

Protocol of the Effect of Eye Exercise, Triphala Kwath Eye Wash & Triphala Ghrita Systemically On Computer Vision Syndrome

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Abstract: *Today, due to online working platform, everyone requires computer device and used for long time. Resulting multi-factorial disease called Computer Vision Syndrome. In modern lifestyle, every person is getting affected due to radiation may be due to VDT (Video display terminals), computer, T.V. and CFL lamp, mobile etc. Symptoms known by video display terminal users include many symptoms, thus term “Computer Vision Syndrome”. In modern Science, lubricating medicine (eye drops) available but has not specific effect for long time on CVS. Ayurveda deals with modification in the lifestyle which is beneficial for the individual to remain healthy. Hence eye exercise, , Triphala Kwath eye wash and Triphala Ghrita sytemically will be use for the treatment of CVS . Objectives To study the efficacy of combine effect of Eye Exercise + Triphala Kwath Eye Wash +Triphala Ghrita Systemically in the management of Computer Vision Syndrome. Methodology- The study is Control Randomised clinical observational study. method - 100 patients of CVS will be treated by randomly dividing them into three, Group I having 40 patients will be subjected to Eye Exercise + Triphala Kwath Eye Wash +Triphala Ghrita Systemically. Group II having 40 patient will be subjected to Eye Exercise + Triphala Kwath Eye wash. Groups.III having 20 patient will be subjected to Exercise + Instillation distilled (demineralised and sterilized) water patients will be treated. Results The result will draw from the study of observation after treatment Conclusion The Conclusion drawn from the observation and result.*

Keywords: *Ayurveda, Multifactorial disease, Eye Strain, Dry tired or sore eyes, CVS*

1. INTRODUCTION

Ayurveda deals with modification in the lifestyle which is beneficial for the individual to remain healthy. In modern lifestyle every person is getting affected due to radiation may be due to VDT (Video display terminals), computer, T.V. and CFL lamp. Maharishi working on Ayurveda search more effective treatment for health. It is free from harmful side effects and can eliminate diseases from its source (1). In fact it is estimated that the 75% of all jobs in the year 2010 involved computer usage (2).

Because of this extensive use of computers, many studies has been undertaken and the large majority of research has been addressed to the questions of radiation levels from VDTs, known to emit many types of radiation including x-radiation, optical radiation, radio frequency radiation, very low frequency radiation, and extremely low frequency radiation. Studies have shown, however that eye-related symptoms are the most frequently occurring health problems among VDT users (3) (4) (5).

The main visual symptoms reported by VDT users include

Dry, sore tired eyes, Itching of Eye, Headache, burning sensation, Blurred Vision, Shoulder back Neckpain, Strain, redness thus term the phrase “Computer Vision Syndrome”(CVS) (6) (7).

According to many reports, the diagnosis, treatment of symptom costs almost many dollars each year. As Computer users become marked aware of CVS, it is important that ophthalmologists should be attentive to this rapidly evolving disorder. Though new diseases are introducing in human life Ayurveda still remain unchanged.

A good vidya cannot nominate the disease many time but he was not discouraged, He cannot give exact name of disease. He should treat the disease properly but cannot give name of disease (8)

Increase in the usage of computers, the term Repeated Stress Injury (RSI) has found place in the contemporary medical science. Computer vision syndrome is an RSI medical jargon in general and vision problem in particular. American optometric Association (AOA), “CVS is the complex of the vision and eye and problems relation to experience during to VDT terminal use”. It is approximately many employe directly use computers by staring into monitor for hours without taking the break (9) (10) (11).

CVS consists due to characters are most concentrated at their centers and bent in intensity toward their edges. Ocular perceivers perpetually peregrinate to the reposing point of accommodation (RPA), and then strain top regain fixate on the screen. This perpetual flexing of the ocular perceivers focusing muscles engenders fatigue and the dry tired ocular perceivers feeling In Ayurveda – “the holistic system of medicine and glorious science of life,” there are explanations pertaining to various remedies of ocular manifestations along with the potency of improving vitality and defense mechanism of the structures involved in causing the disease. Triphala Ghrita one such formulation which not only cures the disease but also acts as a prophylactic measure and is a very potent rejuvenator that revitalizes all the structures of eye.(12)(13)

Pathogenesis of CVS in many respects can be consider in the term musculoskeletal disorder referred to (RSI) repeated Stress injury. Ocular motility, accommodative and Convergence disorders are problems with neuromuscular control mechanisms and are responsible for CVS.

