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***Timir* and its Management: A Review**

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ABSTRACT

Timir is one of the 'Drushtigatrogā', if left untreated may lead into complete blindness. The symptoms of *Patalgat Timir* can be correlated with refractive error. Globally it is estimated that approximately 1.3 billion people live with some form of vision impairment. There is no any medicinal treatment available for refractive error in modern science & available therapies have some complication like dry eye, corneal ulceration etc. While in Ayurvedic text *Timir* is said to be 'AyushdhiSadhya' if treated in early stages. Hence, the Ayurvedic science can be explored to find a better alternative to manage this condition. In Ayurveda, there are number of preventive and curative modalities explained to treat *Timir* in the form of *PathykarAahar-vihar*, *Rasayana Yoga*, *Chakshusya drugs*, *Netrakarma*, *Kriyakalpa*, *Panchkarma* etc. Aim of the study is to find out conceptual resemblance between *Patalgat Timir* and refractive error and discuss on treatment modalities of *Timir*. Here we discuss about these treatment modalities, symptoms of *Patalgat Doshdushti* and refractive error. Use of these therapies helps us to prevent vision loss and to maintain vision.

KEYWORDS

Timir, refractive error, *Patalgat Doshdushti*, *Rasayana yoga*, *PathykarAahar-Vihar*.



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INTRODUCTION

Eye disease are much more important than any other physical disability, because once the vision is lost then that person is disabled for doing all regular activities; day & night are same for the person. *Acharya Sushrut* has explained 76 *Netravaydhi*, among them vision related disorders are studied under the broad heading of “*Drushtigatarogas*”. There are 12 *Drushtigatroga* explained by *AacharyaSushrut* & 27 by *Aacharya Vagbhata*^{1,2}. *Timir* is one of them which occurred due to affliction of the 4 *AbhyntarPatalas*. It is said to be “*Paramdarunvyadhi*” since it is progressive, irreversible and may lead to total or partial blindness if left untreated³. The symptom of *Timir* is “*Avyktanisarooapanisarvanevyaprapashyat i*” i.e. blurring of vision, which is cardinal symptom of refractive error⁴.

Myopia is the refractive condition of eye, in which distant objects not seen clearly. There were four population based studies estimated that the prevalence of myopia is 27-7% and hyperopia is 22.9% in India, which increases in school going age and young adults⁵. Globally it is estimated that approximately 1.3 billion people live with some form of vision impairment⁶. According to WHO, 43% of the visual

impairment is due to uncorrected refractive error⁷. According to sight saving review (1979) myopia is the 4th major cause of vision loss after cataract, glaucoma and senile macular degeneration. Due to significance of myopia as a global public health concern, it was chosen as a priority for vision 2020, by WHO to treat and avoid blindness by year 2020⁸.

Although modern medical science has made remarkable progress & advances in the field of ophthalmology, but there are no any medical treatment is available for refractive error, while on other side in *Ayurvedic* text *Timir* is said to be *AyushadhiSadhya* i.e. medically curable if treated in early stage⁹. In modern medical science, simple myopia is treated with spectacles, contact lenses and high myopia is deal with refractive surgeries, but all these treatments are not pocket friendly for patients and have their own hazards like dry eyes, corneal ulcer due to contact lenses wear. Spectacles are cosmetically unaesthetic and refractive surgeries are very costly & had some complications like night glare, regression, dry eye, corneal ectasia and persistence corneal haziness etc¹⁰.

In *Ayurveda*, all vision related disorders are studied under “*DrushtigataRogas*”, since all cases of visual disturbances can be studied under the broad heading of



“*Timir-Kach-Lingnasha*” complex. Refractive error can be correlated with *PatalgatTimir* in the form symptoms. As far as management of *Timir* is concerned, *Sushrut* has recommended number of the treatment modalities including *Langhna*, *Snehana*, *Snehpana* {internal use of oil, ghee}, *Raktamokshna* {blood letting}, *Virechana*, *Nasya*, *Bastietc*¹¹. *Aacharya* advised to do the above mentioned treatments again and again.

