

Role of *Manahshiladi Anjana* and *Jeevantyadi Ghrita* on *Linganasha* - Cataract

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ABSTRACT : Cataract - *Linganasha* is defined as loss of transparency of lens developing as a result of altered physiological process within its substance. The disease *Linganasha* is mainly due to vitiation of *Kapha Dosha*. According to the 1992 the status report of DGHS, Govt. of India, Cataract alone is responsible for 81% cases of blindness. While the problem of blindness is global, its magnitude is much higher in India. Of the estimated 45 million, India alone has 12 million blind people. In this study patients were selected from the O.P.D. and I.P.D. of Shalya - Shalakya dept and randomly divided into three groups i.e. in Group-A *Manahshiladi Anjana* (Local application), Group-B *Jeevantyadi Ghrita* (Internal use) and in Group - C Rasanjana Netra Bindu and Godanti Cap. 500 mg. (Control group) were administered for 6 months. In this study total 195 patients were registered and 99 patients completed the course of treatment. Maximum relief was observed on Polyopia / Diplopia in Group A and B, whereas increase in the clinical features was found in Group C.

Key Words : *Linganasha* - Cataract, *Manahshiladi Anjana*, *Jeevantyadi Ghrita*.

INTRODUCTION

Cataract is defined as loss of transparency of lens as a result of altered physiological process within its substance¹. According to a survey conducted with W.H.O.'s assistance by NPCB in 1986-89, the states of Uttar Pradesh, Jammu & Kashmir, Maharashtra, Tamilnadu, Madhya Pradesh, Rajasthan, Andhra Pradesh & Orissa had the highest prevalence of blindness. According to 1992 status report of DGHS, Govt. of India Cataract alone is responsible for 81% cases of blindness².

Disorders, which result into either partial or complete loss of vision, have been described under *Drishtigata Rogas*. *Linganasha* has been described as last stage in sequel of *Timira Roga*³. On screening the literature for the treatment of ocular disorders, it becomes obvious that *Acharya Sushruta* as well as other Acharyas have given equal importance to local (Medicinal and Surgical) and systemic treatment.

The very fact that this subject being under study from the days of *Sushruta* denotes its magnitude. Like other diseases of eye, no separate and specific causes of *Timira Roga* or *Linganasha* have been mentioned in *Ayurvedic* texts. Causes in general mentioned for all eye disease are the causes of *Linganasha* or *Timira* as well, which are exposure to heat, excessive strain on the eyes,

excessive weeping, injury to head, anger, grief and suffering etc⁴. In addition to these physical factors much emphasis has been laid upon the dietary factors.

Regarding the aetiology of Cataract, studies have revealed that metabolism of lens is so incomplete that it is impossible to make a final opinion about the level of its derangement⁴. Though many factors like: proteins, peptides, potassium, calcium etc. show a considerable diminution in cataractous lens⁵. Similarly systemic chemical changes in the blood have also been thought to be associated with the development of Cataract⁶. But the final and definite cause is still awaited in reference to ultimate consequences of the disease *Linganasha* - Cataract.

Some other important facts about Cataract :

1. Cataract is 3 times more common in India than in United States⁷.
2. Not only the number of patients developing Cataract in India is high but also the matter is that they develop Cataract at a much younger age leading to incapacitation and dependence for longer period of life⁸.
3. It has been estimated if the onset of Cataract can be delayed for 10 years, the number of Cataract operation would decline by 45%⁹.
4. If we find out any indigenous medicine that simply delays the progressing or maturing of Cataract, it will be great achievement for a country like India.

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No wonder many research workers throughout the world are working to know the remedies for the ailment *Linganasha* - Cataract, still the ultimate answer is awaited. Recently many investigations have been carried out to understand the aetio- pathogenesis of the disease *Linganasha* - Cataract but the cause is still obscure.

