

## CHAKSHUSHYA EFFECT OF RASAYANA CHURNA ON REFRACTIVE ERRORS- A CASE STUDY

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### ABSTRACT

Nowadays whole world is under the influence of the cell phones and computer. Because of this the rate of refractive errors has been increased ultimately compelling people to use spectacles since childhood. WHO estimates that 153 million people worldwide live with visual impairment due to uncorrected refractive errors, in this Present study after taking *Rasayana Churna* for two years regularly, symptoms of the subject related to myopia like Double vision, Haziness, Glare or Haloes around bright lights without using spectacles has been remained same (i. e. severe) after one year and after another one year, subject has got relief from severe to moderate. And in symptoms like headache, eye strain without using spectacles, subject has got relief after six months which remained same at the end of two years.

Refractive test also showed changes in the SPH distance correction of Rt Eye as well as Lt eye which has been reduced from -1.50 to -1.25 of Rt eye, and from -1.25 to -1.0 in Lt. eye respectively. It has been observed that before treatment near correction of Rt eye was +0.75 which changed to +1.0 after the treatment. And also it has been observed that before treatment near correction of Lt eye was +1.0 which was changed to +1.25 after the treatment.

Present study shows the positive result of *Rasayana Churna* on myopia. Through this study people will benefitted in getting rid of using spectacles which will enhance their look.

**Keywords:** *Myopia, Rasayana Churna, Refractive errors*

### INTRODUCTION

Eyes are the most precious gift of God to the living beings. It holds a special status among all the sense organs. Our new generation is the pray of different problems related to the visual, ocular and systemic symptoms which are arising due to the prolonged use of the modern gadgets.

The causative factors behind all problems are mainly improper use of sense organs, improper diet, violating the moral code of conduct and the effect of the time. Among these, improper use of sense organs like eye can lead to refractive errors. Refractive errors are of 4 types i.e. Myopia,

Hyperopia, Astigmatism and Presbyopia. Among these Presbyopia is the age related condition of eye but another 3 are the conditions which can affect both children and adults.

Combination of *Rasayan Churna* is described in *Ashtanga Hridaya* as *rasayana* which is used for strength of hair and gives long healthy life.<sup>2</sup> According to *Charaka Samhita*, a person undergoing rejuvenation therapy attains longevity, memory, intellect, freedom from diseases, youth, excellence of luster, complexion and voice, excellent potentiality of the body and the sense organs,

*vak-siddhi* (i. e. what he says comes true), respect and brilliance.<sup>3</sup>The means by which one gets the excellence of *rasa*(the nourishing fluid which is produced immediately after digestion etc.) is known as *rasayana* or a rejuvenation therapy. Combination of *Guduchi* (*Tinospora cordifolia*), *Amalaki* (*Embllica officinalis*) and *Gokshura* (*Tribulus terrestris*) is well known as *Rasayana Churna*.<sup>4</sup>

So the present study is proposed to assess the *chakshushya* effect of *Rasayana churna* in the treatment of refractive errors. This study is proposed to explain that *Rasayana Churna* can be considered as curative and preventive measure in refractive errors like myopia.

**AIMS & OBJECTIVES:**

- A) To validate the concept of *Rasayana* in refractive errors.
- B) To assess the *Chakshushya* effect of *Rasayana Churna* in relation to refractive errors.
- C) To spread awareness among physicians that *Rasayana Churna* can be used as preventive measure in refractive errors.

**PLAN OF STUDY:**

- The *Rasayana churna* is prepared as per the general method described in Ayur-

vedic Formulary of India. All the ingredients are shade dried and powdered separately, passed through 80 # sieve, and then mixed together in equal proportions to get uniformly blended *churna* and made into coarse powder with the help of a grinder. They are finally powdered and sieved (80#) separately.

- The *Rasayan Churna* was prepared in reputed Pharmacy from Mumbai.
- The *Rasayana churna* was given with *Anupana Madhu* (Honey) at the dosage 10gms at night.
- The *Rasayana churna* was given to subject continuously for two years with follow up of every six months.
- Written consent was obtained from subject before giving medication.

**DURATION OF STUDY:** 2 years

**CRITERIA OF ASSESEMENT:**

**Criteria for refractive errors:**

- CRF (Case Record Form) was prepared.
- Symptoms like Double vision, Haziness, Glare or haloes around bright lights, Headache, Eyestrain were monitored after every 6 months in severe, moderate and mild format for which gradation were +++,++ and + respectively.

