

## ROLE OF *YASTIMADHU GHRUTA TARPAN* IN COMPUTER VISION SYNDROME (C.V.S)

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### ABSTRACT

Computer the knowledge bank of modern life has emerged as a profession causing vision related discomfort- ocular fatigue, and systemic effects. Computer vision syndrome (CVS) is the new nomenclature to the visual, ocular and systemic symptoms arising due to the long time and improper working on the computer and is emerging as a pandemic in the 21<sup>st</sup> century on critical analysis of CVS and Ayurvedic management, as per the road map given by *Acharya Charaka*, it seems to be a *vata- pittaja* ocular disease which needs topical treatment approach. *Yashtimadhu ghruta tarpana* and counseling regarding proper working conditions on computer were tried in 30 patients of CVS. In group 1 local treatment given was given, significant improvement in all the symptoms of CVS was observed, whereas in group 2 counselling regarding proper working conditions were given and sowed insignificant results. The study verified the hypothesis that CVS in Ayurvedic Perspective is a *vata-pittaja* disease affecting mainly eyes so topical ocular medication is useful.

**Keywords:** Computer vision syndrome, *Yashtimadhu ghruta Tarpana*

### INTRODUCTION

Eye holds a special status among all the sense organs. Eyes are the most precious gift of God to the living beings. When the human race evolved, hunting was very essential for survival, hence, they were specialized for distant vision works that could enable the man to hunt with the passage of time, science developed and today, no longer does he require hunting in the forests. Rather, he has to hunt the internet on computer in closed chamber.

Today, in the 21<sup>st</sup> century, where we are living in highly sophisticated environment, computer is one of the most developed technologies which are used presently by the children, the young and the old. More and more men are sitting in front the computer for longer hours, which is a highly vision demanding task. But the eyes are still structured according to the old hunting days and are unable to cope up with the demand of computer work, leading to ocular and

systemic discomfort coined as computer vision syndrome (CVS).

No remedial measures for the prevention and cure of this pathology prevail in the domain of modern medicine except using ocular surface lubricants, computer glasses, and counselling for judicious computer use. This opens the door to the other systems of medicine including Ayurveda to suggest experiments and contribute alternative or to check the sufferings of the computer users.

Ayurveda, the first systematic health system on this planet, has kept the doors open to prospective undescribed health problems to be incorporated in the system on the fundamental grounds. Upon critical and systematic review of CVS, its etiopathogenesis in view of the given guidelines regarding the new health problems seems to be a group of *vata-pitta* dominant ocular cum systemic symptoms.

*Acharya Vagbhatta* has indicated cooling and rejuvenating therapies for eyes affected by bright light, high voltage electric spark, and heat exposure. This

phenomenon is also close to etiopathology of CVS. So, local therapy in the form of *Tarpana Kriyakalpa* has been studied in the management of CVS.

### Aim

To study the CVS in Ayurvedic Perspective and role of *yashtimadhu ghrita tarpan* in CVS

### Objectives

- To study CVS in Ayurvedic perspective
- To study role of *Yashtimadhu ghrita tarpan* in CVS

### Materials and Methods

#### Selection of patients

Patients were selected from the Shalaky Tantra (eye unit) OPD of the hospital affiliated to D Y Patil Ayurvedic Hospital, Nerul, Navi Mumbai for the present study. A total of 30 patients of CVS were registered irrespective of age, sex, caste and religion.

**Table 1:** Drug Review:

Sl No.	Sanskrit	Botanical Name	Part	Properties	Proportion
1.	<i>Yashtimadhu</i>	<i>Glycyrrhiza glabra</i>	Rhizome	<i>Kashaya-Madhura rasa, Snigdha guna</i>	1/8
2.	<i>Go Ghrita</i>		<i>Go Ghrita</i>	<i>Madhura rasa, Snigdha Guna</i>	1
3.	<i>Sharkara / Sita</i>		<i>Sharkara / Sita</i>	<i>Madhura, Snigdha and Sheeta</i>	1/8
4.	<i>Ksheera</i>		<i>Ksheera</i>	<i>Madhura, Snigdha and Sheeta</i>	Together 4 parts
5.	<i>Jala</i>		<i>Jala</i>	<i>Madhurarasa, Sheeta</i>	

