Research Article

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A CLINICAL STUDY TO EVALUATE THE EFFICACY OF TARPANA KARMA WITH JIVANIYA GHRITA IN THE MANAGEMENT OF SHUSHKAKSHIPAKA (DRY EYE SYNDROME)

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ABSTRACT

Shushkakshipaka (Dry eye syndrome) is becoming more common in general population. A number of contributory factors affect the severity of Dry eye. Prevalence of Dry eye ranges from 5% to 35% worldwide. In India, it is 29.25% based on Ocular Surface Disease Index (OSDI) data. Conventional approach in modern ophthalmology for dry eye syndrome is lubricating eye drops while unsatisfactory. But surely there are some shortcomings that give way to Ayurveda to deal with this problem. This clinical study was done to evaluate the effect of Tarpana Karma with Jivaniya Ghrita in Shushkakshipaka (Dry eye syndrome). An open clinical trial was planned for 10 patients presenting with clinical features of Shushkakshipaka (Dry Eye Syndrome) and local therapeutic ocular procedure Tarpana karma with Jivaniya Ghrita was done. On assessment of criteria selected, significant results were found in subjective parameters like Rukshta (Feeling of dryness), Gharshana (Gritty sensation), Darunavartmakshi (Hardness of eyelids), Karachaunmilana (Difficulty in opening and closing of eyes), Daha (burning sensation) and Intolerance to light and in all objective parameters. Thus, it can be concluded that, Tarpana Karma can be advising for successful treatment in patients of Shushkakshipaka (Dry Eye Syndrome).

Keywords: Shushkakshipaka, Dry Eye Syndrome, Akshitarpana

INTRODUCTION

Shushkakshipaka is one among the sarvagata, sadhyanetraroga[1]. Shushkakshipaka is characterized[2], by Vishushkta (Dryness), Gharshana (Gritty sensation), Aavildarshanam (blurred vision), Sandahaytein (Burning sensation), Paka (Inflammation), Updehavata (Stickiness), Koonitam (Narrowing of palpebral aperture), Darunarukshavartma (Hardness and Roughness of eyelid), Sudarunam Yata Pratibodhanam (Difficulty in opening and closing of eye), Toda-Bheda (Pain sensation), Sheetecha (Liking for cold). It is described as Vataja (Sushruta), Vata-pittaja (Vagbhat), Vata-raktaja (Karala, Madhav) Netravikara. The characteristics feature of Dry Eye Syndrome include- dryness, grittiness, blurring of vision, burning sensation, stinging sensation, mucoid discharge, photophobia, etc[3]. On reviewing the clinical presentation from the classical Ayurvedic text, clinical features of Shushkakshipaka resembles Dry eye syndrome. Prevalence of Dry eye ranges from 5% to 35% worldwide. In India, it is 29.25% based on Ocular Surface Disease Index (OSDI) data. A number of contributory factors affect the severity of Dry eye including autoimmune disease, environmental surroundings, contact lens use, hormonal changes, anatomical features, chronic inflammation, infection and iatrogenic factors such as medication and surgeries. If the disease is left uncured it may lead to many serious complications. Early detection and timely management of this disease is important to prevent long term sequels and sight threatening complications[4]. In modern science, artificial tears, ointments, gels, topical antibiotics, oral tetracycline, biological tear substitutes, etc. are being used for treatment of Dry eye syndrome[5]. They provide only symptomatic relief but have no permanent cure for this condition. Tarpana is one among Netra kriyakalpas which is highly potential in the management of netra rogas[6]. Hence the present study is taken up to assess the effect of Jivaniya ghrita tarpana in the management of Shushkakshipaka[7] (Dry Eye Syndrome).

Aims and Objectives

To evaluate the effect of Jivaniya Ghrita Tarpana in Shushakshipaka (Dry Eye Syndrome)

MATERIAL AND METHODS

Selection of patients

Patients presenting with clinical features of Shushkakshipaka - Dry eye syndrome were selected from the OPD and IPD of P.G. Dept. of Shalakya Tantra; Rishikul Campus Haridwar. A total of 10 patients were registered irrespective of their sex, religion, occupation, education etc.

