



## " AN AYURVEDIC PERSPECTIVE ON COMPUTER VISION SYNDROME"

## Ayurveda

<b>Shashi Prakash Gupta*</b>	M.S (AYU), PhD, Shalaky Tantra, Institute for Postgraduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar, Gujarat. *Corresponding Author
<b>Surendra Kumar</b>	PhD Scholar, PG Department of Panchakarma, National Institute of Ayurveda, Jaipur.
<b>Gopesh Mangal</b>	Associate Professor, PG Department of Panchakarma, National Institute of Ayurveda, Jaipur.

## ABSTRACT

Computer is the most beautiful gift ever to the mankind from the modern day science. Most of us are exposed to the computers and work on it throughout the day, some of us do it overnight also. Even today's children are no exception. Most of our day to day work depends on the use of computers. But at the end of the day our eyes get tired and sick. This problem has become very common today. This condition is called Computer Vision Syndrome. People who spend more than three hours on a computer each day will experience symptoms of CVS like eye strain, dry eyes, burning sensation, headache, focussing difficulties, neck and shoulder pain, etc. About 90% of people who use computers everyday suffer from this problem.

Therefore, an *Ayurvedic* approach in understanding the *samprapti* and management thereafter is hypothesized for CVS.

## KEYWORDS

Computer Vision Syndrome, *Seka*, *Aksitarpana*, *Anjana*

## INTRODUCTION

Computer vision syndrome is a group of eye and vision-related problems that results from prolonged computer use. Many individuals experience eye discomfort and vision problems when viewing a computer screen for extended periods. The level of discomfort appears to increase with the amount of computer use. There are several different factors which can lead to eyestrain symptoms. When the ciliary muscle of eye that controls focusing is overworked, symptoms can occur. In many cases, these symptoms will not start immediately, but only after several hours of work. According to the National Institute of Occupational Safety and Health, computer vision syndrome affects some 90% of the people who spend three hours or more a day at a computer. Computer Vision Syndrome has no direct reference in *Ayurvedic* classics; it can be correlated to symptoms of *Shushkakshipaka* of *Sarvaksiroga*. An *Ayurvedic* approach can be given on the basis of fundamentals of *Ayurveda*. *Nidana* and *Samprapti* can be understood by *Trividha hetu's Aastamya Indriyarth Samyoga*, *Prajnapradha*, *parinama*) related to *chakshurendriya* (eye). CVS is a *Vata* dominating *Pittaja* ocular as well as a systemic problem and it can be named as "*Sanganaka Atiyogajanya Netra Samlakshana*."

## OBJECTIVES

Understanding the *Ayurvedic* concept of Computer Vision Syndrome with the help of references given in *Sushruta Samhita Uttara*, *Astanga Hridhyam Uttara Sthana* and *Charaka Samhita Sutra* and *Nidan Sthan*.

## Understanding CVS in Ayurveda

According to *Acharya Charaka* to understand a disease one should go through *Nidana Panchaka* so to understand the symptomatology of CVS probable *Nidana Panchaka* will be discussed here.

1. *Nidana*

For the manifestation of disease *Acharya Charaka* has told three specific causative factors:

- *Asatmya Indriyarth Samyoga* (Improper correlation of sense organs with their objects).
- *Pragyaaparadha* (All the three kinds of unwholesome actions pertaining to body, speech and mind)
- *Parinaam* (Effect of time)

These can be understand in reference to *Chakshuendriya* as follows:

*Asatmya Indriyarth Samyoga* –

1. *Atiyoga*:- Seeing very bright light for long period of time and constantly looking at the monitor without blinking.
2. *Heenyoga*:- Working in a poor illuminated room.
3. *Mithyayoga*:- Looking for a long time the objects which are very near or very far and concentrating on small letters over the screen.

- *Pragyaaparadha* – Extensive computer work without thinking about eye capability and body stamina and not taking appropriate precautions while working on computer.
- *Parinaam* - Working more on computer will produce more symptoms means severity of disease is directly proportional to duration of working on computer.

