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A COMPARITIVE STUDY OF *MADHUKSIDDHAGHRITATARPANA* AND 0.5% CMC (CARBOXY METHYL CELLULOSE) EYE DROPS IN *SHUSHKAKSHIPAKA (DRY EYE SYNDROME)*

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ABSTRACT

In modern days due to advancement of technologies many important improvement in area of ophthalmology came in existence. This enables easy and detailed diagnosis of eye diseases in very less time. Many effective medicines and surgeries have also evolved, due to continue exchange of information with an aim to progress. In present work with the most common problem of the eye - Dry Eye Syndrome have been dealt. It is usually caused by a problem 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. Today millions of people are using computers everyday at offices and at home. Daily computer users are suffering from the symptoms like visual stress, burning of eyes, blurred vision, redness, dryness of eyes. This discomfort may cause confusion, reduce productivity, lost of work time and reduces the job satisfaction. 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.

Key Words: *Madhuksiddhaghrita, Tarpana, Shushkakshipaka, Carboxy Methyl Cellulose, Dry Eye Syndrome*

INTRODUCTION:

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. The classification study group identified two major practical types of cause-based dry eye – Tear Deficient Dry Eye and Evaporative Dry Eye. Common treatment for dry eye syndrome includes the frequent use of artificial tears or punctal occlusion. But the 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*¹’. DES is also known as Keratoconjunctivitis Sicca (KCS)². There is no satisfactory treatment for Dry eyes at present.

AIMS AND OBJECTIVES:

To study on the effects of *Tarpana* (local treatment) in the management of *Shushkakshipaka* (Dry Eye Syndrome).

MATERIALS AND METHODS:-

Type of Study: Open comparative study.

Place of Work: Patients from daily OPD and IPD of *Shalakyatantra* Department.

Selection of the Patients: The patients suffering from *Shushkakshipaka* (Dry Eye syndrome) were selected.

Inclusion Criteria: The patients having signs and symptoms of dry eye, Dryness of eyes, burning sensation, Itching, Redness, Irrespective of Sex and Religion were selected for the project, Normal vision with or without correction. Age-between 20 to 60 years.

Exclusion Criteria: Congenital anomalies of eye, abnormal structure and function of eyelid, *Tarpanaayogya*, Severe cases of Dry eye.

Details of Study Subjects and Controls:

Number of patients' selected - total 60 patients were selected having above signs and symptoms. Patients were divided randomly in the two groups with 30 patients in each group.

Group A: Treated with *Madhuksiddhaghrita Tarpana*³.

Netra Tarpana : *Madhuksiddhaghrita tarpana* were performed for 500 *Matras*. (15 min).

Group B: Treated with 0.5% CMC eye drops 1 drop three times a day were given to Group ‘B’ patients for 30 days

Duration of treatment: Above mentioned *Tarpana* were given to Group ‘A’ patients for 1 month on 1,3,5,7,15 and 30 days. 0.5% CMC eye drops 1 drop three times a day were given to Group ‘B’ patients for 30 days. Follow up will be taken at 0, 1, 3, 5, 7, 15, 30 days.

Investigations: Routine Blood, Urine and

Ophthalmic investigations were done accordingly.

Assessment Criteria and Observations:

Table no. 01

| | Observations | Criteria | Result/Grade |
|---|--|--|--|
| 1 | Shushkta (dryness of eyes) | a) No dryness, More than 15 mm wetting b) Mild; Between 10-15 mm wetting c) Moderate; Between 5-10 mm wetting d) Severe; Between 0-5 mm wetting | 0 1 2 3 |
| 2 | Toda, Bheda (Pricking Tearing Pain) | a) No Pain; b) Mild; Incontinuous tolerable c) Moderate; Continuous tolerable d) Severe; Continuous intolerable | 0 1 2 3 |
| 3 | Gharshan (Foreign Body Sensation) | a) No Foreign body sensation b) Mild; Gharshan/ Incontinuous tolerable c) Moderate; Gharshan/ | 0 1 2 |

| | | | |
|---|--|--|--|
| | | Continuous tolerable d) Severe; Gharshan/ Continuous intolerable | 3 |
| 4 | Darun - Rukshavartma (Crusting of eye lids) | a) No crusting of lids b) Mild; Alpa Upsham c) Moderate; Madhyam Upham d) Severe; Purna Upsham | 0 1 2 3 |
| 5 | Daha (Burning sensation) | a) No burning sensation b) Mild; incontinuous tolerable c) Moderate; continuous tolerable d) Severe; continuous intolerable | 0 1 2 3 |
| 6 | Sheetecha (Liking for colds) | a) No Particular b) Mild- Likes if available/occasionally prefer c) Moderate- Always prefer d) Severe- Can't take hot/warm things | 0 1 2 3 |

Plan of Study:

A detailed history was taken in each case, followed by thorough general and systemic examination and ocular examination as per the proforma attached subsequently. As the 'dry eye' is defined as being either a quantitative or qualitative dysfunction of the tear film, I submitted all the patients of both group with Dry eye to slit lamp examination and performed two specific tests in each case:

- Slit lamp examination
- Schirmer's Test -1.
- Tear film Break up Time Test.

