cornea only, these *Patalas* can be taken as successive layer of the cornea. There is one other view in which the *Patalas* are taken as different layers of the lens itself. To justify this, they argue that the lens is the only structure where the changes of the diseases *Timira*, *Kacha* and *Lingansha* are taking place. They consider the anterior lens capsule as the first *Patala* and nucleus as the fourth *Patala*.

Dwitiya Patalagata Dosha Dushti:

The second *Patala* is constituted by *Mamsa* (muscles) having *Kandara* (tendon like properties), giving attachment. Also, it should have nutritive as well as contraction and relaxation properties. Structure to inner *Patala* having such properties are uveal tract.

According to *Acharya Sushruta*, *Timirambhaka Dosha* reaching *Dwitiya Patala* causes further deterioration of vision¹¹. The main symptom when the *Doshas* are situated in this *Patala* is *Vihwala Darshana*.

According to *Acharya Hrudaya*, *Dosha* reach *Dwitiya Patala*, *Abhuta* i.e. non existing figures like flies, mosquitoes, hair etc are seen but *Bhuta* i.e. existing near objects are seen with difficulty. Very minute and very distant objects are not seen. If *Dosha* occupy upper part of *Drishti* distant objects are not seen. He visualizes distant object as if nearer and near object far away due to faulty perception (Index Myopia). This symptoms complex is called '*Timira*'¹³.

The iris and ciliary body are the most sensitive tissue of the eyeball. Different types of opacities result from inflammatory process in the uveal tract, posterior segment like vitreous or retina, which results into floaters in front of the eye. The other symptoms like metamorphosis, micropsia etc. Thus morphological, physiological and pathological characters and *Dwitiya patala* are alike that of uveal tract, vitreous and retina.

Trutiya Patalagata Dosha Dushti: *Acharya Sushruta* stated that, vitiated *Dosha* when occupies *Trutiya*

Patala, upper quadrant objects are seen but lower quadrant objects are not seen. *Dosha* accumulated below, near objects; accumulated above, distant objects; accumulate center, diplopia. Big objects look as if they are wrapped in cloth. This stage is called as '*Timira*'¹¹.

According to *Ashtang Hrudaya* when *Dosha* reaches *Trutiya Patala* the disease is called '*Kach*'¹³.

Chaturtha Patalagata Dosha Dushti: The power of the eye by which the objects are visualized is called as '*Linga*' and it is lost in this stage. Hence is entitled as '*Linganash*'.

Myopia: Myopia or shortsightedness is a type of refractive error in which parallel rays of light coming from infinity are focused in front of the retina when accommodation is at rest¹⁴. The word Myopia is derived from a Greek term "muopia" which means, "I close the eye" it manifests as blurred distance vision, hence the popular term "Nearsightedness".

Simple Myopia: The refractive status of the eye with simple Myopia is dependent on the optical power of the cornea and crystalline lens and the Axial length. since the sharpest rise occurs at school going age i.e. between 8 years to 12 years, so it is also called as school Myopia. In simple Myopia, the distance blur is constant¹⁴.

Prevalence of Myopia: Myopia is becoming more common problem in general population various surveys in India have found the Prevalence of myopia ranging from 6.9% to 19.7%. An estimate of no of people suffering from refractive errors in the world is in range of 8 million to 2.5 billion. According to Who, 43% of vision impairment is due to uncorrected refractive errors¹⁵.

Classification of Myopia¹⁴:

Etiological Classification

- Axial Myopia- Results from increase in antero-posterior length of the eyeball.
- Curvature Myopia- Occurs due to increased curvature of the cornea, lens or both.
- Positional Myopia- Is produced by anterior placement of crystalline lens in the eye.
- Index Myopia- Increase in the refractive index of crystalline lens with nuclear sclerosis.

- Myopia due to excessive accommodation occurs in patient with spasm of accommodation.

Clinical classification of Myopia-

- Congenital Myopia
- Simple/Developmental Myopia
- Pathological/Degenerative Myopia
- Acquired/Secondary Myopia

Grading of Myopia-

- Low Myopia (<3.00D)
- Medium Myopia (3.00D-6.00D)
- High Myopia (>6.00D)

DISCUSSION

Timira as Simple Myopia: To conclude, *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 third and Fourth *Patala* respectively. In *Prathama Patala Avyaktmekshite Roopam* (visual Hallucination), *Vyak-tamapyta Nimitta* (Transient nature of blurriness) and *Dwitiya Patala Dooram Nekshite* (difficulty of distant vision) these signs and symptoms more similar to Simple Myopia.

First *Patala*, among the four *Akshi Patala*, is known as *Bahya* or outer; this means that the other three are relatively innermost to the former. According to *Sushruta*, the disease *Timira* vitiates the first *Patala* is considered as the outermost and the fourth *Patala* is considered as the innermost *Patala* according to *Sushruta*.