**TABLE NO.1 SHOWING CRITERIA FOR SYMPTOMS**

SYMPTOMS(WITHOUT USING SPECTACLES)	Mild	Moderate	Severe
Double vision	+	++	+++
Haziness-	+	++	+++
Glare or haloes around bright lights	+	++	+++
Headache	+	++	+++
Eyestrain	+	++	+++

- A specialized rating scale for refractive errors examination was prepared. This examination was done to the subject in

two intervals i.e. before treatment and after two years of the treatment.

**Diagnostic criteria:**

- To evaluate the *Chakshushya* effect of the drug, whole importance was given to the findings of refractory errors given by Private Eye Centre running by Ophthalmologist. This test was done to the subject in two intervals i.e. before treatment and after two years of the treatment.
- This study was done in private clinic.

**OBSERVATIONS:**

**Name of the patient:-** XYZ

**Sex:** Male

**Age:** 53 yrs

**Profession:** Teacher

**Religion:** Hindu

**Diet:** Vegetarian

**Present complaints & Duration:**

Without spectacles following complaints occurs

Double vision- Increased since last one month

Haziness- on and off Increased since last 1month

Glare or haloes around bright lights- on and off Increased since last 1month

Headache- Increased since last 1month

Eyestrain- Increased since last 1month

**History of Previous illness:**

No h/o any major illness/Diabetes Mellitus/ Ischaemic Heart Disease/Renal Disorder

Patient was using bifocal spectacles since 10 yrs

**Family History:** Father and Mother expired due to M.I before 4 yrs & 2 yrs respectively.

**Special Complaint:** Patient was curious about his fitness of the body .

**On Examination:**

Pulse rate-72/min

R.R.-20/min

B.P.-120/70

**TABLE NO.2-SHOWING REFRACTIVE TEST BEFORE TREATMENT ON DATE 12/07/2005**

	RT EYE				LT EYE			
	SPH	CYL	AXIS	Vn	SPH	CYL	AXIS	Vn
<b>DISTANCE</b>	-1.50	- 0.5	70 <sup>0</sup>	6/9	-1.25	- 0.25	90 <sup>0</sup>	6/9
<b>NEAR</b>	0.75	0.50	70 <sup>0</sup>	N6	1.0	0.25	90 <sup>0</sup>	N6

**REMARK: BIFOCALS**

- Medicine Given:** *Rasayana churna* 10 gms at night with *Madhu*(honey).

**FOLLOW UP STUDY:**

**TABLE NO.3 –SHOWING FOLLOW UP STUDY**

SYMPTOMS(WITH-OUT USING SPEC-TACLES)	1 <sup>st</sup> Follow Up After 6 months	2 <sup>nd</sup> Follow Up after 1 year	3 <sup>rd</sup> Follow Up after 1 year and 6 months	4 <sup>th</sup> Follow Up after 2 years	Remark
<b>Double vision</b>	+++	+++	++	++	Relieved
<b>Haziness</b>	+++	+++	++	++	Relieved
<b>Glare or haloes around bright lights</b>	+++	+++	++	++	Relieved
<b>Headache</b>	+++	++	++	++	Relieved

**Eyestrain**                      +++                      ++                      ++                      ++                      Relieved  
**TABLE NO 4-SHOWING REFRACTIVE TEST AFTER TREATMENT ON DATE 11/08/2007**

	RT EYE				LT EYE			
	SPH	CYL	AXIS	Vn	SPH	CYL	AXIS	Vn
<b>DISTANCE</b>	<b>-1.25</b>	<b>-0.50</b>	<b>70<sup>0</sup></b>	<b>6/9</b>	<b>-1.0</b>	<b>-0.25</b>	<b>90<sup>0</sup></b>	<b>6/9</b>
<b>NEAR</b>	<b>+1.0</b>	<b>-0.50</b>	<b>70<sup>0</sup></b>	<b>N6</b>	<b>+1.25</b>	<b>-0.25</b>	<b>90<sup>0</sup></b>	<b>N6</b>

**RESULT**

Refractive test also shows changes in the SPH distance correction of Rt. Eye as well as Lt eye which has been reduced. It has been observed that near correction of Rt. eye and Lt. eye which was shown before treatment has been changed after treatment.

In the present study symptoms of the subject related to myopia like Double vision, Hazziness, Glare or Haloes around bright lights without using spectacles, has been remained same ( i. e severe) after one year and the after another one year it has been decreased from severe to moderate. And symptoms like headache, eye strain without using spectacles, it has been decreased after six months and remained same at the end of two years.