OBSERVATIONS AND RESULTS:

1. In A group 09 patients had mild grade and 21 had moderate grade of dryness (*Shushktva*) noted. After treatment 26 were symptom less and 4 had mild form of dryness persistent. While in B group 10 patients had mild form and 20 had moderate form of dryness present. After treatment of B group patients only 21 cases had relief in symptom while 09 had persistent dryness. Thus By comparing both groups *Shushktva* (dryness) symptom is relived in more no. of patients in A Group as compared to B Group.

2. In both groups, numbers of patients in moderate Burning Sensation are more. In A Group Burning Sensation is relived completely in 86.66% cases & mild relived in 13.33% cases. In B group it shows 83%

relief and 17% mild relief. At 30 days in A group 26 patients had no burning sensation and 4 patients had mild symptom. In B group 25 patients had no burning sensation and 5 patients had mild symptom persistent. Thus by comparing both groups burning sensation symptom is relived in more no. of patients in A Group as compared to B Group.

3. In A Group *Gharshan* (foreign body sensation) found in 27 patients. 19 patients (63.33%) in mild degree & in 08 (26.66%) patients moderate degree. After treatment 25 (83.33%) patients had relief while 5 patients (16.66%) had mild fb sensation. While In B Group fb sensation found in 24 patients. 15 patients (50%) in mild degree & in 9 (30%) patients moderate degree. After treatment 25 (83.33%) patients had relief while 4 patients (13.33%) had mild fb sensation and 1 patient i.e. (0.33%) had moderate *Gharshan* (fb sensation).

4. At 30 days in A group 25 patients had no fb sensation and 5 patients had mild symptom. In B group 25 patients had no burning sensation, 4 patients had mild symptom persistent and 1 patients had moderate fb sensation persistent. Thus by comparing both groups fb sensation symptom is relived in more no. of patients in A Group as compared to B Group.

5. While performing shirmer's test 12 cases were found to have mild grade i.e.

10 to 15 mm of strips reading. After treatment 5 no. of the cases had mild grade of shirmers test readings i.e. between 10 to 15 mm. While in B group 09 cases had mild grade of shirmers test readings but after treatment 23 cases had mild grade shirmers test readings and 20 cases were found to have moderate grade i.e.between 5 to 10 mm of strips reading in B group. After treatment 3 cases had moderate grade shirmers test readings in B group. So it is seen that *tarpana* is good over local treatment, as seen here.

A group subjects show 19 patients had TFBUT between 8 to 10 sec and 11 patients had TFBUT between more than 10 sec while after treatment 29 cases shows TFBUT between normal range and 1 case in mild range. In B group 21 cases was in range between 8 to 10 sec while after treatment it 9 case remain in the same range.

So it is well understood here that there is much improvement in both groups.

Since P value is less than 0.05 we reject Ho. i.e. there is significant difference in symptom level in post test of two groups and is less in A group.

Statistical analysis for comparison:-For Comparison of both the groups Mann Whitney U Test is applied.

Comparative Analysis of Groups: Using Mann-Whitney U test, to test the hypothesis-

H₀: Reduction in *Shushktva* for Group A and Group B are equal (equally distributed).

H₁: Reduction in *Shushktva* for Group A and Group B are not equal(not equally distributed).

Distribution of “reduction in *Shushktva* score” for group A and group B is significantly different. (p –value = 0.1227)

Thus **drug A can be considered as more effective with *Shushktvaas* compared to drug B.**

MODE OF ACTION OF DRUG:

Probable Action of Drug: On taking in to consideration the *samprapti* of the Shushkakshipaka, we have found that the *hetusevan* triggers Ruksha *guna* of the *vatadosha* and bala of the netra decreases gradually. Simultaneously the *kapha* and *pitta vahini srotas* gets obstructed. *Ruksha* and *laghu gunas* of *vata* disturbs the flow of the *kapha* and *pitta* leading to the lakshanas like *daha* etc. Due to *vata* aggravates *rukshata* & *netragata aavildarshan* increases. Here the drug *Yashtimadhu* which are sheet in *veerya*, *madhur* in *rasa* and *vipak*. They have *vranapaha*, *shophhara* and *balya* properties too. It pacifies the *vata* and *pittadosha* by *rasa*, *veerya* and *vipak*

action. Also *ghrita* acts by its *yogvahi* action on *sukshma* srotasa and helps the drug to reach the target organ easily.

