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CLINICAL EUALUTION OF THE EFFICACY ON *TARPAN KARMA* IN DRY EYE SYNDROME W.S.R. TO BLEPHARITIS *(KRIMIGRANTHI)* BY *JIVANTIYADI GHRITTA* USING FIUROSCEIN AND ROSE BENGAL CORNEAL STAINING

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ABSTRACT

Dry eye syndrome is a very common condition that is characterized by a disturbance of the tear film. Affecting a significant percentage of the population especially aged 40 or above is the persons most likely to be affected by dry eyes.[1] Dry eye syndrome affects any race and more common in women Tears are a combination of water, for moisture; oils, for lubrication; mucus, for even spreading; and antibodies and special proteins, for resistance to infection. These components are secreted by special glands located around the eye. Krimigranthi is a *Sandhigata Roga* (*Pakshama-Vartma Sandhigata*). It is *Kaphaja Sadhya Vyadhi* described in *Sushruta Samhita*.[2] It is characterised by irritation, small nodules, and inflammation of eye lids. It is correlated with Blepharitis with modern ophthalmology. Blepharitis is an eye condition characterized by chronic inflammation of the eyelid, the severity and time course of which can vary.[3] Onset can be acute, resolving without treatment within 2–4 weeks (this can be greatly reduced with lid hygiene), but more generally is a long standing inflammation varying in severity. It may be classified as Seborrhoeic, Staphylococcal, Mixed, Posterior or Meibomitis, or Parasitic.[4] On the other way *Tarpana* means also *Santarpana*, by mean of which the body tissue grow, find strength and become strong. Here, in this study main concern was with second variety of

Tarpana by means of which the eye shed their weakness and attains better sight. We have tried to observe the role of Tarpan Karma in dry eye syndrome in present clinical study in Blepharitis. The Tarpan Karma with Jivantiyadi Ghritta has been selected as trail drugs and conventional treatment i.e. Artificial tears was selected as a control drug in this present research work for evaluating their roles in the management of a series of patients of dry eyes who were selected on the basis of specialised Performa prepared for this purpose.

KEYWORDS: Dry eye syndrome, Blepharitis (*Krimigranthi*), Jivantiyadi Ghritta, Tarpan Karma Fluorescin and Rose Bengal Staining.

INTRODUCTION

Dry eye syndrome is a very common condition that is characterized by a disturbance of the tear film. Affecting a significant percentage of the population especially aged 40 or above is the persons most likely to be affected by dry eyes. ***Krimigranthi:*** It is a *Sandhigata Roga* (*Pakshama-Vartma Sandhigata*). It is *Kaphaja Sadhya Vyadhi* described in *Sushruta Samhita*. It is characterised by irritation, small nodules, and inflammation of eye lids. It is correlated with Blepharitis with modern ophthalmology. **Blepharitis** is an eye condition characterized by chronic inflammation of the eyelid, the severity and time course of which can vary. Posterior Blepharitis is inflammation of the eyelids secondary to dysfunction of the Meibomian glands. Like Anterior Blepharitis it is a bilateral chronic condition and manifested by a broad spectrum of symptoms involving the lids including inflammation and plugging of the Meibomian orifices and production of abnormal secretion upon pressure over the glands. It may be associated with skin Rosacea, and there is growing evidence that in some cases it is caused by Demodex mites.[5] It is also locally used in ocular diseases as *Tarpana Karma*[6] like in dryness, roughness, hardness, darkness before eye, dirty eye, itching and burning sensation. The name *Tarpana* suggests anything which satisfied, regenerate are rejuvenates. With the help of this process body tissue grow find strength and become strong. Eye shed their weakness gain better vision. This process is very effective in dry eye disorders; probably it may improve the Lacrimal glands, secretion, regenerating the goblet cells of conjunctiva. There is more work yet to be done on this process in coming days. So, we decided to do a study on dry eye by *Jivantiyadi Ghritta*.[7] It includes 14 drugs which are indicated in *Charaka Samhita*.

AIMS AND OBJECTIVES

1.To assess the difference in specified parameters of the dry eye syndrome due to Blepharitis.

2.To compare the efficacy of *Tarpana* therapy with a control drug i.e. modern therapy in the management of dry eye syndrome.

MATERIAL AND METHODS

Following materials & methods were employed for conducting the present research study.

