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ORIGINAL RESEARCH ARTICLE: CLINICAL RESEARCH

A COMPARATIVE STUDY ON THE EFFICIENCY OF *PATOLADI GHRITA PANA* AND *PUNARNAVADHI ANJANA* IN *TIMIRA*

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ABSTRACT

Background: Senile cataract is an age related vision threatening disease. It affects 12 to 15 million persons worldwide. In India approximately 3.38 million persons become blind from cataract every year. Senile immature cataract closely resembles the symptoms of *Timira* involving *Prathama* and *Dwithiya patala*. At present there is no time tested and proven medical treatment to delay, prevent or reverse the development of senile cataract. The present research work is aimed to evaluate easy, cost effective and prevent the deterioration of sight. **Aims:** To evaluate the efficacy of *Patoladi ghrita pana* and *Punarnavadi anjana* in the management of *Timira*. **Methods and Material:** It is a randomized non-controlled parallel arm clinical study. A total of 40 patients who are fulfilling the diagnostic and inclusion criteria were selected randomly and allotted in to 20 patients in each group. Group 'A' patients were treated with *Patoladi gritha* internally and Group 'B'patients were treated with *Punarnavadi Anjana* external application. **Statistical analysis used:** The data were graded based on standard methods and analyzed statistically using Paired't'and Unpaired't'tests. **Results:** Both the groups have shown statistically significant results. Group B patients showed better response when compared to group A. **Conclusion:** Both medicines were found to be effective in reducing the severity of the symptoms but were not sufficient enough to improve the visual acuity to higher extent and density of opacity. Patients with immature cataract with short duration showed better response when compared to that of longer duration.

Key Words: *Timira, Patoladi ghrita, Punarnavadi Anjana*, Senile cataract.

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INTRODUCTION:

Senile cataract is an age related vision threatening disease, occurs due to degeneration of lens fibers with the advancement of age. It affects 12 to 15 million persons worldwide. In India approximately 3.38 million persons become blind from cataract every year[1]. It equally affects the persons of either sex, usually above the age of 50 years. By the age of 70 over 90% of individuals develop senile cataract[2]. Condition is usually bilateral but normally one eye is affected earlier than the other.

Senile immature cataract closely resembles the symptoms of *Timira* involving *Prathama* and *Dwithiya patala*. *Timira (prathama* and *dwiteeya patalagatha)* a *Sadhya, Drishtigata roga[3]* is explained by almost all the *Ayurvedaacharyas* in their treatises. *Avyaktha darshana, Vihwala darshana, Gochara vibhrama, Dwidha/bahudha darshana[4]*are its main symptoms. Image blur, glare, diplopia/ polyopia, black spots in front of eyes, distortion of images and misty vision are the symptoms of Immature senile cataract[5].

At present there is no time tested and proven medical treatment to delay, prevent or reverse the development of senile cataract. The definite management for senile cataract is lens extraction, over the years various surgical techniques have evolved from the ancient method of couching to the present day technique of Phacoemulsification. The present research work is aimed to evaluate easy, cost effective and prevent the deterioration of sight. *Ayurveda,* the science of healthful life, has explained variety of treatments as a boon for those who are suffering from such disorders.

In case of *Timira*, treatment can be broadly classified into *Bahya* and *Abyanthara chikitsa*. In case of *Bahya chikitsa* more importance is given to *Anjana*, as it expels the localized *doshas* from the eye. With regards to *Abyanthara chikitsa Sneha dravyas* are mentioned for internal use as they nourish the *patalas* and prevent further degeneration.

For this present study we have selected *Patoladi ghrita* for internal administration and *Punarnavadi anjana* for topical application.

The present research work is aimed to evaluate easy, practicable method for management of *Timira* and to prevent the deterioration of sight, which is harmless, economic and cost effective.

AIM AND OBJECTIVES:

- To evaluate the efficacy of *Patoladi ghrita pana* in the management of *Timira*.
- To evaluate the efficacy of *Punarnavadi anjana* in the management of *Timira.*
- To comparatively evaluate the efficacy of *Patoladi ghrita pana* to that of *Punarnavadi anjana* in *Timira.*

MATERIALS AND METHODS:

Study design: A comparative clinical study with minimum 40 patients with pre and post-test design.

Study population: Urban and rural population from Bangalore.

Study sample: 40 patients were selected irrespective of sex, caste, religion, income, occupation in the age group of 50-75 years with early cataract symptom. Patients were randomly divided into to 2 groups, group A and B with 20 patients in each group.