DISCUSSION:

Dry eye syndrome cannot be co-related exactly with any single disease explained in various classics by our *Acharyas*. Some of the lakshanas of *Shushkakshipaka* appears to be similar to that in Dry eye, so the attempt is made to co-relate the lakshanas of *Shushkakshipaka* with Dry eye syndrome.

Age –The incidence of Dry eye was observed higher in the age group of 20 to 45 years & minimum in the patient above the 45 years. It is probably because computer is widely used, pollution, nutritional factors playing hostile situation since last decade.

Occupation: A higher prevalence was seen in Farmer and service sector of occupation (58.33 %).

Dryness (*Shushktva*) –In A group 09 patients had mild grade and 21 had moderate grade of dryness (*Shushktva*) noted. After treatment 26 were symptom less and 4 had mild form of dryness persistent. While in B group 10 patients had mild form and 20 had moderate form of dryness present. After treatment of B group patients only 21 cases had relief in symptom while 09 had persistent dryness.

Burning sensation (*Daha*) – In both groups number of patients in moderate Burning Sensation are more. In A Group Burning Sensation is relived completely in 86.66% cases & mild relived in 13.33% cases. In B group it shows 83% relief and 17% mild relief.

The *sheetaguna* of *ghrita* and *yashtimadhu* (*Dahashamak* property) has possible role in this. So burning sensation may have relieved.

Foreign body sensation in eyes – In A Group *Gharshan* (foreign body sensation) found in 27 patients. 19 patients (63.33%) in mild degree & in 08 (26.66%) patients moderate degree. After treatment 25 (83.33%) patients had relief while 5 patients (16.66%) had mild fb sensation. While In B Group fb sensation found in 24 patients. 15 patients (50%) in mild degree & in 9 (30%) patients moderate degree. After treatment 25 (83.33%) patients had relief while 4 patients (13.33%) had mild fb sensation and 1 patient i.e. (0.33%) had moderate *Gharshan* (fb sensation).

As *Yashtimadhu* which have *shoshahara, vranapaha* and *Snigddha* property they must be controlling this symptom, while *ghrita* have *rasayan* and *sheetal* property which are able to heal the surface and bring smoothness.

Shirmer's test: - While performing shirmer's test 12 cases were found to have

mild grade i.e. 10 to 15 mm of strips reading. After treatment 05 no. of the cases had mild grade of shirmers test readings i.e. between 10 to 15 mm of strips reading in A group. While in B group 09 cases had mild grade of shirmers test readings but after treatment 23 cases had mild grade shirmers test readings and 3 cases were found to have moderate grade i.e. between 5 to 10 mm of strips reading in B group. In present study, drug is effective on S.T. 1 in both the groups.

TFBUT: - A group subjects show 19 patients had TFBUT between 8 to 10 sec while after treatment 29 cases shows TFBUT between normal range and 1 case remain in the same range . In B group 21 cases was in range between 8 to 10 sec while after treatment it 9 case remain in the same range.

So it is well understood here that there is much improvement in both groups.

Sheeteccha: -In A Group *Sheeteccha* found in 13 patients. 10 patients (33.33%) in mild degree & in 3 (10%) patients moderate degree. After treatment 26 (86.66%) patients had relief while 4 patients (13.33%) had mild symptom. While In B Group *Sheeteccha* found in 12 patients. 11 patients (36.66%) in mild degree & in 1 (3.33%) patients moderate degree. After treatment 26 (86.66%)

patients had relief while 4 patients (13.33%) had mild symptom.

CONCLUSION:

1. The clinical features of *Shushkakshipaka* are closely related to dry eye syndrome. During the treatment signs and symptoms of *Shushkakshipaka* seen to reduce in both group, but significantly in A group.

2. *Madhuksiddhaghritatarpana* and 0.5% CMC (carboxy methyl cellulose) eye drops is beneficial as its marked relief over symptoms and the ingredients of this preparation are easily available, cost effective.

3. By *Madhuksiddhaghritatarpana*; it is proved that *Shushkakshipaka* can be managed with conservative line of treatment in the initial stages.

4. The effect of *Madhuksiddhaghritatarpana* and 0.5% CMC (carboxy methyl cellulose) eye drops on T.F.B.U.T. & S. T. 1 is effective.

5. Thus early diagnosis and adequate treatment of *Shushkakshipaka* definitely relives the symptoms.

6. Clinical trials showed very encouraging results, but more study is necessary on large scale.

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