Hence, an interest to search for a better remedy from the medicinal heritage of Indian materia medica is aroused and from the repeated advocacy by *Acharya Sushruta*, *Vagbhata* as well as other Acharyas of Indian system of medicine; it was decided to try the drugs under the name *Manahshiladi Anjana* (Local application, Su.Ut.18/54), *Jeevantyadi Ghrita* (Internal use As. Hr. Ut. 13/2-3) and *Rasanjana Netra Bindu* and *Godanti Cap.* 500 mg as control group.

Aims and Objects :

1. To decide the aetiological factors of the disease *Linganasha* - Cataract in the light of *Ayurvedic* concept.
2. To evaluate the efficacy of the selected drugs clinically.

MATERIAL & METHODS

Source of data : Patients of *Linganasha* - Cataract fulfilling the inclusion criteria as mentioned below and attending OPD of Shalya- Shalakya Dept., I.P.G.T. & R.A., G.A.U., Jamnagar. A detailed proforma was prepared incorporating *Ayurvedic* and modern points. After taking ophthalmic and systemic history, the best-corrected vision was recorded. Then pupillary area was examined with torch light in oblique illumination. Pupils were dilated maximally using Tropicamide drops. After maximal pupillary dilatation the lens was studied, using retinoscopic mirror and direct ophthalmoscope.

The trial drugs like *Manahshiladi Anjana* (Su.Ut.18/54), *Jeevantyadi Ghrita* (As. Hr. Ut. 13/2-3) and *Rasanjana Netra Bindu* were prepared in the pharmacy of Gujarat Ayurved University as per the classical method.

Inclusion Criteria :

1. Patient aged more than 35 years and suffering from senile immature cataract.
2. Patients having vision 6/60 or more.

Exclusion Criteria :

1. Patients having vision less than 6/60.
2. Patients having any fundus pathology, DM, HT.
3. Patients with other chronic physical illness like TB, Cancer etc.

The diagnosis was done purely on clinical basis. The study was cleared by the ethical committee of the Institute. Written consent was taken from each patient willing to participate before the start of the study. For those patients who were unable to read or write consent of their relatives was taken. Patients were free to withdraw their name from the study at any time without giving any reason.

Investigations :

Routine blood, urine and stool investigations fasting and post prandial (PP) blood sugar and serum cholesterol estimation were done to rule out associated systemic pathology.

Grouping :

Group A - *Manahshiladi Anjana* was put twice daily after rubbing with clean water in each eye for six months.

Group B - *Jeevantyadi Ghrita* was administered in the dose of 10 ml twice a day with milk for a period of one month.

Group C - *Rasanjana Netra Bindu* 2 drops thrice daily for 6 months and *Godanti Cap.* 500 mg BD for 6 months.

The assessment of medicinal value of the anti cataract drug was done by clinical observations especially -

- i) Improvement of vision or stoppage of further deterioration of vision (as the disease is progressive).
- ii) Reduction of area opacity.
- iii) Diminution of density of the opacity
- iv) Improvement of symptoms.

For statistical analysis the number of eyes treated was taken into consideration and in every patients medicine was put in both eyes, so the number of treated eyes become double. For feasibility of statistical analysis according to the severity of the symptoms, score was given individually for all subjective symptoms from 0 - 3 & objective parameters i.e. Area of Opacity & Density of opacity were given scoring from 0-5.

The obtained data on the basis of observations were subjected to statistical analysis in terms of mean, standard deviation, standard error and unpaired 't' test were conceded at the level of $p < 0.001$ as highly significant, $p < 0.05$ or $p < 0.01$ as significant, and $p < 0.10$ or $p > 0.01$ as insignificant to carry out the results.