Sample size: 40 patients fulfilling the diagnostic and inclusion criteria were selected for the study.

Study setting: Patients attending the outpatient department of Shalakya Tantra, Sri Jayachamarajendra Institute of Indian Medicine Bangalore, with characteristic features of immature cataract were selected for the present study.

Trial drug details:

***Patoladi gritha*:**

Ingredients of *Patoladi ghrita:* *Patola patra, Nimba, Katuki, Daruharidra, Ushira, Haritaki, Vibhitaki, Amalaki, Vasa, Dhanvayasa, Trayanthi, Parpataka* – 1 *Pala* each for *Kwatha* preparation.*Amalaki* – 1 *prastha***,** *Jala* – 1 *Drona* for *Kwatha* preparation**,** *Goghrita* – 1 *Prastha.Mustha, Bhunimba, Yashtimadhu, Kutaja, Udichya, Chandana, Pippali* – ½ pala each for *Kalka* (¼ of *Ghrita*). The above said ingredients are taken as per the prescribed quantity and the medicine was prepared as per *Ghritapaka* [6].

Table 1: Ingredients of *Patoladi ghrita*

Ingredients	Botanical name	*Rasa*	*Guna*	*Veerya*	*Vipaka*	*Karma*
Patola patra	Trichosanthes dioica Roxb	*Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Tridoshahara, Bhedana*
Nimba	Azadirachta indica	*Tikta, Kashaya*	*Laghu*	*Sheeta*	*Katu*	*KaphapittaharaChakshushya*
Katuki	Picrorhiza kurroa Royle	*Tikta*	*Laghu, Ruksha*	*Sheeta*	*Katu*	*KaphapittaharaDeepana*
Daruharidra	Berberis aristata	*Tikta, Kashaya*	*Laghu, Ruksha*	*Ushna*	*Katu*	*KaphapittaharaChakshushya*
Ushira	Vertiveria zizanioides	*Tikta, Madhura*	*Ruksha, Laghu*	*Sheeta*	*Katu*	*KaphapittaharaKaphanisaraka*
Haritaki	Terminalia chebula	*Kashaya*	*Laghu, Ruksha*	*Ushna*	*Madhura*	*Tridoshahara Chakshushya*
Vibhitaki	Terminalia bellerica	*Kashaya*	*Laghu, Ruksha*	*Ushna*	*Madhura*	*Tridoshahara Rasayana*

Amalaki	Embellica officinalis	*Amla*	*Laghu, Ruksha*	*Sheeta*	*Madhura*	*Tridoshahara Rasayana*
Vasa	Adhathoda vasica	*Tikta, Kashaya*	*Ruksha, Laghu*	*Sheeta*	*Katu*	*KaphapittaharaChakshushya*
Dhanvayasa	Alhagi camelorum	*Madhura, Tikta*	*Laghu*	*Sheeta*	*Katu*	*Kaphahara Rasayana*
Trayanthi	Gentiana kurroa	*Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Kaphavatahara*
Parpataka	Fumaria indica	*Tikta*	*Laghu*	*sheeta*	*Katu*	*KaphapittaharaGrahi*
Gritha	Cow ghee	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*Vatapittahara Chakshushya*
Mustha	Cyperus rotundus	*Tikta, Katu*	*Laghu, Ruksha*	*Sheeta*	*Katu*	*Kaphapittahara*
Bhunimba	Swertia chirayita	*Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Tridoshhara Shothahara*
Ysatimadhu	Glycyrrhiza glabra	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*	*Vatapittahara Chakshushya*
Kutaja	Holarrhena antidysentrica	*Tikta, Kashaya*	*Ruksha*	*Sheeta*	*Katu*	*Kaphapittahara*
Udichya	Pavonia odorata	*Tikta, Madhura*	*Ruksha, Laghu*	*Sheeta*	*Katu*	*Vatahara Pachana*
Chandana	Santalum album	*Tikta, Madhura*	*Laghu*	*Sheeta*	*Katu*	*KaphapittaharaRasayana*
Pippali	Pipper longum	*Katu*	*Laghu, Tikshna*	*Ushna*	*Madhura*	*Kaphavatahara Chakshushya*

