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A study on the effect of *Janaranjanakam Anjana* in the management of Senile Immature Cataract

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ABSTRACT

Senile cataract is an important cause of age dependent visual impairment and blindness. Till date, an effective medical treatment for senile cataract has not been found out. The only treatment of choice is surgery. Considering the increased rate of incidence of senile cataract, on availability of effective medical measures, possible complications and contraindications surgery, the need arises to research for drugs that could effectively help in arresting the progression and disintegrate the opacification of lens proteins. The Symptoms such as blurriness of vision, Glare, Diplopia etc. are mentioned in senile immature cataract which can be correlated with *Kaphaja Timira*. Objective of the study was to evaluate the efficacy of *Janaranjanakam Anjana* and *Vimalanjana* in the management of SIMC and to compare the efficacy of *Janaranjanakam Anjana* and *Vimalanjana* in the management of SIMC. In present study 40 patients were randomly selected and divided into 2 groups, with 20 patients each. Group A patients were treated with *Janaranjanakam Anjana* for 60 days. Group B were treated with *Vimalanjana* for 60 days. After the treatment it was observed that there was statistically significant result in the main signs and symptoms i.e. blurring of vision, floaters, glare, visual acuity for distant and near vision and slit lamp bio-microscopy. Amongst 40 patients, 1 patient were getting no improvement, 12 patients were getting Mild improvement, 23 patients were getting Moderate improvement and 4 patients were getting Marked improvement.

Key words: *SIMC, Janaranjanakam Anjana, Vimalanjana, Blurring of Vision, Glare.*

INTRODUCTION

Vision 2020, an International initiative by World Health Organization (WHO), was started to decrease the number of people having preventable blindness. Since cataract is a major cause of avoidable blindness in the developing countries. The most recent estimation from WHO reveals that 47.8% of global blindness in the south Asia (India) is due to cataract. WHO/NPCB survey has shown that there are 285 million blind eyes in the world and 39 million of these are blind due to cataract. In India, approximately 15 million blind eyes are due to cataract.[1]

Timira is a *Dristigata Roga*,[2] *Samanya Nidana* of *Netra Roga* can be taken as *Nidana* of *Timira*. *Vagbhata Acharya* says that *Doshas* gets vitiated by the specific causes mentioned for the individual vitiation of *Dosha*.

Considering the signs, symptoms and histological changes in the lens different stages of senile cataract may be compared to *Kaphaja Timira, Kacha* and *Linganasha*.[3] Surgery is mentioned only in the final stage of *Kaphaja Linganasha* where there is total loss of vision.

Acharya Sushruta has specially mentioned that he will be able to see only large objects and will not be able

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to perceive smaller ones. He will feel as if some heavy objects are covered in front of his eyes. He also says that he may perceive objects as if seen through water.[3]

In initial stages of the disease, *Kapha* is vitiated. Its *Snigdha*, *Sheeta* and *Drava Gunas* are increased and more confined to *Rasa Dhatu*. Later *Sthira* an *Guru Gunas* are increased. As a result, the transparent structure turns to dense white opacity.[4]

Senile cataract is an important cause of age dependent visual impairment and blindness. Till date, an effective medical treatment for senile cataract has not been found out. The only treatment of choice is surgery. Considering the increased rate of incidence of senile cataract, on availability of effective medical measures, possible complication and contraindications of surgery, the need arises to research for drugs that could effectively help in arresting the progression and disintegrate the opacification of lens proteins.

Acharya Vangasena has mentioned *Teekshna Anjana, Shodhana, Putapaka, Tarpana*, and *Shirovirechana* as the line of treatment of *Kaphaja Timira*.[5] Hence; describing the treatment of *Timira*, *Vagbhata Acharya* opines that *Kaphaja Timira* is a *Sadhya Vyadhi, Kaphaja Kacha* as *Yapya* and *Kaphaja Linganasha* as *Satra Sadhya*.[6]

Hence this study on the "Efficacy of *Janaranjanakam Anjana* in the management of Senile Immature Cataract" is being taken up. The composition of this *Yoga* is easily available, cost effective and is devoid of complications.

Materials and Methods

The patients were selected from the OPD & IPD of Sri Jayachamarajendra Institute of Indian Medicine, Bangalore with features of Diabetic Retinopathy.

Selection of patients

40 patients fulfilling the inclusive criteria were selected for the study.

Inclusion criteria[7]

1. Patients above the age group of 40-70 yrs.
2. Patients with senile immature cortical cataract.
3. Visual acuity of 6/12 or less.
4. Patients of either gender.

Exclusion criteria

1. Patients with Mature cataract and hyper mature cataract.
2. Visual acuity of less than 6/60.
3. Patients with congenital and developmental, traumatic, complicated or metabolic cataract.
4. Any other ocular pathology that can cause diminution of vision.

Parameters

Subjective Parameters

1. Blurring vision
2. Black spots
3. Glare

Objective parameters

1. Snellen's chart reading - For distant vision.
2. Jaeger'schart reading - For near vision
3. Slit lamp examination (LOCS 3rd Grading).

