

**COMPUTER VISION SYNDROME (CVS) – AN AYURVEDIC APPROCH OF
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ABSTRACT

Eyes are God's greatest gift and window to our soul. In 21st century, everybody is attracted to computer which is the knowledge bank and emerges the profession. This computer causes visual and ocular symptoms arising due to the long time and improper working on computer, Tablet, Mobile, e-reader and television, collectively called as computer vision syndrome or Digital eye strain. Due to COVID pandemic sudden need for work from home, online learning is driving the digital transformation of the workforce. The visual effect of the computer such as brightness, resolution, glare and quality all are known factors that contribute to CVS. Therefore, an *Ayurvedic* approach in understanding the *samprapti* and management thereafter is hypothesized for CVS. The symptoms of CVS are eye strain, blurred vision, dry eyes, and headache. So, these symptoms are related to *vata-pitta pradhana vyadhi* of *Shushkakshipaka*. *Shushkakshipaka* is one among "Sarvagata Netra Rogas" mentioned by *Sushruta* as well as *Vagbhata* under *Sadhya Vyadhis*. This paper aims to review multifaced of *Ayurvedic* management of CVS by various *kriyakalpa* which is common lifestyle disease among youngsters worldwide.

KEYWORDS: Computer Vision Syndrome (CVS), *Kriyakalpa*, *Shushkakshipaka*.**INTRODUCTION**

In this present era, the human lifestyle has been drastically modified. Computer has become almost an essential piece of equipment both at office and home. The introduction of computer no doubts has revolutionized and benefited the society. More recently, visual and ocular problems are reported as the most frequently occurring health problems among computer users.^[1] In China, A cross sectional survey study using the validated CVS questionnaire in total 137 responses from 63 Chinese students who took classroom lectures and 74 MBBS students who took online lectures with similar schedules. The prevalence of CVS among Chinese students and MBBS students were 50.79% and 74.32%.^[2]

Computer vision syndrome

The American Optometric Association defines CVS as that "Complex of eye and vision problems related to the activities which stress the near vision and which are experienced in relation, or during, the use of computer."^[3] Artificial eye drops and opposed reflection coating glasses are up to date line of treatment in CVS. However, they need their limitations. According to occupational safety and health Administration of the US Government, some studies estimating that 90% US

workers using computers from more than 3 hours/day experience CVS in some form.^[4]

Computer Vision Syndrome has no direct reference in *Ayurvedic* classics; it can be correlated to symptoms of *Shushkakshipaka* of *Sarvagata netra roga* in *Sushruta*^[5] and *Vagbhata*.^[6] under *sadhya vyadhis*. *Nidana* and *Samprapti* can be understood by *trividha hetu's* (*Astamya indriyarthasamyoga, Prajnapradha, Parinama*) related to *chakshurendriya* (eye) in *charak*.^[7] The symptoms of CVS are related to *vata-pitta pradhana*.^[8] *tridosha* and *rakta dhatu* vitiation at *chakshurendriya* leading to the *sthanasamshraya* in *netra*.

PATHOPHYSIOLOGY OF COMPUTER VISION SYNDROME

The symptoms experienced in computer vision syndrome are caused by three potential mechanisms: (i) Extra ocular mechanism, (ii) Accommodative mechanism, (iii) Ocular surface mechanism. Extraocular mechanism causes musculoskeletal symptoms such as neck stiffness& pain, headache, backache and shoulder pain. These symptoms are well associated with improper placement of computer screen which leads to muscles spain.

Accommodative mechanism causes blurring of vision, double vision, presbyopia, myopia and slowness of focus change. In one study it was reported that a transient myopia was observed in 20% of computer users at the end of their work shift. Many people may have accommodative problem or binocular problems which do not usually cause symptoms when they are doing ordinary less strenuous visual task, but these problems are worsen in prolonged period of computer usage.^[9]

Ocular surface mechanism causes symptoms such as dryness of the eyes, redness, gritty sensation and burning after extended period of computer usage. These symptoms may be multifactorial, among the common factors found to be related to dryness and redness of the eyes are cornea dryness, reduction in blink rate, increased surface of cornea exposure caused by horizontal gaze at the computer screen, reduction of tear production due to ageing process contact lens usage, medication such as antihistamines and systemic medical illnesses such as autoimmune connective tissue disease.^[10]

AYURVEDA CORRELATION

Chakshusyendriya occupies the key position among all the other gyanendriya which is responsible for rupagrahana.^[11] Eye care is one of the priorities since the ages as it is a major source of direct knowledge and damage to eyes could immerse life into an ocean of darkness.

SAMPRAPTI:

Hetu sevana, atiyoga, Hinayoga and Mithyayoga of Chakshusyendriya

↓
It Aggravates Vata pradhan pitta dosha

↓
It vitiates raktadhatu in the Sira (increased ruksata and daha etc.)

↓
These vitiated doshas moves towards the eye through Sira

↓
Kha-vaigunya present in the Sarva akshi

↓
Sthanasamshraya of dosha in sarvaakshi

↓
Produces symptoms

↓
Shuska akshipaka (CVS)

Samprapti Ghatak

Dosha	Vata-pitta
Dushya	Rasa, Rakta, Mamsa
Srotas	Rasavaha srotas

Srotodusti prakara	Sanga
Rogamarga	Madhyam
Adhasthan	Shira
Vyakta sthan	Netra (All the Netra mandalas)

Co-relation between Symptoms of Sushkaakshipaka^[12] &^[13] and Computer vision syndrome^[14]:

