

## AN AYURVEDIC PERSPECTIVE ON AGE RELATED EYE DISORDERS – A CONCEPTUAL STUDY

Dr. Anamika Singh Tomar<sup>1\*</sup>, Dr. Vivek Shrivastava<sup>2</sup> and Dr. Omh Prakash Shukla<sup>3</sup>

<sup>1</sup>M. D. Scholar, Government Autonomous Ayurvedic College & Hospital, Rewa (M.P.).

<sup>2</sup>Associate Professor, Government Autonomous Ayurvedic College & Hospital, Rewa (M.P.).

<sup>3</sup>Assistant Professor, Government Autonomous Ayurvedic College & Hospital, Rewa (M.P.).

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**\*Corresponding Author**

**Dr. Anamika Singh Tomar**

M. D. Scholar Government  
Autonomous Ayurvedic  
College & Hospital, Rewa  
(M.P.).

### ABSTRACT

**Introduction:** Tremendous advancement made in the science of ophthalmology in recent years. But at the same time, there are numerous challenging problems existing before modern ophthalmologists that require special attention to develop untrodden fields of medical knowledge hidden in ancient medical texts. For instance, problems retrained with ageing such as senile cataract, age related macular degeneration, presbyopia etc. have remained unsolved since decades. In contemporary medicine, there is no adequate treatment for many age-related eye disorders. Thus, an attempt has been made in this conceptual study to use *Ayurveda* to discover a better answer. *Jaratantra* or *Rasayana Tantra* is one among the eight branches of *Ayurveda* that deals with disorders of ageing through the concept of *Rasayana*. Ayurvedic *Chakshushya-Rasayana* approach represents an alternative approach to age related eye disorders.

**Material & Methods:** A literature search on *jaravastha gata netra rogas* and its treatment modalities which can be helpful in preventing age related ocular diseases under headings *dincharya*, *kriyakalpa*, *rasayana* therapy along with usage of *chakshushya dravyas* as well as *Yogic kriyas* was performed. **Results:** Preventive measures like *Hetupariverjan*, following *Dincharya*, *Rasayana Chikitsa* (rejuvenation therapy) will be more effective to prolong degenerative changes in eyeball. **Discussion & Conclusion:** The degenerative changes in the retina associated with age related eye disorders make treatment challenging. By utilizing *Chakshushya Rasayana* medicines at an early age, one can also change their lifestyle and

postpone aging. When treating any condition, *Ayurveda* considers the body, mind, and sense organs, providing a holistic approach to controlling common diseases in the aged.

**KEYWORDS:** Age-related eye disorder, Jara, Jaravasthagata Netrarogas, Ayurveda, Chakshushya rasayana.

## INTRODUCTION

*Jara* or Ageing is a factor which cannot be avoided by any person. Several common problems such as memory loss, vision loss, wrinkles, etc., are more prevalent at this stage. In *Ayurveda* according to *Acharya Sharangdhar* after 6th decade *drishti* starts declining.<sup>[1]</sup> It is also evident that after the age of 60 years different changes takes places in the ocular tissue which causes diminish of vision.

Our primary objective need to be slow down the ageing process, prevent and treat illness at an early stage and maintain our vision in *Jaravastha*. There are various principles in *Ayurveda* that promote lifespan and good health.

## AIMS AND OBJECTIVES

To study the role of *Dincharya*, *chakshushya Dravya*, *Rasayana therapy*, *Kriyakalpa* & *Yoga kriyas* on Geriatric Ophthalmology.

## MATERIAL AND METHOD

A literature search on *jaravastha gata netra rogas* and its treatment modalities which can be helpful in preventing senile ocular diseases under headings *dincharya*, *kriyakalpa*, *rasayana* therapy along with usage of *chakshushya dravyas* as well as *Yogic kriyas* was performed.

## JARA

*Jara* or ageing is a life stage which cannot be changed. According to *Acharya Charak*, *Jara* and *Mrityu* are both examples of *Swabhavika Roga*, or natural ailments.<sup>[2]</sup> Since both involve a time component and time is a finite resource, nobody can escape the processes of *Mrityu* (death) and *Jara* (declining condition). It indicates that there is no chance of recovery; nevertheless, *Rasayana* can sometimes slow down or stabilize *Jara*.

In everyday speech, the term "*Jara*" should be interpreted as a *Vridhhavastha*; alternatively, it might be interpreted as a decline of *Vayah* or *Ayu*.

