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Comparative clinical study of *Yashtimadhu ghrita tarpana* and Sodium hyaluronate (0.1%) eye drop in the management of *Shushkaakshipaka* w.s.r to dry eyes

Research Article

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Abstract

Shalakyatantra is one of the branches from the eight parts which is concern with the management of disease affecting the regions of the body above the clavicles i.e. Ear, eyes the oral and the Nasal cavities etc. *Shushkaakshipaka* is *vata pitta pradhan sarvagatavyadhi*. It can be co-related with dry eye syndrome in modern aspect. Ancient *Ayurved* texts e.g., *Brihatrayees* and *Laghutrayees* explained ample of therapies regarding management of *Shushkaakshipaka*. Dry eye syndrome is group of symptoms which includes ocular irritation, redness, tenderness, and dryness. *yashtimadhu ghrita is vatapittaghna*, *chakshushya* and having properties of *snigdha guna* so use of *yashtimadhu ghrita tarpana* will be beneficial in the management of *shushkaakshipaak*. Aim: Comparative clinical study of *Yashtimadhu Ghrita Tarpan* and Sodium Hyaluronate (0.1%) Eye Drop in the management of *Shushkakshipaka* with special reference to Dry Eye Syndrome. Materials and Method: A total 70 patients of the age group 18-80 years presenting with signs and symptoms of *Shushkaakshipaak* w.s.r to Dry eye syndrome were selected randomly from OPD of the department of Shalakyatantra. The 35 patients of trial group were treated with *Yashtimadhu Ghrita Tarpan* and 35 patients of control group were subjected to Sodium Hyaluronate (0.1%) Eye Drop. Results: *Yashtimadhu Ghrita Tarpan* is more effective as compared to Sodium Hyaluronate (0.1%) Eye Drop. Trial drug provided more relief in most of the symptoms of *shushkakshipaka*. Conclusion: *Yashtimadhu Ghrita Tarpan* is an effective, safe and potent treatment of *shushkakshipaka* w.s.r. to Dry Eye Syndrome.

Key Words: *Shushkakshipaka,* Dry eye syndrome, Yashtimadhu ghrita tarpana, Sodium Hyaluronate (0.1%).

Introduction

Ayurveda is essential science of life it embraces due to perfect principles for leading healthy life and cure a disease of physically ill person.

Acharya Vagbhat says that if there is desire for living, so long efforts should be made always by men to protect the eyes; because for the blind man, night and day are the same: all the things of their world are useless without vision through he might have plenty of money. (1)

Sushrutacharya refers this *vyadhi* as one of the the *vataj sarvagat aoushada sadhyanetraroga*. Almost all the acharyas described *shushkakshipaka* as an independent disease.

The word *shushkakashipaka* composed from main three words:

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- ***Shushka* (dry)**: It is derived from word *shush* (2) dhatu which means useless or dried up (3).
- ***Akshi* (Eye) (4)**: It is synonym for eyes which means the structure that holds or to which *Ashru* remains adhered.
- ***Paka* (Inflammation) (5)**: It indicates by *ghana bhava* (solidity) which is commonly used to describe cooking burning or inflammation or suppuration.

***Paribhasha* (6)**

According to *madhav nidan* it is defined as *paka* of *netra* which develops as a result of *shushkta* or *adravta*.

In present work, the most common problem of the eye - Dry Eye Syndrome was dealt. It is usually caused by an abnormality with the quality/quantity of the tear film that lubricates the eyes.

If the condition is left untreated it can damage eye tissues and can cause scar formation on the cornea leading to visual impairment.

According to modern science Dry eye is an umbrella term used to describe a heterogeneous group of diseases resulting from inadequate wetting of the cornea and conjunctiva by the pre-corneal tear film. Millions of people worldwide suffer from dry eye. Most

of the patients have symptoms that are mild to moderate in severity. Although these patients suffer with discomfort of dry eye, frequently they fail to receive adequate attention and treatment. (7)