यष्टी मधुकस्य चूर्ण... मेथ्यानि चैतानि रसायनानि ।

- चरक संहिता चिकित्सा स्थान १/३

यष्टी हिमा गुरुः स्वाद्वी चक्षुष्या बलवर्णकृत् ।

सुस्निग्धा शुक्रला केश्या स्वर्या पितानिलास्रजित् ॥

व्रणशोथ विषच्छर्दि तृष्णा ग्लानि क्षयापहा ।

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### Method of Preparation:

1 part of *Ghrita* is warmed and 1/8<sup>th</sup> part of *Yashtimadhu kalka* is added to it followed by adding the four parts of *Ksheera* (2 Parts) and *Jala* (2 Parts) which is mixed with 1/8<sup>th</sup> part of *Sharkara* and processed in *mandagni*. This process should be contin-

ued till it attains the *sneha siddha lakshanas*. Then it should be filtered and used for *Tarpana*.

### Procedure of *Tarpana*:

The Eyes are cleaned with sterile cotton which is dipped in lukewarm water and a concentric boundary will be made along the outer orbital margin with paste of *Masha Choorna*. Approximately 20ml (till it covers the tip of eyelashes) of luke warm *Yashtimadhu Ghrita* will be filled in both eyes and allowed to retain in the eyes approximately for 25 minutes (1000 *Matra kala*) and the patient is allowed to close and open the eyes frequently. After the prescribed time, *Ghrita* will be removed by making a hole in

the boundary at the lateral Canthus of the eye followed by the removal of the boundary and eyes are cleansed and *Akshibandhana* will be performed for 1 hr.

### Mode of Action of Yashtimadhu Ghruta

PROBABLE MODE OF ACTION: *Yashtimadhu* and *ghrita* both are having *Netra* property. *Ghruta* contains K2 and lionelic acid. It is having anti-inflammatory property. *Ghruta* is also rich in vitamin A. Supplementation of Vitamin A reduces and treats dryness which occurs due to its deficiency. In *Netra-Tarpan* all these properties nourishes the conjunctival as well as corneal layers and avoid dryness and inflammation of tissue of conjunctiva and cornea. Thus helps to avoid dryness of eyes also gives smoothening to layers of conjunctiva and cornea. As *yashtimadhu ghruta* is having property of *vata pitta* and In CVS due to continuous exposure both *vata* and *pitta dosha* get vitiate so *yashtimadhu ghruta* is effective in CVS. Its *Chakshushya guna* improves the health status of eyes.

### Inclusion criteria

All patients using computer at least 2 hours/day presenting with following clinical features of CVS were included in this study

Eye strain – Blurred vision  
Dizziness /nausea- headache  
Redness – burning sensation  
Dry eye – changed color perception  
Slow refocusing –excessive fatigue  
(neck/shoulder/back pain)

### Exclusion criteria

Patients are not willing for registration  
Complicated cases like acute, chronic, infective conjunctivitis, any specific eyelid disorders, corneal ulcers, dacryocystitis and lagophthalmos.  
Patient suffering from systemic or metabolic disorders

### Method of study

By random sampling technique, the diagnosed patients, who fulfilled the inclusion criteria, were divided into the following two groups

1. Group I –30 patients in this group, only *Netra Tarpana* with *Yashtimadhu ghruta* was given
2. Group II- 30 patients counseling for changing the working style and standards on comp

### Drug schedule

#### Group I

*Tarpana karma* with *Yashtimadhu ghruta* 5days in a week, then a gap for 15 days, and then the same is repeated.

#### Group II

- Counselling regarding proper posture of the patient while working on the computer.
- Low illumination of the screen of the computer
- Good room illumination or light
- Frequent blinking and intervals of rest
- Plenty of fluid intake
- Regular eye check-up and use of computer glasses

### Duration of trial

The trial of therapy was carried out up to 1 month for both groups.

### Follow -up

Follow-up was done fortnightly to assess the changes and patients were followed up for the next one month for withdrawal effects.

### Criteria of assessment

Grading and scoring system was adopted for assessing each clinical feature before the commencement of trial and after the completion of trial.