***Punarnavadi Anjana*:** Ingredients[7]

Table 2: Ingredients of *Punarnavadi Anjana*

Ingredients	Botanical name	*Rasa*	*Guna*	*Veerya*	*Vipaka*	*Karm*
Punarnava	Trianthema portulacasrtum	*Katu, Kashaya*	*Laghu, Ruksha*	*Ushna*	*Katu*	*Kapha vatahara, Chakshushya*
Tila	Sesamum indicum	*Madhura, Tikta*	*Guru, Vyavai*	*Ushna*	*Madhura*	*Vata kaphahara, Chakshushya*

Diagnostic Criteria:

The diagnosis of *Timira* (Immature cataract) was done on the basis of various clinical investigations. The criteria adopted for the present study are:

a) Functional examination of the eye: The visual acuity for distant central vision was tested by means of Snellen's Distance chart. The field of vision was tested by confrontation test. The colour vision was assessed by Ishihara's chart. The near vision was tested using Jaegar's chart.

b) Confirmation of the refractive error due to *Timira* was done, improvement in the visual acuity, not present while viewing through a pinhole disc was recorded.

c) The spectacles numbers in diopter, used by patients were recorded, and full correction required was determined by both objective and subjective methods before and after treatment to measure the improvement on treatment.

d) Oblique illumination examination: To determine the colour of the lens in pupillary area.

e) Test for Iris shadow: Presence or absence of the iris shadow was noted.

f) Distant direct ophthalmoscope examination: Carried after full mydriasis, density of lenticular opacity was recorded before and after the treatment.

g) Slit-lamp Examination: Performed with a fully dilated pupil. The examination reveals site, size, shape and colour pattern of the opacity[8].

h) Among the Ayurvedic parameters, the symptoms of Patalagata Timira as advocated by Sushrutha were recorded along with doshic features.

Inclusion criteria:

1. Patients with signs and symptoms of *Timira* (Immature cataract).
2. Patients with senile manifestation, age group of 50 to 75 years.
3. Patients having visual acuity 6/36 or less.

Exclusion criteria:

1. Mature cataract (*Kacha, Linganasha*).
2. Cataract associated with systemic diseases.
3. Patients suffering from other eye disorders
4. Patients below the age of 50 years and beyond the age of 75 years.

Lab investigations:

Blood investigation was carried out in all the patients to identify diabetic and non diabetic patients.

Interventional phase:

1.Group A: 20 patients of group'A' were administered with 8 to 12gms of *Patoladi ghrita* once at night 2 hours after food for the period of 48 days.

2.Group B: 20 patients of group'B' were applied with 1 *harenu matra* of *Punarnavadi anjana* once in the morning, the application continued till *samyak lakshanas* of *lekhananjan*[9]is obtained for the maximum period of 48 days.

Follow up study: Follow up study was

undertaken for the next three months, examining the patients once a month.

Assessment Criteria:

The effect of treatment was assessed on both objective and subjective parameters. Grading and scoring system was adopted for assessing each sign and symptom before the commencement of trial and after completion. It was assessed on the basis of standard and some self-formulated scoring scale to signs and symptoms of *Timira*.

Subjective parameters:

1. *Avyakta darshana*(Blurred vision)
2. *Vihwala darshana*(Floters)
3. *Gochara vibhrama*(Disorientation of normal perception)
4. *Dwidha/Bahudha darshana* (Diplopia/Polyopia)

Objective parameters:

1. Visual acuity
2. Density of opacity:

Adverse effects: No serious adverse effects were noted in the present study, but *Anjana* application produced mild irritation, lacrimation and redness on application, which subsided within few minutes.

Statistical analysis: The data were graded based on standard methods and analyzed statistically using Paired't' test and Unpaired't' test.

OBSERVATIONS AND RESULTS:

Out of 40 patients, 9 patients (22.50%) were between the age group of 50 -55 years, 13 patients (32.50%) were between 56 – 60 years, 10 patients (25%) were between 61 – 65 years, 5 patients (12.50%) were between 66 – 70 years, 3 patients (7.50%) were between 71 – 75 years of age group.Among 40 patients selected for clinical study, 21 patients (52.50%) were male and 19 patients (47.50%) were females.Though the religion wise distribution of the patients has no significance in the clinical study, but based on their availability patients from Hindu were more, i.e. 33 patients (82.50%), Muslim patients were 5 (12.50%) and Christian patients were 2 (5%).40 patients were divided into three groups depending on the nature of work, House wives were 10 (25%), Working class 15 (37.50%) and Retired 15 (37.50%).Out of 40 patients 10 patients (25%) belonged to upper class, 14 patients (35%) to middle class and 16 patients (40%) to lower class. The incidence of addiction in study showed that 18 (45%) were addicted to Coffee drinking,20 (50%) to Tea drinking, 10 (25%) to Cigarette smoking and 9 (22.50%) patients were addicted to Alcohol. The study viewed that 13 (32.50%) patients were *vata pitta prakriti* persons, 11 (27.50%) were *pitta kapha prakriti* persons and 16 (40%) were *vata kapha prakriti* persons.Among 40 patients, 18 (45%)

patients were vegetarians and 22 (55%) were of mixed diet habits.