For years, there has been a lack of consensus on the classification of dry eye and the appropriate tests to diagnose it and to treat the disease with ayurvedic drugs. To address this issue, the present clinical trial was planned to know the effect of ayurvedic drug in the management of dry eye. The classification study group identified two major practical types of cause-based dry eye – Tear Deficient Dry Eye and Evaporative Dry Eye. Based on this classification a diagnostic algorithm was developed that helps to identify the disorders that cause dry eye and the underlying pathophysiology. In clinical practice, menopause, aging and RA-associated Sjogren's syndrome are the commonest causes of dry eye. As in today's era we see dryness of eyes due to exposure to wind, smoke, heat, allergens. Various other factors like food habits, daily regimen, seasonal regimen, if not followed properly can cause devastating effects in eyes and cause dry eye. (8)

Due to over exposure to smoke and wind, while travelling on bike, motor, bus can cause dryness of eyes. Also, people who are working with over exposure to heat, hot climates, are also getting affected with dryness of eyes.

Lifestyle changes are known to be causing dry eye as people are unable to follow proper nutritious and seasonal diet. The dry and cold foods if taken in large quantity or for long period continuously can cause the disease. E.g., drinking cold water in cold season in the morning. Food without oily substance, like ghee and oil can also bring dryness.

Common treatment for dry eye syndrome includes the frequent use of artificial tears or punctal occlusion. But there is no satisfactory treatment for Dry eyes at present. (9)

In Ayurvedic *samhitas* different types of advices and procedures are suggested, also eye care medicaments are prescribed to preserve the vision and power of eyes and to cure the eye diseases known as '*Chakshyushya'*.

Netra Tarpana is a method in which warm medicated ghee is made to hold in eye tarpan yantra or mould-frame on the eyes for specific time.

The technique in *Netra Tarpana* relies heavily on medicinal *ghee* with nourishing characteristics. In the eyes, ocular muscles, and soft tissues, *Netra Tarpana* soothes discomfort, stiffness, and oedema caused by *Vata*, *Pitta*, and *Kapha,* and brings lightness and a sense of health. (10)

So, we have selected this study titles "Comparative Clinical Study of *Yashtimadhu Ghrita Tarpana* and Sodium Hyaluronate (0.1%) Eye Drop in the management of *Shushkaakshipaka* w. s. r. to Dry Eyes". As *Yashtimadhu,go-dugdha* (cow milk),ghee these all *dravya* are stated as *pathyakar* and *chakshushya*.

Aim

Comparative Clinical Study of *Yashtimadhu Ghrita Tarpan* and Sodium Hyaluronate (0.1%) Eye Drop in the management of *Shushkakshipaka* with special reference to Dry Eye Syndrome.

Objectives

1. A Comparative Clinical Study of *Yashtimadhu ghrita tarpan* and Sodium Hyaluronate Eye Drop in the management of *Shushkakshipaka* with special reference to dry eye syndrome in detail.
2. To study the *Shushkakshipaka* mentioned in *Ayurveda* and to find a co-relation with Dry eye syndrome in detail.
3. To study the Dry eye syndrome according to modern medical science in detail.
4. To study the role of *Tarpan*.

Material and methods

A total 70 patients of the age group 18-80 years presenting with signs and symptoms of *Shushkakshipaka* w.s.r to Dry eye syndrome were selected randomly from OPD of the department of *Shalakyatantra* according to inclusion criteria and were treated in two groups. The 35 patients of trial group were treated with *Yashtimadhu ghrita tarpan* and patients of control group in similar number were subjected to Sodium Hyaluronate (0.1%) Eye Drop.

Criteria for selection of patients

Diagnostic Criteria

Patients were diagnosed based on the signs and symptoms of *Shushkakshipaka* given in *Ayurveda* and Dry eye syndrome in modern science.

Inclusion criteria

- Patients with classical symptoms of *Netrashushkata* like *Rukshata* (dryness), *Daah* (Burning sensation), *Avil Darshan* (Bluring of vision), *Kruchounmilan* (unable to open and close eye with ease), *Netrakandu* (itching), *Netraaraktata* (redness), *Tod* (pain) and Schirmer's test.
- Age between 18 to 80 years irrespective of gender.
- Patients fits for *Tarpan*
- Patients willing for this study

Exclusion criteria

- Below18 years and above 80 years were not selected
- Congenital anomalies of eye
- Abnormal structure and function of eyelid
- *Tarpan Ayogya*
- One eyed Patients
- K/C/O of DM, Hypertension, AIDS and other systematic diseases.