“Serve indriyanamnayanampradhanam.”

Eyes are the best gift of nature to the mankind. Each part of the human body has a very specific purpose; importance of vision was recognized by our ancient Acharya .So they recommended some procedures to be practiced every day to maintain, preserve and improve vision. For maintaining good vision therapeutic measures like kriya kalpas, shamanoushadis, rasayanas which improve the homeostasis and ocular vitality have been explicitly explained in our classics. Any disease has to be treated taking into consideration many aspects such as elimination of causative factors, keeping in check all the predisposing factors, reversing the pathological manifestation in the structures affected along with systemic manifestations if any, avoiding side effects or adverse effects caused by treatment, improving immunity and vitality of body and structure involved and finally avoiding its reoccurrence. Hence taking into consideration all these factors, the study of this newly invented disease has become very essential along with an appropriate remedy. Along with this, a suitable prophylactic measure is also required which can reduce the threat created by this inevitable problem of computer users and to check its occurrence. This problem does not only exist among few but has become a burning issue globally demanding immediate attention (14).

In Many studies as the formulation was water extract absorption was rapid but dispersion of drug and its retention inside the tissue for its effectiveness of action was not to a greater extent as they get excreted after stipulated time depending on circulation (15).

In the Treatment of Netra Tarpan 4-5 hours required to normalized eye work. So daily work gets hampered so it was decided that Triphala Ghrita should be administered systemically instead of Netra Tarpan & Triphala Kwath eye wash for local effect on Eye is given along with eye exercise (16).

Problem Statement

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Previous work done on Computer/Screen Vision Syndrome

- 1) Clinical study of CVS with its management by Triphala Aschothana was carried out by Dr. Chandrashekar of GAMC Bangalore under RGUHS in 2003. Conclusion was given as formulation was potent in curing as well as improving the vitality of eye in many cases. Finally it was concluded stating that further research is necessary to discover the procedure in which maximum benefits of the formulation can be achieved.
- 2) Study of CVS and its management by Aschothana of Triphala Ark was taken up by Dr. Gangamma in Jamnagar Ayurvedic College in 2008. The effectiveness of Triphala as Ark was again proved but the procedure of administration needed of further advance method.
- 3) Clinical study of CVS and its management with Mahatriphaladi Ghrit by Vd. Vishwanathan Kavita at Tilak Ayurvedic Mahavidyalaya Pune. This treatment was again potent, formulation along with cure, prophylaxis and maintenance of health of eye. But Netra Tarpan Kriya Kalpa takes 4 to 5 hours to do normal work so decided to take only systemically and Triphala Kwath eye wash with eye exercise.
- 4) To study the effect of Netra Tarpan & Ergonomics in the victims of CVS working with visual display terminal (VDT) by Dr. Prashant Thorat in 2010 at Dr. G.D. Pol foundation YMT Ayurved College, Kharghar Navi Mumbai. Combination of Triphala Ghrit Netra Tarpan and ergonomic showed excellent result during study period & continued improvement, but in further study there is need to study patho physiology of CVS at very minute level strengthen their claim multi centric study on large scale at different centers must be carried out.
- 5) Standardization & clinical assessment of efficacy of Saptamrut Loha to CVS. Conclusion was that Saptamrut Loha may be the 1st drug of choice to CVS as a systemic medicine, but this oral drug can be used along with local treatment as supportive therapy to improve its clinical efficacy.

