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Comparative Study Of Triphala Ghrita Aschyotan And Hydroxy PropylMethyl Cellulose Eye Drop In Dry Eye Syndrome.

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Abstract

Dry eye is a disorder of the tear film which occurs due to tear deficiency or excessive tear evaporation; it causes damage to the interpalpebral ocular surface and is associated with a variety of symptoms reflecting ocular discomfort. Sushrutacharya described Shushkaakshipak vyadhi in vataj netrarogas as sadhya vyadhi in Uttartantra of Sushruta Samhita. It mainly causes shushkta in Netra.Considering the symptoms found in Shushkaakshipak it can be related to Dry eye Syndrome in modern science. Aschyotana is one of the Kriyakalpas described in Ayurveda. Aschyotana means instillation of eye drops. In Aschyotana procedure Acharya have described use of snigdha and madhur rasatmaka dravya in Vatapittajanya Vyadhi. As,Triphala Ghrita prepared for this study is vatta pittaghana, Chakshushya and having properties of snigdha guna and is easily available.
Patients were randomly divided into two groups with 30 patients in each group. Trial group patients were treated with Triphala Ghrita two drops three times a day. Control group patientswere treated with Hydroxy Propyl Methyl Cellulose eye drop, two drops three times aday.Follow up was done on 0^{th}, 15^{th}, 30^{th}, 45^{th} day for both group and observation were recorded in tabular form.For the assessment Subjective as well as objective criteria were taken.Subjective parameters viz. Dryness in eyes, Burning sensation in eyes, foreign sensation in eyes and objective parameters such as Schirmer's test I and TFBUT were assessed.
In this study ,It was statistically analysed that Triphala Ghrita Aschyotan and Hydroxy propyl methyl cellulose(HPMC) eye drop have significant effects on all parameters of Dry eye syndrome. But Triphala ghrita Aschyotan is more effective than HPMC eye drop in all parameters of Dry eye syndrome.

Keywords- Dry eye syndrome, Shushkaakshipak, Triphala Ghrita, Aschyotan.

Introduction

The eye is a most important sense organ of body. In Sushruta Samhita Uttartantra, Sushrutacharya, a legend shalyakarmi described the etiology, pathogenesis, symptoms, complication, and treatment etc. of the Netrarogas. He has described nearly all diseases of eyes which we come across today. Eyes were greatly valued by ancient Indians & prime importance has been given for the protection of eyes. Sushrutacharya gives importance to chakshuindriya in Sushrut Samhita, because we cannot make even difference between day and night without eyes. Sushrutacharya described Shushkaakshipak vyadhi in vataj netrarogas as sadhya vyadhi in Uttartantra of Sushruta Samhita. It mainly causes shushkta in Netra.Considering the symptoms found in Shushkaakshipak it can be related to Dry eye Syndrome in modern science.
Dry Eye Syndrome is becoming a common problem of the eye. Dry eye is a disorder of the tear film which occurs due to tear deficiency or excessive tear evaporation; it causes damage to the interpalpebral ocular surface and is associated with a variety of symptoms reflecting ocular discomfort.[1]It can effect any race, and it is slightly more common in women than men.Recently a study from north India reported 32% prevalence of dry eye disease (DED), and based on symptoms 81% were severe DED.[2] Another study from south India reported 1.46% DED incidence[3].The vast majority of patients have symptoms that are mild to moderate in severity. Although these patients suffer with discomfort of eye, frequently they fail to receive adequate attention and treatment. Additionally, patients with dry eye are prone to potentially blinding infections, such as bacterial keratitis.[4]
Today there are many people who use computers in their everyday life. Daily computer users can have symptoms of dry eyes like burning of eyes, redness, discomfort, blurred vision etc. Smoke, dust, pollution, frequent use of television and mobiles etc cause dry eyes.

Common treatment for dry eye syndrome includes the frequent use of artificial tears or punctual occlusion. But there is no satisfactory treatment for dry eye at present. Ayurveda, the ancient science of life can be of great help by its preventive and therapeutic principals.
In Ayurvedic Samhitas different types of advices and procedure such as Kriyakalpas are suggested . Also eye care medicaments Shaman aushadis, Chakshushya dravya and Rasayanas etc are prescribed to preserve the vision, improve the hemostasis, ocular strength and to cure the eye diseases.In Shushkaakshipak 'Vata Dosha' is considered as prime factor so shushkta is the main symptom . Hence treatment must be strictly aimed to arrest the vitiated Vata Dosha in the eye.
Aschyotana is one of the Kriyakalpas described in Ayurveda. Aschyotana means instillation of eye drops. In Aschyotana procedure Acharya have described use of snigdha and madhur rasatmaka dravya in Vatapittajanya Vyadhi. As,Triphala Ghrita prepared for this study is vattapittaghana, Chakshushya and having properties of snigdha guna and is easily available.