OBSERVATIONS & RESULTS

The maximum i.e. 28.72% patients were belonged to 41-50 years. Maximum number of patients i.e. 112 (57.44%) were females, Hindus (88.21%), and middle socio-economical class (71.79%), were found in large proportions in the present sample. Maximum 49.24% i.e. 96 patients were housewives. The 55.29% of the patients were having positive family history of Cataract. Maximum 144 patients (73.85%) were vegetarians and 51 (26.15%) patients were non-vegetarians having the nature of mixed type of food. 30.77% of patients were taking spicy (Katu rasa pradhana) diet. Maximum number of patients i.e. 192 (98.46%) were having the habit of taking tea/coffee. A good number of patients i.e. 43 (22.05%) were addicted to smoking. For distant vision (D/V) patients were having myopic correction up to 4.00 D & for near vision patients were having Hypermetropic correction up to 6.00 D. Maximum number of patients i.e. 70.51% (275) eyes of patients were having area of opacity 20 - 40%. Maximum number of patients i.e. 77.69% (303) eyes of patients were having density of opacity of grade 2 and 17.44% were having Density of opacity of grade 3. In 72.56% (283) eyes of the patients studied there was Cortical Cataract and in 27.44% of eyes had Mixed Cataract. It has been observed in the clinical study that maximum number of patients 92.82% showed symptom - *Suchipasham na pashyati* - difficulty in near work, 87.69% patients showed *Vihvala Darshana* - distorted or blurred vision, 87.18% patients showed *Doorastha Avyakta Darshana* - indistinct distant vision. Maximum number of patients i.e. 74.75% reported to have *Rajo Nishevana* as causative factor, 51.28% were reported to have *Dhooma Nishevana* as causative factor.

Effect of Therapy :

The overall effect of the therapy on various clinical symptoms in different groups is as given below:

In Group A (Manahshiladi Anjana) : Maximum relief was observed in *Bahudha / Dwividha Drishti* - Polyopia / Diplopia i.e. 69.93%; 52.38% relief was observed in the symptom *Neela, Krishna Drishti* - Cynopsia & Erythrospia; 46.24% relief in night blindness. Perception of cloudy vision was relieved by 45.36% and there was 36.44% relief in *Vihavaladarshana* - blurred vision and 30.00% relief in day blindness, than in indistinct vision and difficulty for near work was relieved by 25.00% and 11.93% respectively.

In Group B (Jeevanti Ghrita) : Maximum relief was observed in *Bahudha / Dwividha Drishti* - Polyopia / Diplopia & Day blindness i.e. 33.33%; 27.98% relief was observed in the symptom *Vihavaladarshana* - blurred vision; 20.00% relief was observed in cloudy vision; indistinct distant vision by 18.18%; difficulty for near work was relieved by 10.98% and *Neela Krishna Drishti*-Cynopsia & Erythrospia were relieved by 11.11%.

In Group C : In control group increase in the severity of symptoms was observed. Maximum change was observed in *Naktandhyata* i.e. 60.00% increase followed by 32.56% increase was observed in the symptom Day blindness. 29.13% increase was observed in the symptom *Neela Krishna Drishti* - Cynopsia & Erythrospia; 16.95% increase in *Vihavaladarshana* - blurred vision; 14.00% increase was observed in indistinct distant vision; 9.09% increase in perception of cloudy objects and 4.49% increase was observed in difficulty in near vision.

TABLE NO. 1 : OVERALL EFFECT OF DRUGS ON VARIOUS OBJECTIVE FINDINGS :

Objective Parameter	Group A	Group B	Group C
Visual Acuity	HS↑	S↑	S↓
Clinical Refraction For Distance - Myopic Spherical	NS ↓	NS ↓	NS (R) ↑ S (L) ↑
Clinical Refraction For Distance - Myopic Cylindrical	NS ↓	NS ↓	NS ↑
Clinical Refraction For Distance - Hypermetropic Spherical	S ↑	S (R) ↑ NS (L) ↑	S ↓
Clinical Refraction For Distance - Hypermetropic Cylindrical	NS ↓	Not Cal.	S ↓
Clinical Refraction For Near-Myopic Spherical	Not Cal.	Not Cal.	Not Cal.
Clinical Refraction For Near-Myopic Cylindrical	Not Cal.	S (R) NS (L)	NS (R) ↑ NS (L)
Area of Opacity	NS ↓	HS ↓	HS ↑
Density of Opacity	S ↓	NS ↓	S ↑

NS -Non significant; HS -Highly significant; S -Significant; ↓ - Decrease; ↑ - Increase; Not Cal-Not Calculated.

