



## **An Approach To Prevent Computer Vision Syndrome With Ergonomic Counselling And Add on Effect of Yashtimadhu Grita Tarpan A Single Case Study**

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### **INTRODUCTION**

The computer has become a common item in today's society. It is estimated has approximately 45 million workers directly use computers. Computers have increased the work efficiency and communications and have opened access to information like never before. Despite these contributions to the society, prolonged exposure to computers has been the cause of a visual and ergonomic disorder called " Computer Vision Syndrome" (CVS).[1]

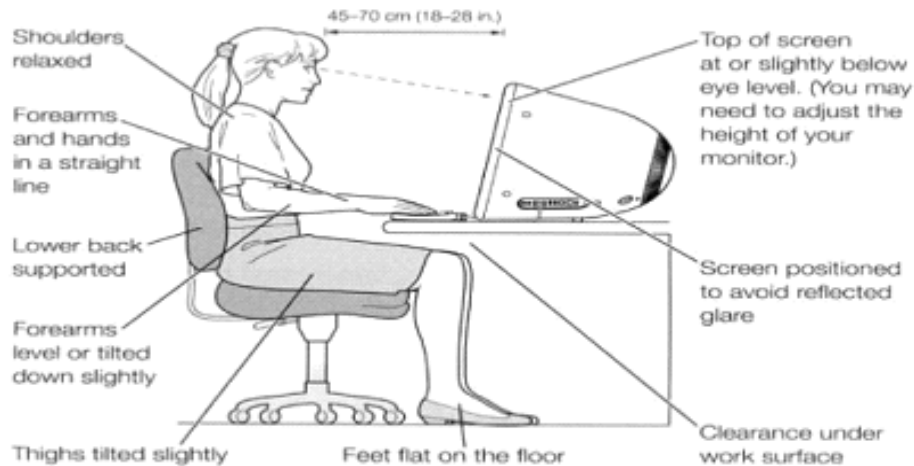


CVS is a group of symptoms which crop up from the extended viewing of the VDT, when the demands of the task exceed the abilities of the viewer. Symptoms comprising CVS are dry and irritated eyes, eye strain/fatigue, blurred vision, red eyes, burning eyes, excessive tear secretion, double vision, headache, light or glare sensitivity, contact lens discomfort, slowness in changing focus, changes in color perception, and neck, shoulder and backache. These symptoms of CVS are due to ocular (ocular-surface abnormalities or accommodative spasms) and/or extra ocular (ergonomic) etiologies. It has also been shown that computer users also have a higher incidence of complaints than non-computer users in the same environment.[2]

The catastrophic effect of the CVS has resulted in low performance and extreme discomfort to the sufferer. The symptoms being vague and slow in onset drift to intolerable severity by the time the sufferer seeks medical advice. This problem is very new to medical science and is under investigation to explain the mechanism of the disease and to find a solution. The current understanding upholds meticulous work environment as a precaution and use of artificial tear or contact lens wetting solutions to suffice the symptoms. But with these treatments, the patients of CVS get only symptomatic relief.[3] So, to find a better solution to this burning problem, this study was designed.

## Preventive measures

### Follow computer Ergonomics



Though the ailment is a consequence of modern invention, Ayurveda, the ancient science of life can be of great help in dealing the modern occupational ailments by its preventive and therapeutic principles. Ayurveda and siddha medicines have various formulations which have been extensively used for various eye disorders.

**90% OF OFFICE-WORKERS HAVE COMPUTER VISION SYNDROME**

Computer Vision Syndrome (CVS) or digital eye strain is caused by the overuse of digital devices. The most common repetitive strain injury in the world, the symptoms of CVS (from eyestrain to vision problems) are seen in more than 90% of office-workers using computers:

- Sore or irritated eyes
- Dry eyes
- Headaches
- Blurred or double vision
- Difficulty focusing
- Watery eyes

Computer Vision Syndrome can be prevented by modifying your workstation to ensure less strain on your eyes, using proper lighting on your desk, adjusting your computer display settings and by taking breaks to look away and rest your eyes. It is also recommended to get your eyes tested at least once in a year.

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### **Need of Study [4-5]**

According to the American Optometric Association (AOA), the most frequent health complaints among computer workers are vision-related. Studies indicate that 50 to 90 percent of computer users suffer from visual symptoms of computer vision syndrome. These symptoms include eye strain, dry eyes, eye irritation, blurred vision and double vision.

With more and more of us using a computer at work, CVS is becoming a major public health issue. The AOA reports that a survey of optometrists found that approximately 10 million eye exams are performed annually in the United States due to vision problems related to computer use.

### **Materials**

The study subjects were selected randomly at their own will, regardless of age and gender and regardless of their visual status, be it normal or corrected by glasses or contact lenses. Those who did not give consent or were not willing to participate were excluded from the study. The variables studied included both ophthalmic and non-ophthalmic problems associated with an excessive use of computers. The variables studied included demographics and ocular symptoms such as redness, tiring eyes, watering, and burning as well as extraocular symptoms such as neck stiffness, shoulder and neck pain, and headache. The most common symptoms and their association with the hours using a computer were determined.

1. Type of study design: Experimental study.
2. Place of study: *Shalakya* OPD and IPD of hospital.
3. Sampling Technique: Computerized Randomization Sampling Method

### **Consent**

Valid informed written consent will be obtained from the patients after explaining the Consequences & nature of the study in the language best understood by the patient. Screening and selection of the patients will be carried out as per inclusion and exclusion criteria.

### **Investigations**

Thorough ophthalmic investigations will be carried out in the patients as follows:

1. Visual acuity
2. Slit lamp examination
3. Autorefractometry
4. Tear Film Break Up Time
5. Schirmer's test

Other necessary investigations will be carried out as per requirement.

