

## EFFECT OF 'USHIRAADI ANJANA' ON 'TIMIRA' W.S.R. TO REFRACTIVE ERRORS & PRESBYOPIA: A CLINICAL STUDY

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### ABSTRACT

The disease 'Timira' manifests due to affliction of *Netra Patals* i.e. layers of the eye ball. The critical analysis of the symptoms of *Timira* are suggestive of two different categories of visual disorders i.e. refractive errors and pathologies of refractive medias leading to poor vision and ultimately loss of vision described in modern ophthalmology. Refractive errors are the most common diseases affecting human eye. *Ushiraadi Anjana*, a name coined to depict the combined effect of five *Ayurvedic* ingredients were evaluated with standard statistical tests. The results of this clinical trial which was conducted for one month on a group of sixty one patients, subdivided in four groups of *Timira*- indicate possibility of significant benefits of *Ushiraadi Anjana* on subjective symptoms like 'Avyakta darshana' i.e., blurring of vision, eye strain, headache, nausea and vomiting etc. The treatment also resulted in improving visual efficacy on objective parameters, particularly on the subgroup of Myopia. However, tests indicate a longer duration of clinical treatment is required to determine the efficacy of *Ushiradi Anjana* on all objective parameters of all subgroups.

**Keywords:** *Timira*, *Anjana*, Refractive errors, Myopia

### INTRODUCTION

"*Timira*" is said to be a "*Param Darun Vyadhi*"<sup>1</sup>. Critical analysis of the symptoms of *Timira* on the basis of affliction of *patalas* as well as on the basis of vitiated *doshas* are suggestive of two different categories of visual disorders described in modern ophthalmology viz., refractive errors and pathologies of refractive media leading to poor vision and

ultimate loss of vision. Estimates of number of people suffering from refractive errors in the world is in the range of 500 million to 2.3 billion<sup>2</sup>. The main causes of blindness in India are: cataract (62.60%), refractive errors (19.7%)<sup>3</sup>. Here is systematic effort is carried out to establish the efficacy of *Ushiraadi Anjana* in the management of

*Timira* w.s.r. myopia, hypermetropia, astigmatism and presbyopia.

One of the features of *Dwitiya patalgatagata Timira* is, patient is unable to locate the eye of needle. This feature is in parlance with clinical features of Presbyopia. Now a days, treatment of Refractive errors includes spectacles, contact lenses, Radial keratotomy (RK), photorefractive keratectomy (PRK), and laser in-situ-keratomileusis (LASIK)<sup>4</sup>. Spectacles are only palliative, as they cannot check further progression of the condition. Contact lenses needs more care, refractive surgeries are not cost friendly, and surgical complications sometimes lead to keratitis.

Surgeries like RK, PKR and LASIK, which are generally not affordable.

In Ayurvedic texts, *Timira* is known as "*Aushadha Sadhya Vyadhi*"<sup>5</sup> i.e. medically treatable disease. Various treatment modalities like *Shanshodhana Chikitsa (Virechan karma)*, *Kriyakalpa-Nasya*, *Dhoom*, *Tarpan*, *Putpaka* and *Anjana* are described in detail.

In the light of the above mentioned scenario, "*Ushiradi Anjana*", a *sarvatimirahar* compound, i.e useful in all types of visual disorders, as mentioned by *Acharya Vagbhatta*<sup>6</sup> has been selected for evaluation of its clinical efficacy in *Timira* (Refractive errors and Presbyopia) in our present study with null hypothesis that *Ushiradi anjana* is not having any role in the treatment of *Timira*.

#### **Aims and Objectives:-**

To evaluate the effects of "*Ushiraadi Anjana*" in *Timira* roga (*Refractive errors & Presbyopia*).

To study side effects/ adverse effects of this medicine, if any.

#### **Material and Methods**

**Source of Data** - Patients of *Timira* (Refractive errors and Presbyopia) attending the OPD of Shalakyata Tantra at R. G. P.G. Ay. Hospital Paprola,

Distt. Kangra (H.P), were selected for the present study.

Study Period: - one month

#### **Inclusion criteria**

All patients presenting with signs and symptoms of refractive errors and presbyopia and those mentioned in classical text for 1st and 2nd *Patalgata Timira* were included in study.

