

11. Efficacy Of Triphala Ghrita Netratarpan in Computer Vision Syndrome

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Abstract

In present era, the full computerization of a country is necessary for the progress. Present era can be defined as "Computer Age". It has seems that the work at computer is very intensive & most tiring therefore countries like Germany has included computer operational work in the list of the 40 most harmful trades for the health & restricted work at the computer should not exceed 50% of the working time. In the developing countries like India where the remuneration for the work are far from satisfactory & the young generation is aspiring for more material gains which necessitate them to work over time or have part time jobs in addition to their legitimate work. This situation adds up to the works with the computer which badly affects their health.

Computer Vision Syndrome (CVS) is the complex of eye and vision problems related to near work which are experienced during or related to computer use. CVS is characterized by visual symptoms which result from interaction with a computer display or its environment. In most cases, symptoms occur because the visual demands of the task exceed the visual abilities of the individual to comfortably perform the task.

In cvs following Signs & Symptoms occurs. they are Presence of excessive debris & mucus strands in the tear film., Reduced or absence of marginal tear strip. Lusterless ocular surface - xerosis., Lid Dry & Rough touch. And Symptoms are Itching, Burning sensation, Blurred vision, Dryness of eyes, Redness of eyes, Pricking Pain., Foreign body Sensation, Difficulty in opening & closing the lids.

For study we have taken Trifala Ghrita Tarpan for 7 days in three consecutive months for 30

patients in treated group and in controlled group eye exercises given like palming, eye movements for 7 days in three consecutive months for 30 patients. The results are very much satisfactory in treated group as compared to controlled group. The details will be given in detail in full research paper.

INTRODUCTION :-

Eye is considered to be the most important and noblest sense organ of human body. In Ayurveda Eye is one of the Dynanedriya which has dominance of Tej Mahabhut. In today's era of 21st century, the full computerization of a country is necessary for the progress. Like "Stone Age" today era can be defined as "Computer Age". It has seems that the work at computer is very intensive & most tiring therefore countries like Germany has included computer operational work in the list of the 40 most harmful trades for the health & restricted work at the computer should not exceed 50% of the working time. Other developing countries are also following the suit. In the developing countries like India where the remuneration for the work are far from satisfactory & the young generation is aspiring for more material gains which necessitate them to work over time or have part time jobs in addition to their legitimate work. This situation adds up to the works with the computer which badly affects their health.

Visual display terminals are pc in office, Laptop to them who are in marketing. watching TV, prolong use of mobiles. Hence such long term & repetitive exposure can damages eyes. This damage is called as **Computer Vision Syndrome** in modern terminology. These ophthalmic health problems have been extensively investigated by American

optometric association of 32 thousand ophthalmologists and opticians which concluded that working at the computer is unnatural for human eyesight & 70-75% of all users who work with the computers have problems with the eyesight. Lot of complaints received from the computer operators about sharp pain in the eyes, blurring of vision and problems about convergence as constant gazing at the monitor leaves hardly any scope for blinking causing stress on eye.

While reading a text from a paper the human eye takes the reflected image on which the light falls, where as reading the text on the computer screen one has to look at the bright source of light. While operating computer, one has to do both things simultaneously. This results into stress on eyes, as the eye has to adjust with light from paper & bright light of monitor simultaneously for thousand times a day. This has a negative influence on the eyesight. In addition to this brightness of illuminated monitor the light emitted by the monitor consists of X-rays, UV rays and IR rays along with the wide range of electromagnetic waves of different frequencies. In the presence of several computers in a small room, ion quantity may increase. Superfluous quantity of positive ions is considered unhealthy for human beings, as these ions affect the circulation of blood & have effect on practically every organ in the body especially vital organs like brain, heart, eyes, kidneys & gonads.