TABLE NO. 2: OVERALL EFFECT OF THERAPY :

Group	Improved		Maintained		Deteriorated	
	Patients	%	Patients	%	Patients	%
Group A - Manahshiladi Anjana	21	67.74	07	22.58	03	9.68
Group B - Jeevantyadi Ghrita	17	56.67	13	43.33	00	00
Group C - Control Group	08	21.05	13	34.21	17	44.74
Total	46	46.46	33	33.33	20	20.20

In addition to above mentioned observations the number of patients showing type of change in unaided distant vision was analyzed in all the three groups, the details of which are as below :

DISCUSSION

There are an estimated 45 million blind people in the world concentrated mainly in the developing world of which 12 million population are in India!¹⁰ Cataract is the most important cause of visual disturbance and blindness in the world affecting about 19 million people. India rates high in the incidence of Cataract blindness compared to the western countries, affecting mostly those between 55 and 65 years¹¹.

Among all the three, the most important factor is *Ahara*, as it is the basis of all functions of the body. The *Doshas* and *Dhatu*s of the body are created, maintained and destroyed mainly by *Ahara*¹². The dietary factors which adversely affect the eyes are called as *Achakshushya Aharas*. Among the six *Rasas*, *Amla* and *Katu* rasas are particularly harmful for eyes¹³. So food items with excessive *Amla* i.e. curds, pickles etc. and items of *Katu Rasa* i.e. red chillies etc. similarly *Vidahi Ahara* like baked items, over cooked, fried items etc. (meat, and fish) are also harmful for the eyes; preserved food items especially tinned foods and alcohol are capable of precipitating the stage of *Vidahi*, which can result into aggravation of *Pitta Dosha*, which is one of the important factor for causation of the disease *Linganasha*¹⁴.

Of the multi-faceted etiology of cataract, two striking epidemiological findings are that:

1. The use of cheap smoke in cooking fuel such as firewood is linked to an increased risk of cataract.
2. Cigarette smoking leads to an earlier onset of cataract, while stopping smoking correspondingly reduces the risk of cataract¹⁵.

In light of the fact that a significant fraction of the population in India (and also in third world countries) use smoke producing cooking fuel, the risk factor of cataract can be expected to be large. In addition, this

risk factor will get enhanced in individuals who are active or passive smokers¹⁶. Two drugs were selected for the present study i.e. *Manahshiladi Anjana* and *Jeevantyadi Ghrita*, of which *Manahshiladi Anjana* was a formulation prepared on the basis repeated advocacy of different drugs used in the management of *Timira - Kacha* context and *Jeevantyadi Ghrita* is specifically mentioned by Vagbhata in the context of *Vataja Timira Chikitsa* in his *Ashtanga Hridaya* (As. Hr. Ut. 13/2-3).

One may come across lot of difficulties with either of the therapies of cataract i.e. Surgical or Medical due to multiple reasons. As far as medical therapy is concerned, patients compliance may be poor because patients have to apply or eat the medicine regularly, patients shall have to come for regular checkups, long duration of the treatment, belief in the minds of the patients that surgery is the only treatment of the cataract.

In the present clinical study also following observations were made -

Drop out rate was more, may be because of either of the above-mentioned reasons.

1. Different presentation of the Ayurvedic ocular preparations than ocular preparations in modern medicine.
2. Local irritation caused by the drug though only for short duration.
3. Less palatability of Medicated Ghrita.

It is important to note that no adverse effect was observed during treatment period with either of drugs.

In the present study patients were grouped into 2 groups on the basis of type of Cataract. In 72.56% (283) eyes of the patients studied there was Cortical Cataract and in 27.44% of eyes had Mixed Cataract. Though the sample was quite random, still the maximum number of cortical Cataract affected patients revealed that prevalence of this Cataract is comparatively more than the other. This higher incidence of Cortical Cataract is also in agreement with modern texts¹⁷.