#### **Exclusion criteria**

- Patient not willing for registration.
- Patients outside age group of 14-55 years.
- Refractive media pathologies.
- Cases complicated with infection and corneal ulcer etc.
- Other systemic/metabolic disorders.

#### **CLINICAL STUDY-**

1) Diagnostic phase (2) Interventional Phase (3) Assessment phase

**1) Diagnostic phase-** *Symptoms of 1<sup>st</sup> and 2<sup>nd</sup> patalgata Timira -Avyakta darshana, Vihwala darshana and patient unable to thread the needle etc* as mentioned in *Sushruta Samhita* were recorded along with *doshik* features and taken for most criteria of diagnosis

**2) Interventional Phase-** The study was intervened by the treatment with "*Ushiraadi Anjana*" (*Rasakriyanjna*).

**USHIRAADI ANJANA**<sup>7</sup>-Composition:- It is composed of 5 ingredients.

*Ushira* (1 part), *Pippali* (1/4<sup>th</sup> part), *Saindhava Lavana* (1/4<sup>th</sup> part) *Ghrita Naveena* (1/8<sup>th</sup> Part), *Madhu* (1/8<sup>th</sup> part<sup>4</sup>)

Diagnosed patient who fulfilled the inclusive criteria were divided into following 4 groups:

- |   |               |
|---|---------------|
| Trial Group I ( <i>Myopia</i> )         | -20 patients  |
| Trial Group II ( <i>Hypermetropia</i> ) | - 13 patients |
| Trial Group III ( <i>Astigmatism</i> )  | -20 patients  |
| Trial Group IV ( <i>Presbyopia</i> )    | -20 patients. |

Dose:- 3 Vidanga Matra (i.e. approx. 90 mg) per day in two divided doses.

Duration: -1 month.

Assessment interval: -Day1, Day15 & Day30

Route of Administration:- Topical

**3) Assessment phase –**

Grading and scoring system was adopted for assessing each sign and symptom before the commencement of trial and after completion of trial on these Parameters *Avyakta Darshan, Vihwala darshana, Eye strain, Headache, Nausea and Vomiting Distortion of objects, Reduced near vision in dim light, Reduced near vision in day light :-*

**Overall assessment of the result**

After completion of the trial, assessment of overall improvement was done on the basis of improvement of following subjective and objective features, over its pre trial values.

1. *Cured*: - more than 75% reliefs in symptoms and more than 75% improvement in visual efficacy.
2. *Markedly Improved*: - More than 50% improvement in symptoms and more than 50% improvement in visual efficacy.

3. *Improved*: - Less than 50% relief in symptoms and less than 50% improvement in visual efficacy.
4. *Unchanged and Deteriorated*: - No change in symptoms and no change in visual efficacy. Further progression of refractive errors and presbyopia were also taken into account as deteriorated.

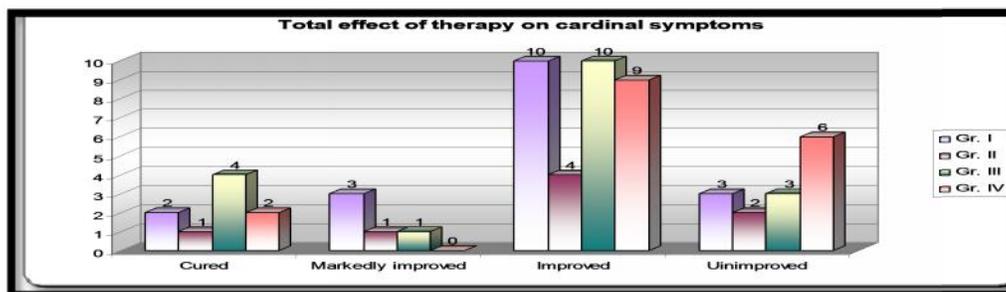
**Observations**

Clinical study has been carried out into four different trial groups. Total 73 patients were registered. Out of them, 20 were in Gr. I, 13 were in Gr. II, 20 were in Gr. III and 20 were in Gr. IV. Among all the patients enrolled, 12 patients did not complete the trial i.e. 2 were from Gr. I, 5 were from Gr. II, 2 were from Gr. III and 3 were from Gr. IV. Patients who completed the trial were distributed as 18 patients in Gr. I, 8 in Gr. II, 18 in Gr. III and 17 in Gr. IV. Maximum patients 21-25% was found in the age group of 21-25years. Major number of patients was females 70%. In cardinal symptoms *avyakta darsana* was found in 90% patients. The dioptric power of 100% patients in right eye was 0-1.00 and in left eye was 0-1.00ds and 0-1.00dc.