The American Optometric Association defines Computer Vision Syndrome is caused by extensive use of computers which reduces the blinking rate of a person and due to this water flow across the eyes is reduced drastically and leads to dryness. People in the age group of 18 to 30 years are at the risk of being affected by this syndrome if they spend lot of time on computer. Computer Vision Syndrome (CVS) is the complex of eye and vision problems related to near work which are experienced during or related to computer use. CVS is characterized by visual symptoms which result from interaction with a computer display or its environment. In most cases, symptoms occur

because the visual demands of the task exceed the visual abilities of the individual to comfortably perform the task. Vision problems occur frequently among video display terminal (VDT) workers & VDT associated vision problems are more significant than the musculoskeletal disorders

Other causes of Computer Vision Syndrome:-

- ▶ Vitamin – A deficiency (Xerophthalmia), chemical burns
- ▶ Constant staring at a particular object such as T.V., Computer etc.
- ▶ Environment – dry, dusty, windy climate.
- ▶ Medication – antihistamines, birth control pills.
- ▶ Infection – systemic diseases such as lupus, rheumatoid arthritis
- ▶ Long-term use of contact lenses
- ▶ Hormonal changes

Signs & Symptoms Of Computer Vision Syndrome:-

Signs -

- ▶ Presence of excessive debris & mucus strands in the tear film.
- ▶ Reduced or absence of marginal tear strip.
- ▶ Lusterless ocular surface - xerosis.
- ▶ Lid – Dry & Rough touch.

Symptoms-

- ▶ Itching (Netrakandu)
- ▶ Burning sensation.(Netradaha)
- ▶ Blurred vision. (Drishtivaishmyata i.e.Dhusardrishtita)
- ▶ Dryness of eyes.(Netrarukshata)
- ▶ Redness of eyes.(Araktnetra)
- ▶ Pricking Pain (Netrashool)
- ▶ Foreign body Sensation. (Abhighatate)

► Difficulty in opening & closing the lids(Krichhonmilan)

.Materials and Methods:-

For this study we have taken 30 patients in experimental and in controlled group respectively. We have taken randomly patients coming in OPD for computer vision syndrome .For experimental group we administered Triphala Ghrita Netratarpan for 7days in three consecutive months for 30 patients and for controlled group eye exercises given like palming ,eye movements for 7days in three consecutive months for 30 patients.

Criteria of Selection :-

For this study we have taken 30 patients in each experimental and control group irrespectively of age, sex, marital status, educational status and nature of work.

Criteria of Rejection:-

Those having local and systemic infective disorders of eye,cataracts glaucoma, degenerative disorders, DM ,Hypertension, cardiac and renal disorders.

Selection of Drug:-

As Per Ashtanga Hridaya, B.R.64/246-256.Netrarogadhikar, Sharangdhar samhita Madhyam khanda 9/65-69 We have selected Trifala Ghrita for Netratarpan. This Siddha Ghrita and instruments are autoclaved daily before procedure. This drug having Sarva Netra Rogaghna properties.Due to these properties it inhibits the sign and symptoms of computer vision syndrome by alleviating Vayu and it nourishes the eye and improves the vision.

Time Of Tarpan :-

According to Sushrut (S.U.18/6-11)it is of two types.one as per dominance of Dosha,and another as per vyadhi in different layers of eyes. It comes near about 15-20 minutes. Thus we have done Tarpan for about 15-20minutes 7days in three consecutive months for patients in experimental group.

Mode Of Action of Triphala Ghrita in Tarpan:-

According to modern pharmacology various drugs used in the form of eye drops and ointments enter the eyeball by passing through the cornea. This penetration depends upon the permeability of the various layers of cornea. The epithelium and endothelium is highly permissible for lipid content as compared to stromal layer .Thus fat soluble drugs readily penetrate these layers, however only water soluble drugs can penetrate the stromal layer. Thus for complete penetration of the drug, It should be lipophilic and hydrophilic.

The Triphala Ghrita which is generally used for Tarpan is saturated with decoction of (Triphala) indigenous drugs and hence it contains both lipid and water soluble constituents of Triphala .Thus it has lipophilic as well as hydrophilic properties .hence it has got very good penetration through various layers of the cornea.

Clinical Study :-

We have taken 30 patients randomly in Experimental Group and Control Group respectively .