Assessment of response in "group A" after treatment:

Table 3: Effect of *Patoladi ghrita* on *Timira lakshanas*

Lakshanas	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Avyaktha darshana	1.35	0.65	0.7	51.85%	0.571	0.127	5.481	<0.001
Vihwala darshana	0.65	0.45	0.2	30.76%	0.410	0.091	2.181	<0.05
Gochara vibhrama	1.15	0.75	0.4	34.78%	0.502	0.112	3.561	<0.05
Dwidha/ bahudha darshana	0.55	0.4	0.15	27.27%	0.366	0.081	1.831	<0.05

Effect of *Patoladi ghrita* on improvement of symptoms like *Avyaktha darshana*(<0.001), Vihwala *darshana*(<0.05), *Gochara vibhrama*(<0.05) and *Dwidha/ bahudha darshana*(<0.05) were statistically significant.

Table 4: Effect of *Patoladi ghrita* on visual acuity in *Timira*

	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Right eye	63.89	69.29	5.4	8.44%	6.314	1.412	3.824	<0.05
Left eye	67.24	73.46	6.22	9.25%	5.915	1.322	4.702	<0.001

The percentage of improvement of visual acuity in right eye was 8.44% which was statistically significant at the level of p <0.05 and in left eye was 9.25% which was statistically highly significant at the level of p <0.001.

Table 5: Effect of *Patoladi ghrita* on density of opacity in *Timira*:

	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Right eye	1.3	1.15	0.15	11.53%	0.366	0.0819	1.831	>0.05
Left eye	1.35	1.2	0.15	11.11%	0.366	0.0819	1.831	>0.05

The percentage of improvement on density of opacity in right eye was 11.53% which was statistically insignificant at the level of p>0.05 and in left eye was 11.11% which was statistically insignificant at the level of p>0.05.

Assessment of response in "group B" after treatment:

Table 6: Effect of *Punarnavadi anjana* on *Timira lakshanas*

Lakshanas	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Avyaktha darshana	1.5	0.65	0.75	56.66%	0.489	0.109	7.769	<0.001
Vihwala darshana	0.6	0.4	0.2	33.33%	0.523	0.116	1.710	<0.05
Gocharavibhrama	1.25	0.8	0.45	36%	0.510	0.114	3.943	<0.001
Dwidha/ bahudha darshana	0.85	0.55	0.3	35.29%	0.470	0.105	2.854	<0.05

Effect of *Punarnavadi anjana* on improvement of symptoms like *Avyaktha darshana*(<0.001), Vihwala *darshana*(<0.05), *Gochara vibhrama*(<0.001) and *Dwidha/ bahudha darshana*(<0.05) were statistically significant.

Table7: Effect of *Punarnavadi anjana* on visual acuity in *Timira*

	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Right eye	66.06	75.49	9.435	14.29%	6.884	1.539	6.130	<0.001
Left eye	59.25	67.53	7.285	12.33%	8.096	1.810	4.023	<0.001

The percentage of improvement of visual acuity in right eye was 14.29% which was statistically significant at the level of p <0.001 and in left eye was 12.33% which was statistically highly significant at the level of p <0.001.

Table 8: Effect of *Punarnavadi anjana* on density of opacity

	Mean		Difference in mean	Percentage	SD	SEM	t	P
	BT	AT						
Right eye	1.5	1.25	0.25	16.66%	0.444	0.099	2.517	<0.05
Left eye	1.55	1.35	0.2	12.9%	0.410	0.0917	2.181	<0.05

The percentage of improvement on density of opacity in right eye was 16.66% which was statistically significant at the level of p <0.05 and in left eye was 12.9% which was statistically significant at the level of p<0.05.