**Table 1:** Comparative Effects of Therapy on Cardinal symptoms

Groups	Cured		Markedly improved		Improved		Unimproved		Total patients	%age
	No.	%age	No.	%age	No.	%age	No.	%age		
Gr. I	2	11.11	3	16.66	10	55.55	3	16.66	18	100
Gr. II	1	12.5	1	12.5	4	50	2	25	8	100
Gr. III	4	22.22	1	5.55	10.	55.55	3	16.66	18	99.99
Gr. IV	2	11.76	0	0	9	52.94	6	35.29	17	99.99

**Bar Diagram No 1**

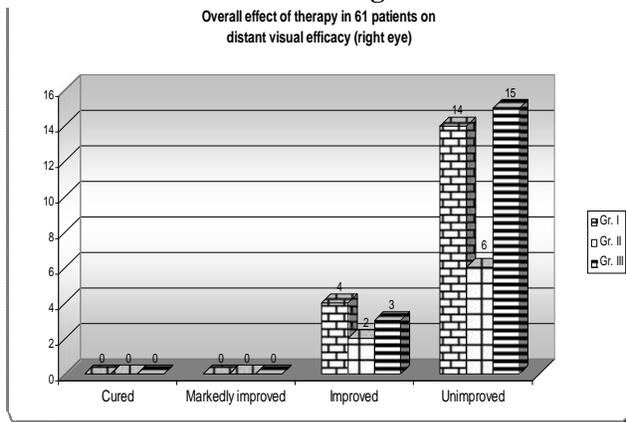


**Table 2:** Total Effects of Therapy on Distant and Near Vision Efficacy

Groups	Cured		Markedly improved		Improved		Table Unimproved		Total patients	% Age
	No.	%age	No.	%age	No.	%age	No.	%age		
Distant visual efficacy										
Right eye										
Gr. I	0	0	0	0	4	22.22	14	76.66	18	100
Gr. II	0	0	0	0	2	25	6	75	8	100
Gr. III	0	0	0	0	3	16.66	15	83.33	18	99.99
Left Eye										
Gr. I	0	0	0	0	3	14.29	15	83.33	18	100
Gr. II	0	0	0	0	0	0	8	100	8	100
Gr. III	0	0	0	0	2	11.11	16	88.88	18	99.99
Near Visual Efficacy										
Right Eye										
Gr. IV	0	0	0	0	0	0	17	100	17	100
Left eye										
Gr. IV	0	0	0	0	0	0	17	100	17	100

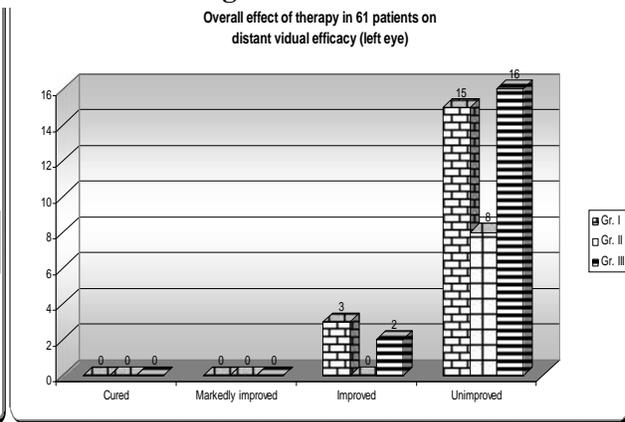
**Bar Diagram No 2**

Overall effect of therapy in 61 patients on distant visual efficacy (right eye)



**Bar Diagram No 3**

Overall effect of therapy in 61 patients on distant visual efficacy (left eye)



## RESULTS & DISCUSSION

### Effect of therapy in Tr. Gr. I

Total 18 patients were documented and result was statistically significant in "Avakta darshana"  $p < 0.05$ , "Eye strain"  $p < 0.001$ , in "Headache"  $p < 0.05$ . In "Vihwala darshana" the result was statistically insignificant  $p > 0.05$ .

In distant visual efficacy right eye result was significant  $p < 0.05$  and left eye the result was statistically insignificant  $p > 0.05$ .