**DISCUSSION:**

As per Modern science, in humans, three carotenoids (beta-carotene, alpha-carotene, and beta-cryptoxanthin) have vitamin A activity (meaning they can be converted to retinal), and these and other carotenoids can also act as antioxidants. In the eye, certain other carotenoids (lutein, astaxanthin<sup>[2]</sup> and zeaxanthin) apparently act directly to absorb damaging blue and near-ultraviolet light, in order to protect the macula of the retina, the part of the eye with the sharpest vision.<sup>5</sup>

It is well known that the retina and lens are enriched in these carotenoids, relatively little is known about carotenoid levels in the uveal tract and in other ocular tissues. In addition, human ciliary body revealed the presence of monohydroxy carotenoids and hydrocarbon carotenoids, while only the latter group was detected in human RPE/choroid. Uveal structures (iris, ciliary body, and RPE/choroid) account for ~50% of the eye’s total carotenoids and ~30% of the lutein and zeaxanthin. In the iris, these pigments are likely to play a role in filtering out phototoxic short-wavelength visible light, while they are more likely to act as antioxidants in the ciliary body. Both mechanisms, light screening and antioxidant, may be operative in the RPE/choroid in addition to a possible function of this tissue in the transport of dihydroxy carotenoids from the circulating blood to the retina. This report lends further support for the critical role of lutein, zeaxanthin, and other ocular carotenoids in protecting the eye from light-induced oxidative damage and aging.<sup>6</sup>

The beneficial effects of carotenoids are thought to be due to their role as antioxidants. Beta-Carotene may have added benefits due its ability to be converted to vitamin A. Furthermore, lutein and zeaxanthin may be protective in eye diseases because they absorb damaging blue light that enters the eye.<sup>7</sup>

*Rasayana churna* is said to be good for hairs.<sup>8</sup> But according to the definition of *rasayana*, it was decided to see the effect of it on refractive errors as it is described in *rasayana adhyaya*. *Rasayana* therapy (Rejuvenation Therapy) attains *dehaindriya bala* (excellent potentiality of the body and the sense organs)<sup>9</sup> and *Tarpaka kapha* nourishes sense organs.<sup>10</sup> It means the word *Rasayana* (*Rasa + Ayana*) refers to nutrition and its transportation in body. Such a state of improved nutrition is claimed to lead to a series of secondary attributes like prevention of ageing, provide immunity against diseases, mental competence, increased vitality and luster of the body.

There are *pancha indriyas* (five sense organs) in the body.<sup>11</sup> Sense organ of vision is *Chakshu rindriya* (*Chakshu*) is a sense organ consisting of *teja mahabhuta*. Its location is eye, object (*artha*) is vision and perception of it is *chakshusha buddhi*. Perception depends on contact of sense organ with its subject.<sup>12</sup>

According to this concept good vision depends on site, its *panchbhoutik* constitution and proper perception with the help of proper conjugation of soul, mind, sense organ and its respective object.<sup>13</sup>

If there is misconjugation in these things there would be defect in perception which causes refractive errors.

*Chakshushya*, means "strengthening the eyes"-(*Chakshu* means "eye" and *ayushya* means "*rasayana*" so it is literally a "*rasayana* for the eyes"). *Rasayana Churna* is good to empower the strength of sense organs. As eye is one of the important sense organ of the body and refractive errors are indication of less strength of eye. Positive

result on myopia in present study may be due to *Amalaki*.

Modern science also supports textual statement as *Amalaki* (*Embllica officinalis*) is richest natural source of carotenoids, vitamin C, bioflavonoids, flavones polyphenols. Carotenoids including lutein (49+/-27mg/100g) and  $\beta$ -carotene (32+/-19mg/100g).<sup>14</sup>

It supports the health of the eye by enhancing both *Ranjaka Pitta* (the *subdosha* of *Pitta* that governs liver function and the blood plasma)<sup>15</sup> and *Alochaka Pitta* (the *subdosha* of *Pitta* that governs the eyes and vision)<sup>16</sup>. The *tridoshahar* nature of *Amalaki* (*Embllica officinalis*) also makes it a good tonic for the eyes.<sup>17</sup> Thus carotenoids present in the *Amalaki* (*Embllica officinalis*) nourishes eye and all uveal structures which can help to reduce the refractive error.