### Decade wise decline conditions

According to *Acharya Sharangdhar Balya* (childhood), *Vridhi* (growth), *Chhavi* (wellstructured and beauty), *Medha* (power of retention), *Twak* (Luster of skin), *Drishti* (vision), *Shukra* (Sexual Potency) *Vikram* (working capacity), *Buddhi* (Intelligence) and Strength of *Karmendriya* (all motor activities) are decline or ends serially at the end of first to tenth decade of Life.<sup>[1]</sup> This shows that after 6<sup>th</sup> decade *Drishti* starts declining. The gradual denaturation of the lens protein contributes to the lens's enlargement, thickness, and decreased elasticity with ageing in an individual. Consequently, the lens's capacity to change shape gradually diminishes.

### Common vision problem in Ageing

By some age, most of person experience some vision changes. As eyes undergo normal ageing changes some changes are found like,

- Decrease in clarity of vision
- Decrease in focusing power
- Decrease in ability to see differences in colours
- Decrease in ability to judge distances,
- Increased sensitivity for light
- Increased spots or specks
- Increased or decreased tearing.

As the lens of the eye becomes less flexible, it is less able to focus. Which results in difficulty in reading fine print or see close objects clearly.

Cataract, Presbyopia and ARMD is more common after 65 yrs. of age. India has about 77 million people vulnerable to vision-related disorders at or above the age of 60 years representing a large group and the number is estimated to reach 180 million by 2026. The prevalence of cataract in people aged  $\geq 60$  was 58% in north India (95% CI, 56–60) and 53% (95% CI, 51–55) in south India ( $P = 0.01$ ).<sup>[3]</sup>

In contemporary medicine, there is no adequate treatment for many age-related eye disorders. Thus, an attempt has been made in this conceptual study to use *Ayurveda* to discover a better answer.

### Eye Diseases and Disorders Common in Aging Adults

**Cataract:** The signs and symptoms of a cataract include lens opacity, black spots in front of the eyes, coloured halos, loss of vision, glare, or intolerance of bright light, and unocular polyopia (doubling or trebling of objects). Across the globe, it is the most prevalent age-related disease that causes the greatest proportion of blindness.

According to *Ayurveda*, cataract is caused by the vitiation of the *vata*, *pitta*, and *kapha doshas*. *Ayurveda* believes that cataracts can be treated if identified in their early stages. The progression of cataract from its immature to mature stage can be slowed down or controlled by using *Ayurvedic* treatments like *Virechana*, *Anjana*, and *Aschotanam* together with oral medicines like *Chakshushya dravyas* & *rasayana* drugs.

**Age related Macular degeneration (ARMD):** For individuals over 50, it is the primary cause of blindness. Macular degeneration typically affects older persons and causes vision loss in the center of the visual field. Between 65 and 75 years of age, at least 10% of adults will have some degree of central vision loss from ARMD. Also, 30% percent of people over 75 years of age will experience some degree of disruption. Typical signs and symptoms include: blurry vision, Central scotomas (shadows or dark patches in the center of the field of vision), Vision distortion (also known as metamorphopsia): A straight-line grid appears wavy, color misunderstandings, gradual restoration of vision after exposure to intense light.

Macular degeneration is *Vata* (dry ARMD) and *Pitta* (wet ARMD) predominate, according to *Ayurveda*. Therefore, *Vatashamak chikitsa* focusing on the head and eye is essential. This is because *Brimhana Nasya*, *Sirobasti*, oil-based *Sirodhara*, *Netratarpana*, and so on are helpful. The patient's age, physical constitution, and mental health should all be taken into consideration while choosing the medication for any of these procedures.

In case of vitiation of *pitta* or wet AMD, it is very important to start the treatment as soon as possible otherwise persistent oedema can cause irreversible damage in retina. Also, *Pittashamak chikitsa*, *chakshushya* and *rasayana* drugs are appropriate for this condition. Some *rasayana* drugs like, *Jyotishmati* (*Celastrus paniculata*), *Triphala*, *yashtimadhu* (*Glycyrrhiza glabra*), *Amalaki* (*Emblica officinale*) etc. can be taken.

**Presbyopia:** It is a relatively common visual impairment that appears and gets worse with age. Having presbyopia makes it difficult to focus on nearby objects. Refraction is a simple

way to correct this. Our changing lifestyles, increased computer usage, TV watching, and inactivity cause the natural lens in our eyes to harden, making it more difficult for the eye to concentrate light directly onto the retina. With regular *netrakriyakalpas* like *tarpana* and *netradhawan*, light *yoga* excersises, eye exercises, diet restrictions, and intake of some *chakshushya* drugs, we can prevent the lens from hardening too early (before the age of 40–45) and inhibit the degenerative process of the eye from continuing.