<i>Patala</i>	Symptoms	Pathogenesis	Modern correlation
<i>Prathama/Rasa/Rakta</i>	Intermittent blurring of vision described as <i>Avyakta Rup Darshan</i> , symptoms are not stable.	<i>Dosha Sanchaya, Prakopa, Prasara.</i> Initial stage of Hydration.	Refractive errors come under it. Prodromal symptoms of <i>Timira</i> .
<i>Dwitiya/Mamsa</i>	Blurring of vision > 1 st <i>Patala</i> . Scotomas- Seeing the shape of hair, flies, flames etc. Decreased visual acuity. Metamorphosis, Micropsia, Macropsia, Diplopia.	<i>Dosha Sthansamsraya.</i>	Cortical Cataract. <i>Ashtanga Hrudaya</i> - Stage of established <i>Timira</i> .
<i>Trutiya/</i>	More de-	Change in	Nuclear Cata-

<i>Meda</i>	crease in vision, colour halos, less visual acuity, visual field loss,	refractive index of the nucleus causes Index Myopia, reduction in sensitivity due to loss of transparency.	ract. <i>Sushruta-Timira. Ashtanga Hrudaya-Kacha.</i>
<i>Chaturtha/Ashti</i>	Complete loss of vision. Perception of light is only positive.	<i>Dosha</i> in <i>Bheda</i> Stage. Complete opacity developed.	Mature Cataract. <i>Sushruta/Ashtanga Hrudaya-Linganasha</i>

Sadhyasadhyatva:

	<i>Sushruta</i> (12)	<i>Ashtanga-Hrudaya</i> (27)
<i>Sadhya</i>	Non discolored <i>Timira</i> of <i>Prathama Patala</i> .	Six types of <i>Timira</i> .
<i>Kruchhra-Sadhya</i>	<i>Dwitiya Patalagata Timira</i> .	-
<i>Yapya</i>	<i>Trutiya Patalagata Timira</i> with discolouration.	6 Types of <i>Kach</i> .
<i>Asadhya</i>	-	6 Types of <i>Linganasha</i> .

CONCLUSION

Anatomical *Netragata Patala* are sequential (from outer to inner) covering of eye. *Prathama Patala* is limited to the cornea only, these *Patalas* can be taken as successive layer of the cornea. For Refractive Error, Refractive surgery is related to cornea like as Radial keratotomy (RK), Photorefractive Keratectomy (PPK), Laser in situ Keratomileusis (LASIK). When we consider the comparative analysis of symptoms of 1st and 2nd *Patalgata Timira* with Myopia then the symptoms described by *Acharya Sushruta* and *Acharya Vagbhata* resembles to that of symptoms of different type of Myopia. Myopia is a common refractive condition that can affect clarity of vision. So, *Prathama* and *Dwitiya Patalgata Timira* are *Drishtigata Roga* can be correlated with in modern science with Simple Myopia. Thus, there is a need to study of each and every anatomical structures of eye explained in different *Samhita* and comparison of science and health of human being.

REFERENCES

1. Dalhanacharyavirchitaya Nibandhasamgraha Vyakhya, Sushruta Samhita, Uttartantra 1/10 Chaukhamba Sanskrit Series, Varanasi. Page no.5
2. Raja Radhakanta Dev Bahadur Shabdakalpadruma, Chaukhambha Sanskrita Series Office, Varanasi 1. Page no.415
3. Dr. Raghuram Y.S.MD (AY) and Dr. Manasa, B.A.M.S; Anatomy of eye; Netra Rachana: Ayurveda Perspective.
4. Kaviraj Ambika Datta Shastri, Sushruta Samhita Sharirasthan, 1/7,10, Chaukhambha Sanskrit Sansthan, Varanasi, Edition-Reprint 2014, Page no.2,3
5. Raja Radhakanta Dev Bahadur Shabdakalpadruma,1/10/20, Chaukhambha Sanskrita Series Office, Varanasi 1. Page no.618
6. Kaviraj Ambika Datta Shastri, Shushruta Samhita Uttartantra 7/19-25 Chaukhamba Sanskrit Sansthan, Varanasi, Edition-Reprint 2014, Page no.43,44.
7. Sir Monier Williams, A Sanskrit English Dictionary Moti; al Banarasidas Publishers Pvt.Ltd., New Delhi; 2002.1333 PP, Pg 597.
8. Kaviraj Ambika Datta Shastri, Shushruta samhita Uttartantra 1/17,18, Chaukhamba Sanskrit Sansthan, Varanasi, Edition Reprint 2014, Page no.11.
9. Kaviraj Ambika Datta Shastri, Sushruta Samhita Uttartantra 1/18, Chaukhamba Sanskrit Sansthan, Varanasi, Edition Reprint 2014, Page no.11
10. Shanthakumari P. K. A textbook of Ophthalmology in Ayurveda, 1st edition, Published by author, 2002.
11. Kaviraj Ambika Datta Shastri Shushruta Samhita Uttartantra 7/7-18, Chaukhamba Sanskrit sansthan Varanasi, Edition Reprint 2014; Page no:41-32.
12. Dalhanacharyavirchitaya Nibandhasamgraha Vyakhya, Sushruta Samhita, Uttartantra 7/6 Chaukhamba Sanskrit Series, Varanasi.
13. Kaviraja Atridev Gupta Ashtang Hridaya uttarsthan, 12/1-7, Chaukhambha Sanskrit Varanasi; Edition Reprint 2011, Page No.667.
14. Comprehensive Ophthalmology, A.K.Khurana, chapter 4, Sanat Printers, Kundli, 6th edition 2015, Page no.38,39
15. WHO visual impairments and blindness www.who.int/mediacent (Retrieved20/7/20)

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Priyanka S. Bolke & Pravin M. Bhat: A Conceptual Study Of Prathama And Dwitiya Patalagata Timira Correlated With Simple Myopia. International Ayurvedic Medical Journal {online} 2020 {cited May, 2020} Available from: http://www.iamj.in/posts/images/upload/3539_3543.pdf