### **Diagnosis**

Selected patients will undergo Tear Film Break Up Time test, Schirmer's test and observations will be noted.

### **Materials**

A study of drug *Yashtimadhu Ghrita*

**Route:** *Tarpan*

### **METHOD OF PREPARATION:**

1 part of *Ghrita* is warmed and 1/8th 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 1/8th part of *Sharkara* and processed in *mandagni*. This process should be continued till it attains the *sneha siddha lakshanas*. Then it should be filtered and used for *Tarpan Karma*.

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>	

#### 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 one hour.

#### MODE OF ACTION

*Yashtimadhu tarpana* has great healing properties, which soothes the eye along with problems solving other eye related problems concerning with CVS. It nourishes the conjunctival as well corneal layers and acts as anti-dryness and anti-inflammatory properties.

*Yashtimadhu* and *ghrita* both are having *Netra* property. *Ghrita* contains K2 and lionelic acid. It is having anti-inflammatory property. *Ghrita* 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 Ghrita* is having property of *vata pittahara* and In VDT syndrome due to continuous exposure both *vata* and *pitta dosha* get vitiate so *Yashtimadhu Ghrita* is effective in VDT. Its *Chakshushya guna* improves the health status of eyes.[6]

#### METHOD OF STUDY

By random sampling technique, the diagnosed patients, who fulfilled the inclusion criteria, patients is treated with Eye Ergonomics Counselling and *Yashtimadhu Ghrita Tarpan*.

#### COUSELLING AND DRUG

1. Eye Ergonomics Counselling regarding proper posture of the patient while working on the computer.
2. Adequate rest of the eyes means taking break at least 10 to 15 min break per hour.
3. Exercise means get adequate physical exercise.
4. Eyeglasses- Use of eyeglasses at the suitable strength.
5. Keep the distance between the document and your eyes similar to the distance between the screen and your eyes.
6. Minimize the dark-bright contrast in the room to prevent you from being dazzled.
7. Keep a distance of at least 40 cm between the computer screen and your eyes.
8. Sit back in your chair with its back support in contact with keeping the entire soles of your feet in contact with the floor.
9. Use an anti-reflection screen.
10. Position the screen at a level that causes minimal light reflection.
11. Adjust screen angle to allow you to look slightly downward at the screen.



12. Eye Ergonomics Counselling and *Tarpana karma* with *Yashtimadhu Ghrita* 5days in a week, then a gap for 15 days, and then the same is repeated for two months.

**METHODS OF SELECTION OF STUDY SUBJECT:**

**INCLUSION CRITERIA**

- Either gender within the age group of 18-55 yrs.
- All patients using computer at least 4 hours/day with following clinical features of CVS were included in this study
- Eye strain, Blurred vision, headache , Dryness of eye , eye fatigue (neck/shoulder/back pain)

**EXCLUSION CRITERIA**

- Patient having any other ophthalmic condition like aphekia, astigmatism, presbyopia etc.
- Patient below 18 and above 55 years.
- Patients having any systemic diseases.
- Pregnant and lactating women.
- 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

**FOLLOW -UP**

Follow-up will be done at 1<sup>st</sup> , 10<sup>th</sup> ,20<sup>th</sup> 30<sup>th</sup> , 60<sup>th</sup> to assess the changes and patients were followed up for the next two month for withdrawal effects.

**STUDY REVIEW OF TRIAL**

<u>SR.NO</u>	<u>CARDINAL FEAT</u>	<u>FOLLOW UP</u>				
		<u>DAY 1</u>	<u>DAY 10</u>	<u>DAY 20</u>	<u>DAY 30</u>	<u>DAY 60</u>
1.	Dryness of eyes	+++	++	+	+	---
2.	Burning Sensation	+++	++	+	---	---
3.	Foreign body sensation	+++	++	+	+	---
4.	Head ache	+++	+	---	---	---
5.	Blurred vision	+++	+	++	+	---
6.	Musculo skeletal problem	+++	+		---	---

(+++ - severe, ++ - moderate, + - mild, ---- - none)

**FOLLOW UP**

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

**DISCUSSION**

In young individuals CVS is highly prevalent in today’s digital environment. Symptoms of CVS are as dry eyes, eye strain, red eyes, burning eyes and head ache amongst others.in ayurveda *tarpan kriya* is

implemented so as to achieve a healthy eye along with balancing the *vatta pitta doshas* with proper ayurvedic treatment along with ergonomic counselling.

Eye drop applications significantly constitutes to the basic therapeutic treatment in combating CVS and symptoms associated with it. Ayurvedic treatment is implemented as it is easily accessible and economically viable.

In 21<sup>st</sup> century the use of digital gadgets cannot be avoided but a few measures can be followed as wearing a screen glare (specs) which can protect the eyes to a certain extent. Traditional ayurveda has given various kriya kalpa's and tarpan's which can reduce the strain caused due to CVS.



[7]

## CONCLUSION

CVS can be coined as a digital hazard causing various eye related disorders. CVS causes the reduction in the blinking rate of the eyes which leads to dry eyes and subsequently resulting in various eye related disorders. In the treatment of CVS, Ayurveda has much to offer through Karakalpak, eye exercises and medications. The above study reveals that use of Netra-tarpan with Yashtimadhu Ghrith in patient of computer vision syndrome helps to cure the following disorders.

1. Eye strain – Blurred vision
2. Dizziness /nausea- headache
3. Redness – burning sensation
4. Dry eye – changed color perception
5. excessive fatigue (Musculo - skeletal problem)
6. foreign body sensation



[8]

Here we can conclude that ayurvedic side medicine are eternal and can be implemented in curing any diseases.

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