As per *Ayurveda* *Guduchi* (*Tinospora cordifolia*) is having *Katu rasa* (Pungent taste), *Tikta Rasa* (Bitter taste), Sweet in *Vipaka* (taste of end product of digestion) *Rasayani* (Rejuvenative), hot in potency, *Balyakara* (gives strength), *Agnideepaka* (increases digestive fire).<sup>18</sup> *Guduchi* (*Tinospora cordifolia*) nourishes the eye and adjacent muscles and joints. Eye related muscle weakness shows the cause of the refractive errors. *Guduchi* (*Tinospora cordifolia*) enhances the power of vision as it act as a rejuvenation of eye and vision. Modern science also supports this statement by elaborating the composition of *Guduchi* (*Tinospora cordifolia*). A variety of constituents have been isolated from different parts of *Guduchi* (*Tinospora cordifolia*). The active component of the *Guduchi* (*Tinospora cordifolia*) is Alkaloids, octacosonal and ste-

roids.<sup>19</sup> Animal study shows that Octacosonol isolated from *Tinospora Cordifolia* Inhibits proliferation of endothelial cells and enrich ascites tumour cells, inhibits neovascularization induced by angiogenic factors in chick chorioallantoic membrane and rat cornea in vivo angiogenesis assays.<sup>20</sup> Thus *Guduchi* (*Tinospora cordifolia*) gives strength to the uveal structures of eye as it is explained as *rasyana & balyakara*.

Modern science elaborates constituents of **Gokshura (Tribulus terrestris)** as follows: A number of steroids<sup>21</sup>, flavonoids<sup>22</sup>, lignanamides<sup>23</sup> and alkaloids<sup>24</sup> have been identified. As per *Ayurveda*, *Gokshura* (*Tribulus terrestris*) is a plant whose root and fruits are used for male virility and general vitality, respectively. *Gokshura* (*Tribulus terrestris*) is of cold in potency, sweet in taste, gives strength and *Bastishodhaka* (cleanses the *basti*).<sup>25</sup> Thus

**TABLE.NO.5 SHOWING PREDOMINANCE OF PANCHAMAHABHUTA IN PARTS OF EYE**<sup>29</sup>

Part of the eye	Bhuta Predominance
<b>Mamsa</b>	<i>Prithvi</i>
<b>Rakta</b>	<i>Agni</i>
<b>Krishna mandalam</b>	<i>Vayu</i>
<b>Shweta mandalam</b>	<i>Jala</i>
<b>Ashrumarga</b>	<i>Aakash</i>

In this study *Rasayana Churna* was given with Honey as *Anupana* which is also *Chakshushya*.<sup>30</sup> And for better result for *Chakshushya* it was given at night as it is very well explained in text.<sup>31</sup>

In modern science correction of refractive errors is done by using spectacles or surgery is the only treatment. But through *Ayurveda*, refractive errors can be prevented and treated by taking *Rasayana Churna* as per the severity. So this study would be helpful in getting rid of using spectacles regularly.

*Gokshura* (*Tribulus terrestris*) gives strength to the *dhatu*s and sense organ like eye. Fruit of it has been found useful in all *vata* aggravations of the nervous system. It draws all three *doshas* downward and can treat headaches, hives, itchy skin, eye inflammation.<sup>26</sup>

As eye is one of the important sense organ of the body and cause of refractive errors is indicating the less strength of eye. As per *Ayurveda*, *Atma* and mind conjugates with *chakshurendriya* and eyes can establish contact with its object. *Prana vayu* facilitates this process of conjugation and impulse of vision is transferred to mind by *dhama-nis*.<sup>27</sup> *Drushti* (Vision) is formed by the essence of *panchmahbhutas* with *agnibhuta* predominance.<sup>28</sup> Eye ball is formed by the essence of *panchamahbhutas*, the following parts are formed by the corresponding *bhuta* predominance.

From this study we can understand that to get proper vision structures like lens, retina, ciliary body, iris should function in proper manner. Weakness in muscles or decreased carotenoids in the eye may lead to refractive error. *Rasayana Churna* plays significant role in correcting the refractive errors.

## CONCLUSION

- Among the contents of *Rasayana churna*, *Amalaki* (*Emblca officinalis*) shows *chakshushya* effect to the eyes, *Gudu-*

*chi*(*Tinospora cordifolia*) shows the effect of rasayana on eyes as a sense organ and *Gokshura* (*Tribulus terrestris*) gives strength to the sense organ like eye.

- This study shows positive effect of *Rasayana churna* on myopia.
- *Rasayana Churna* can be used from childhood to prevent refractive errors in children of modern era .
- *Anupana* honey plays an important role to get a *chakshushya* effect of *Rasayana Churna* on refractive errors.

### SCOPE OF FURTHER STUDY:

Controlled study to assess the single drug study of the *chakshushya* effect of *Amlaki*(*Emblica officinalis*), *Guduchi*(*Tinospora cordifolia*) , *Gokshura*( *Tribulus terrestris* ) on refractive errors in different age groups.

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