### Effect of therapy in Gr. II

Total 8 patients were registered and result was statistically significant in "Headache"  $p < 0.05$ . In "Avyakta darshana", "Eye strain", "Nausea and Vomiting" result was statistically insignificant  $p > 0.05$ .

In distant visual efficacy result was statistically insignificant  $p > 0.05$  in both eyes.

### Effect of therapy in Gr. III

Total 18 patients were documented and result was statistically significant in "Avakta darshana"

p<0.05, "Eye strain" p<0.05, in "Headache" p<0.05. In "Nausea and Vomiting" and "Distortion of objects" the result was statistically insignificant p> 0.05.

In distant visual efficacy right eye result was significant p<0.05 and in left eye the result was statistically insignificant p >0.05.

**Effect of therapy in Gr. IV** -Total 17 patients were documented and result was statistically significant in "Eye strain" p<0.05, in "Headache"

p<0.05. In "Reduced near vision in dim light" and "Reduced near vision in day light", the result was statistically insignificant p> 0.05.

In near visual efficacy result was insignificant at the level of p>0.05 in both eyes.

**Effect of therapy in Inter group comparison:-**

The result was statistically insignificant at the level of p> 0.05 in inter group comparison of all the four groups.

**Table 3:** Overall effects of therapy on Cardinal symptoms-

Group	Cured	Markedly Cured	Improved	Unimproved
Gr.	11.11%	16.66%	55.55%	16.66%
Gr.	12.5%	12.5%	50%	25%
Gr.	22.22%	12.5%	50%	25%
Gr.	11.76%	00%	52.94%	17%

- *Avyakta darshana* or blurring of vision symptom occurs in all refractive errors.
- *Vihwala darshana*- visualization of non existing objects occurs due to progressive myopia which results into vitreous degeneration, retinal degeneration and ultimately retinal detachment in advanced stages.
- *Timira* ultimately leads to *linganasha* i.e total loss of blindness, which is also found in cases of very high refractive errors.
- 2<sup>nd</sup> *Patala gata Timira* also having the symptoms; *yatanvanapi suchiparshvama na pashyati*...i.e patient is unable to locate/ thread the eye of needle, which occurs due to vitiation of *mansashrita patala* (muscular coat of eye inner to outer *patala*). It is established during description of *patalas* that 2<sup>nd</sup> *patala* is similar to uveal tract (iris, ciliary body and choroid). Presbyopia is the deficiency of accommodation power, which is related to efficiency of ciliary muscles this symptom of 2<sup>nd</sup> *Patala Gata Timira* is similar to presbyopia.

**Overall effects of Therapy On distant and near visual efficacy (Table no-20)**

**On distant visual efficacy of Right eye**

Group I)-22.22% patients were improved, 76.66% were unimproved,

Group II)-25% patients were improved while 75% were unimproved,

Group III)-16.66% patients were improved while 83.33% were unimproved.

**On distant visual efficacy of left eye**

Group I)- 14.29% patients were improved,83.33% were unimproved,

Group II)-00% patients were improved while 100% were unimproved,

Group III)-11.11% patients were improved while 88.88% were unimproved.

**Near visual efficacy-**

Group IV)-100% patients were unimproved.

**S.O.P. OF USHIRAADI ANJANA<sup>8</sup>**

- Fresh, well identified raw material of herbal drugs was taken and dried properly.
- Decoction of *Ushira* was made as per classical text.

- Fine powder of *pippali* and *Saindhava Lavana* mixed in decoction and grinded until it was totally absorbed in this.
- Above material was cooked in properly filtered *Ghrita*.

- Mixed honey in it when it becomes cold.

**Dosage-**

*Rasakriyanjana* (ointment) - 3 *vidanga matra* (approximate 90mg) in two divided doses.