### Basic Principles of treatment in Geriatric eye disorders

The three stages of life described in *Ayurveda* are *Vriddhavastha*, *Youvana*, and *Balya*, during which the predominate *doshas* are *Vata*, *pitta*, and *Kapha* respectively. The *Vata dosha* dominates during the *Vridhhavastha*. Also, there is remarkable decrease of *Dhatus*, *Indriyabala* and *oja*.<sup>[4]</sup>

**In all above-mentioned changes, we can observe**

**Dosha-** *Vata vruddhi*, *Kapha khsaya*, *Pitta dushti*

**Guna** –*Ruksha guna vruddhi*, *Snigdha sthira guna khsaya*.

**Dhatu** – *Sarva dhatu kshaya*, *Oja kshaya*. **Indriya** – *Bala hani*.

Therefore, *Vatashamak Upakramas* such as *Snehana*, *Snehapana*, *Ghritapana*, *Mridu virechana*, *Basti*, *Siro basti*, *Siro pichu*, *Nasya (snehana)*, *Snigdha anjana*, and *Parisheka* with *Siddha dugdha* should be used as a general treatment for geriatric eye problems. *Rasayana* and *Chakshushya* medications can be used as *Shamana chikitsa*.

### General treatment for Geriatric Eye Disorders in *Ayurveda*

#### • Following *dincharya* (Daily Regimen)

1. **Anjana:** As per *ayurveda* the eye is the element of *agni*. So, it is susceptible to vitiated *kapha*. Therefore, measures that pacify *kapha* are beneficial for keeping the vision clear. Hence one should daily apply the collyrium of *sauviranjana* (a type of collyrium), which is beneficial to the eyes.<sup>[5]</sup>

2. **Padabhyanga:** While explaining *Padabhyanga* and its importance in *dincharya* *Acharya Sushruta* has mentioned it as *chakshusya*.<sup>[6]</sup> *Acharya Vagbhatta* says that in the centre of each foot, two *siras* are situated which are greatly connected to the eyes. These transmit the effect of the medicines applied over the feet in the form of *udwartana*, *lepana* etc. to the eyes.<sup>[7]</sup>

Therefore, for protecting our eyes we can modified our lifestyle by simple intervention of *dincharyokta Padabhyanga* practises in our daily life.

**3. *Pratimarsha nasya*:** *Pratimarsha* is an oleative type of nasal stimulant without any adverse effects whatsoever, serves both oleation and purification and can be performed daily. One, who practices *nasya*, as per the prescribed method, at the proper time, will keep his sight, smell and hearing unimpaired.

- ***Chakshushya Dravya*:** *Ahara*, or diet, plays a crucial role in aging and *Jara*. Poor nutritional status (*Gramya Ahara*) paired with an unhealthy lifestyle can vitiate any or all three *Doshas*, leading to pathological changes and shortened lifespan. The various *chakshushya dravya* mentioned in our classics such as *triphala*, *madhu*, *Shigru*, *yashtimadhu*, *yava*, *ksheer*, *ghrita*, *draksha*, *amalaki* etc. are rich source of micro and macro nutrients like sorbitol, glucose, fructose, glycogen, mucoprotein, calcium, zinc, glutathione, vit-A, E, C, K, B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, B<sub>12</sub>, D which helps in maintaining normal function and structural integrity of eye. “*Chakshustejomayam tasya vishesat sleshmatobhayam*” Signifies *Chakshu* is the chief site for *Alochaka Pitta* and is more prone to *Kapha* disorders.<sup>[8]</sup> So *Chakshushya dravyas* should be *Kapha Shamaka* and *Pitta Vardhaka*. But *Pitta* is *Aadana Karaka*, and it will cause *Chakshuindriya Balahraasah*. So *Chakshushya Dravyas* should be having property of balancing all the three *Doshas*, especially keeping the *Pittakapha Samyata* i.e., *Kaphashamaka* but without disturbing *Pitta Samyata*.

A study published by researchers at the Massachusetts Eye and Ear Infirmary reported that people who consumed the most vegetables rich in carotenoids (lutein and zeaxanthin) had a 43 percent lower risk of AMD than those who ate these foods the least.<sup>[9]</sup> This shows that, *chakshushya dravyas* has *rasayana guna* help in restoring normal ocular function. The drug assumed to have the chemical constituents like vit C, carotene, riboflavin, magnesium, potassium. These constituents protect further degeneration of photoreceptor cells. Thus, *Chakshushya Darvyas* described in the Ayurvedic literature has vast area of properties which includes drugs having, healing, nutritive, preventive, therapeutic, and rejuvenating properties.

- ***Rasayana therapy*:** *Rasayana* is one of the eight clinical specialties of classical *ayurveda*. It appears to have been practised in ancient times as an important speciality aiming at rejuvenation and geriatric care. *Rasayana* is not a drug therapy but is a specialised

procedure practised in the form of rejuvenative recipes dietary regimen and special health-promoting conduct and behaviour such i.e. *achara-rasayana*.