Assessment criteria-(11)

Table No.1: Subjective parameters

Parameters	Symptoms	Grade
Rukshata (Dryness)- It is subjective examination told by patient	Absent (No feeling of dryness)	0
	Mild (Occasionally present and very mild feeling of dryness.)	1
	Moderate (Frequently present moderate feeling of dryness)	2
	Severe (feeling of dryness present almost all the time.)	3
Netradaha (Burning sensation)	Absent (No burning sensation)	0
	Mild (present but not distressing)	1
	Moderate (Distressing but not interfering with daily life)	2
	Severe (very distressing and interfering with daily life)	3
***Avil Darshan* (blurring of vision)**	Absent (no blurring of vision)	0
	Mild (Occasional blurring of vision)	1
	Moderate (Regular blurring without disturbing routine work)	2
	Severe (Regular blurring disturbing day to day work)	3
Kruchounmilan (Unable to open and close eye with ease)	Absent (No difficulty in lid movement)	0
	Mild (Occasional difficulty in lid movement)	1
	Moderate (Frequent and moderate difficulty in lid movement.)	2
	Severe (Feeling of difficulty in lid movement almost all the time.)	3
Aaraktata (Redness)	Absent (No redness)	0
	Mild (some vessels are detectible)	1
	Moderate (individual vessels are detectible)	2
	Severe (Individual vessels are not easily detectible)	3

Table No.2: Objective parameters

Parameters	Symptoms	Grade
Rukshata (Dryness)- Schirmer's test	Absent (20-35 mm)	0
	Mild (15 -20 mm)	1
	Moderate (5-15 mm)	2
	Severe (< 5 mm)	3
Tear film break up time test:	Absent (Tear film break up time > 10 sec)	0
	Mild (Tear film break up time 8 sec to 10 sec)	1
	Moderate (Tear film break up time 5 sec to 8 sec)	2
	Severe (tear film break up time < 5sec)	3

A study result is noted based on tear film break up time in seconds calculated at every visit.

Table No. 3: Tear film break up time (TBUT) is recorded in following format

Tear film break up time (TBUT)	No of Days					
	0	1st	2nd	3rd	4th	5th

Follow ups: 0th, 1st, 2nd, 3rd, 4th, 5th

The graded values were later totally and individually scored and assessed statistically to find out the rate of effect of treatment. The age, gender, occupation, habitat wise distribution of patients with socioeconomic status was also recorded and assessed statistically. The effect of treatment in each group was assessed separately by analysing the pre-treatment and post treatment data, scores and values. The comparison of the effect of therapy of two groups done by statistical analysis.

Ingredients of drug and preparation of *Yashtimadu Ghrita*

1. *Yashtimadhu Kalka: 1 Pala (40gm)*
2. *Yashtimadhu Kwata*: 64 *Tola* (640ml)
3. *Goghrita* : 4 *Pala* (160 ml)
4. *Godugdha*: Quantity same as *Kwata* (640ml)

All the above ingredients were taken into utensils along with stirrer and kept on gas. The above mixture was heated till "*Snehasiddhi Lakshana*" appears in mixture or 320 ml *Ghrita* remained in utensil**.**

Table No. 4: Drug Regimen

Subject	Group A	Group B
Number of patients	35	35
Age group	18 to 80 years	18 to 80 years
Drug name	*Yashtimadhu Ghrita Tarpan*	Sodium Hyaluronate 0.1% eye drop
Route of administration	Local	Local
Matra[21]	1000 *Matra*	2 Drop
Kaal	Once in a day	2 times in a day (BD)
Duration	5 days	5 days
Follow up	0^{th}, 1^{st}, 2^{nd}, 3^{rd}, 4^{th}, 5^{th}	0^{th}, 1^{st} ,2^{nd}, 3^{rd}, 4^{th}, 5^{th}

Data thus collected during the study, summarized and statistically analyzed as per protocol.