Inter group comparison between group A and group B:

Table 9: Comparison of effect of treatment on *Lakshanas* in group A and B:

Lakshanas	Group A Mean		% of relief	Group B Mean		% of relief	% of relief difference	t	P
	BT	AT		BT	AT				
Avyaktha darshana	1.35	0.65	51.85%	1.5	0.65	56.66%	4.81%	0.892	>0.05
Vihwala darshana	0.65	0.45	30.76%	0.6	0.4	33.33%	2.57%	0	>0.05
Gochara vibhrama	1.15	0.75	34.78%	1.25	0.8	36%	1.22%	0.312	>0.05
Dwidha / bahudha darshana	0.55	0.4	27.27%	0.85	0.55	35.29%	8.02%	1.126	>0.05

The comparison of effect of treatment on symptoms like *Avyaktha darshana, Vihwala darshana, Gocharavibhrama, Dwidha/bahudha darshana* showed that there is statistically insignificant difference between the group A and group B at the level of p>0.05. The percentage relief difference between the group shows that group B therapy is more effective than group A.

Table 10: Comparison of effect of therapy on visual acuity in group A and B:

	Group A Mean		% of relief	Group B Mean		% of relief	% of relief difference	t	P
	BT	AT		BT	AT				
Right eye	63.89	69.29	8.44%	66.06	75.49	14.29%	5.85%	1.931	>0.05
Left eye	67.24	73.46	9.25%	59.25	67.53	12.33%	3.08%	0.475	>0.05

In visual acuity, there is insignificant difference between group A and B at the level of p>0.05 in both eye. The percentage relief difference between the groups is 12.97% in right eye and 11.40% in left eye. This shows that group B therapy is more effective than group A.

Table 11:Comparison of effect of treatment on density of opacity in group A and B:

	Group A Mean		% of relief	Group B Mean		% of relief	% of relief difference	t	p
	BT	AT		BT	AT				
Right eye	1.3	1.15	11.53%	1.5	1.25	16.66%	5.13%	0.777	>0.05
Left eye	1.35	1.2	11.11%	1.55	1.35	12.9%	1.79%	0.406	>0.05

In density of opacity, there is statistically insignificant difference between group A and B at the level of p>0.05. The percentage relief difference between the groups is 5.13% in right eye and 1.79% in left eye. This shows that group B therapy is more effective than group A.

Overall assessment of therapy:

Table 12: Overall assessment of therapy:

Response	Group A		Group B		Total	
	No. of patients	%	No. of patients	%	No. of patients	Total %
Good	3	15%	5	25%	8	20%
Moderate	6	30%	6	30%	12	30%
Average	5	25%	6	30%	11	27.50%
Unchanged/ deteriorated	6	30%	3	15%	9	22.50%

The study reveals that in group A 15% of patients had good response, 30% had moderate response, 25% average response and 30% showed no response.

In group B 25% patients had good response, 30% had moderate response, 30% had average response and 15% of patients showed no response to the treatment.

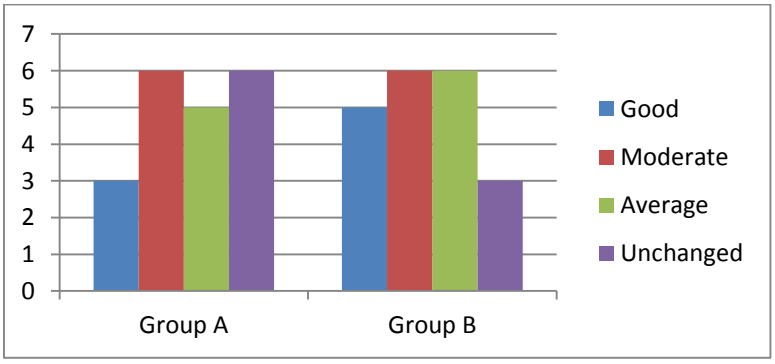

Fig. no. 1: Overall assessment of therapy:

DISCUSSION:

The incidence of *Timira* was observed higher in the age group of 56 to 60years (31.66%). which indicate that with the advancing of the age, the incidence of *Timira* has also witnessed a gradual rise. An equal distribution was seen in male (51.66%) and in female (48.33%).

Maximum numbers of patients (83.33%) belong to Hindu religion. This is due to predominance of hindu population in and around Bangalore. Most of the patients were retired persons (43.33%), may be due to age factor and senile nature of the disease. The incidence of *Timira* was maximum among poor class (40%), the diet deficient of nutrients and

poverty is considered as a factor for developing early senile cataract[11].