Materials and Methods -

The patients suffering from Shushkakshipaaka (Dry Eye Syndrome) were selected for the project. Patients coming to the Shalakyatantra (Netrarog) Out patient department who meet with the inclusion criteria included in the study and an informed written consent will be obtained from the subjects to be included.
Total 70 patients were selected having above signs and symptoms . 10 patients dropped out due to various reasons during the clinical study.
Inclusion criteria:

- The Patients having signs and symptoms of Shushkaakshipak were selected.
- Patients from age group 16 to 60 were selected.
- Selection was irrespective of Gender, religion and socioeconomic status.

Exclusion criteria :

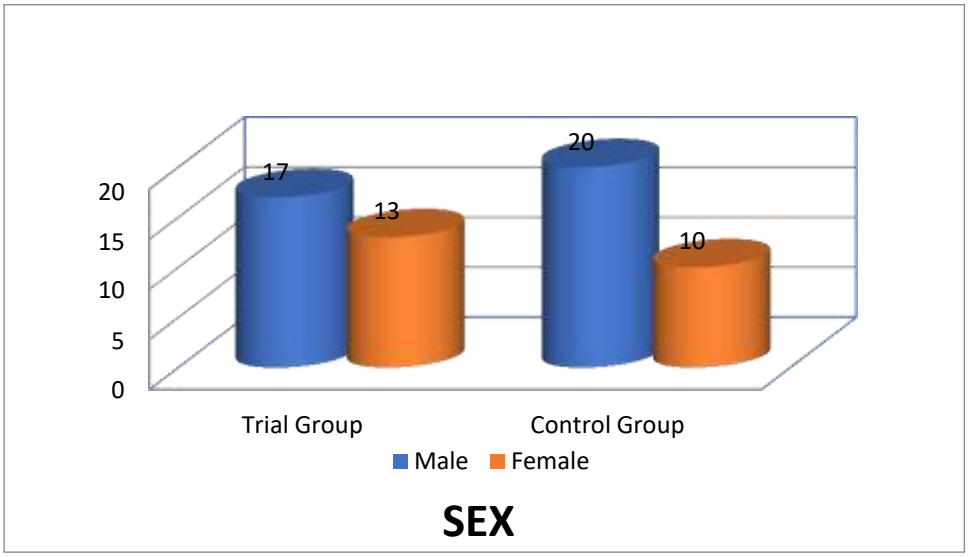
Patients having Congenital anomalies of eye, One eyed patients, The patient having infective eye diseases,Severe cases of Dry eye syndrome were excluded.
Study Design -
Patients were randomly divided into two groups with 30 patients in each group. Trial group patients were treated with Triphala Ghrita two drops three times a day. Control group patients were treated with Hydroxy Propyl Methyl Cellulose eye drop, two drops three times a day.
Follow up was done on 0^{th}, 15^{th}, 30^{th}, 45^{th} day for both group and observation were recorded in tabular form.
For the assessment Subjective as well as objective criteria were taken.
Subjective parameters viz. Dryness in eyes, Burning sensation in eyes, foreign sensation in eyes and objective parameters such as Schirmer's test I and TFBUT were assessed.
Drug Selection-

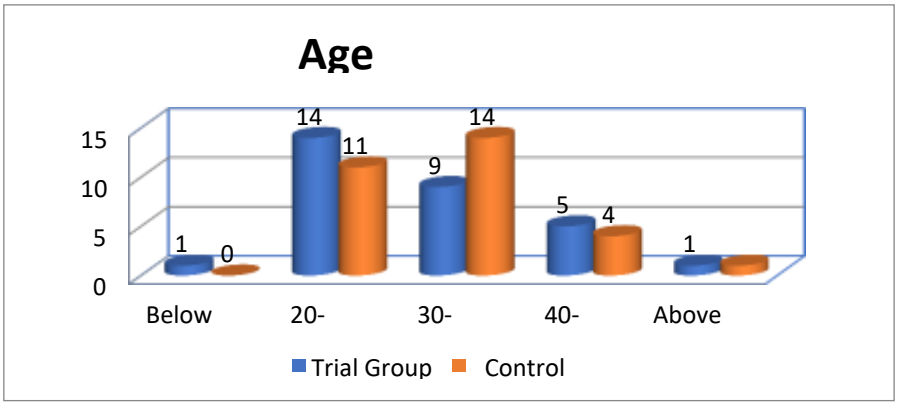
- For the clinical study, Triphala Ghrita was chosen because Triphala is the formulation which have been extensively used for various eye diseases.It is used for both local and internal administration in many forms for treating many of the ocular conditions.It acts as the best Rasayana and Chakshushya drug. Goghrita is also Rasayan and Netrabalkarak. Aschyotana is one of the kriyakalpas described in Ayurveda. Aschyotana is the simplest and most convenient method of topical application. Application in form of eye drops makes the drug available for immediate use.