The general causative factors told by *Acharaya Sushruta* out of which some are seen in CVS

- i. *Swapna viprayanscha*-Not taking proper sleep or disturbed sleep may aggravate symptoms of CVS.
- ii. *Prasakta sanrodana*- Excessive weeping causes congestion in eyes which may aggravate symptoms and signs of CVS.
- iii. *Kopa, Shoka and Klesha* - All these *Hetu* may cause depression, tension headache and vascular headache. So these can aggravate the disease.
- iv. *Atimaitthuna* – Excessive coitus leads to depletion of all *Dhatus* including *rasa* in this way causes *Chakshu Shaktihani* so this can also aggravate the disease.
- v. *Shuktha arnala kulatha masha atisevana* – All these *Aharas* are *Pitta Vardhaka* so may cause *Pitta* predominant symptoms in eyes like *daha* (burning sensation), *Netra lalima* (redness) which are common features of CVS.
- vi. *Dhoom nisevana* – It causes hyperemia in conjunctiva which may present as foreign body sensation which is also a common feature of CVS.
- vii. *Sukshmanirikshna* – Working with concentration on computer leads to less blinking. In this way Precorneal tear film breaks down which may cause dry eye. This *Hetu* can be taken in another way as excessive accommodation which leads to eye pain and headache.
- viii. *Bhaswarvastuvikshadama* - :- The eye exposing to bright things causes blurring of vision which is seen in CVS.

2. *Poorvaroopa*

*Acharya Shusruta* had described *Poorvroopa* of all *Netra Roga* in general of which few are present in prodromal symptoms of CVS like:

1. *Aavilam* - A patient of CVS may have altered eye texture because of constant eye strain and asthenopia.
2. *Sasarambh* – A patient of CVS may feel foreign body sensations or atypical discomfort in eye.
3. *Kandu* – A patient of CVS may have itching as a symptom because of eye strain.
4. *Guru* – A patient of CVS may have heaviness in eyes because of eye fatigue.
5. *Usha, Toda*- ACVS patient may experience burning sensation and pain in eyes.
6. *Raga* – Because of asthenopia there may be redness in eyes or we can say hyperemic eyes.

7. **Sashulam vartam koshaishu** – This may be atypical symptom perceived by a CVS patient.
8. **Sukapurnabham**–This can be correlated with foreign body sensation which is a common feature of CVS.
9. **VihanyaManam rupe va kriya swakshi yathapura** – It means visual acuity of a CVS patient usually deteriorates if preventive measures are not used.

Thus the *Poorvarupa* of *Netra Roga* resembles in a patient of CVS.

### 3. Roopa

Typical signs and symptoms by which a disease is recognized are known as *Roopa*. So, as CVS as such has not been mentioned anywhere in *Ayurvedic* texts as such but here symptomatology of CVS will be discussed on modern grounds with *Ayurvedic* references.

### I. Eye Strain

Eye strain is a very common feature of CVS. It is due to constant and continued focusing done by ciliary muscles, which creates fatigue and lead to tired eyes or eye strain.

In *Ayurveda*, different symptoms can be correlated with eye strain like *Kunchan*, *Netravayatha* etc. Moreover *Acharya Sushruta* considered second *Patala* of *Netra* as *Mansa ashrita Patala* which has *Akunchana* and *Prasarana* properties the same properties which a muscle fibre has. So, we can say that overuse of this *Mansaashrita Patala* may cause *Ayasa* or fatigue in eyes. All the activities, which produce fatigue (*Ayaas*) in the body, are known as *Vyayama*. *Acharya Sushruta* has given its limit up to the half strength of individual. If any individual crosses this limit (excessive *Vyayam*), it causes *Shrama* i.e. *Apakarshana* which ultimately leads to *Kapha Kshaya* & *Vata* and *Pitta* aggravation. Eye strain is described as a feature of ocular disease, such as in *Vatika Abhishtyanda*.

#### ii. Blurred vision:-

It occurs due to accommodative spasm of ciliary body. The symptom 'Blurring of vision' is described in *Ayurvedic* texts as symptom of *Pratham Patalagata Timira* and other *Dristhigata Roga* like *Dhoomdarshi*. *Acharya Charaka* has considered *Timira* as *Vata nanatamaja Vikara* so prolong working on computer leads to *Vata* vitiation as discussed earlier which give rise to blurring of vision.

