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A CLINICAL STUDY ON THE EFFICACY OF HAREETAKYADI ANJANA IN THE MANAGEMENT OF KAPHAJA TIMIRA (IMMATURE CATARACT)

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ABSTRACT

Thirty patients of Kaphaja Timira (Immature Cataract) were diagnosed and registered for the clinical study irrespective of sex, socio-economic status and religion with an aim to know the efficacy of Hareetakyadi Anjana. To present the study in a scientific manner WHO Cataract grading system and classical signs and symptoms of Kaphaja Timira were used for assessment and statistical evaluation. Favourable results were found at the end of the research study. The Lenticular opacity along with the signs and symptoms were reduced and the results were significantly effective.

Objectives:

To evaluate the effectiveness of Hareetakyadi Anjana in the management of Kaphaja Timira (Immature Cataract).

Materials and Methods:

Study Design: *An open label single arm clinical trial with pre hoc and post hoc test design.*

Sample: *A single arm clinical study over 30 patients of Kaphaja Timira (Immature Cataract) selected randomly. The patients were selected irrespective of religion, caste and gender from Shalakya OPD of Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka.*

Drug: *Hareetakyadi Rasakriya anjana 1 drop BD for 60 days was administered into affected eye.*

Results: *Hareetakyadi Anjana showed statistically significant improvement in subjective parameters of Kaphaja Timira.*

Conclusions:

Hareetakyadi Anjana was found to be significant for treating Kaphaja Timira (Immature Cataract).

KEYWORDS: *Kaphaja Timira, Anjana, Immature Cataract, Hareetaki, Haridra, Pippali, Saindhava.*

INTRODUCTION

Ayurveda means 'The Knowledge of life' or 'The Science of life'. Eyes are one of the precious and very sensitive organ exposed to external environment and highly susceptible to develop diseases. A person who desires for a long life must take care of his eyes throughout the life, as for a blind man; there is no difference between day and night even if he has so much of wealth.

Kaphaja Kacha (Immature Cataract) is highly prevalent among the age group more than 40 years. It is preventable blindness as explained by "Vision 2020: The Right to Sight" (WHO). It is affecting 12 to 15 million people globally. In India, approximately 3.8 million people become blind from cataract each year[1]. An effective medical therapy for senile cataract has not been found till now. Surgery is the only choice of treatment.

There is no direct mentioning of senile cataract in Ayurveda. Considering the signs, symptoms and histological changes in the lens, different stages of senile cataract may be compared to Kaphaja Timira, Kaca and Linganasha. Various medical measures have been advised in different authoritative textbooks of Ayurveda to correct KaphajaTimira in the initial stage. Surgery is mentioned only in the final stage of Kaphaja Linganasha where there is total loss of vision[2]. Hence, any potential intervention that could delay the progression of cataract or cure cataract would have significant impact on the prevalence of blindness. Hence a clinical trial was made to evaluate the efficacy of Hareetakyadi Anjana in Kaphaja Timira with special reference to Senile Immature Cataract. Hareetakyadi Anjana is a unique formulation described in Chakradatta and Bhaishjyaratnavali. It consists of Hareetaki, Haridra, Pippali and Saindhava[3].

Diagnositic criteria

Assessment parameters were selected as per WHO guidelines for Cataract[4].

Subjective symptoms:

- Pashyetasookshmanyatyartam (Difficulty in vision)
- Bhootamtuyatnaatpashyati (Difficulty in viewing small objects)
- Yatnavanapi Suchipasham napashyati (Difficulty in near vision)
- Snigdha Darshanam (Blurred vision)
- Dvidaika Darshanam (Diplopia)
- Tanuchailavrutopamam (Objects as if covered by cloth)
- Jalaka Darshanam (Floaters)
- Sweta Darshanam (Vision like whitening of objects)

Objective symptoms:

- Visual acuity test revealing reduced visual acuity.
- Direct Ophthalmoscopic evaluation to understand the Type and Grade of Cataract.
- Slit lamp Examination to understand the Type and Grade of Cataract.

Inclusion criteria

- Patients diagnosed as Kaphaja Timira (Immature Cataract)
- Patients of age group 30 to 70 years
- Patients of either gender
- Patients who are ready to sign informed consent form

Exclusion criteria

- Senile Mature Cataract and Hypermature Cataract
- Congenital, Traumatic, Complicated or Metabolic Cataract
- Other Ocular pathology that causes diminished vision
- Visual Acuity <6/60 (Snellens Chart)

Drug Preparation:

The trial drug was Hareetakyadi Anjana which is a classical formulation mentioned in Chakradatta and Bhaishajyaratnavali. It contains 4 ingredients- Hareetaki, Haridra, Pippali and Saindava in the ratio 1:1:1:1. These drugs were powdered and concentrated Kashaya was made. This Kashaya was later mixed with sufficient quantity of honey. The drug was prepared and bottled under aseptic conditions at K.S.Varier'sAshtangaAyurvedics (P) Ltd, Trichy, Tamilnadu.

Observation and Results

A total of 32 patients of Kaphaja Timira (Immature Cataract) fulfilling the inclusion criteria were registered for this clinical study.