Instead of that, there are some preventive and curative treatment that are explained in the form of *PathayakarAahar-vihar*, *Netrakarma* (Eye exercise), local therapeutic procedures (*Kriyakalpa*), *Chaksushyadravya* and *Rasayana yoga* etc. All these treatment are helpful to avoid vision loss and to maintain the visual acuity.

AIM

1} To study the conceptual resemblance between *PatalgatTimir* and refractive error.

2} To find out and discuss the preventive and curative measures mentioned in Ayurvedic text for *Timir*{vision disorder}.

Review of Refractive error:

- Refractive error is a problem with focusing light accurately onto the retina due to the shape of the eye. The most

common types of refractive error are myopia, hypermetropia, astigmatism and presbyopia. Myopia results in far away objects being blurry, hyperopia and presbyopia results in close objects become blurry and astigmatism causes objects to appear stretched out and blurry. Other symptoms may include diplopia, floaters, night blindness, glare or halos around light, squinting, headaches, or eye strain etc.

- Myopia is due the length of the eyeball being too long, this causes light rays to focus at a point in front of the retina. In hyperopia the eyeball is too short, lead to focusing light rays back of retina and astigmatism is blurring of vision due to irregular shape of cornea or lens.

- Myopia is commonly referred as shortsightedness. It is mainly of 2 types: 1} Simple or Physiological myopia 2} Pathological/ Progressive or Degenerative myopia¹².

- Genetic factors, weak or degraded sclera and cornea, stress, nutritional deficiency and excessive near work are some significant factor in causing myopia. Instead of that, it is also results from some biological variations in development of eye i.e. change in optical power of cornea & lens, increase in axial length of eyeball¹³.



- Simple myopia is considered as a physiological error not associated with any eye disease, usually it ranges from low to moderate that does not exceed -6D.
- Pathological myopia starts in childhood at 5-10yr of age, progress rapidly and results in high myopia during early adult life. High myopia includes myopic refractive error greater than 6.00 D or 8.00 D or an axial length greater than 26.5mm. It is usually associated with degenerative changes in the eye like retinal tear & detachment, vitreous liquification, choroidal& myopic degeneration etc¹⁴.
- In astigmatism, light rays entering the eye can't converge to a point focus but form focal lines. Broadly there are 2 types of astigmatism depending upon etiology i.e. regular & irregular.
- Presbyopia is not an error of refraction but a condition of physiological insufficiency of accommodation lead to difficulty for near vision. This condition of failing near vision occurs due to age related decrease in amplitude of accommodation. Patient usually complaint of difficulty in reading along with asthenopic symptoms i.e. headache, eye strain etc.

Review of Timir: Acharya Sushrut described 6 *Patalas* i.e. 2 *Vartmagat*

(*Bahya*) and 4 *AkshigatPatala* (*Aabhyntara*).

1} Concept of Patala: Various authors have described concept of *Patala* in their own way. V.S. Aapte, in his Sanskrit-English dictionary describes the meaning of *Patala* as film or coats of eyeball. According Monier Williams, *Patala* can be said as layer of eyeball¹⁵.

Etymology: Pat+Klachpratyaya- which means a layer, veil, membrane of eye, a film over eyes. So it can be considered as coats of eyeball. There are 6 *Patalas* explained by *SuchrutAacharya* such as: 2 *VartmaPatala* and 4 *AkshiPatala*. *Timir* has been described in terms of involvement of respective 4 *AbhyntaraPatala*. The outermost first *Patala* is supported by *Tejas&Jala*. 2nd *Patala* is nourished by *Mamsa*. 3rd *Patala* is supported by *Meda* and 4th *Patala* is supported by *Asthi*. The thickness of these four *Patalas* is about 1/5th of *Drushti*.

AacharyaDalahan has described reversed position of each *Patala*. *Dalhan* describe *AsthiashritaPatala* is the first *Patala*, 2nd, 3rd *Patala* is *Mamas and Medoashrit*. Fourth *Patala* is *Tejojalashrit*¹⁶.

