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RESEARCH ARTICLE

STUDY OF EYE ANATOMY (NETRA SHARIR) IN COMPUTER VISION SYNDROME.

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Abstract

Background: Computer Vision Syndrome (CVS) is a name given to the collection of symptoms which occur as a result of prolonged exposure to computer screens. In this paper we study whether CVS causes any anatomical changes in Eye.

Materials and Methods: In this study we have collected data from 30 patients suffering from CVS using Slit Lamp Microscopy and Ophthalmoscopy. We have also collected data from 30 people not suffering from CVS to serve as control group.

Results: Data collected from all patients is compared with control group's data. There are no unusual changes in anatomy are observed.

Conclusion: We have concluded that CVS does not cause any anatomical changes in the eye.

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Introduction:-

Computer Vision Syndrome affects millions of office workers, students and retired people who are computer users.

Nowadays it is becoming a common problem for the peoples spending more than 2 hr. on a computer each day. As our dependence on computers continues to grow an increasing number of peoples are seeking medical attention for eye strain and irritation.

According to the US National Institute for Occupational Safety and Health, about 90% of computer users experience the symptoms of Computer Vision Syndrome^[1].

Ayurveda have given prime importance to Netra.

चक्षुरक्षायां सर्वकालं मनुष्यैर्यत्नः कर्तव्यो जीविते यावदिच्छाः |

व्यथो लोकोऽयं तुल्यरात्रिन्दिवानाम् पुंसामन्धानां विद्यमानेऽपि विज्ञे || (अ. ह. उ. १३/९७)

Because the person without vision can't differentiate between light and darkness. Both day and night are same for him, even if he has a lot of wealth. So, every possible effort should be made to protect his eyes.

अग्निः सोमो वायुः सत्त्वं रजस्तमः पञ्चेन्द्रियाणि भुतात्मेति प्राणाः | (सु. शा. ४/३)

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Agni, Soma, Vayu, Stava, Raja, Tam, Panchindriya, Bhutatma are pranas.

Acharya Sushruta has mentioned that Netra as a Prana out of twelve Pranas.

Considering all these things, here I have decided to see whether Computer Vision Syndrome causes anatomical changes in eye anatomy (Netra) or not.

My study will guide students of Swasthvritta and Shalakyata-Tantra. And also, my study will be key factor for further study. Hence, I have selected this topic for my dissertation research work.

Material:-

Clinical Study: To collect dataset, slit lamp microscopy and ophthalmoscopy was performed on 30 patients with CVS and 30 people without CVS. The data from people without CVS is used as control. This study was conducted at Ashtang Ayurved Mahavidyalay, Pune, under the guidance of Dr. Walvankar (Ophthalmologist).

Inclusion Criteria:

1. Age: 20 to 35 years.
2. Sex: Both males and females are included.
3. Patients suffering from Computer Vision Syndrome.
4. Sample size is 30.

Exclusion Criteria:

1. Age: Below 20 year and above 35 year.
2. Patients suffering from other than Computer Vision Syndrome.

Following features are noted for each person

1. Vartmamandala (Eye lids)
2. Shuklamandala (Sclera)
3. Krushnamandala (Iris & Cornea)
4. Drushtimandala (Pupil & Lens)
5. Pakshnavartmagata sandhi (Anterior Lid Margin)
6. Vartmashuklagata sandhi (Fornix)
7. Shuklkrushnagata sandhi (Limbus)
8. Krushnadrushtigata sandhi (Pupillary Margin)
9. Kaneenika sandhi (Inner Canthus)
10. Apanga sandhi (Outer Canthus).

Methodology:-

Feature data from control group is used to establish normal range for each of the features. Every patient's feature data is then compared with the normal range, which was established earlier. This comparison is performed with the help of expert ophthalmologist. And data is collected in following tabular format.

Patient No.	Eyelids	Sclera	Iris & Cornea	Pupil & Lens	Anterior Lid Margin	Fornix	Limbus	Pupillary Margin	Inner Canthus	Outer Canthus
1	N	A	N	N	N	N	N	N	N	N
...
30	N	N	N	N	A	N	N	N	N	N

(N – Within Normal Limit, A – Abnormal)

Result and Conclusion:-

From gathered tabular data, it is observed that, most of the features are in normal limits. And as the Non WNL features are very insignificant we can safely conclude that CVS does not cause any anatomical changes in the eye.

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