

A REVIEW STUDY ON REFRACTIVE ERRORS AND IT'S AYURVEDIC MANAGEMENT

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ABSTRACT

Emmetropia is optically normal eye & Ametropia is a condition of refractive error which includes Myopia, Hypermetropia, Astigmatism. Ametropia is the most common disorders of eye and has grown more in these recent years. These errors are treated by glasses, contact lenses, refractive surgery etc. These are only tools of management in modern science for refractive errors. WHO runs a Programme naming Vision 2020 has one of its objective to control & treat uncorrected refractive errors. Here attempt has been made to present refractive errors in respect to its management as ayurvedic aspect. By taking review of ayurvedic literature, we can claim that ayurveda is having the solution

for prevention & management of refractive errors. Curvatural deformity of lens or cornea or both causes refractive errors & in ayurvedic literature curvatural size or diameter variation as per *prakriti* is described, while suitable diet & life style for corresponding *prakriti* is also suggested which prevents the disorders of any ophthalmic disease such as refractive errors. Retinal & lenticular degeneration is one of the cause of refractive errors & new generation is related to *shukra dhatu*, hence *vajikaran* & *rasayana kalpas* which has action on both *shukra* & *Netra* like *kaishor Guggulu*, *chandraprabha vati*, *punarnava*, *vasant kalpas* etc can be used. *Tarpana*, *Putpak* plays very important role in Ametropia as well.

KEYWORDS: Corneal curvature, *prakriti*, *Shrukrasarta*, cellular regeneration, lens, Retina.

INTRODUCTION MATERIALS & METHODS

1) Review on Curvatural Type of Refractive Error

Curvatural hypermetropia is the condition in which the curvature of cornea, lens or both is flatter than the normal resulting in a decrease in the refractive power of eye. *Prakriti* wise variation in size of eyeball or the cornea is mentioned in Ayurveda & it's clearly indicated

that if person is not adapting his life style & having food suitable to his *Prakriti*, he will be prone to diseases of any system as per his *Prakriti*.^[1]

Here we are focusing on the size variation as curvatural refractive error is concerned then question about *Saddhya-Asaddhyatva* (prognosis) arises, so here Ayurveda always think about *Bala* of person that is potential of body to face or prevent to the disease. *Bala* is again of three types.^[2]

Sahaj (by birth strength), *Kalaj* (season & age wise strength) & *Yuktij*. If young patient is coming with refractive error that means *Sahaj* & *Kalaj Bala* is not enough. So here use of *Yuktij Bala* is found & *yuktij Bala* is nothing but developed by appropriate *aahar* (diet), *viharar* (activities) by considering the *vyadhi, desh, Prakriti*.

While modern science believes that inadequate & faulty diet leads to curvatural type of refractive error.^[3] That means one should have diet habits & lifestyle as per his *prakriti*.

2) Review on Developmental Type of Refractive Error

At birth, the eyeball is relatively short, having +2 to +3 hypermetropia. This is gradually reduced until by the age of 5-7 years the eye is emmetropic and remains so till the age of about 50 years. Eye is the *sthan* (location) of *Pitta*^[4] & *Darshan* (to see) is the *karma of Pitta* that means *Pitta dosha* is related with the eye. *Majja dhatu vriddhi* (increased level) or *kshaya* (reduced level) shows symptoms related to eye & vision that means *Majja* is too related with the eye.^[5]

Aacharya Dalhana says *Pittadhara Kala* is nothing but *Majjadhara kala* & *Majja dhatu* is often get compared with *shira Pradesh* (brain) that means related to development.

When sedentary life style like restricting any natural phenomena e.g. *kshavathu veg dharan* (restricting sneezing) as its result *Pran vayu* of which *Murdha* (brain) is the main *sthan* (location) get affected & side by *Kaph Sanga* (stagnation of *kapha*) happens at *Murdha* (brain). *Chhardi veg* is also concerned with *pran vayu* & by restricting vomiting eyes got affected.^[6]

It means due to this behavioural mistake *Majja dhatu* got affected & as it is habit, it shows its bad impact on eye in any form such as a developmental refractive error.

3) Review on Treatment of Other Systemic Disease & Its Effect on Refraction

Symptoms of *Pratham patalagat Timira* can be matched with Myopia. *Pratham Patala* is composed by *Tej & jal mahabhut*.