Trial Drug

Group A: The trial drug was *Janaranjanakam Anjana*.[9] It contains *Trikatu, Karanjaphala, Haridra, Daruharidra, Saindhava Lavana, Bilvamula, Varunamula, Varichara (Shankanabhi)* taken in equal quantity make into *Varti*. Hence these drugs have to be rubbed with honey and then applied to eyes in the form of *Anjana*.

Group B: *Vimalanjana*[8] will be prepared by mixing of fie powders of *Maricha, Pippali, Triphala, Darvi, Yastimadhu, Lodhra, Twak, Karpura* and *Katurohini*[10] in the ratio of 2:2:4:4:6:8:10 parts respectively. Then *Bhavana* with honey will be given till it attains the form of *Rasakriya*.[11]

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2019

Table 1: Study Design

	Group - A	Group - B
Dose	1 *Harenu*	1 *Harenu*
Time of application	Once a day in morning	Once a day in morning
Site	*Kaninika* to *Apanga*	*Kaninika* to *Apanga*
Number of patients	20	20
Treatment duration	60 days	60 days
Follow up	Once a month for 2 months	Once a month for 2 months

Assessment criteria

Assessment was made once every 15 days for 2 months on the basis of objective, subjective parameters.

Table 2: Grading Index (Taken from scales of National screening committee)[12]

Black spots	Grade 0 – No static black dots Grade 1 – Occasional Visualization Grade 2 – Frequent Visualization Grade 3 – Regular Visualization
Glare	Grade 0 – No Glare Grade 1 – Mild Glare Grade 2 – Moderate Glare Grade 3 – Severe Glare
Snellen's chart reading for distant vision	Grade 0 – 6/6 Grade 1 – 6/9 Grade 2 – 6/12 Grade 3 – 6/18 Grade 4 – 6/24 Grade 5 – 6/30 Grade 6 – 6/60
Near vision by Jaeger's chart	Grade 0 – N6 Grade 1 – N8 Grade 2 – N10 Grade 3 – N12 Grade 4 – N18 Grade 5 – N24 Grade 6 – N36
Slit lamp bio-microscopy (Grading of lens opacity)	Grade 0 – No Opacity Grade 1 – Grayish Opacity Grade 2 – Pearly Opacity Grade 3 – Milky Opacity

OBSERVATION

In the present study, maximum patients were females 22 (55%), age group 50-59years (42.5%), Occupation Homemakers 18 (45%), Religion hindu 37 (92.5%), Middle class 37 (92.5%), Marital Married 20 (100%), *Dehaprakruti Vatakapha* 21 (52.5%). Maximum Number of Patients were of Blurred vision 40 (100%), followed by Glare 23 (57.5%), Floaters 10 (25%).

RESULT

In Right eye

In subjective parameters: like Blurred vision percentage relief was 50%, Statistically significant ($P<0.05$), in Glare percentage of relief was 6.67%, no statistically significant change ($P>0.05$), in Black spots the relief observed was 71.43%, No significant change ($P>0.05$).

In Objective parameters: like Visual Acuity for distant vision (Snellen's chart) percentage of relief was 32.08%, there is a statistically significant ($P<0.05$), for near vision (jaeger's chart) percentage of relief was 43.48%%, there is statistically significant, for LOCS grading percentage of relief was 51.72%, there is statistically significant ($P<0.05$)

ISSN: 2456-3110 **ORIGINAL ARTICLE** July-Aug 2019

In Left eye

In subjective parameter: like blurred vision percentage of relief was 58.06%, which were statistically significant, foe glare percentage of relief was 59.94%, which were statistically significant (P<0.05%), for floaters percentage of relief was 60%, which were no statistically significant (P>0.05).

In Objective parameters: like visual acuity for distant vision percentage of relief was 36.54%, which were statistically significant change (P<0.05), for near vision percentage of relief was 42.86 %, which were statistically significant change (P< 0.05), for LOCS grading percentage of relief was 50%,which were statistically significant change (P<0.05).

Table 3: Effect of improvement in subjective parameter

Right Eye					
Parameters	**BT**	**AT**	**%**	**t value**	**p value**
Blurring vision	1.50	0.75	50%	3.21	<0.05
Glare	0.79	0.42	46.67	1.40	>0.05
Black spots	0.35	0.10	71.43	1.51	>0.05
Left Eye					
Parameters	**BT**	**AT**	**%**	**t value**	**p value**
Blurring Vision	1.55	0.65	58.06%	4.19	<0.05
Glare	0.85	0.40	52.94	1.90	<0.05
Black spots	0.25	0.10	60.00	1.24	>0.05

Table 4: Effect of improvement in objective parameter

Right Eye					
Parameters	**BT**	**AT**	**%**	**t value**	**p value**
Viaual acuity Distant vision Near vision	2.65 2.30	1.80 1.30	32.08% 43.48%	1.88 2.539	<0.05 <0.05
LOCS Grading	1.45	0.70	51.72%	2.54	<0.05
Left Eye					
Parameters	**BT**	**AT**	**%**	**t value**	**p value**
Visual acuity Distant vision Near vision	2.60 2.10	1.65 1.20	36.54% 42.86%	1.96 2.14	<0.05 <0.05
LOCS Grading	1.20	0.60	50.00%	2.14	<0.50