#### iii. Dry eye-

Dry eye in a patient of CVS is due to exposure of cornea to reflected light energy which causes tear film abnormality by early evaporation of tears. This also decreases tear film break up time (TBUT). In *Ayurvedic* texts dry eye is mentioned in various terms such as *Visushakbhava*, *Visushaktava* and *Sushakaakshipaka* are *Vatapitta* dominating features. Thus, *Vata* and *Pitta* are responsible for dry eye symptoms. Poor blinking during working on computer also decrease TBUT because blinking is responsible for spreading of tear film.

#### iv. Burning sensation, irritation and redness-

Every electronic device including computers and laptops produce a form of Electromagnetic Field (EMF) This EMF is actually a non ionizing radiation which release energy from these electronic devices that is not enough to ionize the atoms, hence instead of removing electrons it only excites the electrons. This energy brings negative effects to human health. By using computers, laptops or even sitting in computerized workplaces an individual is exposed to the dangerous waves. These waves directly affect the human eyes even after the system is off inducing symptoms like burning sensation, irritation and redness in eyes. EMF increases the heat in surrounding environment which in turn aggravate the *Pitta Dosa* in human body which is responsible for these symptoms.

#### v. Headache –

Usually headache is due to stress. In *Ayurveda*, its pathophysiology can be assumed as continuous work on computer monitor leads to ocular fatigue which further leads to aggravation of *Vata* and *Pitta* (*Vata Pitta* usually vitiated after excessive *Vyayama*) which leads to *Shirotapa* and *Shiroruja* (headache).

#### vi. Excessive fatigue (Neck/shoulder/Back pain) -

These symptoms in a patient of CVS are due to constant sitting posture, overuse of muscles of neck/shoulder and fingers. This may leads to musculoskeletal disorders. In *Ayurveda*, excessive use of muscle or *Ativyayama* leads to such symptoms. *Ativyayama* also vitiates *Vata* and *Pitta* which is the cause of neck/shoulder/back and finger pain.

### 4. Upshyaya

The medicines, food items and activities which give feelings of

wellbeing to the patient are known as *Upshyaya*. In CVS patient *Upshyaya* may include eye rest, sound sleep, fresh air, vitamin C, vitamin A rich food like *Triphala*, *Ghee*, *Papaya*, *Aloevera*, *Tarpana Karma*, ocular and head massage (*Samvahana*) and soothing *Netra Bindu* (*Aschyotana*). A good rule of thumb is to follow the “20-20-20 rule” when working at a computer: every 20 minutes, look away from your computer screen and find an object that's at least 20 feet away to look at for 20 seconds. This relaxes eye alignment and focusing muscles that are used for close up work, reducing your risk of eyestrain and eye fatigue. During these mini-breaks, take the opportunity to stand up and stretch. This not only relieves muscle tension in your back and shoulders, but increases metabolism, moves fluid that builds up in the legs, reduces blood pressure and your risk of blood clots, and much more.

### 5. Samprapti:

*Acharya Sushruta* had given a general *Samprapti* of all *Netra Roga* as the vitiated *Dosas*, will course through the vessels and reach upwards, to produce diseases in different parts of the eye. In context of CVS, the *Atiyoga* (exposure to very bright light, long working hours, light from a short distance, concentrating more on the near work without shifting the gaze), *Hinayoga* (working in poorly illuminated room and without blinking) and *Mithayoga* (seeing very small fonts against the bright light, constantly staring at computer) of *Chakshuendriya* leads to aggravation of vitiated *Vata* and *Pitta Dosas* and *Sthanasanshraya* of *Dosas* in the *Bahya Patala*, *Shukla Mandala*, etc which produces symptoms of CVS.

### DISCUSSION

The symptoms of CVS can be correlated with *Shushkakshipaka*. It is a disorder of the eye characterized by difficulty while closing the lids because of *Daruna Rooksha Vartma Yat Kunitam* (Hardness and Roughness of the Eye Lid), *Avila Darshana* (Patient cannot see the Objects Clearly), *Sudarunam Yat Pratibhodanam* (Difficulty in Opening/Closing the Eye).

