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ARTICLE

Title: Homoeopathy for computer vision syndrome

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ABSTRACT

The use of digital devices has increased considerably in recent years across the entire age spectrum and has become an integral component of modern living. Computer vision syndrome (CVS) is an array of vision impairments that result from interacting with visual display interfaces such as computers, mobile phones, and tablets. There are over 60 million CVS patients worldwide, which leads to decreased productivity at work and a lower quality of life for people who use computers. Asthenopia (eye strain), irritability, burning, red eye, blurriness, and double vision are its hallmark symptoms. Behavioral adjustments such as posture, visual distance, and occupational design have an essential role in symptom management. This article aims to view the scope of homoeopathic medicines for the management of this syndrome.

Keywords: *Computer vision syndrome (CVS), Dry eye, Eye disorder, Homoeopathic medicines, Homoeopathy*

ABBREVIATION:

Computer vision syndrome – CVS
American Optometric Association – AOA
Resting point of accommodation – RPA

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INTRODUCTION

'Computer vision syndrome', is also known as 'digital eye syndrome', is a widespread yet sometimes undetected pandemic. The American Optometric Association (AOA) explains "Computer Vision Syndrome" as an aggregate of eye and vision issues linked with close-up events that are encountered in connection with or while using computers, which causes greater stress to near vision in particular.^[1] In India, there are about 40 million computer users, and 80% of them are affected by CVS.^[2] In 21st century, computers are among the most widely utilized supplies in the offices, and it is has also being used at many institutions and organizations for professional and/or non-professional reasons. As a result, CVS is expected to continue to have a significant and growing influence on lowered job productivity while also affecting the quality of life for office workers who use computers.^[3]

The most common triggering causes includes improper workplace layout or incorrect workstation usage, incorrect power of spectacle, workplace pressure, and decreased rate of blinking.^[4] It is characterized by dry and itchy eyes with irritation, eye tiredness and strain (asthenopia), double vision, headaches, sensitivity to light and brightness, difficulties in focusing, changes in color perception, and excessive weeping along with extra ocular symptoms such as pain in neck and shoulders, neck stiffness etc.^[5] Prevention is the first line of management for this syndrome. The prevention and management of CVS should be improved by education, understanding of risk

factors, and suitably advised behavioral modifications in handling these devices for extended periods.^[5]

This article will assist clinical practitioners in understanding the spectrum of homoeopathic medications in the management of CVS, as well as improve practitioners' awareness regarding computer vision syndrome.

PATHOPHYSIOLOGY

CVS's major contributors include the dry eye, video display terminals visual effects like lighting, glare, quality of display, refresh rates, radiation, and computer monitor position.

VISUAL MECHANISM ON THE VISUAL DISPLAY TERMINAL'S SCREEN:

The focusing system of human eyes responds perfectly to well-defined edges that have good background contrast. In VDT letters consists of tiny dots or pixels, which is bright in the centre and is progressively less luminous as it gets closer to its outer margin. Focusing on the pixel characters is challenging for the human eye. The eyes cannot retain concentration when they are on the computer's plane; ultimately, they will ends up relaxing into the area beyond the screen.

This is referred to as RPA, also known as "dark focus". RPA is different for each individual, but it is closer to the computer than the average working distance. Hence, constant relaxation from RPA and straining to refocus on the screen occur in the eyes. Clinical features of

accommodative CVS are brought on by the eye becoming tired due to the ciliary body's continuous focus shifting.^[6]

CONTRIBUTING FACTORS ^[6,7]

Factors responsible for the development of CVS-related symptoms include ocular factors, extraocular factors, and computer design.

OCULAR FACTORS:

Previously occurred, uncorrected refractive errors.

Astigmatism: Blurred vision occurs due to an irregularly shaped cornea or curvature of the lens, resulting in eye discomfort and headaches. Frequently occurs along with myopia and hypermetropia and contributes to an increase in symptoms in CVS.

Residual uncorrected astigmatism also plays a role in increasing symptoms during the computer task.

Presbyopia is defined as an age-related normal loss of the near-focusing ability of the eye. Prolonged viewing of digital screens can be troublesome in such cases. Contributing factors include distance and gaze angle.

Inappropriate oculomotor responses.