1. STUDY DESIGN

It was a randomized, open, controlled, clinical, interventional trial on human subjects.

2. STUDY POPULATION

The study population was collected from the outpatient and inpatient of Department of *Shalakya* and Department Of Ophthalmology, Sir Sunderlal Hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi after obtaining informed consent from patients.

3. SAMPLE SIZE AND SELECTION CRITERIA

Twenty patients of Dry eye were registered, as per criteria of inclusion and exclusion.

i. Inclusion Criteria

a) Patients with the symptoms of dry eyes caused due to Blepharitis.

b) Patients who show score for dry eye on the Flourescein corneal staining and Rose Bengal staining.

c) Patients in the age group of 15-70 years of either sex.

ii. Exclusion Criteria

a) Patients below 15 and above 70 years of age.

b) Dry eyes due to direct physiological effect of a substance (e.g. wind, dry climates, smoke, air conditioning **and medication) or a general medical condition (**such as Sjögren's syndrome, Rheumatoid arthritis, Diabetes, Thyroid problems, Herpes zoster and Collagen vascular diseases).

4. STUDY DRUG DESCRIPTION

The ***Tarpana Karma*** with ***Jivantyadi Ghritta*** has been selected as trial drugs and conventional treatment i.e. Artificial tears was selected as a control drug in this present

research work for evaluating their roles in the management of a series of patients of Dry eye syndrome wsr to Blepharitis.

I. *Tarpana Karma* with *Jivantyadi Ghritta*

1. Dose

10 ml in each eye once a day for 10 minutes in morning hours before meal.

2. Duration

2 months (3 days *Swedana Karma* of *Urdhvajatroo* followed by 7 days *Tarpana Karma* followed by gap of 10 days and this cycle were repeated for total 3 times).

3. Follow ups

On 0 day i.e on day of admission 20^{th}, 40^{th} and 60^{th} day of trial.

4. Method of *Tarpana Karma*

i) Patient who underwent *Tarpana Karma* was firstly subjected to *Swedana Karma* of *Urdhvajatroo* region followed by *Nasya Karma* by *Khadabindu Taila*. 2 drops were poured in each nostril. This process was followed for three days. After three days *Tarpana Karma* was started.

ii) Patients with empty stomach were lied down on his back in a room which is free from sunlight, blast of wind, dust and the process was done in the morning hours.

iii) A firm, circular wall of paste of *Urada* pulse powder around the eye should be made. It is applied to each around it.

iv) 10 gm of *Ghritta Manda* is slightly heated in warm water and transformed into liquid should fill up the ocular cavity up to the tip of eye lashes.

v) The duration of keeping *Ghritta Manda* in the eyes was 10 minutes.

vi) After the completion of *Tarpana* therapy *Sneha* should be drained by the outer canthus (temporal side) of the eye and should be cleaned by luck warm water.

II. Corboxymethylcellolose eye drop

1. It is an artificial tear eye drop

2. Dose - one drop 8 times per day

3. Duration - 2 months.

4. Follow ups - On 0 day i.e on day of admission 20^{th}, 40^{th} and 60^{th} day of trial.

III. Dose Schedule

1. *Tarpana Karma* with *Jivantyadi Ghritta* – 3 days *Swedana Karma* of *Urdhvajatroo* followed by 7 days *Tarpana Karma* by pouring 10ml of *Ghritta* for 10 minutes in each eye followed by gap of 10 days and this cycle was repeated for total 3 times in morning hours before meal.

2. Artificial tear drops- One drop of Artificial tear was administered 8 times per day.

IV. Duration of clinical trail

The duration of clinical trial was 60 days. All patients were followed up 0 day i.e. on day of admission than 20^{th}, 40^{th} and 60^{th} day of trial.

5. EXPERIMENTAL GROUPING

20 registered patients of 40 Dry eyes with Blepharitis were divided into two subgroups i.e. GB1 and GB2 with 10 patients in each subgroup. 10 (20eyes) Patients in this group were treated with *Tarpana Karma* with *Jivantiyadi Ghritta* for 10 days (3 days *Swedana Karma* of *Urdhvajatroo* region followed by 7 days *Tarpana Karma*) followed by gap of 10 days and this cycle was repeated for total 3 times in morning hours before meal. 10 (20eys) patients of Dry eyes were administered artificial tear 1 drop eight times a day with the precaution of wearing sunglasses while going out in day time.