### Results and observations

Demographic data have been presented for 30 patients, while clinical data and observations were made on 26 patients who completed the trial, and similarly the results were analyzed and are presented in table I and table II

**Table 2:** Effect of therapy in group I

Cardinal features	No. of patients	Mean		D	% of relief	_+ SD	+_ SE	“t”	P
		BT	AT						
Eye strain	8	2.125	0.375	1.75	82.35	0.46	0.16	10.69	<0.001
Blurred vision	6	1.5	0.25	1.25	83.33	1.03	0.37	3.42	<0.05
Dizziness / Nausea	1	0.125	0.125	0.0	0.0	0.0	0.0	0.0	>0.05
Headache	5	1.125	0.375	0.75	66.66	0.71	0.25	3.00	<0.05
Redness	5	0.75	0.125	0.625	83.33	0.74	0.26	2.38	>0.05
Burning sensation	5	0.875	0.25	0.625	71.42	0.74	0.26	2.38	>0.05
Dry eye	1	0.25	0.0	0.25	100	0.71	0.25	1.0	>0.05
Change in color perception	4	0.875	0.25	0.625	71.43	0.92	0.32	1.92	>0.05
Slow refocusing	5	1.875	0.875	1.0	53.33	0.53	0.19	5.29	<0.01
Excessive fatigue (Neck/ back pain )	7	1.25	0.375	0.875	70.0	0.99	0.35	2.497	<0.05

**Table 3:** Effect of therapy in group II

Cardinal features	No. of patients	Mean		D	% of relief	_+ SD	+_ SE	“t”	P
		BT	AT						
Eye strain	3	1.4	1	0.4	28.57	0.55	0.24	1.63	>0.05
Blurred vision	5	1.4	1	0.4	28.57	0.55	0.24	1.63	>0.05
Dizziness / Nausea	0	0.0	0.0	0	0	0	0	0	>0.05
Headache	3	1.2	0.8	0.4	33.33	0.55	0.24	1.63	>0.05
Redness	3	0.6	0.6	0.0	0.0	0.0	0.0	0.0	>0.05
Burning sensation	3	1.4	1.0	0.4	28.57	0.55	0.24	1.63	>0.05
Dry eye	1	0.4	0.2	0.2	50.00	0.44	0.20	1.0	>0.05
Change in color perception	3	0.8	0.6	0.2	25.0	0.44	0.20	1.0	>0.05
Slow refocusing	5	1.8	1.2	0.6	33.33	1.44	0.51	1.17	>0.05
Excessive fatigue (Neck/ back pain)	3	1.0	0.8	0.2	20	0.44	0.20	1.0	>0.05

**Demographic profile**

It reveals that the incidence of CVS was higher i.e. 73.33%, in the age group 18-40 years, and was 56.66% in males and 96.66% in Hindus. Majority of the patients i.e. 55.50% were full-time computer workers and 48% of them belonged to middle socio-economic status. Most of the patients i.e. 26.66% were using computer for 8-10h/day, 85.33% of patients were on mixed diet. The incidence was more i.e. 55%, in patients with *vata-pittaja prakriti*. Maximum number of patients i.e. 43.33% was addicted to tea or coffee, 36.66% of patients having

regular bowel habits and 56.66% of patients were having sound sleep. Most of the patients i.e. 65.33% were having graduate qualification and 63.33% of patients were unmarried. Maximum number of patients, 56.66% belonged to rural area and 90% of patients were having no refractive error.

**Clinical profile**

Maximum number of patients i.e. 95.33% was having eye strain, while 84.33% patients had excessive fatigue (neck or shoulder or back pain). 75% patients had blurred vision and burning sensation, while 78%

patients had headache and slow refocusing. 55% patients had change in color perception, while 67.66% had redness. 25% patients had dizziness or nausea and only 18% patients had red eye.

## DISCUSSION

In Ayurveda many exclusive therapies are described which can be combined with modern for synergetic effect for benefit the patient and give the better quality life. In *Shalaky Tantra* “*Netra-kriyakalpa*” is also a unique and effective therapy for treating and preventing eye diseases. “*Netra-tarpan*” is one of them. Most of the symptoms of computer vision syndrome are due to dryness conjunctiva and cornea, contact of allergens to eye and vitamin A deficiency. *Netra-tarpan* gives smoothening effect to eye. Thus, is useful in preventing dryness and inflammation which may be induced by allergen contact as well as friction due to dryness. Supplementation of Vitamin A also treats its deficiency induced symptoms and helps to enhance healthy status of eyes.