Sushkaakshipaka	Computer vision syndrome
Gharshna (Gritting sensation)	Irritated eyes
Toda (pricking pain)	Tired eyes
Bheda (pain)	Headache
Upadeha (coating)	
Rooksha Daruna Vartma akshi (dryness of eyelids)	Dry eyes
Krichronmeelnimeelanam (difficulty in opening and closing of eye lid)	
Vikunan (eye become small in size)	
Visuskatvam (Dryness)	Dry eyes
Shiteccha (Desire for cold things)	
Netrasula (pain)	Eye strain
Netrapaka	
Daruna Rooksha Vartma Yat Kunitam (Hardness and Roughness of the Eye Lid)	
Vilokane Avila Darshana (Patient cannot see the Objects Clearly)	Blurred vision
Sudarunam Yat Pratibhodanam (Difficulty in Opening/Closing the Eye).	Eye strain

Prevention is better than cure^[15]

- Proper rest
- Consciously blink (10 blink/30min). Often look out the window to a distant object
- Close eyes for 20 seconds, at least every half hour
- Minimize glare
- Update display
- Adjust brightness/contrast
- Anti-glare filters for computer screens may increase comfort
- Clean your screen

Position of the computer monitor: Distance b/w screen and eyes - 20-26 inches, for children 18-28 inches. optical screen position is at about 10 to 20 Degree angle below eye level.

- Take A break: National institute of occupational safety and health (NIOSH) recommends minimum 4 -5 min. break/hr. The American optometric Association (AOA) suggest to follow 20-20-20 rule: Take a 20 second break to view something 20 feet away every 20 minutes.

Ayurvedic approach^[16,17,18]

The goals of *Ayurveda* treatment for Dry eyes include correcting the vitiation of *Vata dosha* in body and in the eyes also relieving the symptoms of CVS and correcting the digestive fire and encourage lubrication in the body.

The main concept of treatment of *Netra roga* is *Nidana parivarjan* and *Vatadi doshanashak*. *Nidana parivarjana* (Avoid maximum screen time) is the first and foremost *Chikitsa* in CVS.^[19]

1)Anjana

➤ *Saindhav lavana + Daruharidra churna + Sunthi Churna + Matulunga swarasa*



Prepare *varti* mixed with *ghee* and apply *anjan* with *stanya* and *udaka*.

- Make *kalka* or *kwath* of *Haridra /Daruharidra* → *Ghrit siddha + Saindhav lavana*
- *Stanya ghrishta anjan* with *sunthi (Mahaushadham)*
- *Sarpiyukta stanyapista Anjana* with *Sunthi (A.h)*
- *Vasa* of *aanupa* and *Jalaja* animals + *Saindhav lavana + Sunthi churna*
- *Sneha anjan (A.s)* – *Aanupa vasa + sunthi + saindhav churna*
- *Keshanjana (A.s)* – Human hairs smeared with *ghee*, made unclean by wiping a mirror (which is unclean) should be burnt in a blind crucible, the ash obtained is macerated with *ghee* and stored (for some days) in an iron vessel. This, used as a collyrium cures *akshipaka*.
- Applying *Lekhananjana* because of *tikshna* property, eliminate the vitiated doshas from the *siras* pertaining to *vartma* and eye.^[20]

2) Netra tarpana & Putapaka

Tarpana Should be carried out with *ghee* medicated with drugs from *jivaniya gana*.^[21]

Tarpana and *putapaka* is performed with *snigdha dravyas*.^[22] (A.s.)

Both *tarpana* and *putapaka* are the *santarpana* methods, helps relieve tiredness & improve eyesights. Eyes become fatigued after *tarpana* therapy, in order to restore the strength to the eyes, *putapaka* therapy should be done.^[23]

Ghrita which is *Madhura* and *snigdha* so; it is best for *vata pitta* vitiated disease.

3)Netra pariseka^[24]

Saindhav lavan yukta sheetal paya

Saindhava lavan + koushana paya (A.h.)

Severely aggravated disease can be cured by *pariseka* due to its potency.^[25]

The medicine is absorbed through the skin of eye lids. the active principle is aqueous extract so tissue contact time is very less as it get diluted with tears and drained to naso lacrimal duct.

4)Aschyotana^[26]

Darvi + prapaudrika kwath (A.s)

Acc.to *vagbhata Aaschyotana* is the first important and beneficial procedure to begin with in all ophthalmic disease. Being constituted by various drugs, it alleviates the symptoms like *vedana, kandu, ashrusrava, Redness, daha* etc.^[27]

Mild aggravated disease can be cured by *Aschyotana*.^[28]

DISCUSSION

Computer vision syndrome name is not described in *Ayurveda* text but *Ayurveda Siddhantas* are applied by centuries by observing, understanding diseases and by well testing. By above discussion it can be concluded that *Ayurveda Siddhantas* are eternal and be applied in understanding newer diseases like Computer Vision disease in *Poorvaroopavastha* itself so that it doesn't worsen the condition. Dry eyes occur due to decreased production of fluids from tear glands, which prevent tears from performing their practical functions and affect vision. When eyes become dry, they may lead to irritation. The *Nidana* mentioned under the CVS i.e. duration of Computer work is directly proportional to the severity of the symptoms in CVS. so *Nidana Parivarjanameva Chikitsa* can be well applied here. By above treatment modalities it can be said that CVS can be well managed but clinical research must required for the analysis of effectiveness of above treatment.

CONCLUSION

With the advancement of new technologies, occupational challenges, environment etc. has led to the manifestation of new disorders as Computer vision syndrome. Regular eye examinations and proper viewing habits can help to prevent or reduce the development of the symptoms associated with CVS. So, the application of *Anjan, Tarpana, putapaka, pariseka* and *Aaschyotana* with *Vata pittahara Dravyas* constitutes the basic therapeutic approach in the management of CVS. Hence can be implemented in all places of computer utility.

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