AIM & OBJECTIVES:

Aim

To evaluate the combine Effect of Eye Exercise, Triphala Kwath Eye Wash & Triphala Ghrita Systemically on Computer Vision Syndrome

Objectives

1. To select the patients having CVS as well as doing computer work more than three hours.
2. To provide easily available, efficient and cheaper medicine than modern medicine.
3. To recommend appropriate quick exercise at appropriate time intervals for extensive computer users testing of Hypothesis for Treatment mean difference between the Group & Within the Group

Hypothesis For Research Question

Hypothesis Testing in Two Way

1. Compare the result Within Same Treatment Group on different Day – Statistical method - **T paired Test** will be Used .
2. Compare the Result With different Treatment group on Same day Result - Statistical method – **ANOVAs Method** will be used & **Fisher_ test** the least significant difference test for Compare mean
 1. Compare the result Within Treatment(same) Group on different Day – Statistical method - T pair Test will be used for test hypothesis

Null Hypothesis (Primary Hypothesis) H_0 = There is no significant effect of Eye Exercise, Triphala Kwath Eye Wash & Triphala Ghrita Systemically On Computer Vision Syndrome (Within Same Group) there is significant difference in different Symptom of CVS before treatment & follows up after e.g 42th day of treatment ($p > 0.05$) is true & Statement is accepted (if $p > 0.05$)

Alternative Hypothesis H1 (Secondary Hypothesis) H_1 = There is significant effect Of Eye Exercise, Triphala Kwath Eye Wash & Triphala Ghrita Systemically On Computer Vision Syndrome (Within Same Group) there is significant difference in different Symptom of CVS before treatment & follows up after e.g 42th day of treatment ($p < 0.05$) is true & Statement is accepted (if $p < 0.05$)

Trial design:

Group I :- Eye Exercise + Triphala Kwath Eye Wash (5g Triphal Bhard for one time) 10ml in BT (Morning & Evening) + Systemically Triphala Ghrita 20 gm BD with Koshnajaal in morning (pragbhakt) before meal and after meal at night before sleep (Nisha) For 42 day

Group II :- Eye Exercise + Triphala Kwath Eye wash (5g Triphal Bhard for one time) 10ml in BT (Morning & Evening) For 42 day

Group III :- Eye Exercise + Instillation distilled (demineralised and sterilized) water or eye wash for 42 day

Methodology:

1. Study type: The study Control Randomised clinical observational study method .
2. Study setting: The study population was selected from patients attending Netra Vibhag of Shalaky Tantra department of college .
3. Sample size: The total sample size will be 100 . Group I, II will be of 40 pts & Group III will be 20 patient
4. Sampling technique: 100 patients of CVS will be treated by randomly dividing them into Three groups.
5. Study design: As given in trial design

6. Diagnostic criteria: The diagnosis is made by slit-lamp examination. schirmer's test in millimeter to measure the extent of dryness of eye: Dryness Status distribution by different modality Groups Before Treatment & After treatment. Other detail examination will be carried out and documentation would be done.. VDT user /computer clinical Performa will be based on questionnaire The diagnosis is most often clear clinically

Inclusion criteria

1. Computer user between the age group 18- 35 yrs.
2. Daily Computer user using computer for 3 hrs continuously per day or more
3. Eye and or vision related symptoms discomfort subjectively attributed to VDT/computer use

Exclusion criteria:

Patient having age less than 18 year& greater than 35 year using computer more than 3 hours where not included in study

Dis-continuation Criteria:

If any negative effect of treatment is seen

Any acute or severe illness

TREATMENT SCHEDULE & METHODOLOGY

100 patients of CVS were randomly selected and equally divided into the following two groups.

Group I :- Eye Exercise + Triphala Kwath Eye Wash (5gTriphal Bhard for one time) 10ml in BT (Morning & Evening) + Systemically Triphala Ghrita 20 gm BD with Koshna jal in morning (pragbhakt) before meal and after meal at night befor sleep (Nisha)For 42 day (40 Sample)

Group II :-Eye Exercise + TriphalaKwath Eye wash (5gTriphal Bhard for one time) 10ml in BT (Morning & Evening) For 42 day (40 Sample)

Group III :- Eye Exercise +Instillation distilled (demineralised and sterilized) water or eye wash for 42 day (20 Sample)

Method of prepration of Triphala Ghrita:

Triphala Ghrita claimed as an most potent preparation for all ocular pathological conditions irrespective of doshas involved, prepared as per Sharangdhar Sahmita (शा .सं.म.खा .९.६६) (17),(18),(19),(20).