Dry Eye is considered to be one of the major causes. Multiple factors responsible for causing dry eyes include:

Environmental: Low ambient humidity, high forced air conditioning settings, airborne contaminants that can result in dry eyes.

Reduced blink rate.

Increased exposure: Normally while reading, some area of the cornea gets covered, which lowers the evaporation rate of tear. Whereas while operating a computer, the gaze is horizontal, causing a wider opening of palpebral fissure that leads to increased evaporation through the exposed area.

Wearing Contact lenses.

Sex: Females are more affected.

Age: Women in their post-menopausal years are generally impacted.

Systemic maladies and medicines: association with Sjogren syndrome, rheumatoid arthritis, etc.

Other ocular pathologies: e.g. Blepharitis

EXTRAOCULAR FACTORS:

- Improper sitting position, inadequate screening distances, defective screening angles, as well as insufficient lighting should be considered.

- Background intensity, glare, and reflection cause difficulty in viewing. Those people who did not use anti-glare glasses reported more symptoms.^[7]

CLINICAL FEATURES ^[6,8]

1. **Accommodative or asthenopic symptoms:** Eye strain, tired eyes, sore eyes, dry eyes.

2. **Ocular surface related:** Watery eyes, Irritation, Contact lens problems, Burning, Dryness, and redness.

3. **Visual symptoms:** blurred vision, trouble concentrating, double vision, and presbyopia.

4. **Extra-ocular:** Pain in the region of neck, back and shoulder. Stiffness may also occur along with pain in neck.

EXAMINATION AND EVALUATION ^[8]

History to be inquired about related to their occupation, duration of work, glass usage, lightning in the workplace, and ergonomics

Ophthalmic examination: For Visual acuity, Refraction, Intraocular pressure, slit lamp examination of the anterior and posterior segments, cornea, pupils, and blinking should be done.^[8]

MANAGEMENT^[5]

The most essential method in managing CVS is done by eliminating the underlying cause of the symptoms.

(i) **Personal factors** includes improper sitting posture, poor distance vision, ageing, diseases related to eyes or any other medical diseases.

(ii) **Factors related to environment** includes inadequate balance of light between the screen and the immediate surroundings.

(iii) **Factors related to computers** includes insufficient clarity, poor brightness, the display's glare and rate of refresh is slow.

Factors related to environment

An important external environmental component that might contribute to discomfort and glare is lighting. To minimize visual

fatigue, proper control — using shades, filters, or room configuration — is essential. For the same task, young and older workers need varying amounts of light intensity. It is essential to maintain the balance between the surroundings and the brightness of computer screen. Changes in the contrast and brightness of screen should be done for maximum visibility.

Proper workstation adjustment, such as distance from the screen, image size, and seat height, can prevent musculoskeletal problems and enhance efficiency.

EYE MANAGEMENT

Taking little rest, some muscular activity, and a brief walk can increase output and lessen the effects of stress. Over four hours of nonstop work might strain the eyes. In order to avoid strain and visual fatigue, frequent pauses help relax the eye accommodating system. The 20-20-20 rule is good for eyes to take regular breaks. Every 20 minutes, take a 20-seconds pause to look at anything 20 feet away.

Eye lubricating drops or artificial tears should be used to manage dry eye.

For refractive abnormalities including myopia, astigmatism, and presbyopia, the right corrective lenses are essential to avoid worsening eye discomfort and inadequate work performance. Referrals to ophthalmologists for patients with conditions including connective tissue disease and diabetes mellitus should be made as soon as possible.

HOMOEOPATHIC MANAGEMENT

The selection of Homoeopathic medicine is based upon Symptom similarity (characteristic symptoms). Since the common symptoms of CVS overlap with many other symptoms of eye disorders. In such circumstances, the history of using computers, smart phones, e-readers, and other electronic devices becomes the major differentiating factor, and artificial sources of light, glare, strain from reading, and eye dryness become valuable distinguishing factors.