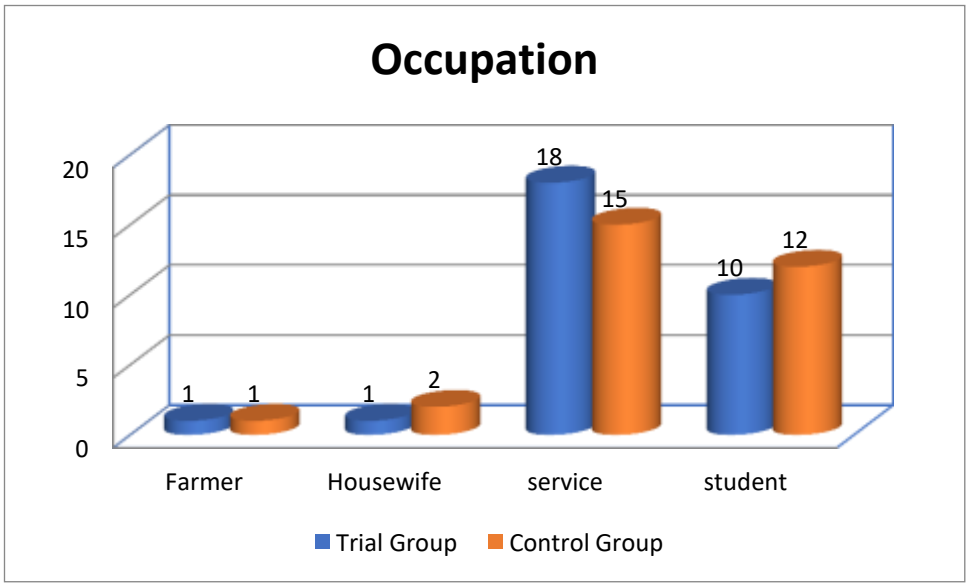
Preparation Of Triphala Ghrita-
250 gms of Triphala churna is added to 4 times of water, boiled and reduced to 1/4th quantity to make kashaya. Then Triphala kalk of 250 gms and 1 litre Goghrita are added into Triphala kashaya.
All the ingridients were thoroughly mixed together and were placed over controlled fire so that the mixture was slowly simmering .Vigorous boiling was avoided. Then this whole mixture is boiled till the Ghrita siddha lakshanas are obtained.
Standardisation was done at Late Principal B.V.hide lab , Pune.
Hydroxy Propyl Methyl Cellulose (HPMC)eye drop
It is an inert,semisynthetic drug. It is viscoelastic polymer used as an ophthalmic lubricant.It is also useful as an excipient and controlled delivery component in oral medicaments.
Duration of treatment and Follow ups-
Triphala Ghrita Aschyotana to Trial group patients and Hydroxy Propyl Methyl Celluloseeye drop to control group patients was given for 45 days. Follow up was done on 0^{th}, 15^{th}, 30^{th}, 45^{th} day for both group and observations were

recorded in tabular form.
Place of Study-
Patients from daily OPD of Shalakyatantra Department of Annasaheb Dange Ayurved Hospital,Ashta.

Observation and Results-







Study shows that Dry eye syndrome is observed more in between 20 to 40 yrs of age group. It is more commonly observed in males than females. It is more common in students and Service sector as per observation.

Effect on DRYNESS IN EYES

Shushkata	Mean		Wilcoxon Signed Rank W	P-Value	% Effect at D14	Result
	0 Day	14th Day				
Trial Group	1.62	0.21	-4.916[a]	.000	87.23	Significant
ControlGroup	1.55	0.66	-5.196[a]	.000	57.78	Significant

Using Wilcoxon Signed Rank Test, Since P-value for Trial and Control group is less than 0.001 we claim that, result is significant in trial as well as in control group.
In trial Group result observed is 87.23% while in control group result observed is 57.78% hence trial group treatment is more effective than control group.

Effect on BURNING SENSATION IN EYES

Daha	Mean		WilcoxonSigned Rank W	P-Value	% Effect at D14	Result
	0 Day	14th Day				
Trial Group	1.38	0.21	-4.842[a]	.000	85.00	Significant
Control Group	1.28	0.41	-4.245[a]	.000	67.57	Significant

Using Wilcoxon Signed Rank Test, Since P-value for Trial and Control group is less than 0.001 we claim that, result is significant in trial as well as in control group.
In trial Group result observed is 85% while in control group result observed is 67.57% hence trial group treatment is more effective than control group.