**ANALYTICAL STUDY OF USHIRAADI AJANA-**

DEPARTMENT OF INDIAN SYSTEM OF MEDICINE & HOMEOPATHY  
HIMACHAL PRADESH  
NO.DTL/PP/13/07-1912 Dated 12-1-08  
Report of Test/ Analysis of Drugs

1. Name of the Manufacturer	Govt Ayurvedic Pharmacy Paprola H.P
2. Date of receipt of sample	01/09/2007
3. Name of the Drug	Ushiranjana
4. Batch No.	Not Mention
5. Mnf dt	Not Mention
6. Dt. of Exp.	Not Mention
7. Drug wt.	50 gm
8. Appearance	Semi Solid
9. Colour	Blackish
10. Odor	Aromatic
11. Taste	Salty
12. Loss on Drying at 105° C	20.0 % w/w
13. Total solid	80.0 %
14. Total Ash.	32.5 %
15. Acid insoluble Ash	10.0 %
16. pH	5.40

IDENTIFICATION TESTS:-  
+ve tests for Alk., Carbohydrate, Resin, NaCl

**Microscopic study:-**

- 1 Large polygonal cells
- 2 Prismatic calcium oxalate crystals
- 3 Mass of parenchymatous cells
- 4 Oil globules

**THIN LAYER CHROMATOGRAPHY**

Solvent System	Treatment	No. of spots	Rf. Values
Tol:EA	UV	1	0.27
	Ans, spray	7	0.13, 0.19, 0.27, 0.40, 0.48, 0.87, 0.92
Tol:EA:DEA	UV	1	0.83
	DRG spray	2	0.86, 0.94

Government Analyst  
Govt. Analyst (Vet. Drugs),  
Drug Testing Laboratory,  
Joginder Nagar, 175120 (H.P.)

**PROBABLE MODE OF ACTION OF DRUG –**  
In *Ayurvedic* texts the action of the drug is based on the *Raspanchaka* of the drug. *Timira roga* is *Vata* predominant, *Tridoshaja* disease. The formulation under trial has *Tridoshshamaka*, mainly *Vatashamaka* properties due to *madhura vipaka*. And these properties of the drug help to break down the pathogenesis of the disease. Apart from these properties all ingredients are *Balya*, *Brihana*, *Chakshushya* and *Rasayana* which all strengthen the *patala*.

“*Ushiraadi Anjana*” was expected to strengthen the *Netra patala* by relieving any pathological abnormality there in. So it seems to be mandatory that the *srotas* of *patala* (micro channels or lymphatic channels) must be clear for free circulation of the extra cellular fluid. *Sodhana (sarvanga)* and *Nasya Karma* should have been the *pre Anjana* procedures for the proper absorption, circulation and action of *Anjana*. This fact only seems to be the possible reason behind poor action of the applied drug.

## CONCLUSION

- "Ushiradi Anjana" is significantly effective in relieving the subjective symptoms like *Avyakta darshana* (blurring of vision), Eye strain, Headache, Nausea and Vomiting, Distortion of objects, Reduced near vision in dim light and in day light.
- "Ushiradi Anjana" is less effective in altering the visual acuity.
- "Ushiradi Anjana" showed no adverse effects/toxic effects. But drawback of this *Anjana*, were irritation and excessive watering from the eyes which was overcome by advising the patient to keep eyes closed for five minutes after its application. Modifications in the preparation of *Anjana* at the level of pharmaceuticals are also required to overcome this excessive irritation.

## REFERENCES

1. *Sushruta Samhita with Ayurveda Tatvasandeeepika Hindi Commentary, Uttarantra* by Kaviraj Ambikadatt Shastri, Chaukhamba, Sanskrit Series, Varanasi, 1996, uttratantra1/17
2. *David Denaway, Ian Berger*- Presentation to the Int. Soc. For geographical and epidemiologic ophthalmology.
3. *Dr. R. Jose*. Community Eye Health Journal, Vol -21, Issue – 65, March 2008.
4. Text book of *Ophthalmology*, by A.K khurana, 2nd Edi. New Age International (P) Ltd. New Delhi.
5. *Sushruta Samhita with Ayurveda Tatvasandeeepika Hindi Commentary, Uttarantra* by Kaviraj Ambikadatt Shastri, Chaukhamba, Sanskrit Series, Varanasi, 1996, Uttratantra17/53.
6. *Ashtang Hridaya with Tatvabodhaka Vayakhya* by Shivdasa Sen 1st Edi. Swami Lakshmi Rama Trust 1942, Uttratantra13/77-78.

7. *Ashtang Hridaya with Tatvabodhaka Vayakhya* by Shivdasa Sen 1st Edi. Swami Lakshmi Rama Trust 1942, Uttratantra13/77-78.
8. *Sharangdhara samhita, subodhini hindi commentary* by Prayag Datt Sharma, chaukhamba Amarbharti prakashan, varansi seventh edition, 1988, Uttarakhanda, 13/75-77, page n.465.

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