In Group A, average 8.86% decrease in the power of myopic spherical glasses, and 31.28% decrease in the power of myopic cylindrical glasses was observed. Whereas 18.68% increase and 8.32% decrease in the power of hypermetropic spherical and cylindrical glass was observed.

In Group B, average 3.41% decrease in the power of myopic spherical glasses, and 22.24% decrease in the power of myopic cylindrical glasses was observed. Whereas 7.24% and 120.59% increase in the power of hypermetropic spherical and cylindrical glasses was observed respectively.

Both of these changes indicate shift towards hypermetropic side, which indicates improvement as far as cataractous changes are concerned. As it is a known fact as the cataractous changes progress, there is increase in the power of myopic glasses, which is the reason for discardment of presbyopic glasses by the patients, this change only is named as second sight.

In Group C average 24.90% increase in the power of myopic spherical glasses, and 10.78% increase in the power of myopic cylindrical glass was observed. Whereas 47.01% and 90.88% decrease in the power of hypermetropic spherical and cylindrical glasses was observed. These changes indicate the increase in cataractous changes in patients of control group.

Probable mode of Action of Drug :

Manahshiladi Anjana : *Manahshiladi Anjana* was prepared in the form of Varti for local instillation in the eyes; the absorption of which might be either through cornea or conjunctiva. On the basis of inherent properties of the drug its pharmacodynamics can be assumed as follows -

This drug is having *Katu*, *Kashaya*, *Madhura*, *Tikta* and *Amla* - the 5 *Rasas*; *Laghu*, *Ruksha*, *Guru*, *Snigdha* and *Vishada* *Gunas*; mainly *Ushna Virya*, *Lekhana*, *Chhedaniya*, *Shodhana*, *Rasayana*, *Chakshushya* properties. *Katu Rasa* is having *Ushna*, *Pachana*, *Kaphahara* properties¹⁸. *Kledopashoshana*, *Shlesmopashoshana* properties are possessed by *Tikta Rasa*. *Kashaya Rasa* shows its *Shoshana*, more particularly *Kledashoshana* and *Shleshma Prashamana* properties. *Kledachushana* property is possessed by *Vishada Guna*, *Laghu Guna* is having *Kaphahara* properties, *Lekhana* property is being possessed by *Tikta* and *Kashaya Rasa* and *Laghu Guna*. *Tikta Rasa* shows its *Chhedana* property, *Katu Rasa* is *Teekshna* and possessing *Marga Vivarana* action. Because of the above said inherent

properties of drug, after getting absorbed, it may scrap away the vitiated *Kapha*, *Ama* and *Meda* already lodged in the *Patalas*, *Rupavaha Sira* as well as in *Drishti*. Their *Shuddha Srotas* (opened channels) allows free movement of *Vata*, *Pitta* and *Kapha* resulting into alleviation of *Kapha* and *Vata* along with enhancement of *Pitta*. This *Pitta* performs its normal function of visual perception which was previously experiencing hindrance due to vitiated *Kapha*. The specific activity like *Kaphahara* and *Pittavardhaka* make an overall attempt to enhance the qualities of *Tarpaka Kapha* and *Alochaka* *Pitta* by alleviating the disturbances related to them.