Statistical Analysis for Group A (Trial Group)

Within Group A

- Factors: Dryness (*Rukshata*), Burning Sensation (*Daha*), Blurring of Vision (*Avildarshan*), Unable to Open & Close Eye with Ease, Redness (*Araktata*)
- To test whether there is significant difference in grades of factors stated above at BT & AT.
- To test the hypotheses,
- The null hypothesis, H_0: There is no significant difference in grades of factors stated above at BT & AT.
- The alternative hypothesis, H_a: There is significant difference in grades of factors stated above at BT & AT.

Table No.5: Wilcoxon Signed Ranks Test for Group A

Ranks						
			N	Mean Rank	Sum of Ranks	P value
Dryness (*Rukshata*)	AT - BT	Negative Ranks	35	18.00	630.00	0.00001
		Positive Ranks	0	0.00	0.00	
Burning Sensation (*Daha*)	AT - BT	Negative Ranks	35	18.00	630.00	0.00001
		Positive Ranks	0	0.00	0.00	
Blurring of Vision (*Avildarshan*)	AT - BT	Negative Ranks	25	13.00	325.00	0.00001
		Positive Ranks	0	0.00	0.00	
Unable to open & close Eye with Ease	AT - BT	Negative Ranks	5	3.00	15.00	0.00001
		Positive Ranks	0	0.00	0.00	
Redness (*Araktata*)	AT - BT	Negative Ranks	35	18.00	630.00	0.00001
		Positive Ranks	0	0.00	0.00	

Since p value < 0.05, the level of significance for all factors, there is strong evidence to reject the null hypothesis for all factors.

Conclusion: There is significant difference in grades of all factors stated above at BT & AT.

The mean rank values suggest that the grades are decreasing significantly as the days of treatment increasing for all factors.

Factor: Schemer's Test, Tear Film Break up Time Test

- To test whether there is significant difference in factors stated above at BT & AT.
- To test the hypotheses,
- The null hypothesis, H_0: There is no significant difference in the factors stated above at BT & AT.
- The alternative hypothesis, H_a: There is significant difference in the factors stated above at BT & AT. The test used is paired t Test.

Table No.6: Paired "t" Test for Group A

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Schirmer's Test	BT	11.0286	35	3.86908	0.65399
	AT	19.2286	35	3.10678	0.52514
Tear Film Break up Time Test	BT	7.7429	35	1.40048	0.23672
	AT	11.9143	35	2.75864	0.46629
a. Groups = Group A					

Paired Samples Test							
		Paired Differences			t	df	P value (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Schirmer's Test	BT - AT	-8.20000	3.70850	0.62685	-13.081	34	0.000
Tear Film Break up Time Test	BT - AT	-4.17143	2.56086	0.43286	-9.637	34	0.000
a. Groups = Group A							

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.
Conclusion: There is significant difference in the all factors stated above at BT & AT.
The mean values suggest that the all the factors are increasing significantly as the days of treatment increasing.

Within Group B

- Factors: Dryness (*Rukshata*), Burning Sensation (*Daha*), Blurring of Vision (*Avildarshan*), Unable to Open & Close Eye with Ease, Redness (*Araktata*)
- To test whether there is significant difference in grades of factors stated above at BT & AT.
- To test the hypotheses,
- The null hypothesis, H_0: There is no significant difference in grades of factors stated above at BT & AT.
- The alternative hypothesis, H_a: There is significant difference in grades of factors stated above at BT & AT.
- The test used is Wilcoxon Signed Ranks Test.

Table No.7: Wilcoxon Signed Ranks Test for Group B

Ranks					
			N	Mean Rank	Sum of Ranks
Dryness (*Rukshata*)	AT - BT	Negative Ranks	29	15.00	435.00
		Positive Ranks	0	0.00	0.00
		Ties	6		
		Total	35		
Burning Sensation (*Daha*)	AT - BT	Negative Ranks	12	6.50	78.00
		Positive Ranks	0	0.00	0.00
		Ties	23		
		Total	35		
Blurring Of Vision (*Avildarshan*)	AT - BT	Negative Ranks	13	7.50	97.50
		Positive Ranks	1	7.50	7.50
		Ties	21		
		Total	35		
Unable to open & close Eye with ease	AT - BT	Negative Ranks	5	3.00	15.00
		Positive Ranks	0	0.00	0.00
		Ties	30		
		Total	35		
Redness (*Araktata*)	AT - BT	Negative Ranks	20	10.50	210.00
		Positive Ranks	0	0.00	0.00
		Ties	15		
		Total	35		
a. Groups = Group B					

Since p value < 0.05, the level of significance for all factors, there is strong evidence to reject the null hypothesis for all factors.
Conclusion: There is significant difference in grades of all factors stated above at BT & AT.
The mean rank values suggest that the grades are decreasing significantly as the days of treatment increasing for all factors.