Institutional ethical clearance letter vide no. - UAU/Rc/IEC/2017-18/05

Plan of the study

1. Criteria for selection of patients
2. Criteria for diagnosis
3. Study design
4. Criteria for assessment.
5. Follow up study

Criteria for selection of patient's inclusion criteria

- Age 20-60 years
- Patients presenting with signs and symptoms suggestive of dry eye syndrome like irritation, foreign body sensation, feeling of dryness, itching, non-specific ocular discomfort and classical symptoms of Shushkakshipaka.
- Visual Acuity 6/6 (with or without glasses)
- Tear Film break up time less than 10 second.
- Schirmer 1st test positive < 15 mm
- Fluorescein staining positive.

Exclusion criteria

- Patients not willing to participate in the study.
- Systemic diseases DM, HTN, R.A.
- Patients having infective eye diseases corneal ulcer, trichiasis, dacryocystitis, acute conjunctivitis etc.
- Patients suffering from specific eye lid disorders like skin allergies, ectropion, entropion, lagophthalmos, etc.
- Patients having any fundus pathology like optic atrophy, retinal disorder, diabetic retinopathy, hypertensive retinopathy, papilledema etc.

Withdrawal criteria

- Personal matters.
- Inter current illness.
- Cases complicated with superadded infections

Criteria for diagnosis

Subjective parameter

- Rukshta (feeling of dryness)
- Gharshana (gritty sensation)
- Aviladarshanam (blurring of vision)
- Darunvartmakshi (hardness of eyelids)
- Karachaunmilana (difficulty in opening and closing of eyes)
- Daha (burning sensation)
- Intolerance to light.

Criteria for assessment

Objective parameter

- TBUT (Tear film break up time)
- Schirmer's 1st TEST
- Fluorescein staining

Functional examination of eyes

External examination, visual acuity, slit lamp examination, fundoscopy.

Investigations

- Blood sugar (fasting and PP)
- Erythrocyte sedimentation rate (ESR)
- Complete blood count
- Serum uric acid, blood urea, serum creatinine
- R.A factor
- Lipid profile test
- LFT

Study Design

The method adopted in present study is open randomized clinical trial.

Sampling

A total number of 10 patients with signs and symptoms of Shushkakshipaka (Dry Eye Syndrome) was registered. Patients were advised for tarpana with Jivaniyaghrita 12-15 min in both eyes for 28 days (7 days therapy with 7 days rest). Results of therapy were assessed on the basis of subjective and objective parameters.

Plan of work: The study was carried out as follows -

Performa

A special Performa was prepared on the basis of signs and symptoms of Shushkakshipaka and Dry eye syndrome described in Ayurvedic and modern text respectively to maintain the records of all findings (before and after treatment) regarding the patients.

Informed consent

The purpose of the study, nature of the study drugs, the procedures to be carried out and the potential risks and benefits were explained to the patients in detail. Thereafter their written consent was taken before starting the procedures.

Table 1: **Subjective parameters were assessed with the help of following scoring pattern**

Rukshta (Feeling of dryness)	0- No Dryness 1- Occasional feeling of dryness 2- Persistent does not disturb routine work 3- Disturb routine work
Gharshan (Gritty sensation)	0- No Gritty sensation 1- Occasional Gritty sensation 2- Persistent does not disturb routine work 3- Disturb routine work
Avildarshanam (Blurring of vision)	0- No Blurring of vision 1- Occasional Blurring of vision 2- Persistent does not disturb routine work 3- Disturb routine work

Darunavartmakshi (Hardness of eyelids)	0- No Hardness of eyelids 1- Occasional hardness of eyelids 2- Persistent does not disturb routine work 3- Disturb routine work
Karachounmilana (Difficulty in opening and closing of eye)	0- No difficulty in opening and closing of eye 1- Occasional difficulty in opening and closing of eye 2- Persistent does not disturb routine work 3- Disturb routine work
Daha (Burning sensation)	0- No burning sensation 1- Mild burning sensation 2- Persistent does not disturb routine work 3- Disturb routine work
Intolerance to light	0- No Intolerance to light 1- Occasional intolerance to light 2- Persistent does not disturb routine work 3- Disturb routine work

Table 2: Objective parameters were assessed with the help of following scoring pattern

TBUT TEST (Tear film break up time)	0- Normal >10 sec 1- Mild >8sec and ≤ 10 sec 2- Moderate >5sec and ≤ 8sec 3- Severe ≤ 5sec
Schirmer 1ST test	0- Normal >15mm 1- Mild >8mm and ≤15mm 2- Moderate >4mm and ≤8mm 3- Severe ≤4mm
Fluorescein staining	0- No staining of corneal epithelial surface 1- Staining occupying ≤1/3 of corneal epithelial surface. 2- Staining occupying >1/3 and ≤1/2 of corneal epithelial surface 3- Staining occupying >1/2 of corneal epithelial surface.