Table-1 Showing Agewise Distribution Of 60 Patients Of Computer Vision Syndrome

S.N.	Age Group	No.Of Patients			Percentage		
		EG	CG	Total	EG	CG	Total
1	Balya(1-16yrs)	5	3	8	16.67	10.00	13.33
2	Madhyam(17-60yrs)	22	27	49	73.33	90.00	81.67
3	Vridhdha above 60yrs	3	0	3	10.00	0.0	05.00

Table-2 Showing Sexwise Distribution Of 60 Patients Of Computer Vision Syndrome

S.N.	Sex	No.Of Patients			Percentage		
		EG	CG	Total	EG	CG	Total
1	Male	23	14	37	76.67	46.67	61.67
2	Female	07	16	23	23.33	53.33	38.33

Table-3 Showing Marital status Of 60 Patients Of Computer Vision Syndrome

S.N.	Marital status	No.Of Patients			Percentage		
		EG	CG	Total	EG	CG	Total
1	Married	18	20	38	60.00	66.67	63.33
2	Unmarried	12	10	22	40.00	33.33	36.67
3	Widow	00	00	00	0.00	0.00	0.00
4	Widower	00	00	00	0.00	0.00	0.00

Table-4 Showing Educational status Of 60 Patients Of Computer Vision Syndrome

S.N.	Educational status	No.Of Patients			Percentage		
		EG	CG	Total	EG	CG	Total
1	Uneducated	00	00	00	0.00	0.00	0.00
2	Educated						
	a)Primary	02	00	02	06.66	0.00	03.33
	b)High school	06	04	10	20.00	13.33	16.67
	c)UG	14	24	38	46.67	80.00	63.33
	d) PG	08	02	10	26.67	06.67	16.67

Table 5 Showing Nature Of Work Of 60 Patients Of Computer Vision Syndrome

S.N.	Nature Of Work	No.Of Patients			Percentage		
		EG	CG	Total	EG	CG	Total
1	Manual	02	00	02	06.66	00.00	03.33
2	Sedentary	24	27	51	80.00	90.00	85.00
3	Labour	00	00	00	00.00	00.00	00.00
4	Travelling	02	02	04	06.66	06.66	06.67
5	Standing	02	01	03	06.66	03.33	05.00

Table-6 Showing Incidence of Symptoms in 60 Patients Of Computer Vision Syndrome

S.N.	Incidence Symptoms of	Experimental Group		Control Group		Total	
		No.of Patients	%	No.of Patients	%	No.of Patients	%
1	Netrarukshata	30	100.0	27	90.00	57	95.00
2	Krichhonmilan	28	93.33	27	90.00	55	91.66
3	Drishtivaishmyata	27	90.00	24	80.00	51	85.00
4	Netradaha	25	83.33	25	83.33	50	83.33
5	Netrashool	24	80.00	25	83.33	49	81.66
6	Netrakandu	25	83.33	26	86.66	51	85.00
7	Araktnetra	26	86.66	27	90.00	53	88.33
8	Abhighatate	23	76.66	24	80.00	47	78.33

Criteria for symptom score:-

The method of symptom score has been described by Malagi K.J(1985) and Kagade S.T.(2000).This method is described as follows.

1.Two marks was given to each symptom present before the treatment.

2.One mark was given to each symptom reduced remarkably after the treatment

3.zero mark was allotted to complete relief in the symptoms.

4.two marks were allotted to the symptoms which did not show any improvement after the completion of treatment.

Table-7 Showing Effect of Therapy on Symptoms Score in 60 Patients Of Computer Vision Syndrome

S.N.	Symptoms of CVS	Symptoms Score of Experimental Group				Symptoms Score of Control Group			
		B.T.	A.T.	Diff	Relief%	B.T.	A.T.	Diff	Relief%
1	Netrarukshata	60	00	60	100.00	54	50	04	07.40
2	Krichhonmilan	56	02	54	96.42	54	46	08	14.81
3	Drishtivaishmyata	54	00	54	100.00	48	34	14	29.16
4	Netradaha	48	02	46	95.83	50	38	12	24.00
5	Netrashool	48	00	48	100.00	50	44	06	12.00
6	Netrakandu	50	00	50	100.00	52	40	10	19.23
7	Araktnetra	52	00	52	100.00	54	50	04	07.40
8	Abhighatate	46	00	46	100.00	48	30	18	37.50

Effect of Therapy on Symptoms Score:-

According to Effect of Therapy on Symptoms Score for Netrarukshata Before Treatment was 60, After Treatment it is 0. The relief of percentage in Experimental Group was 100%. In the same manner Krichhonmilan Before Treatment it was 56, After Treatment it is 02. The relief of percentage in Experimental Group was 96.42%. Drishtivaishmyata Before Treatment was 54 After Treatment it is 0. The relief of percentage in Experimental Group was 100%. Netradaha Before Treatment was 48 After Treatment it is 02. The relief of percentage in Experimental Group was 95.83%. Netrashool Before Treatment was 48