Factor: Schirmer's Test, Tear Film Break up Time Test

- To test whether there is significant difference in factors stated above at BT & AT.
- To test the hypotheses,

- The null hypothesis, H_0:
- There is no significant difference in the factors stated above at BT & AT.
- The alternative hypothesis, H_a: There is significant difference in the factors stated above at BT & AT.
- The test used is **paired t Test.**

Table No.8: Paired "t" Test for Group B

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Schirmer's Test	BT	8.7143	35	2.60736	0.44072
	AT	11.8000	35	2.56446	0.43347
Tear Film Break up Time Test	BT	7.8571	35	2.17124	0.36701
	AT	11.6571	35	2.42466	0.40984
a. Groups = Group B					

Paired Samples Test[a]							
		Paired Differences			t	df	P value (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Schirmer's Test	BT - AT	-3.08571	1.17251	0.19819	-15.569	34	0.000
Tear Film Break up Time Test	BT - AT	-3.80000	1.34602	0.22752	-16.702	34	0.000
a. Groups = Group B							

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.
Conclusion: There is significant difference in the all factors stated above at BT & AT.
The mean values suggest that the all the factors are increasing significantly as the days of treatment increasing.

Between Group A & Group B

- Factors: Dryness (*Rukshata*), Burning Sensation (Daha*),* Blurring of Vision (*Avildarshan*), Unable to open & close Eye with ease, Redness (*Araktata*)
- To test whether there is significant difference in factors stated above between Group A & Group B.
- To test the hypotheses,
- The null hypothesis, H_0: There is no significant difference in factors stated above between Group A & Group B.
- The alternative hypothesis, H_a: There is significant difference in factors stated above between Group A & Group B.

The test used is Mann Whitney U test.

Table No. 9: Mann Whitney U Test to compare efficacy of drugs in Group A and B

Ranks				
Groups		N	Mean Rank	Sum of Ranks
Dryness (*Rukshata*)	Group A	35	50.03	1751.00
	Group B	35	20.97	734.00
	Total	70		
Burning Sensation (*Daha*)	Group A	35	51.53	1803.50
	Group B	35	19.47	681.50
	Total	70		
Blurring of Vision (*Avildarshan*)	Group A	35	41.83	1464.00
	Group B	35	29.17	1021.00
	Total	70		
Unable to open & close Eye with ease	Group A	35	35.50	1242.50
	Group B	35	35.50	1242.50
	Total	70		
Redness (*Araktata*)	Group A	35	49.47	1731.50
	Group B	35	21.53	753.50
	Total	70		

Table No. 10: Mann Whitney U test and Wilcoxon signed rank test values

Test Statistics					
	Dryness (*Rukshata*)	Burning Sensation (*Daha*)	Blurring Of Vision (*Avildarshan*)	Unable to open & close Eye with ease	Redness (*Araktata*)
Mann-Whitney U	104.000	51.500	391.000	612.500	123.500
Wilcoxon W	734.000	681.500	1021.000	1242.500	753.500
P value (2-tailed)	0.000	0.000	0.003	1.000	0.000
a. Grouping Variable: Groups					

Since p values < 0.05, the level of significance for all factors except factor Unable to open & close Eye with ease; there is strong evidence to reject the null hypothesis for all factors except factor Unable to Open & Close Eye with Ease.
Conclusion: There is no significant difference in grades of factor Unable to Open & Close Eye with Ease between Group A & Group B.
The effect on factor Unable to Open & Close Eye with Ease is nearly same in Group A & in Group B.
There is significant difference in grades of all factors Dryness (*Rukshata*), Burning Sensation (*Daha*), Blurring of Vision (*Avildarshan*), Redness (*Araktata*) between Group A & Group B.
The effect on all the factors Dryness (*Rukshata*), Burning Sensation (*Daha*), Blurring of Vision (*Avildarshan*), Redness (*Araktata*) is higher in Group A than that in Group B.