In aphorisms 5 and 7 of the Organon of Medicine, Dr. Hahnemann states that causative factors, i.e., exciting and maintaining causes for e.g., mode of living, habit, occupation, etc., play an important role in producing as well as

maintaining the disease. Hence, such factors must be removed, which will lead to recovery only, but in order to cure the patient, a suitable remedy must be selected according to homoeopathic principles, which will act dynamically.^[9]

Indications of Homoeopathic medicines for eye conditions:

ASARUM EUROPAEUM – Stiffness in eyes, eyes burn and inflamed and feel cold. Sensation in eyes as if they would be pressed while reading. Dryness of eyes. Asthenopia with headache of congestive type. Symptoms worse from sunlight and wind. Feels better in cold air or by application of water.^[10,11]

AGARICUS MUSCARIS – Weakness of vision and confusion of vision as from a mist before eyes. Twitching of eyeballs and lids of the eyes. Dim and Double vision. Difficulty in reading, as type seems to swim or move. Asthenopia from excessive strain of eyes. Burning and itching of eyelids < from touch.^[10,11]

ARNICA MONTANA – Paralysis of ocular muscles. Diplopia from trauma. Haemorrhage from retina. Dizziness of eyes on closing them and feels better by keeping them open. Eyes feel bruised and tired after work or sight seeing.^[10,11]

ARGENTUM NITRICUM – Blurring of vision. Aching and tiredness in eyes due to overwork and feels better on closing them. Cannot tolerate light especially in warm room. It is a great remedy for restoring power of ciliary muscles which are weakened.^[10,11]

CONIUM MACULATUM – Intolerance of light. Dimness of vision due to artificial light. The lines seem to move and pain in eyes while reading.^[10,11]

CROCUS SATIVUS – Constant blinking of eyes after eyestrain, and prolonged reading. Sensation in eyes as if cold air was rushing through eyes.^[10,11]

EUPHRASIA – Watery discharge from eyes. Lachrymation from eyes is acrid, associated with bland discharge from nose. Photophobia in sunshine and daylight.^[10,11]

GELSEMIUM – Heaviness and aching in eyes. Double vision while looking sideways. Blurring and dimness of vision. Constant discomfort in eyes even after use of accurate glasses. Prolonged negligence can lead to complete blindness.^[10,11]

JABORANDI – Eye strain from whatever cause. Headache and burning in eyes from slightest use of eyes. Blurred and dim vision for distant objects.^[10,11]

LITHIUM CARBONICUM – Hemiopia (Half vision), entire invisibility of right half. Dryness and pain in eyes especially right eye after reading and using them by candle-light.^[10,11]

NATRUM MURIATICUM – Bruised feeling in eyes and headache in school children due to eyestrain. Weakness and stiffness of ocular muscles. Pain in eyes while looking downwards. Confusion of letters, they run together while reading and writing.^[10,11]

PHYSOSTIGMA – Partial blindness with twitching and spasm of ocular muscles. Overuse of eyes causes irritability in eyes. Flashes of light. Haziness or blurring of vision. Intolerance of light.^[10,11]

PICRICUM ACIDUM – Pressure in eyes with headache from excessive mental exertion. Confusion and dimness of vision. Patient has sensation of sand in eyes. Eye symptoms worse from movement and artificial light. Patient is unable to keep his eyes open while studying.^[10,11]

RUTA GRAVEOLENS – Eyestrain due to overuse of eyes and followed by headache. Burning sensation in eyes with redness. Pain in eyes from sewing or reading fine print. Accommodation disturbed.^[10,11]

SENEGA – Burning in eyes with dryness

during reading, with sensation as if orbits are too large. Vision double relieved from bending head backwards. Eyes are very sensitive to light. Sight dazzling with confusion of letter during reading, better from rubbing or wiping them. [10,11]

TABACUM – Dimness of vision. Pain in the eyes. Sensation as if hair in the eye. Loss of vision on continuously looking at anything white. Sudden blindness without cause starting from one eye, mostly right eye. Complaints generally aggravates in the evening. [10,11]

CONCLUSION

With the increasing importance of computers and other mobile electronic gadgets in our daily lives, digital eye strain has unfortunately become an unintended side effect. The prevention and treatment of ocular discomfort symptoms will be aided by education, an understanding of risk factors, and suitably advised behavioral modifications in handling these devices for extended periods. The present scenario makes it clear that the homoeopathic treatment has gained a lot of popularity for managing a variety of eye disorders and diseases. Success in dealing such cases requires correct selection of similar remedies based on the totality of symptoms. With the selection of similar remedies based on the totality we can successfully manage such cases.

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