The Ready made Ghrita as per SharanderSahita is not available in the marketThis is to raw material brought from pharmacy of authenticated in our college Rasshastra BK Department College Lab Detail of calculating Drug is given in Table 1

TriphalaGhrita Content Rate Calculation Chart					
S.no	Name / Ingredient	Part Use	Proportion	Rate Per Kg	Amount
1	Cow's Ghirita	Ghrita	768 ml.	700	537.6
2	Aja Kshira Goat Milk	Milk	768 ml.	60	46.08

3	Bhrungraj	Panchang	768 g	65	49.92
4	Vasa	Lf	768g	50	38.4
	Triphala		768g	120	92.16
5	(Embelia officinal)/Awla	Pericarp			
6	Terminalia chebula P./Haritaki /Hirda	Pericarp			
7	(Termanaliabellerica)Bibhitak ./ Behada	Pericarp			
8	Pimpali	Fruit	12 g	800	9.6
9	Shwetchandan	Stem	12 g	500	6
10	Bala	Panchang	12 g	600	7.2
11	Shatavari	Root	24 g	600	14.40
12	Medasakh	Stem	12 g	700	8.4
13	Kalimirch	Fruit	12 g	800	9.6
14	Sunth	Rhizome	12 g	600	7.2
15	Kamal	Flower Bud	12 g	650	7.8
16	Punarnava	Panchang	12 g	500	6
17	Halad	Rhizome	12 g	140	1.68
18	Daru Haridra	Stem	12 g	200	2.4
19	Mulethi	Stem	12 g	600	7.2
20	Manuka	Fruit	12 g	400	4.8
21	Chini	Stem	12 g	50	0.6
22	shendhav 12g		12 g	40	0.48
22	Labour & Fuel Charge				100
	Total Ghirita was prepare		700ml		957.52
	Rate per Kg		1 Kg		1357.6

Method of preparation Of TriphalaKwath

Procedure for making TriphalaKwath 5 gm coarse powder of each

Triphala Rasa (Triphala) KwathContain following contain

AmalkiEmbllica officinalis

Terminalia belerica P

Terminalia chebula P.

All ingredient are added 16 parts of water i.e 80 ml,boiled and reduced to1/4 th part 20ml, filter with filter paper and used wash both Eyes

Bhaishajya Ratnakar kashayaprakarna Sanskrit verse explain the product

Eye Exercise Recommended in Following Figure 1



Figure 1

2. Remember Rule 20-20-20 take break after 20 Min see on 20 feet For 20 Second



Figure 2

Strategies to improve adherence to intervention protocols. If no improvement seen then Drug intervention may change from BD TO TD means 20gm to 30 gm

Primary Outcomes: -CVS which include Dry, sore or tired, Strain, redness ,Itching Burning in Eye will be reduce (21) (22)

Secondary Outcomes: CVS which include Redness of Eye , Headache , Blurred Vision ,Neck ,shoulder ,or back pain will be reduce