2} Concept of Timir:

- Etymology of *Timir*: Tim+ Unadi suffix 'Kirach' (Shabdikalpadrum), It is derived as

'*TimiKledaneAardriBhavahaItiYavatha*',



which means – increase of watery substance in the eye¹⁷. The meaning of *Timir* according to *Amarkosha* is given as darkness¹⁸. *Timir* is one of the *DrushtigataRogas*, which causes vision disturbances. According *AachryaSushrut*, when vitiated *Doshas* get lodge into first 3 *Patalas*, then bunch of symptoms known as "*Timir*". When they occupy 4th*Patala* and causes vision loss, then known as "*Lingnasha*". (*Ling* means *Darshanshakti* of *Chaksuyindriya*) (does not mean cataract). *Kacha* and *Lingnasha* are the successive stages of *Timir*.

- According to *Vagbhataaacharya*, when *doshas* gets lodge in first two *Patalas* then *Timir* occurs when *Doshas* gets lodge in third *Patala* then it's known as '*Kacha*' and when it rest in fourth *Patala* ,it's called as '*Lingnash*'. *AacharyaSushrut* does not explain about '*Kach*' *Vyadhi*, while *Acharya Dalhan* described *Kacha* as "*RagpraptaTimir*". The clinical features of *Timir* are based on vitiation of *Doshas* and involvement of *Patalas*.

- Intake of *Aphykar* and *AchaksusyaAahar-Vihar* leads to vitiation of *Doshas* with predominance of *Pitta Dosh*, which gets carried out through *SirasuptoPatalas* of *Drushtithat* leads to *Timir* formation.

- *Timir* starts from blurring of vision i.e. *Avyktadarshana* and if it's left untreated, may lead to complete blindness i.e. *Lingnash*. There are 6 types of *Timir* described by *Aacharyas* i.e. *Vataj*, *Pitajj*, *Kaphaj*, *Raktaj*, *Sannipatik* and *Parimlayi*.

- The progress of the disease *Timir* has been mentioned in *Uttartantra* in terms of involvement of successive *Patalas*. The symptoms of *Timir* when it invades each *Patala* are given in detail and critical analysis of these symptoms may establish an exact correlation for the clinical conditions seen in refractive error.

- When vitiated *Doshas* invade the first *Patala*, the patient complains of blurry vision for distant objects. According *Vagbhata*, when *Doshas* get localized in 1st*Patala* then that person see objects hazy & sometimes clearly without any obvious cause. This is common complaint of myopia, hyperopia, astigmatism and presbyopia¹⁹.

- When vitiated *Doshas* get lodge into 2nd*Patala*, patient may complaint of increase in blurriness(*Vivhildarshanm*), distortion of vision (metamorphopsia), black spot in front of eyes (Floters), difficulty for near work (*Suchipashamnapashyati*), seeing indistinct images (*Abhutmapipashyati*) like flies, hair webs, circles, clouds, rain etc,



appear distant object as near & near object as distant. These symptoms occur in high myopic patients associated with degenerative changes. Appearance of distant object as near and vice-versa is mainly due to accommodative failures, the inability to thread a needle denotes presbyopic changes and it's an age related accommodative failure.

- When vitiated *Doshas* get lodge into 3rd *Patala*, then they will produce following symptoms such as, when *Doshas* get lodge in lower part then those patients are unable to see near objects, when *Doshas* get lodge in upper part then those patients are unable to see far objects and if it occupy posterior part then those patients are unable to see the objects on his right or left side, if *Doshas* are localized in center, patients finds one objects as two, two objects as three. All these symptoms are caused either due to index myopia, hyperopia, astigmatism or lenticular changes, segmental defect in retina. (In Case of inferior retinal detachment, results in a superior visual field defect, temporal detachment causes nasal field defect)
- At the end when *Doshas* get lodge into 4th *Patala*, it leads to complete vision loss i.e. *Lingnash*. This type of condition occurs in mature and hypermature cataract and certain retinal degenerative conditions.

Preventive measures for *Timir*²⁰:

AachryaSushrut suggested that, the daily consumption of *Triphala*, *Puranghirt*, *Yava*, *greengram*, *Shatavari*, *Aamlaki*, *Patoletc* is helpful to avoid *Timir*. *Padabhyga* added by the *Acharya Chkrdattin* this. Daily intake of *Shatavaripayas*,

Aamalaki payas, *Triphladi* & *Yavadipayaswa* s also helps to avoid *Timir*.