6. CRITERIA'S OF ASSESSMENT FOR DRY EYES

During trial and follow up study the patients were assessed on following parameters:-

- Subjective Improvement
- Objective Improvement

7. Diagnostic Method for Dry eye syndrome

Following are the diagnostic methods for the dry eye syndrome

1.Flourescein Corneal Staining

2. Rose Bengal Staining.

STATISTICAL METHODS USED IN THIS STUDY

Various observations made and results obtained were computed statistically to find out the significance of the values obtained and various conclusions were drawn accordingly. Following tests were used for this statistical purpose.

1. Chi-square test-This test was used to obtain results for each group.

2. Fridman Test- This test is used for Inter group comparison.

Both the tests was carried out at $p<0.05$, $p<0.01$, $p<0.001$. The obtained results was interpreted as

- Insignificant : P >0.05
- Significant : P <0.05
- Highly significant : P < 0.01, P < 0.00

OBSERVATION AND RESULT

- All the results are calculated with the help of SPSS Software.
- For Nonparametric Data **Friedman Test** has been used and results are obtained for each group.
- For calculating the Inter group comparison **Chi- Square Test** is used.

Table No. 1: Showing effect of Flourescein Corneal Staining right eye in the patients of Blepharitis (Friedman Test)

Group	Sub-group	Grade	No. of Cases				Within the Group comparison (Friedman Test)
			BT	F1	F2	F3	
Group B	GB1	Normal	0	0	0	4	Chi-square=28.933 P <0.001
		Mild	0	0	6	6	
		Moderate	4	6	4	0	
		Severe	6	4	0	0	
	GB2	Normal	0	0	2	7	Chi-square=28.780 P <0.001
		Mild	0	2	5	3	
		Moderate	6	5	3	0	
		Severe	4	3	0	0	

Table No.2: Showing effect of Flourescein Corneal Staining left eye in the patients of Blepharitis (Friedman Test)

Group	Sub-group	Grade	No. of Cases				Within the Group comparison (Friedman Test)
			BT	F1	F2	F3	
Group B	GB1	Normal	0	0	0	2	Chi-square=24.462 P <0.001
		Mild	0	4	6	4	
		Moderate	6	2	4	4	
		Severe	4	4	0	0	
	GB2	Normal	0	0	4	7	Chi-square=28.448 P <0.001
		Mild	0	4	3	0	
		Moderate	7	3	3	3	
		Severe	3	3	0	0	

Table No.3: Showing effect of Rose Bengal corneal staining right eye in the patients of Blepharitis (Friedman Test)

Group	Sub-group	Grade	No. of Cases				Within the Group comparison (Friedman Test)
			BT	F1	F2	F3	
Group B	GB1	Normal	4	2	4	5	Chi-square=26.727 P <0.001
		Mild	0	2	2	3	
		Moderate	2	2	4	2	
		Severe	4	4	0	0	
	GB2	Normal	2	2	5	5	Chi-square=29.510 P <0.001
		Mild	2	3	2	2	
		Moderate	3	2	3	3	
		Severe	3	3	0	0	

Table No. 4: Showing effect of Rose Bengal corneal staining left eye in the patients of Blepharitis (Friedman Test)

Group	Sub-group	Grade	No. of Cases				Within the Group comparison (Friedman Test)
			BT	F1	F2	F3	
Group B	GB1	Normal	0	1	1	4	Chi-square=28.875 P <0.001
		Mild	2	2	4	4	
		Moderate	4	4	3	2	
		Severe	4	3	2	0	
	GB2	Normal	0	1	1	5	Chi-square=29.351 P <0.001
		Mild	3	2	4	2	
		Moderate	4	4	3	3	
		Severe	3	3	2	0	

DISCUSSION

Table No.1 In **Flourescein Corneal Staining** on right eye of **GB1** in Group B, the number of patient in Normal grade were 0, 0 in Mild grade, 4 in Moderate grade and 6 in Severe grade before the treatment but after the treatment there were no patients in Moderate or Severe grade but 4 patients were converted into Normal Grade and 6 patients shifted to Mild grade. So, the result is highly significant with P value <0.001 and Chi- square value= 28.933. In **Flourescein Corneal Staining** on right eye of **GB2** in Group B, the number of patient in Normal grade were 0, 0 in Mild grade, 6 in Moderate grade and 4 in Severe grade before the treatment but after the treatment there were no patients in Moderate or Severe grade but 7 patients were converted into Normal Grade and 3 patients shifted to Mild grade. So, the result is highly significant with P value <0.001 and Chi- square value= 28.780.