Statistical analysis

Wilcoxon's signed rank-Test (W-value) was applied to the statistical data

Observations and Results

Out of all 10 patients registered for the present study maximum number of patients i.e. 40% belonged to 41-50 years age group, 60% was male, 90% were from hindureligion, 40% patients were of service class, 50% were graduated, 50% were from upper middle class followed by 30% from middle class. In terms of prakriti, maximum patients i.e. 50% were having vataja-pittaja prakriti. In chronicity, 50% patients were having chronicity of less than one year.

Chief complaints reported were Feeling of dryness 90% (R/E & L/E), Gritty sensation 90% (R/E & L/E), Blurring of vision 50% (R/E & L/E), Hardness of eyelids 90% (R/E & L/E), Difficulty in opening and closing of eye 100% (B/E), Burning sensation 80% (B/E), Intolerance to light 90% (B/E).

Objective parameters wise distribution showed Schirmer's 1st test reading 100 % (B/E), TBUT 100% (B/E), and Fluorescein staining 100% in RE and 80% in LE.

Table 3: Statistical Analysis showing the result of therapy on Subjective parameters

Subjective Parameters	Median		30 day Median	(BT-AT)				Follow up (AT-30 day)		
	BT	AT		Wilcoxon Signed Rank W	P-value	% Effect	Result	Wilcoxon Signed rank W	P-value	Result
Feeling of dryness RE	2	0	0.5	2.783	< 0.01	89.47	Sig	1.732	>0.05	NS
Feeling of dryness LE	2	0	0.5	2.783	< 0.01	89.47	Sig	1.732	>0.05	NS
Gritty sensation RE	2	0	0	2.783	< 0.01	95	Sig	1.732	>0.05	NS
Gritty sensation LE	2	0	0	2.783	< 0.01	95	Sig	1.732	>0.05	NS
Blurring of vision RE	0.5	0	0	0.045	> 0.05	66.66	NS	-	>0.05	NS
Blurring of vision LE	0.5	0	0	0.045	> 0.05	66.66	NS	-	>0.05	NS
Hardness of eyelids RE	2.5	0	1	2.783	< 0.01	80	Sig	1.732	>0.05	NS
Hardness of eyelids LE	2.5	0	1	2.783	< 0.01	80	Sig	1.732	>0.05	NS
Difficulty in opening and closing of eyes RE	2	0	0	2.842	< 0.01	94.73	Sig	1.732	>0.05	NS
Difficulty in opening and closing of eyes LE	2	0	0	2.842	< 0.01	94.73	Sig	1.732	>0.05	NS
Burning sensation RE	1	0	0	2.705	< 0.01	100	Sig	1.732	>0.05	NS
Burning sensation LE	1	0	0	2.705	< 0.01	100	Sig	1.414	>0.05	NS
Intolerance to light RE	2	0	1	2.823	< 0.01	89.47	Sig	2.000	<0.05	Sig
Intolerance to light LE	2	0	1	2.823	< 0.01	89.47	Sig	2.000	<0.05	Sig

Table 4: Statistical Analysis showing the result of therapy on Objective parameters

Objective Parameters	Median		30 day Median	(BT-AT)				Follow up(AT-30 day)		
	BT	AT		Wilcoxon Sign Rank W	P-value	% Effect	Result	Wilcoxon Sign Rank W	P-value	Result
Schirmer 1st test RE	2	1	1	2.828	< 0.01	60	Sig	2.000	<0.05	Sig
Schirmer 1st test LE	2	1	1	2.828	< 0.01	63.15	Sig	1.732	>0.05	NS
Tear Film Break Time RE	3	1	1	2.692	< 0.01	56	Sig	1.414	>0.05	NS
Tear Film Break Time LE	2.5	1	1	2.877	< 0.01	62.5	Sig	1.414	>0.05	NS
Fluorescein stain RE	1	0	0.5	2.733	< 0.01	66.66	Sig	1.414	>0.05	NS
Fluorescein stain LE	1	0	0	2.606	< 0.01	61.53	Sig	1.000	>0.05	NS

DISCUSSION

Effect of therapy

Feeling of dryness

Before treatment median score of dryness was 2 in right eye and 2 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 89.47% in right eye and 89.47 % in left eye which is statistically significant (P < 0.01)

Gritty sensation

Before treatment median score of gritty sensation was 2 in right eye and 2 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 95% in right eye and left eye which is statistically significant (P < 0.01)

Blurring of vision

Before treatment median score of blurring of vision was 0.5 in right eye and 0.5 in left eye which after treatment reduced to 0 in both right and left eye. This way treatment provides 66.66 % relief in right eye and left eye, but it was statistically not significant (p > 0.05). This may be due to lesser sample size (n = 5). Blurring of vision was found in 50% patients.