Acharya Chakrdatahas explained, the daily consumption of *TriphlaKwath*, *Kalakaor Churnawith Ghrit*, *Madhu* helps to cure all types of *Timir*. *Netradhawanwith TriphlaKwath* helps to treat all eye diseases. Beside that *Gandush*, *Panitalgharshna* (after meal) is also helpful to avoid vision related disorders²¹. Application of *Vachadi*, *Madhuk-aamalakadi*, *Krishnatilakalka* at head region before the bath also helps to derange *Timir*²².

Shakadi-Pathya in Timir: Cooked vegetables of *Jeevanti*, *Changeri*, *Tanduliyak*, *Vastuk*, *Chilli*, *Mulka potika*, *Patol*, *Karwellak*, *Vartak*, *Jangal* & *ShakunMamsa* etc are beneficial for visual acuity.

Triphalaprayeroga: *Triphla* is said to be very useful in treatment of all kind of *Timir* and there are some different *yoga* was explained as follow²³:

1} *Vatajtimir* = *Triphlachurna* + *Til tail*



2}Pitaajtimir = *Triphlachurna* + *Ghrit*

3}Kaphajtimir = *Triphla* + *Madhu*

Samanya Chikitsa of Timir: *Aachrya Vagbhata* stated that, if *Timiris* not treated in early stages it may causes complete blindness therefore, it is necessary to treat it as early as possible. For that he recommended *Snehana*, *Raktmokshna*, *Virechan*, *Nasya* and after that *Tarpana* etc therapies are advised²⁴. According to *Shushrut Aachrya* in acute conditions of eye disease, body purification should be done with the help of *Langhana*, *Virechana*, *Nasya*, *Basti* and after that *Abhishndokatakriyakalpa* can be applied according to predominance of *Doshas*.

Visheshchikitsa of Timir: *Acharyas* deeply studied about *Timir* stages & indicate different treatment modality according *Doshic* predominance:

Snehapanarthdrvya =

1} In *VatajTimir*- *Dashmuladi* & *triphalakalkasiddhghrita*

2} In *PitajjTimir* – *JivntyadiGana* & *TriphalasidehhGhrita*

3} In *Kaphaj Timir*- *Vasadi*, *Triphala*, *Patol*, *Guduchi Kwathsidhh Ghrita*.

Virechnadi yoga =

1} In *Vataj Timir*- Use of *Erand oil* with lukewarm water or milk for *Virechana*.

2} In *Raktaj* & *PittajTimir*- *Virechana* with *Triphla Ghrita*

3}In *KaphajaTimir* -*Virechana* with *NishottarsidhhaGhrit*.

4} *TridoshajTimir*- *Virechanawith Trivritasidhha Tail*.

Nasyadi Yoga =

1} *VatajTimir*- *Jivantyadi tail*, *Mudgparni*, *Shatavari*, *Balasidehhatrivrutt tail* & *Masty*, *Anupamamsasidhhaghrit*.

2} *PitajjTimir* – Use of *Aajaghrita* made up of *Kaakolyadigana Aaushadhi*.

3} *KaphajTimir* - *Sahadi or Jalaudhbhavadi ghrita* *Nasya*, *Vidarigandhadisidhha Tail* and use of *Ushira*, *Lodhra*, *Triphala*, *Priyangu* *sidhha Tiltail*.

Anjanadi yoga =

1} *Vataj Timir*- *Yashtimadhuchurna* mixed with *vasa ofkrishnasarpa*, *grudho* use for *Anjana*.

2} *PitajjTimir*- *Raskriya* made up of *Rasanjana*, *Honey*, *Sugar*, *Manshila* etc & *SarivadiVarti*.

3} *KaphajTimir*- *VimalaVarti*, *KokiladiVarti*. Use of *Kasis*, *Rasanjana*, *Guda*, *Shunthi* in the form of *Raskriya* can be applied.