Effect of FOREIGN SENSATION IN EYES

Gharshan	Mean		Wilcoxon Signed Rank W	P-Value	% Effect at D14	Result
	0 Day	14th Day				
Trial Group	1.21	0.17	-4.523[a]	.000	85.71	Significant
Control Group	1.03	0.41	-4.359[a]	.000	60.00	Significant

Using Wilcoxon Signed Rank Test, Since P-value for Trial and Control group is less than 0.001 we claim that, result is significant in trial as well as in control group.
In trial Group result observed is 85.71% while in control group result observed is 60% hence trial group treatment is more effective than control group.

Effect on TEAR FILM BREAK UP TIME

T.F.B.U.T.	Mean		Wilcoxon Signed Rank W	P-Value	% Effect at D14	Result
	0 Day	14th Day				
Trial Group	8.83	10.21	-4.000[b]	<0.001	15.63	Significant
Control Group	9.24	10.17	-4.315[b]	<0.001	10.07	Significant

Using Wilcoxon Signed Rank Test, since P-value for Trial and Control group is less than 0.001 we claim that, result is significant in trial as well as in control group.
In trial Group result observed is 15.63% while in control group result observed is 10.07% hence trial group treatment is

more effective than control group

Effect on Schirmer Test

ırimerTest	**Mean**		**/ilcoxon Signed Rank W**	**P-Value**	**% Effect at D14**	**Result**
	0 Day	**14th Day**				
Trial Group	8.90	10.48	-4.716[b]	<0.001	17.83	Significant
Control Group	9.10	10.17	-3.534[b]	<0.001	11.74	Significant

Using Wilcoxon Signed Rank Test, since P-value for Trial and Control group is less than 0.01we claim that, result is significant in trial as well as in control group.
In trial Group result observed is 17.83% while in control group result observed is 11.74%hence trial group treatment is more effective than control group.

Discussion

It is caused by disorder in quality and quantity of tear film that lubricates the eye. It isdisorder of the tear film affecting a significant percentage of population
This Study shows that Dry eye syndrome is observed more in between 20 to 40 yrs of age group. It is more commonly observed in males than females. It is more common in students and Service sector as per observation.
In this study ,It was statistically analysed that Triphala Ghrita Aschyotan and Hydroxy propyl methyl cellulose(HPMC) eye drop have significant effects on all parameters of Dry eye syndrome. But Triphala ghrita Aschyotan is more effective than HPMC eye drop in all parameters of Dry eye syndrome.
Dry eye syndrome cannot be correlated exactly with any single disease explained in various classic by our Acharya's. Some of the lakshanas of Shushkaakshipak are similar to that in Dryeye syndrome. Shushkaakshipak is Vatapittajanya Vyadhi.
For the vighatana of Samprapti of Shushkaakshipak , Triphala Ghrita eye drops is used which have the following properties—

- Triphala and Goghrita are Vatapittashamak.
- Here the drug Triphala which is Sheet in Veerya, Madhur, Panchrasaymak lavanvarjit kashay in Rasa and Madhur in Vipak. It has ruksh and laghu guna. It is Tridoshara. They haveChakshushya, Raktshudikar, and Balya properties too.
- Goghrita is Madhur in rasa and vipaka, Sheet in Veerya and it has Guru and Snigdha properties. It is yogvahi and sanskaranuvartani. Thus it is Pittashamak. Its snigdha guna pacifies the ruksha guna of vata and reduces dryness.
- So both drugs pacifies vata and pitta dosha, they also decreases symptoms like rukshata, kandu, daha, aaraktata, gharshan etc of Shushkakshipak.

Triphala ghrita eye drops relieve the eye strain, reduces local symptoms and strengthns the visual function. So taking into consideration all the rasa, virya, vipaka, guna and prabhav of the ingredients of Triphala Ghrita eye drops, the principle effect is mainly Vatapitta shamak and because of these properties vitiated Vata and Pitta are pacified. Besides both are chakshushya, Balya, which is again useful for well being of eyes and beneficial for samprapti vighatana of Shushkakshipaak. From the all the above discussion it becomes clear that the treatment is very much effective in Samprapti Vighatana of Shushkakshipaak.
Dry Eye Syndrome resembles Shushkakshipaak as far as signs and symptoms are concerned and 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

Triphala ghrita eye drops relieve the eye strain, reduces local symptoms and strengthns the visual function. So taking into consideration all the rasa, virya, vipaka, guna and prabhav of the ingredients of Triphala Ghrita eye drops, the principle effect is mainly Vatapitta shamak and because of these properties vitiated Vata and Pitta are pacified. Besides both are chakshushya, Balya, which is again useful for well being of eyes and beneficial for samprapti vighatana of Shushkakshipaak. From the all the above discussion it becomes clear that the treatment is very much effective in Samprapti Vighatana of Shushkakshipaak.
Dry Eye Syndrome resembles Shushkakshipaak as far as signs and symptoms are concerned and hence the treatment quoted by Acharyas is very much effective in Dry Eye Syndrome according to Ayurvedic Samprapti Vighatana i.e.

decrease in pathology.

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