Hardness of eyelids

Before treatment median score of hardness of eyelids was 2.5 in right eye and 2.5 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 80% in right eye and left eye which is statistically significant (P < 0.01)

Difficulty in opening and closing of eyes

Before treatment median score of difficulty in opening and closing of eyes 2 in right eye and 2 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 94.73% in right eye and left eye which is statistically significant (P < 0.01)

Burning sensation

Before treatment median score of burning sensation was 1 in right eye and 1 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 100% in right eye and left eye which is statistically significant (P < 0.01)

Intolerance to light

Before treatment median score of Intolerance to light was 2 in right eye and 2 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 89.47% in right eye and left eye which is statistically significant (P < 0.01)

Schirmer's 1st test

Before treatment median score of Schirmer's 1st test was 2 in right eye and 2 in left eye which after treatment reduced to 1 in both right and left eye with a relief of 60% in right eye and 63.15% in left eye which is statistically significant. (P < 0.01)

Tear film break up time

Before treatment median score of Tear Film Break Up Time was 3 in right eye and 2.5 in left eye which after treatment reduced to 1 in both right and left eye with a relief of 56% in right eye and 62.5 in left eye which is statistically significant (P < 0.01)

Fluorescein staining

Before treatment median score of fluorescein staining was 1 in right eye and 1 in left eye which after treatment reduced to 0 in both right and left eye with a relief of 66.66% in right eye and 61.53% in left eye which is statistically significant (P < 0.01)

Probable mode of action of drug

Jivaniyaghrita has predominance of madhura rasa, snigdhaguna, guru guna, sheetaveerya, madhuravipaka, vata-pittashamaka[8]. Sneha, snigdha, guru guna of ghrita counters the ruksha, laghuguna of vata sheetaguna counters the ushnaguna of pitta[9]. Madhura rasa,madhura vipaka are classified as best vata-pitta prashamana. By virtue of its rasa, guna, veerya, vipaka and doshaghnata overall effect of compound is vata-pittashamaka and hence it disintegrates the pathology of eye disease, which is vata-pittaja in its manifestation[10]. Go-ghrita alleviates Medo-dhatudushti, as it is Kapha-medo vivardhan[11]. It maintains the rasa-dhatu. It is ojovardhaka and rasayanathus having dhatuvardhaka effect. Attributes of Ghee i.e. unctuousness and coldness are antagonistic to those of vata and pitta like dryness, lusterless, roughness and heat respectively. Godugdha is also rasayana, dhatuvardhaka, ojovardhaka, saumya dhatu vardhaka, preenana, jeevaniya, sandhaniya in properties[12].

Probable mode of action of tarpana karma

When the procedure of Tarpana with Jivaniyaghrita in the eye is done, transient local vasodilation occurs through sthanika abhyanga and mriduswedana, and due to lipophilic nature of corneal epithelium, absorption of drug through various channels of the eye take place. Spread of drug occurs into the deeper tissues through ashruvahi siras.

Ghrita, due to its rasayana, chakshushya and vata-pitta shamaka properties and also the chakshushya and rasayana properties of other drugs of Jivaniyaghrita, strengthens first patala (cornea and conjunctiva) and reconstruction of ashru (tear film) take place. Reconstruction of ashru (tear film) decreases shushkata (dryness) of akshi and strengthening of first patala decreases paka

(Inflammation) of akshi. Thus, overall improvement in features of Shushkakshipaka (Dry eye syndrome) is seen.

CONCLUSION

Tarpana karma with Jivaniyaghrita has shown significant result in the reduction of signs and symptoms of Shushkakshipaka (Dry eye syndrome) and no adverse effects of this therapy were seen. However clinical trials on a large sample with long duration of follow up are necessary to establish the efficacy of Tarpana karma as a procedure of choice and to analyze the recurrence rate after treatment. Thus, it can be concluded that, Tarpana karma can be advised for successful treatment in patients of Shushkakshipaka (Dry eye syndrome).

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