Tarpandi yoga : *TriphalaGhrit*, *MahatriphladiGhrit*, *JeevantyadiGhrit*, *PatoladiGhrit* etc.

In *Sannipatik Timir*, treatment should be done according to predominance of *Doshas*. Also some other modalities like *Lepa*, *Seka*, *Putpaka*, *Dhuma* and *Basti* are



also advised in all form of *Timir* according to predominance of *Doshas*.

Treatment of Raktaj & ParimlayiTimir:

In *RaktajandParimlyaiTimir* treatment should be done as per *PitajjTimir*, while in *ShaktajjTimirtreatment* should be applied as per *RaktajTimir*. In *AragiTimir* treatment should be done as per *RaktajTimir* and In *RagajTimir* as per the *PitajjKacha*. *AacharyaSushrut* stated that *Abhishyndoktatreatment* can applied as per *Doshaspredominance* in all form of *Timir*.

Some ***Pathykar Aahar-Vihar*** advised by *AchryaVagbhata* and *Yogratnakar*, as preventive measure in *Timiras* follow^{25,26}:

Pathaykaraahar: *Yava, Lohitshali (red rice,)* *Mudga (green gram), Sita, Jeevanti, Vastuk, Patol, Karwellak, Kumara, Vihangamamsa, Jangal and Mayuramamsa, Dadim, Draksha, Triphala, Streenamsarpi, Ajaaghril, Peya, Vilepi, Yush etc.*

PathykarVihar: *Netraprakshlan with triphlakwath, Padabhynga, Padprakshalan, Chatradharana, Padtrandharan, Doshnirharan (Shodhan),* Avoid surge of natural urges like *bashpa (ashru), Nidraetc, Palming, Candle gazing, Jalneti, Tratak, Sarvangasan, Bhujangasan, Vajrasan, Shrisasana etc.*

Chaksuya drugs: *Ghrita, Yastimadhu, Triphala, Jieevanti, Vastuk, Devdaru, Daruharidra, Musta, Guduchi etc.*

Some ***Chaksuyarasaynayogas*** by different *Aacharya:*

- *Sarpiguda (A.S.Chi-7), Triphalarasayana (A.S.Sutra-12), Shivagutika (A.S.Uttar-49)*
- *Bijaksaradi yoga (S.Chi-27), Vidangatanduliya yoga (S.Chi-27)*
- *Dronipraveshikrasayana (C.Chi1/4 pad)*

Sadhysadhytva of Timir^{27,28}:

As per *Vagbhata Acharya* all types of *Timir* are *Sadhya*, *Kach* are *Yapya* and all *Lingnash* are *Asadhya* except *KaphajLignash*, as it said to be *Shastrakrit*. While *Sushrut* stated that, *Pratham Patalashrit Timir* is *Sadhya*, *Dwitya Patalashrit Timir* is *Krichsadhya* and *Ragaprapt Tritya Patalashrit Timir* is *Yapya*. All *Lingnasha* except *Kaphaja* is *Asadhya*.

Ragprapti in Timir: When there is predominance of any one of *Dosha* in *Vyadhi* then those persons see specific colorful images such as: if there is *VataDosha* predominance then objects seen become red in color, when there is *Pitta Dosha* predominance then objects seen become yellow in color. This type of changes in '*Drushtivarna*' according *Doshic* predominance known as "*Ragprapta Drushti*"²⁹.



After *Ragpraptiin TimirSiramokshna* should be avoided because of mechanism of *Siramokshna*, *Doshprakopacan* occur which may lead to *Drushtinasha* (blindness), since if there is an emergency then *Jalukaavchrana* should be used.