Ayurveda describes *Swatantra* (Main disease) & *Paratantra Vyadhi* (Secondary Disease)^[7] If patient is having *Mutraj Ashmari* (Renal Calicle), usually high water intake is suggested to these patients, *jal* is having *Amla Vipaka*, more consumption of water causes increased *Amlata* & hence increase the level of *Vikruta Pitta* by which it again affects the eye & causes *timir* as per *vagbhata*^[8] & also oral water intake is absolutely contraindicated in Ophthalmic disorders.^[9]

It clearly indicates that few management techniques of other diseases such as renal calculi affect the refraction & causes *Pratham Patalagat Timira*. Ayurveda suggests abundant oral water intake in the form *Dhanyak Jirak Phant* which helps to cure renal renal calculi without promoting any eye disease as it is easiest digestible form of water which doesn't affect the refraction.

4) Review on Degenerative Changes In Lens Causing Refractive Error & Its Management

Lens is the refractive media & degenerative changes in it causes refractive errors.

Utpadana (new generation) is associated with *Shukra Dhatu*. *Aacharya Charaka* says person with *Shukra Sarata* has ideal eyes & vision.^[10]

It means *Shukra* & eyes has direct association & hence medicines mentioned in *Vajikaran adhikar* will help to reduce degeneration at lenticular level. *Rasakalpa* like *kaishor guggulu* is usually given for degenerative changes in lense & retina causing refractive errors.^[11] *Aacharya Sharangdhara* says to use *kaishor guggulu* with *Vasa swaras* which claims to cure *Netra Roga* (eye disorders) & *Jara Nasha* (stops degeneration). Logic behind using it with *vasa swarasa* is retinal vascularisation can be compared with *urdhvaga raktpitta* as excessive *rakt vriddhi* is found.

5) Review on Treatment of Different Types of Refractive Errors

Pratham Ptala is composed by *tej & jala* while *dwitiy patal* is by *mansa dhatu*. Medicines like *chandraprabha varti* acts on *mans dhatu* & it's already *rasayana* & *netrarogahar kalpa*.^[12]

Dravyas i.e. plants included in *vayasthapana Gana* are known for their anti-ageing property can be used in sclerotic changes in lens & hence causing refractive errors such as hypermetropia.^[13]

Punarnava+falatrik+raupya bhasma can be given in case of lenticular deformity. *Punarnava* having *rasayan* activity while *roupya bhasma* is having both *rasayan* & *netrarogahar* property. As *raupya bhasma* is having *kashay rasa* & *sheet virya*, it helps to reduce vascularisation of retina. *Falatrik* is *chakshushya*, *rasayan* & *virechak* (purgative) which is helpful to reduce diseases of eye as *pitta* is located at eyes.

Tarpana with *triphala ghruta* & *trataka* exercise plays important role in accommodation spasm related refractive errors.^[14]

RESULT AND DISCUSSION

Emmetropia (optically normal eye) can be defined as a state of refraction, where in the parallel rays of light coming from infinity are focused at the sensitive layer of retina with the accommodation being at rest.^[15] Compilation of ayurvedic literature related to refractive errors is done in this study. Impaired refractive media that is cornea, Lens & retina was focused for *Ayurvedic* management by logic developed through compiled study. As the result of study it is clear that refractive errors can be prevented by Ayurveda. Few types of refractive errors can be get treated by *ayurvedic* management.

CONCLUSION

Developmental Refractive errors can be prevented by proper diet and adapting better lifestyle. *Veg dharan* must be avoided to treat this type. Though curvatural type is anatomical change in cornea, natural factors like *prakriti* of person puts its impact over this size variation. That means one should have diet and life style as per his *prakriti*. Eye is the part of body hence other systemic disorders and their management may give rise to refractive errors or *pratham patalagattimir*. As *pratham patal* of *netra* is made up of *tej* and *jal mahabhut*, *atyambu pan* that is more water intake should be avoided in such a cases. *Shukra dhatu* brings the new generation in our body that means *vajikar kalpas* should be used in lenticular degeneration. Medicines like *chandraprabha* acts on *mans dhatu* present in *netra* and hence able to reduce the cylindrical number as it acts on ciliary muscle of eye ball. There is lot of scope for compiling the data related to refractive errors and other ophthalmic disorders from *ayurvedic* classics for the further studies.

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