ABSTRACT

With rapid economic development and increasing westernization of lifestyle in the past few decades, prevalence of lifestyle diseases has reached alarming proportions among Indians in the recent years. As Ayurveda is recognized as foremost life science and describes ways to prevent and manage lifestyle disorders, the world is being attracted towards its potential. Computer vision syndrome (CVS) is one among the lifestyle disorder in the present era. About 88% of people who use computers everyday suffer from this problem. CVS is a complex of ocular and visual problems due to near work which is experienced during the use of computer and television. Possibly making it the silent epidemic of the 21st century. Therefore, an Ayurvedic approach in understanding the samprapti and management thereafter is hypothesized for CVS. The symptoms of CVS are irritated eyes, eye strain, blurred vision, red eyes, burning eyes, double vision 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 multifacets of Ayurvedic management of CVS which is common lifestyle disease among youngsters worldwide.

KEYWORDS: Computer Vision Syndrome, Ayurveda, Shushkakshipaka, Sarvagata Netra Rogas, Sadhya Vyadhis.
PURPOSE
Lifestyle diseases has became common in today’s society and are causing some serious health hazards, among which Computer Vision Syndrome (CVS) is one.

The invention of computers could be considered as one of the most magnificent technological developments and a useful contribution of human brain to the mankind. Computers have made our life easy, decreased the quantity of man power at many fronts and have increased the quality of work. Failure of internet facilities for a few hours or a technological upset of the systems will put all our work in array. But the use of computers, desktops and laptops in various work areas has been maximized to the level of overuse in the current decade. This excessive dependence and overuse of computers have introduced many a health problems amidst us. Computer overuse mainly has its bad impact on the eyes. As a result the ‘Computer Vision Syndrome’ or ‘Computer Fatigue Syndrome’ has become one of the chief problems affecting those working on computers for more number of hours.

Computer Vision Syndrome (CVS)
It is a condition wherein a group of symptoms are manifested so as to cause problems related to the eye and vision as a result of repetitive strain to the eyes due to excessive and long term exposure to the computers.

This paper aims to review possible Ayurvedic Management for Computer vision syndrome (CVS).

METHODS
Review and analysis of possible management of computer vision syndrome (CVS) from Ayurvedic literature such as Brihatreyi and classical texts of Ayurveda is done.

There is no direct reference about Computer vision syndrome (CVS) in Ayurvedic Literature. This Lifestyle disease can be correlated with Shushkakshipaka as per Lakshanas mentioned in Ayurvedic literature. Searching and reviewing various ayurvedic management as quoted in ayurvedic literature, which is mentioned by Acharyas for Netraroga and which can be applied for management of Computer vision syndrome (CVS).

DISCUSSION
Computer vision syndrome (CVS) is defined as a complex of ocular or visual problems which are experienced during and related to computer use.
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 (asatmya indriyartha samyoga, prajnaparadha, parinama) related to chakshurendriya (eye). The symptoms of CVS are related to vata-pitta pradhana tri-dosa vitiation at chakshurendriya leading to the sthanasamshraya (lodged) in netra (eyes).

The symptoms of CVS are.[1]
- irritated eyes
- eye strain
- blurred vision
- red eyes
- burning eyes
- double vision
- Headache
- Dry eyes

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, caused by Vata and Pitta Doshas having symptoms of

- Gharshana (gritting sensation).
- Toda (pricking pain).
- Bheda (pain).
- Upadeha (coating).
- Krichronmeelan (difficulty in opening and closing of eye lid).
- Vishushkata (dryness).
- Rooksha Daruna Vartma (dryness of eyelids).[2]

These symptoms can be correlated with the symptoms of CVS in modern system of medicine.[3]

Shushkakshipaka 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 Pratibodhanam (Difficulty in Opening/Closing the Eye).

According to Vagbhata Shushkakshipaka is characterized by.[4]

Gharshana (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).
Desire for cold comforts.

The vitiated Vata and Pitta Doshas passing through Siras 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, Meda.
Srotas – Rasavaha Srotas.
Srotodushti Prakara – Sanga.
Rogamarga – Madhyama.
Adhistana – Shiras.
Vyakta Sthana – Netra (all the Netra Mandalas).

Hence, while looking into the Ayurvedic treatment modalities, the drug should have vata-pitta pacifying property.[5]

Management of Computer vision syndrome (CVS)

According to Vagbhata

1. Internal administration of medicated ghee of jeevaniya gana drugs (jivaka, risabhaka, meda, maha-meda, kakoli, mudgaparni, masparni, jivanti) for Akshitarpana. Anutailla Nasya and externally pariseka (eye wash) with warm milk added with saindhava are treatment for the eyes of CVS.[6]

2. Saindhava, devadaru, sunthi, juice of matulunga boiled with ghee and added with breast milk should be used as anjana (collyrium).[7]
3. Internal administration of *draksha, patola, candana, guduchi* in the form of *kashayam* is ideal to cure CVS.[8,9]

4. Ascyotana (eye drops) with *darvi, manjista kwatha* can be administered.[10,11]

5. *Mahaushadha (nagara)* macerated with breast milk and mixed with ghee, or the muscle fat of animals of marshy lands mixed with little of *saindhava* and *nagara* should be applied as collyrium.[12]

6. Hair (of man) smeared with ghee, should be burnt keeping them inside two earthen saucers (which are sealed with mud and place inside a heap of cow dung and set on fire) the ash taken out, macerated with ghee and put in an iron vessel, this ash forms a best collyrium.[13]

7. *Agrya dravyas* mentioned for eye disorders.[14]

   - *Triphala Akshyamayeshu* (diseases of eye.).
   - *Nasya, Anjana* (collyrium) and *Tarpana* (satiating eyes.).