DISCUSSION

AchryaSushrut considered *Timir* as “*ParamdarunVyadhi*”, therefore if it is left untreated finally leads to blindness. The symptoms of *PatalgatTimir* can be correlated with refractive error. Refractive error is major public health problem that leads to vision disorders. In modern medical science there are no any medicinal treatment available for refractive error and the available treatment also have some complications. Hence the ayurvedic science can be explored to find a better alternative to manage this condition. While, in *Ayurveda Acharya* described number of treatment modalities in the form of *PathykarAahar-Vihar*, *Netrakarma*, *Kriyakalpa*, *Panchkarma*, *Chakshuya drugs & Rasayana yoga etc.*

AachryaSushrut has stated that in acute condition of eye diseases, firstly *Langhna*, *Snehana*, *Nasya*, *Virechna* should be done for 3 days for *Dehashudhi*, after that *Abhishyndokta Tarpnaetc Kriyakalpa* can be done. As we know that *Netra* is site for *Alochaka pitta* which gets nourishment by

Pachaka Pitta. Since, *Koshtshudhi* is recommended firstly for 3 days to breakdown *Samprapti* of *Timir*.

Snehpanootar Virechana followed by *Raktmokshna* is main line of treatment of *Timir*. Before *Virechana*, *Snehana* & *Swedana* is advised, as it help to breakdown of *Doshnghata*, *Strotoavrodha* (channels of the body) and open it, make it soften, dissolving *Shleshma*, causing vasodilation etc. All these help for flow of *Vatadi Dosha* in their normal form, penetration of drugs upto cellular level, improve blood circulation, and help for excretion of toxic products out of body. *Virechana* is not only effective for elimination of *Pitta dosha* but also effective for *Vata*, & *Kapha Dosha*. It helps to remove *Vata-kapha Awarana* and helps open the channels of body. *Virechaka* drugs are get quickly absorbed in body by its *Virya*, *Vyavayi* property and spread upto cellular level due to its *Sukshma*, *Ushna*, *Tikshna*, *Vikasiproperties*. *Ushna*, *Tikshna* properties cause *Chedanaof doshasanghat* liquefied it and dragged towards *Koshtha*. *Triphalahas* predominance of *Madhur Rasa*, *Guru Guna*, *Sheet Virya* and *Madhur Vipak*. Considering the *Doshakarma* the drug is appears to be *Vatashamak*, followed by *Pittashamak Kaphashamaka* by virtue of its *Rasa*, *Guna*, *Virya*, *Vipak*.



Thus, *Tridoshamaka* effect of *Triphala* helps to disintegrate the pathology of the disease *Timir*, which is *Vatapradhan Tridoshaja* in its manifestation.

According to modern pharmacology, drug penetration depends upon permeability of layers of cornea. The epithelium & endothelium of cornea is highly permeable for lipid content, while stroma is permeable to only water content. Thus fat soluble and water soluble drugs readily penetrate these layers. *Triphalaghrit*, which is generally used for *Tarpana* is saturated with decoction of various drugs and hence it contains both lipid & water soluble constituents of *Triphala*. Thus it is lipophilic & hydrophilic; it has good penetration through various layers of the cornea. *Ghrita* is best for *Tarpana* due to its *Chaksushya*, *Rasayana*, *Yogvahi* and *Sanskaraunvarti* properties. The lipophilic action of *Ghrita* facilitates the transportation of the drug into the eyeball through the corneal surface.

Shiroshudhi by *Nasya* breaks down the *Strotorodha* and opens the channels to receive *Sneha*. Eye is an organ which should be protected from vitiated *kapha*. *Nasya* helps in protecting eyes from excessive vitiated *Kapha*. It helps to remove *Aamaat* at the cellular level and pacify the vitiated *Vata* and *Kaphadosha*. Due to *Strotoshodhana* &

Vatakapha shaman, *Awarana*, *Sanga* of *dosha* is removed and *Dhatupushti* is done irrespective of site. Daily scheduled eye exercises such as palming, candle gazing (*Tratak*), convergence & zooming, figure 8, blinking all these help to strengthen ciliary muscles, relieve its spasm and in turn lead to improvement for accommodation. Palming, blinking causes redistribution of tears and maintains lubrication of the ocular surface. In this way all therapies help to disintegrate the *Samprapti* of *Timir*, prevent vision loss and maintain it.

CONCLUSION

- 1) *Patalgat Timir* can be correlated with refractive error in symptoms point of view.
- 2) Treatment modalities described in Ayurvedic text help to prevent vision disorder and to maintain the visual acuity.



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