Incidence of diet in patients show that majority of them follow mixed diet (60%). The excessive use of Non vegetarian food is also considered as factors for early onset of senile cataract[12]. Regarding chronicity, maximum numbers of patients were having duration of 6 months to 1 year (36.06%). This may be due to selection of patients belonging to early stage of immature cataract. Addiction to tea (50%) found in most of the patients may have a simple role as it is customary to drink tea in this particular region.

Among *lakshanas* 90% of patients had *Avyaktha darshana*, 75% patients had *Gochara vibhrama*. Among the *Nidanas* mentioned for *Netra rogas* 65% of patients had abnormal dietary habits, 60% patients were excessively exposed to smoke and sunlight. These factors are implicated for early onset and maturation of senile cataract. Visual acuity was greatly disturbed in majority of the patients with greater incidence in 6/18 (21.66%), 6/24 (20%) and 6/36 (19.56%).Among density of opacity most of the patients were with moderate incidence of lenticular opacity (37.5%).

Mode of action of Patoladi ghrita:

Patoladi ghrita has been mentioned to be useful in *Timira* in *Ayurveda* literature hence was taken for assessing its efficacy in the form of *pana*, in the management of *Timira*.

Timira is *kapha* predominant *tridoshaja* disease. The formulation *Patoladi ghrita* contains ingredients which have *tridoshahara* and *kaphahara* properties due to *tikta, kashaya rasa* and *laghu, ruksha guna*.Ingredients like *Amalaki, Haritaki, Vibeetaki, Daruharidra, Nimba, Maduyashti* having *chakshushya* and *rasayana* properties help in revitalizing and restoring normal ocular function. The drug like *Patola, Amalaki, Ghrita* are assumed to have the chemical constituents like vit C, carotein, riboflavin, magnesium, potassium. This protects lens from free radical damage and help in lens metabolism support.

Vitamin C:Vitamin C helps in normal ocular metabolism, Protect the lens from photochemical oxidation, Help to increase levels of glutathione, Support delicate membrane, regulating transport of nutrients and ions in to the lens, Protect against damaging UV radiation and visible light and Protect against superoxide radicals[13].

Vitamin E:Protects the lens from cataract formation[14].

Riboflavin: It activates glutathione and makes that glutathione available for the enzyme glutathione selenium peroxidase, which chemically reduce peroxide free radicals[15].

Carotenoids: Provides protection from the toxic effects of oxygen free radicals there by protects from cataract formation[16].

Potassium and magnesium: Help in maintaining the concentration of potassium and magnesium in the lens.

Mode of action of *Punarnavadi anjana*: *Punarnava anjana* is a *Lekhananjana* due to *Tikta*, *Kashaya, Ruksha* and *Ushna veerya* of *Punarnava* and *Lekhana* property of *Tila taila*. There by it will scrape out the vitiated *Kapha* from *Drishti. Punarnava* and *Tila taila* have *Chakshushya* and *Rasayana* properties**.** The active principle of *Punarnavadi anjana* gets absorbed into the eye through cornea because of lipophilic property of cornea and exhibits its action.

The chemical constituents of *Punarnava* maintain the glytathione level in the lens. Glutathione helps in preserving the physicochemical integrity of proteins in the lens, maintaining action of the sodium, potassium transport pump and molecular integrity of lens fibers, maintain the water balance in the lens, acting as a free radical scavenger to protect membranes and enzymes from oxidation, prevent free-radical induced photochemical generation of harmful byproducts, reactivate oxidized vitamin C which improves antioxidant capability in the lens.

The flavonoids present in the *Punarnava* act as a powerful inhibitor of enzyme aldose reductase, thereby reducing the accumulation of water in the lens.

CONCLUSION:

The clinical features of *Timira* (*Prathama* and *Dwiteeya patalagatha*) are similar to Senile immature cataract, hence *Timira* (*Prathama* and *Dwiteeya patalagata*) can be co-related to Senile immature cataract.

Senile cataract (*Timira*) is seen in the later period of life, average between 56 to 60 years of age. *Timira* equally affects both males and females.

Both medicines were found to be effective in reducing the severity of the symptoms but were not sufficient enough to improve the visual acuity to higher extent and density of opacity.

Group B patients showed much more superior results when compared to group A.

Patients with immature cataract with short duration showed better response when compared to that of longer duration.

As the present study was conducted only on 40 patients and the period of research was limited, there is a need for research with more number of patients and extension in duration of therapeutic procedures.

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