According to *Vagbhata* it is characterized by *Gharshna* (Foreign Body Sensation), *Toda* (Pricking Pain), *Upadeha* (Loss of Clear Vision), *Rooksha Daruna Vartma* (Hardness and Roughness of the Eye Lids), *Krichra Unmeela Nimeela* (Difficulty in Closing and Opening of Eye Lids), *Sushkata* (Dryness), *Shoola* (Pain), and desire for cold comforts. The vitiated *Vata* and *Pitta Doshas* passing through *Sira's* gets accumulated in the parts of the eye like *Vartma*, *Sandhis*, *Shukla Mandala*, *Krishna Mandala*, *Drusti Mandala* and manifests the disease *Shushkakshipaka*. *Dosha – Vata* and *Pitta*, *Dushya – Rasa*, *Rakta*, *Mamsa*, *Medha*, *Srotas – Rasavaha Srotas*, *Srotodrusti Prakara – Sanga*, *Rogamarga – Madhyama*, *Adhistana – Shira*, *Vyakta Stana – Netra* (all the *Netra Mandalas*). Hence looking into the *Ayurvedic* treatment modalities, the drug should have *Vata-pitta* property. So, internally administration of medicated ghee of *Jeevaimyagana* drugs (*Jivaka*, *Risabhaka*, *Meda*, *Mahameda*, *Kakoli*, *Mudaparni*, *Masparni*, *Jivanti*) which has plays a major role. So, externally *Pariseka* (eye wash) with warm milk added with *Saindhava* are treatment for the eyes of CVS. *Saindhava*, *Devadaru*, *Sunthi*, juice of *Matulunga* boiled with *Ghee* and added with breast milk should use as *Anjana* (collyrium). Internally administration of *Draksha*, *Patola*, *Candana*, *Guduchi* in the form of *Kashyam* is ideal to cure CVS. *Aschyotana* (eye drops) with *Darvi*, *Manjista Kwatha* can be administered.

#### According to Sushruta

*Ghritha Pana* – Oral administration of *Ghee*, *Tarpana* (nourishment of eyes) with *Gritha* which is prepared by *Jeevaniya Gana Dravyas*., *Nasya* (nasal administration of medicated oil and ghee) with *Anutaila* or any *Brumhana Taila*., *Pariseka* with *Saindhavalavana* + Cold Milk. *Saindhava Lavana* + *Devadaru* + *Shunti* + *Matulunga Swarasa* + *Ghritha*.

#### According to Vagbhata

*Anjana* (collyrium) with - *Shunti* + *Stanya* + *Ghritha*, *Anupa Mamsa* + *Shunti* or *Saindhava Lavana*, *Saindhava Lavana* + *Devadaru* + *Shunti*.

### CONCLUSION

Computer has become an integral part of office equipments. Because of the high use of computer there has been a considerable increase in visual problems, leading to the risk of developing CVS. So, the application of *Seka* and *Aksitarpana* with *Vatapiitahara Dravyas* constitutes the basic therapeutic approach in the management of CVS. Hence, it can be implemented in all places of computer utility.

**REFERENCES**

1. [www.sscasrh.org/index.../241-ayurveda-kriyakalpa-in-computer-vision-syndrome](http://www.sscasrh.org/index.../241-ayurveda-kriyakalpa-in-computer-vision-syndrome)
2. Sivbalaji et al: Ayurvedic Approach on Computer Vision Syndrome IAMJ: Volume 1; Issue 3; May – June 2013
3. "A Clinical Study On Shatavaryadi Compound And Durvadi Aschyotana In The Treatment Of Computer Vision Syndrome" by Dr. Arun kumar in 2014.
4. Srikanthamurthy KR(ed). Astanga Hridayam of Vagbhata's with English translation and commentary.2002 reprinted. Varanasi: Chaukhambaorientalia:2002.p.140
5. Sharma R K, Dash B (ed). Charaka Samhita of Agnivesa with Ayurveda Dipika of Cakrapanidatta.2007 reprinted. Varanasi: Chaukhambaorientalia:2007.p.160
6. Anshel J.visual Ergonomics handbook. In: Anshel Jeffrey, editor. Corporate vision consulting, Encinitas. 1st ed.california,USA: Taylor & Francis Grp; 2005.p.24.chap 1
7. Srikanthamurthy KR(ed). Susrutha Samhita of Susrutha with English translation and commentary.2002 reprinted. Varanasi: Chaukhambaorientalia:2002.p.40
8. Srikanthamurthy KR(ed). Astanga Hridayam of Vagbhata with English translation and commentary.2002 reprinted. Varanasi: Chaukhambaorientalia:2002.p.147
9. Sivbalaji et al: Ayurvedic Approach on Computer Vision Syndrome IAMJ: Volume 1; Issue 3; May – June 2013