There can be specific age groups which help in restoring the loss of specific *rasayana* for specific age groups which help in restoring the loss of specific biovalues of the respective ages such as for the age group of 51-60 yrs suitable *rasayana* drugs can be *triphala ghrita*, *saptamrut lauha*, etc. which can be used to get the desired effect on *drishti*.

Two main objectives are there to give *Rasayana*

1. *Rasayana* is utilized to achieve the optimum levels of the *Dhatu*, this is the primary objective of *Rasayana* (by which both the health and ill-health can be managed) and
2. *Rasayana* is also employed to obtain the freedom from diseases, caused either by natural courses or abnormal conditions; this is the secondary objective of *Rasayana*.

*Charaka* has briefly defined *Rasayana* as the measure by which one gets *Rasa*, *Rakta*, etc. *dhatu* in its best condition.<sup>[10]</sup> *Sushruta* has defined *Rasayana* as the therapy, which establishes the age (*Vayasthapana*), increases the life span (*Ayuskar*), intelligence (*Medha*) and strength (*Bala*) as well as it enables the person to get rid of the diseases.<sup>[11]</sup> *Dalhana* has explained the word “*Vayasthapana*” by giving its two meanings of “*Vayasthapana*”:

- 1) It enables the person to live a full life span of 100 years.
- 2) It makes the man to live young for a long period thus prevents the *Jara*.<sup>[12]</sup>

In short, *Rasayana* is the therapy, which provides the optimum quality of the bodily tissues and the promotion of both physical and mental health, and prevents the *Ageing* and diseases. This therapy enables the person to live for a longer youthful life.

- ***Kriyakalpas***

Following the process of body purification, *Netra Kriya-kalpas* should be utilized such as

- 1) *Seka*: *Netra Seka* combined with *Triphala Kwatha* (an eye wash made with medicinal *Kashayam*).
- 2) *Anjana*: The administration of a paste-like medication to the eyes. (*Hritakyadi Varti*, *Sarivadi Varti*, *Rasanjan*).
- 3) *Aschyotana*: applying eye drops to the affected area.



4) *Tarpana*: Creating a concentric border around the orbit and applying medicinal *ghee* over the eye for the designated amount of time. *Tarpana* with *Triphala*, *Jeevantyadi*, *Shatavhadi*, and *Goghrita* can be useful as per ayurvedic classics.

5) *Putapaka*: Administering medications made from plant extracts, lipids, and certain minerals to the eye for a predetermined amount of time while creating a concentric circle around the orbit.

- **Yogik Kriya**

Soul (*Aatma*), Mind (*Mana*), Eye (eyeball) and Visual centres (*Netra Indriya*) act together and help us to see the object. *Yogik Kriyas* can facilitate economical operating of (*Netra Indriya*) by assuasive mind.

1. *Trataka* (concentrating on specific object/candle light).

2. *Bhramari* can facilitate to reinforce *Netra IndriyaBala* and delaying chronic changes.

3. *Surya Namaskara* (Sun salutation).

## DISCUSSION AND RESULT

Local treatment alone will not be sufficient for geriatric eye diseases, as they arise from degenerative changes in the retina (*Drushtigata doshdushti*). Because of "*Swabhavabala pravrutattva*," senile illnesses can be difficult to treat. *Ayurvedic* principles state that prevention is always preferable, or "*swasthasya swashthya rakshana*." Preventative measures such as *Hetupariverjan*, *Rasayana chikitsa* (rejuvenation therapy), and *Dincharya* will be more effective in delaying the deteriorating changes in the eyeball. We can prevent adverse impacts on our eyes from an altered lifestyle by following to the "*Netra Raksha Vidhi*." Since many *Chakshushya dravya* have antioxidant qualities, we may delay the aging process by initiating to use *Chakshushya Rasayana* medications (rejuvenation therapy) at a young age. For the treatment of any illness, *Ayurveda* takes the body, mind, and sense organs into consideration. Therefore, ayurvedic approach in preventing the geriatrics eye problems can be helpful.

## CONCLUSION

By following to *Dinacharya*, *Ritucharya*, and the Samhita's guidelines on *Ahara*, *Vihara*, *Panchakarma Chikitsa*, *Rasayana Chikitsa*, and *Netrakriyakarmas* recommended for *Swastha*, one can prevent eye disorders and delay age-related ocular changes. When it comes to preventing age-related ocular alterations, *Anjana*, *Pratimarsha Nasya*, and *Murdhataila* are very important. Thus, *Ayurveda* presents with a comprehensive approach through its various



pharmacological (oral medications and *panchakarma* therapy) and non-pharmacological measures (*Sattvavajaya chikitsa*) and yogic procedures towards management of most of the prevalent diseases in the elderly, the senior citizens who have spent their whole life for the society.

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