Table no. 2 In **Flourescein Corneal Staining** on left eye of **GB1** in Group B, the number of patient in Normal grade were 0, 0 in Mild grade, 6 in Moderate grade and 4 in Severe grade before the treatment but after the treatment there were no patients in Severe grade but 2

patients were converted into Normal Grade, 4 patients shifted to Mild grade and 4 patients to Severe grade. So, the result is highly significant with P value <0.001 and Chi- square value = 24.462. In **Flourescein Corneal Staining** on left eye of **GB2** in Group B, the number of patient in Normal grade were 0, 0 in Mild grade, 7 in Moderate grade and 3 in Severe grade before the treatment but after the treatment there were no patients in Mild or Severe grade but 7 patients were converted into Normal Grade and 3 patients shifted to Moderate grade. So, the result is highly significant with P value <0.001 and Chi- square value = 28.448.

Table No. 3 In **Rose Bengal Corneal Staining** on right eye of **GB1** in Group B, the number of patient in Normal grade were 4, 0 in Mild grade, 2 in Moderate grade and 4 in Severe grade before the treatment but after the treatment there were no patients in Severe grade but 5 patients were converted into Normal Grade, 3 patients shifted to Mild grade and 2 patients in Moderate grade. So, the result is highly significant with P value <0.001 and Chi- square value = 26.727. In **Rose Bengal Corneal Staining** on right eye of **GB2** in Group B, the number of patient in Normal grade were 2, 2 in Mild grade, 3 in Moderate grade and 3 in Severe grade before the treatment but after the treatment there were no patients in Severe grade but 5 patients were converted into Normal Grade, 2 patients shifted to Mild grade and 3 patients Moderate grade. So, the result is highly significant with P value <0.001 and Chi- square value = 29.510.

Table no. 4 In Rose Bengal Corneal Staining on left eye of **GB1** in Group B, the number of patient in Normal grade were 0, 2 in Mild grade, 4 in Moderate grade and 4 in Severe grade before the treatment but after the treatment there were no patients in Severe grade but 4 patients were converted into Normal Grade, 4 patients shifted to Mild grade and 2 patients in Moderate grade. So, the result is highly significant with P value <0.001 and Chi- square value = 28.875. In **Rose Bengal Corneal Staining** on left eye of **GB2** in Group B, the number of patient in Normal grade were 0, 3 in Mild grade, 4 in Moderate grade and 3 in Severe grade before the treatment but after the treatment there were no patients in Severe grade but 5 patients were converted into Normal Grade, 2 patients shifted to Mild grade and 3 patients Moderate grade. So, the result is highly significant with P value <0.001 and Chi- square value = 29.351.

CONCLUSSION

Following conclusion can be drawn from the current research work

1. Among various eye disorders described in *Ayurveda Sushkakshipaka, Vataja Abhishyanda, Krimigrinthi, Pothaki etc* is nearest term for dry eye syndrome.
2. Aetiology of dry eye syndrome can be understood at the level of various deficiency of tear. The drug having effect on tear film layers may show symptomatic relief in dry eye syndrome.
3. *Tarpana* therapy by *Jivantiyadi Ghritta* produced similar results in sign and symptoms of *dry eye syndrome* when compared with artificial tear drops
4. Thus, the results obtained in clinical studies are highly encouraging and pave the way to find out toxicity free and cost effective *Ayurvedic* management.
5. Since the study was carried out with limited budget and time, the results of this study provide enough scope to future research scholars in the field of *Ayurveda* in general and *Netra Rogas* in particular to work in this direction.
6. Since administration of *Tarpana* therapy by *Jivantiyadi Ghritta* did not witnessed any side toxic effect in a series of patients of *dry eye syndrome*, obviously these two *Ayurvedic* modalities can be employed for longer duration in the management of patients of *dry syndrome*.

Therefore it can be concluded that *Tarpana* therapy by *Jivantiyadi Ghritta* can be used effectively, separately or in combination together for the management of patients of Dry Eye Syndrome safely.

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