Table 5: Overall effect of treatment

Class	**Grading**	**No. of patients**
0-25%	No Improvement	1
26% -50%	Mild Improvement	5
51% - 75%	Moderate Improvement	11
76% - 100%	Marked Improvement	3

In Overall effect of treatment, out of 20 patients in this study, 1 patient (5%) were getting no improvement, 5 patients (25%) were getting Mild improvement, 11 patients (55%) were getting Moderate improvement and 3 patients (15%) were getting Marked improvement. Overall effect of the treatment is 60.27%.

Effects of *Vimalanjana* - Group B

Assessment of total effect of therapy

Table 6: Overall effect of Group - B

Class	**Grading**	**No. of patients**
0-25%	No Improvement	0
26%-50%	Mild Improvement	7
51%-75%	Moderate Improvement	12
76%-100%	Marked Improvement	1

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2019

Table 7: Comparative results of Group A and Group B

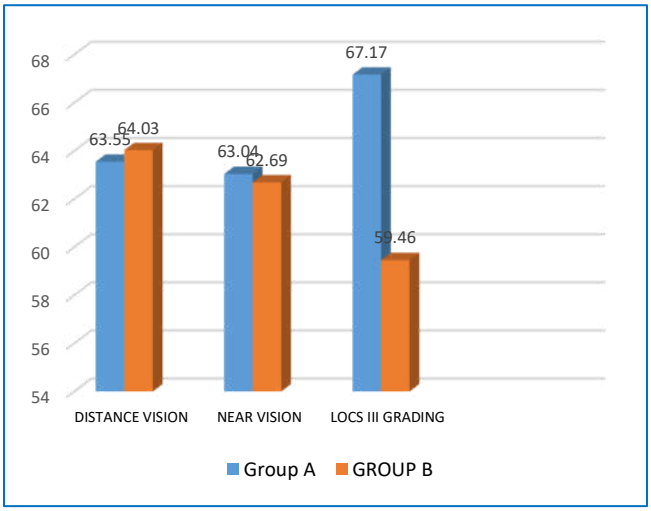
Characteristics	Group A			Group B		
Signs and Symptoms	Mean score		Percentage of relief	Mean score		Percentage of relief
	BT	AT		BT	AT	
Distant Vision	3.15	1.05	63.55	3.48	1.25	64.03
Near Vision	3.05	1.15	63.04	3.35	1.25	62.69
LOCS III Grading	1.65	0.50	67.17	1.85	0.75	59.46

Table 8: Overall comparative results of Group A and Group B

Group A	Group B	Mean Difference	SE (+-)	t value	p value
60.27	57.34	4.24	2.14	1.02	>0.05

Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with paired 't' test. The test shows that the treatment is statistically not significant in Group A when compared to Group B and it is clinically significant, Group A overall result is 60.27% and Group B overall result is 57.34%.

Chart 1: Comparative results of Group-A and Group-B



Discussion

Timira is one among the 12 types of *Dristi Rogas*. *Acharya Sushruta* while enumerating, as given outmost importance to the disease and has explained 6 types of *Timira* in *Dristigata Rogas*. *Timira* is the initial stage, if not treated it will progress to *Kacha* which if neglected leads to *Linganasha* (Complete loss of vision). *Timira* is characterized by blurred vision, appearance of mosquitoes, hairs, net, circles, flags, rings, flies, difficulty in threading the needle, diplopia, polyopia etc. the signs and symptoms of which can be correlated with senile immature cataract. In contemporary medicine, there are no proven non-surgical measures to delay, prevent or reverse the development of senile cataract. All the ingredients of *Janaranjanakam Anjana* are *Chakshushya* possess *Rasayana Karma* and *Ushna*, *Teekshna* and *Pippali* is *Pramathi*, they all do *Lekhana* action. Thus, pacifies *Kapha* and maintains the lens in dehydrated state.

Conclusion

Kaphaja Timira can be compared to immature cataract. *Kaphaja Timira* person is characterized by Blurred vision, Glare, Blackspots etc. the signs and symptoms of which can be correlated with senile immature cataract. Common etiology of *Netra Rogas* applicable for *Kaphaja Timira* also. There is no significant difference in results between the Group A and Group B. Group A overall result is 60.27%, Group B overall result is 57.34%. Group A was found to be clinically more effective than Group B. Both medicines were found to be effective in reducing the severity of the symptoms and improvement in visual acuity but were not sufficient to reduce the density of opacification. Patients of immature cataract with 6/9 and 6/12 visual acuity showed better response when compared to that of 6/18 and above. And patients with short duration history showed better response when compared to that of long duration.

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ISSN: 2456-3110 **ORIGINAL ARTICLE** July-Aug 2019

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