Factor: Schirmer's Test, Tear Film Break up Time Test

- To test whether there is significant difference in factors stated above between Group A & Group B. To test the hypotheses,
- The null hypothesis, H_0: There is no significant difference in effect on factors stated above between Group A & Group B.
- The alternative hypothesis, H_a: There is significant difference in effect on factors stated above between Group A & Group B.
- The test used is "t" test for two independent samples.

Table No. 11: Unpaired "t" test for independent samples

Group Statistics					
Groups		N	Mean	Std. Deviation	Std. Error Mean
Schirmer's Test	Group A	35	8.2000	3.70850	0.62685
	Group B	35	3.0857	1.17251	0.19819
Tear Film Break up Time Test	Group A	35	4.1714	2.56086	0.43286
	Group B	35	3.8000	1.34602	0.22752

Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	P value (2-tailed)
Schirmer's Test	Equal variances assumed	40.341	0.000	7.779	68	0.000
	Equal variances not assumed			7.779	40.730	0.000
Tear Film Break up Time Test	Equal variances assumed	5.737	0.019	0.760	68	0.450
	Equal variances not assumed			0.760	51.454	0.451

Since p value > 0.05, the level of significance for Tear Film Break up Time Test, there is no sufficient evidence to reject the null hypothesis for Tear Film Break up Time Test.
Conclusion: There is no significant difference in effect on Tear Film Break up Time Test between Group A & Group B.
The effect on Tear Film Break up Time Test is nearly same in Group A & Group B.
There is significant difference in effect on Schirmer's Test between Group A & Group B.
The effect on Schirmer's Test is higher in Group A than that in Group B.

Observations

Most of the patients (48.57%) were reported in age group of 30-40 yrs. The observed M: F ratio was 3.1:1. The farmers were 28.57% as consideration with occupation. Graduated patients were 35.71 %. Marital status wise distribution of patients shows 90% married patients.

Discussion

Now a days use of computers, other visual display terminals, TV sets is very common, in fact we are totally depended upon digital gadget. Adding to this changing habits of daily regime, pollution, smoke, dust, global warming Dry eye conditions are increasing day by day and the patients are routinely found in an ophthalmic OPD. Dry eye syndrome cannot be co-related exactly with any disease explained in various ayurvedic text. Acharyas explain the disease *Shushkakshipaak* which have similar symptoms to Dry eye syndrome. Some of the symptoms of *Shushkakshipaak* appears to be similar to that in Dry eye syndrome, so this attempt is made to co-relate the symptoms of *Shushkakshipaak* with Dry eye syndrome. Covid 19 pandemic also leads to sedentary life style and increase in near work or use of digital work leads to dry eye syndrome.

Now on considering the various statistical data available, study reveals following.

- **Age:** It was found that the mean age of patients were 34 years in trial group and 35 years in control group. This may also indicate that the people of such age have verities of exposures to the causative factors as mentioned in the text.
- **Gender:** It was found that males have more affected by this disease as compared to female in early age as they are more exposed to the stimulating factors like environmental pollution, excessive computer usage etc. hence ratio of male to female sex is 1:2 in both groups.
- **Occupation:** It was clearly found that the Service persons affected as compared then farmers, followed by the business, student, Worker and House Wife respectively. Because of Service class have continuously out door work, near work or computer users.
- **Symptoms:** Symptoms of *shushkakshipaka* like *Rukshata*, *Avildarshan*, *Kruchomilan*, *Daha*, *Aaraktata* , etc are statistically reduced in both groups.
- This is due to *Madhur rasa*. *Vipaka*, and *sheet virya* with *singdha guna* and *chakshushya guna* of *Yashtimadhu ghruta*. ST and TBUT result in both groups suggest that there is significant difference in group B then group A.
- This may be due to long term contact of *Yashtimadhu ghruta* then Soha (0.1%) eye drop with eyes. This help to reduce ocular surface inflammation which results in improvement in objective parameter like ST and TBUT.