After Treatment it is 0. The relief of percentage in Experimental Group was 100.00%. Netrakandu Before Treatment was 50 After Treatment it is 0. The relief of percentage in Experimental Group was 100.00%. Araktnetra Before Treatment was 52 After Treatment it is 0. The relief of percentage in Experimental Group was 100.00%. Abhighatate Before Treatment was 46 After Treatment it is 0. The relief of percentage in Experimental Group was 100.00%. (Table-6)

In case of Control Group the relief of percentage in Abhighatate, Netradaha, Drishtivaishmyata is 37.50%, 24.00%, 29.16% respectively. (Table-6)

Table 7 Showing The Effect of Therapy on various Parameters By Paired t Test in Both Groups Of Computer Vision Syndrome

S.N.	Parameter	Group	Mean±Sd		Diff of Mean (BT-AT)	SEd	Paired t	P
			BT	AT				
1	Netrarukshata	EG	2.867±0.346	0.333±0.479	2.533	0.115	22.037	
		CG	2.633±0.490	1.333±0.547	1.300	0.128	10.126	
2	Netradaha	EG	2.800±0.407	0.433±0.774	2.367	0.176	13.424	
		CG	2.667±0.479	1.200±0.714	1.467	0.171	8.561	
3	Netrashool	EG	2.867±0.346	0.267±0.450	2.600	0.103	25.250	
		CG	2.700±0.596	0.900±0.803	1.800	0.162	11.104	
4	Araktnetra	EG	2.933±0.254	0.167±0.379	2.767	0.079	35.179	
		CG	2.767±0.504	0.833±0.747	2.100	0.154	13.596	

By shirmer's test

0-wetting > 16 mm

1-wetting 12-16mm

2-wetting 06-12mm

3- wetting < 6mm

1. Redness(Araktnetra)-

No Redness - 0

Palpebral conjunctival congestion -1

Bulbar conjunctival congestion - 2

Both palpebral and bulbar conjunctival congestion - 3

2. Burning sensation(Netradaha)

No burning sensation 0 [5, 6]

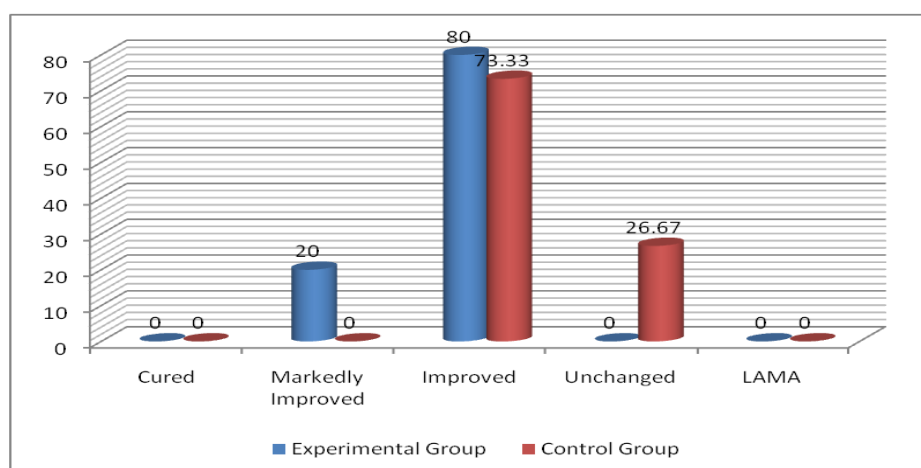
Burning sensation on exposure to sunlight 1 [7]

Intermittent burning sensation 2

Continuous burning sensation 3

Table 9 Showing Effect of Therapy in 60 Patients Of Computer Vision Syndrome

Sr.No		Experimental Group		Control Group	
		No.of Pts	Percentage	No.of Pts	Percentage
1	Cured	00	00.00	00	00.00
2	Markedly Improved	06	20.00	00	00.00
3	Improved	24	80.00	22	73.33
4	Unchanged	00	00.00	08	26.67
5	LAMA	00	00.00	00	00.00

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