The effect of treatment was assessed on the basis of both subjective criteria and objective parameters.

There were no significant observations seen related to gender, cast, ethnicity, religion, education, occupation, diet and habits while was significantly more in elderly.

Assessment schedule:

S.N.	Baseline Assessment	Follow up During the Treatment (Observation between treatment)				Follow up After the Treatment
Assessment No.	1st	2nd	3rd	4th	5th	6th
Day	BT	15th day	30th day	45th day	AT	75th day

Results:

The Objective parameters were studied using

- 'Repeated Measure Anova' is used to analyze the significance of change in Distant and Near Visual Acuity followed by 'Paired t test' as post hoc.
- 'Wilcoxon signed rank test' is done on Cataract Grading to interpret the significant change before and after treatment.
- 'Mc Nemar test' is used to analyse the significance of change in the subjective symptoms before and after the treatment.

RESULT

Mcnemar test

Symptoms	BT		AT		N	P-value	Remarks
	Present	Absent	Present	Absent			
PashyetAsookshmanyatyartam	58	2	33	27	60	0.0001	S
Bhootamtuyatnaatpashyati	56	4	40	20	60	0.0001	S
Yatnavanapi Suchipashamnapashyati	52	8	14	46	60	0.0001	S
Snigdha Darshanam	35	25	11	49	60	0.0001	S
DvidaikaDarshanam	8	52	4	56	60	0.0001	S
Tanuchailavrutopamam	54	6	14	46	60	0.0001	S
JalakaDarshanam	13	47	2	58	60	0.0001	S
SwetaDarshanam	32	28	11	49	60	0.0001	S

Repeated Measure Anova

Assessment criteria	N	BT mean	AT mean	Greenhouse - geisser			Greenhouse – geisser error Df	Remarks
				df	F-value	p-value		
Distant Visual Acuity	60	60.517	72.517	2.806	38.448	0.0001	165.536	S
Near Visual Acuity	30	61.900	84.000	2.575	14.936	0.0001	74.678	S

Wilcoxon signed rank test for effect on types of cataract

Cataract Grade	Negative ranks			Positive ranks			Ties	Total	Z Value	P Value	Remarks
	N	MR	SR	N	MR	SR					
Cortical BT AT	12	6.50	78.00	0	0.00	0.00	5	17	-3.464	0.001	S
Nuclear BT AT	8	4.50	36.00	0	0.00	0.00	11	19	-2.828	0.005	S
PSC BT AT	8	4.50	36.00	0	0.00	0.00	9	17	-2.828	0.005	S

MR-Mean rank, SR-Sum of ranks

- Out of 17 eyes having Cortical Cataract, there were 12 Negative ranks and 0 Positive ranks after the treatment with 5 ties which is statistically significant($p<0.001$)
- Out of 19 eyes having Nuclear Cataract there were 8 Negative ranks and 0 Positive ranks after the treatment with 11 ties which is statistically significant(p value 0.005)
- Out of 17 eyes having PSC Cataract, there were 8 Negative ranks and 0 Positive ranks after the treatment with 9 ties which is statistically significant(p value 0.005)

HareetakyadiAnjana was found to be effective in subjective improvement in the symptoms of

KaphajaTimira which is statistically significant at the level of ($p<0.001$). The drug was found to be effective in the improving distant ($p<0.001$) and near visual acuity ($p<0.001$). There was significant reduction in the cortical, Nuclear and Posterior Subcapsular opacities. Hence the medicine was found effective in KaphajaTimira with special reference to Immature Cataract.

DISCUSSION

Overall analysis of the drug shows that it is having properties like Chakshusya, Rasayana, Lekhana, Chedhana, Kaphavata pradhana Tridoshahara, Rooksha, Laghu, Sookshma, VyavayiGuna. It ishaving Tikta Katu rasa pradhana, Ushna Veerya and KatuVipaka.

Chakshushya guna yukta tikta rasa does the kledashoshana in lens thereby decreasing opacity. Chakshushyagunayukta Katu rasa facilitates the exchange of ions through channels by its margavivavarana and also does shleshmashamana. Laghu and Ruksha guna of the drug decreases kledatwa which is the prime cause for denaturation of the proteins in lens. Sookshma and Vyavayi guna of the drug increases corneal penetration and provides larger dissolution area and thus enhances the bioavailability of the phytochemicals present in the trial drug.

The trial drug with its predominant property of Chakshushya improves the visual parameters like blurred distant and near vision. The Rasayana property of the drug contributes to the antioxidant action thereby scavenging the free radicals and thus prevent cataractous development. The Chedana and Lekhana property of the drug removes the sthira vikruta kapha which is effecting the transparency of the lens and thus decreases the opacity.

CONCLUSION

Hareetakyadi Anjana showed significant improvement in subjective parameters of Kaphaja Timira. The Anjana showed significant improvement in Distant and Near Visual Acuity. This Anjana yoga significantly reduces Kaphaja Timira (Cortical Cataract, Posterior Sub capsular and Nuclear Cataract). No adverse drug reactions were reported during the study. The Research hypothesis is thus accepted.

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