Jeevantiyadi Ghrita: *Ghrita* is best among the *Sneha Dravyas*. By virtue of its *Samskaranuvartana Guna* it works as best vehicle without change in its inherent properties. *Jeevantiyadi Ghrita* has all the six *Rasas* among which *Madhura Rasa* is predominant & as far as *Virya* is concerned, it is predominantly *Sheeta Virya*. By virtue of these properties i.e. *Madhura Rasa*, and *Sheeta Virya* it may work as *Rasayana*. Though it possess predominantly *Madhura Rasa* and *Sheeta Virya*, still it has predominantly *Laghu* and *Snigdha Guna* which explains for *Rasayana* and *Kapha* mitigating action. Presence of *Ruksha* and *Teekshna Guna* further goes in favour of its *Sroto Vishodhana* and *Kapha* mitigating action. In addition to these properties its *Madhura Vipaka* also explains for its *Rasayana* action. As far as effect on various vitiated *Doshas* is concerned, it might possess *Tridosha* pacifying action, and maximum action on *Vata*, which is the most important factor responsible for senile disorders. All the ingredients are said to be *Chakshushya* in *Samhitas*. Their other properties are *Chakshushya*, *Jeevaniya*, *Rasayana*, *Vayasthapana* and *Balya* action. *Ushna Virya* is having *Kaphanasha* effect and simultaneously *Sheeta Virya* helps in maintaining the *Sheeta Satmya* of the *Drishti* which is a therapeutic property of the *Drishti*. *Rasayana* action of the drug is mainly because of *Madhura Rasa*, *Guru Snigdha Gunas* and *Madhura Vipaka*. Because of its *Rasayana* action the substrate *Dhatus* of the four *Patalas* as well as *Drishti* are nourished. Thus by improving the functional capacity of the eye there is decline in various symptoms. *Glycyrrhiza glabra*, one of the constituents of the drug is reported to contain flavonoids¹⁹ & it has been reported that bioflavonoids inhibit galactosaemic cataract formation by inhibiting the enzyme aldose reductase. So it can be possible that some such bioactive moieties in the test drug may modulate the cataract formation. Drug like *Amalaki*, *Ashwagandha*, possess anti - oxidant property, by virtue

of which it might scavenge the free radicals and help in checking the cataractous changes in lens.

CONCLUSION

In brief the present clinical study has established that these two drugs can control *Linganaasha*. A longer duration of treatment may give absolute result provided proper nutrition and ocular hygiene is maintained in the prestigious period of growth. Large number of patients is necessary to explore the effects of drugs according to different types of Cataract (cortical, nuclear, P.S.C etc). For definite conclusion a large double blind multicentric photo documented studies are essential.

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हिन्दी सारांश

मनःशिलादि अंजन एवं जीवन्त्यादि घृत का लिंगनाश –केटेरेक्ट पर चिकित्सीय प्रभाव

मंजूषा राजगोपाल, कुलवंत सिंह, एच. जे. मंकोडी एवं नारायण बावलत्ती

केटेरेक्ट-लिंगनाश नेत्र में उपस्थित लेन्स की अपारदर्शकता को कहते हैं। यह मुख्यतः लेन्स की चयापचय की प्रक्रिया में परिवर्तन होने के कारण होता है। लिंगनाश रोग में मुख्यतः कफ दोष की प्रधानता होती है। डी. जी. एच. एस., गर्वमेन्ट ऑफ इन्डिया १९९२ की सर्वे रिपोर्ट के अनुसार केटेरेक्ट भारत में ८१% लोगों में दृष्टिनाश का कारण है। वैसे तो अंधापन सम्पूर्ण विश्व में व्याप्त है, परन्तु भारत में इस से प्रभावित लोगों की संख्या अधिकतम है। विश्व के ४५ लाख अंधे लोगों में से १२ लाख लोग भारतवर्ष में हैं। इस चिकित्सीय अध्ययन में शल्य-शालाक्य विभाग के बहिरंग एवं अन्तरंग विभाग से रोगियों का चयन किया गया एवं उन्हें तीन वर्गों में विभाजित किया गया। समूह 'ए' में मनःशिलादि अंजन (स्थानिक प्रयोग) समूह 'बी' में जीवन्त्यादि घृत (आभ्यन्तर प्रयोग) एवं समूह 'सी' में रसांजन नेत्रबिंदु व गोदन्ती केप्सूल ५०० मि.ग्रा. (कन्ट्रोल समूह) ६ माह के लिए दिए गए। कुल १९५ पंजीकृत रोगियों में से ९९ ने चिकित्सा पूर्ण की। बहुधा दिधादृष्टि में समूह 'ए' के रोगियों में अधिक लाभ पाया गया और समूह 'सी' के रोगियों में वृद्धि पाई गई।