Samprapti* and its *Vighatana

Nidan sevan
⇩
Agnimandya
⇩
Aam formation
⇩
Shrotorodh
⇩
Vatpradhan Dosha Vruddhi and *Drushti*
⇩
Urdwa Gaman of *Doshas* through *Siras* and *Shrotas*
⇩
Sthan Samshraya in *Netra Mandala*
⇩
Rasa and *Rakta Dushti*
⇩
Ruksha, Darun, Vartma, Shushka, Krichronmilan
⇩
Shushkakshipaka

For the *vighatana* of above *Samprapti*, *Yashtimadhu ghrita* is used which have the following properties.

- ***Guna*:** *Snigdha* – A *snigdha guna* of the *Yashtimadhu ghruta* is opposite to *ruksha* and is *Vatashamak*. Hence, it reduces symptom of *Rukshata*.
- ***Rasa***: *Madhur– Madhur rasa* of *Yashtimadhu ghruta,* helps in *vata-pittashamak* along with *snigdha*, *madhur ras* is also *pitta* and *vatashamak*. Hence, it reduces symptom of *Rukshata* (Dryness), *Netradaha* (Burning Sensation) & *Avil Darshana* (Blurring of Vision).
- ***Veerya***: *Shita- Yashtimadhu ghruta* is *sheet* in *virya*, which is also *pittaghna*. So, it works as *Dahashamak*, *Raktaprasadan* and help to reduces *Netradaha*.
- ***Vipaka*:** *Madhur- Yashtimadhu ghruta* is *madhur rasa* with *madhur vipak* which is also *vatapittashamak*. Hence, it reduces symptom of *Rukshata*, *Netradaha* & *Avil Darshana*.
- ***Doshaghnata*** - From all the above points the *Yashtimadhu ghruta* are *vatapittaghna* in nature.
- ***Prabhav***: The *chakshushya prabhava Yashtimadhu ghruta* is well known. So, taking into consideration of the *rasa, virya, vipaka*, *guna* and *prabhav* of the ingredients of *Yashtimadhu ghruta*, the main effect is mainly *Vatapitta shamak* and because of these properties vitiated *Vata* and *Pitta doshas* are pacified. Besides this, *Prabhava* of *goghruta* is *chakshushya* which is again useful for well-being of eyes.
- Considering all the above discussion it becomes clear that the treatment is significantly effective in *Samprapti Vighatana* of *Shushkakshipaak*.
- As far as signs and symptoms are concerned dry eye syndrome and *Shushkakshipaak* hence the treatment quoted by Acharyas is very much effective in Dry Eye Syndrome according to Ayurvedic *Samprapti Vighatana* i.e., Decrease in pathology.

Conclusion

The aim of our study is to compare efficacy of *Yashtimadhu Ghrita Tarpan* and Sodium Hyaluronate 0.1% eye drop in the management of *Shushkakshipaka* W.S.R to Dry Eyes. The results are based in the relief of

various symptoms, increase in TBUT readings and the data is collected in Standard Performa. Both the statistical analysis and percentage of relief is calculated and presented in the observation and following conclusion is presented on this basis. The clinical sign and symptoms of *Shushkakshipaak* are closely related to Dry eyes.

Both the treatment group, *Yashtimadhu ghrita tarpan* and *Soha* (0.1%) eye drop is equally effective during the period of treatment and statistically both are significant. Except in Schirmer and Tear Film Break Up Time Test.

Yashtimadhu ghrita tarpan is beneficial as its marked relief over subjective as well as objective parameter and this drug is easily available.

During treatment, Patients had given advice to avoid causes of *Shushkakshipaak* is very effective. E.g.- Regular blinking of eye, avoid direct exposure to air conditioners, coolers, hot air, avoid contact lenses, avoid kajal, avoid rubbing of eye, etc.

Yashtimadhu ghrita tarpan can be considered as a good alternative treatment in Dry Eye.

So, considering the results of the study, the use of *Yashtimadhu ghrita tarpan* can be recommended as lubricating Eye drops as well as anti-inflammatory drug in dry eye diseases.

Yashtimadhu ghrita tarpan has no adverse reaction observed during the treatment.

In future, this work may be valuable and required in this direction with large sample size and larger duration of follow up days to establish the effect of *Yashtimadhu ghrita tarpan* in *Shushkakshipaak*.

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