8. *Saindhava lava* (Rock salt) good for eyes.[15]

**According to Sushruta**

1. *Ghrita Pana* – Oral administration of Ghee, *Tarpana* (nourishment of eyes) with *Ghrita* which is prepared by *Jeevaniya Gana Dravyas*, *Nasya* (nasal administration of medicated oil and ghee) with *Anutaila* or any *Brinhana Taila*, *Parisheka* with *Saindhavalavana* + *Cold Milk*. *Saindhava Lavana + Devadara + Shunti + Matulunga Swarasa + Ghrita*.[16]

2. Sweet collyrium with Ghee is useful for *Drushtiprasadana*.[17]

**References of medicinal plants which can be used for management of CVS**

1. *Triphala* (Haritaki-*Terminalia chebula* Retz., Bibhitaka- *Terminalia bellirica* Roxb., Aamalaki-*Embllica Officinalis Gaertn.*) is *chakshushya*[18] and can be used in Computer vision syndrome (CVS).

2. Amalakyadi gana is *chakshushya*[19], contains Aamalaki (*Embllica Officinalis Gaertn.*), Haritaki (*Terminalia chebula* Retz.), Pippali (*Piper longum* Linn.), Chitraka (*Plumbago Zeylanica* Linn.)

3. *Guduchi* (*Tinospora cordifolia* Wild Miers ex Hook f. & Thoms)-Decoction of *guduchi* and *triphala* added with pippali (*Piper longum* Linn.) powder and honey alleviates all types of eye diseases.[20]

4. *Chakshushya* [Vanyakulattha] (*Cassia absus* Linn.)- Acharya Kashyapa mentioned it in *Chakshushyakalpa*. Vanyakulattha seeds are put in a cloth- pouch and steamed in cow dung
juice. Then they are dehusked and powdered. this powder used as collyrium (Churnanjana) in night alleviates inflammation of eyes.[21]

5. Kataka (Strychnos potatorum Linn.)-The seed of kataka is rubbed with honey and mixed with little camphor is applied as collyrium to eyes. It clears eyes.[22]

6. Aamalaki (Emblica Officinalis Gaertn.).
- Pitta vataja Netraroga- Semisolid extract of Aamalaka and rasanjana mixed with honey alleviates diseases of eye caused by pitta and vata, defects of vision and patala.[23]
- Anjanarthe- preparation made by boiling leaves and fruits of amalaka pacifies acute conjunctivities by filling the eye.[24]

7. Daruharidra (Berberis vulgaris Linn.).
- Milk boiled with daruharidra cooked and mixed with a little rock salt should be used for washing eyes or shunthi rubbed with breast milk and mixed with ghee should be used as collyrium.[25]
- Decoction made of darvi 40 gm with water 640 ml reduced to 1/8th is mixed with honey and used for washing, it is useful in inflammation of eyes by all doshas.[26]
- Eye drop should be used of the decoction of darvi.[27]

8. Bhringaraja [Eclipta alba (Linn.) Hassk.]
- Bhringaraja taila – Drushtiprasadaka quoted in vranda madhava.
- Nasya-Tila taila and bibhitaka taila cooked with bhringaraja juice and decoction of asana (Pterocarpus marsupium Roxb.) in an iron vessel is used for Nasya. It improves eye sight.( Drushterbala).[28]

PREVENTION & PATHYA

PREVENTION
- The computer work-station should be ergonomically correct.
- Conscious frequent blinking of the eyelids during computer usage. Say every time you press ‘Enter’ or click the mouse as an example.
- Short break of about 15 seconds away from the screen every 20 minutes or so.
- Use appropriate glasses or contact lenses for correction of refractive errors, if any.
- People over 40 years age should use special ‘computer’ glasses and not bifocals during computer work.
PATHYA\textsuperscript{[29]}

- Jivanti (\textit{Leptadenia reticulate W. & A.}), sunishannakam (\textit{Oxalis corniculata Linn.}), tanduliyaka (\textit{Amaranthus spinosus Linn.}), varavastuka (\textit{Chenopodium murale L.}), chilli (\textit{chenopodium album Linn.}), balamulaka (\textit{Raphanus sativus Linn.}), shakun and jangala mamsa.
- Ghritabharjiata shaka of patola (\textit{Trichosanthis dioica Roxb.}), karkotaka (\textit{Momordica dioica Roxb. ex Wild.}), karvellaka (\textit{Momordica charantia Linn.}), vartaka (\textit{Solanum melongena Linn.}), tarkari (\textit{Clerodendrum phlomidis Linn. f.}), karir (\textit{Capparis deciduas Edgew.}), shigru (\textit{Moringa oleifera Lam.}), aartagala (\textit{Xanthium strumarium L.}) are beneficial for eye disorders\textsuperscript{[29]}

CONCLUSION

Due to irregular life style & over use of modern electronic devices like computers increments in incidence of visual and associated problems are increasing. The same has been echoed by Ayurveda in context pathogenesis of diseases in the form of \textit{Asatmya indriyartha samyoga}.

Both Sushruta as well as Vagbhata mentioned internal administration and \textit{tarpana} of \textit{Ghrita} which is prepared by \textit{Jeevaniya Gana Dravyas}, \textit{Anutaila Nasya} and \textit{parisheka} of milk added with \textit{saindhava} as a treatment of \textit{Shushkakshipaka}, so it can be effectively used in management of Computer vision syndrome (CVS).

\textit{Ayurvedic} modalities can play major role in prevention as well as management of Computer vision syndrome, hence exclusive research work regarding references quoted in \textit{Ayurvedic} literatute about \textit{Netrarogas} is the need of time.

REFERENCES