### Probable Mode of Action:

*Yashtimadhu* and *Ghrit* both are having *Netrya* property. *Ghrit* contains K2 and lionelic acid. It is having anti-inflammatory. *Ghrit* is also rich in vitamin A. Supplementation of Vitamin A reduces and treats dryness which occurs due to its deficiency. In *Netra-tarpan* all these properties nourishes the conjunctival as well as corneal layers and avoid dryness and inflammation of tissue of conjunctiva and cornea. Thus helps to avoid dryness of eyes also gives smoothening to layers of conjunctiva and cornea. Its *Chakshushya* guna improves the health status of eyes.

### Demographic profile

Majority of the patients were in the group 21-30 years because this age group used computer more than the other age groups. Maximum number of patients was Hindus because this area (where the trial was conducted) is a Hindu dominated area. Most of the patients were full time computer working and using computer for 8-10 h/day, which shows that

prevalence of CVS is more in long time computer users because they have no time for rest (break). Most of the patients belonged to middle socio economic status, and their over stress of responsibility (which demands over work) as well as not meeting the required nutritional demand adds into precipitation of CVS. Most of the patients were addicted to tea or coffee. Maximum number of patients was of *vata-pittaja prakriti* again suggestive of CVS, a *vata* dominating *pittaja* disorder. Maximum number of patients belonged to rural area because this study was done in a rural area.

### Clinical profile

#### Effect of Therapy in Group I

In dry eye which was the only subjective feature, because objectively (i.e. schirmer test and T BUT) they had no findings, the percentage of relief was 100%, which was statistically insignificant ( $p > 0.05$ ) owing to the reason that “n” was 1, i.e.  $< 6$ .

In eye strain the percentage of relief was 90.09%, in blurred vision 88.88%, in burning sensation 86.61% in slow refocusing 90.43% and in excessive fatigue (neck or shoulder or back pain) 87.50% relief was observed, which were statistically significant ( $p < 0.001$ ).

In dizziness/nausea the percentage of relief was 83.70% and in headache 79.06% relief was observed, which were statistically significant ( $p < 0.01$ ) In change in color perception the percentage of relief was 81.96% and in redness 88.38% relief was observed, which were statistically significant ( $p < 0.05$ )

#### Effect of therapy in group II

In eye strain the percentage of relief was 28.57%, in blurred vision 28.57%, in dizziness/nausea 0%, in headache 33.33%, in redness 0%, in burning sensation 33.33%, in dry eye 50%, in change in color perception 25%, in slow refocusing 33.33% and in excessive fatigue (neck or shoulder or back pain) 20% relief was observed, and all of them were statistically insignificant ( $p > 0.05$ ).



## CONCLUSION

The clinical study reveals that use of *Netra-tarpan with Yashtimadhu ghrut in* patient of computer vision syndrome helps to cure dryness also improves the health status of eyes

The discussion on ocular and non-ocular symptoms of CVS in the perspectives of Ayurveda is clearly suggestive of *vata* dominating *pittaja* vitiation in eye and body as a whole. These pathological factors give rise to *vata-pittaja* ocular surface symptoms like *vataja*, *pittaja*, *Raktaja abhishyanda*, as well as *shushkakshipaka* (dry eye syndrome). Not only ocular surface discomfort but also *vata-pittaja* dominating disorders vision i.e. *Timira* are manifested in CVS patients. The generalized or physical symptoms of CVS are also in the manifestations of *vata* and *pitta*.

As per the given fundamentals regarding naming an unknown disease, CVS may be coined as “*Sanganak Atiyoga-Janya Netra Samlakshana*”.

- *Yashtimadhu ghruta Tarpana* was more effective in relieving the different ocular as well as non-ocular features of CVS.
- Changing the working style and standard alone was least effective in relieving the CVS.
- During the course of study, no significant adverse effects were observed.
- To sum up, it can be concluded that CVS is *vata – Pitta* vitiation pathology and needs to be managed by lubricating (*snigdha*) measures locally.
- It is hoped that the observations made in this work will be helpful for future studies and to the mankind as a whole.

**NOTE:** In some patients recurrence was there after 6 months & in some patients recurrence was observed after 1 year.

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