Harm outcomes CVS causes will increase

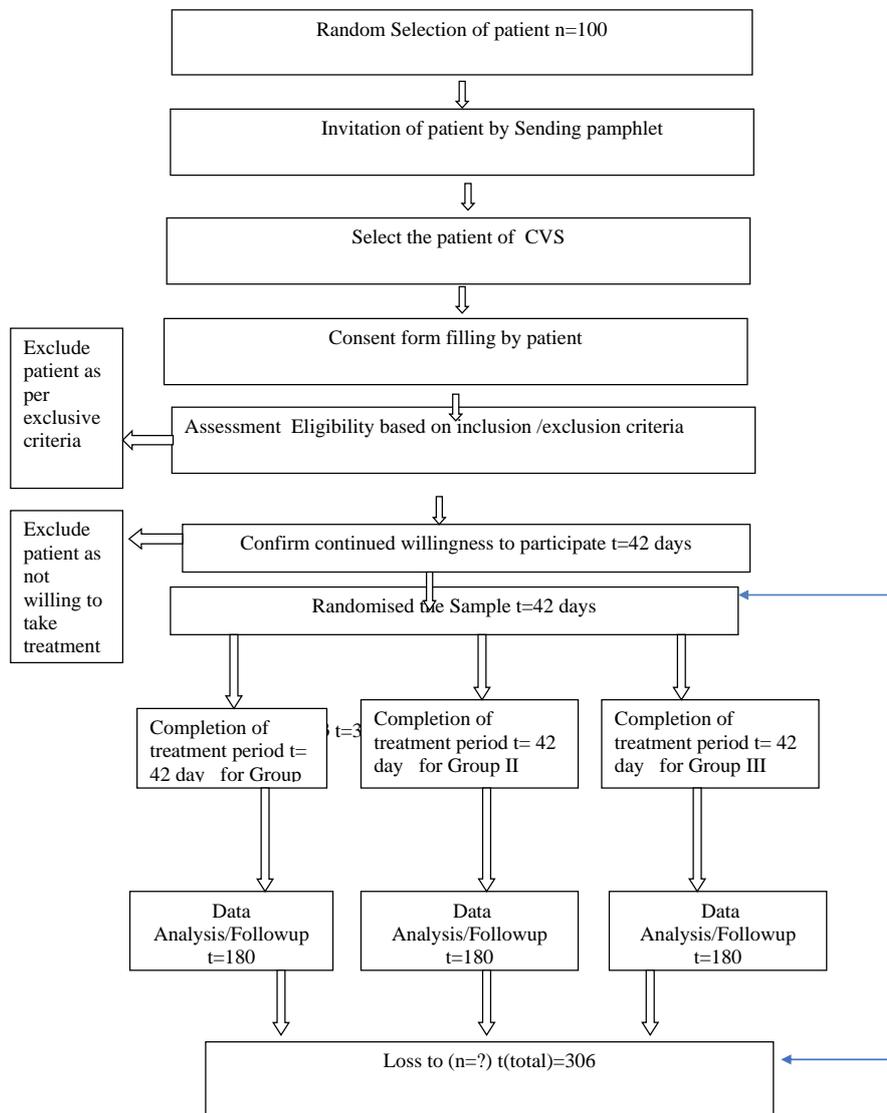
Assessment Criteria: Patients were assessed with subjective and objective parameters formulated for CVS before and after treatment.

Table 2 Assessment criteria

Sr No.	Type of lesion	0 Normal	1 Mild	2 Moderate	3 Severe
	Dryness (Schemer' Test)	>15 mm/ Normal Dryness	14 – 9 mm /Mild Dryness	8 – 5 mm /Moderate Dryness	< 4 mm/ Severe Dryness
	Redness	No Redness in eye	Occupy 1 % to 25% Redness in eye	Occupy 25% to 50% Redness in eye	Occupy > 50% Redness in eye

All other Symptoms are considered as subjective criteria

Flow chart 2.1 Participant timeline Fig 3



Sample size formula with desired error of margin:

$$n = \frac{Z * SD(\sigma) / d)^2}{}$$

n= Sample Size

Z = Value at Specified level of confidence or desired degree of precision

SD (σ) = Standard deviation of population

d = Difference between population mean
Z=2.58 at 1% level i.e 99 % Confidence of Index

$$SD (\sigma) = 4$$

$$n = ((2.58*4) / 2)^2$$

$$n = (5.16 = 6)^2$$

n= 36

n=40

Where,

• P = Prevalence (from previous studies) •

Q = 100 – P•

d = allowable error (5-20% of P)

IN computer Vision syndrome

• P = Prevalence (from previous studies) = 90%

Q = 100-90 =10

If d =10% allowable error of p

d = 10 (10% P=90)

N=4*90*10/10*10

N=36

Recruitment:By Taking the camp in Urben area offices/School ,By Distributing pamphlets at public places like Eye Hospital , Government Hospital,BusStand,Rly Station

Methods: Assignment of interventions (for controlled trials):

Methods for justification The following figure 4 shown the justification
Methods for justification

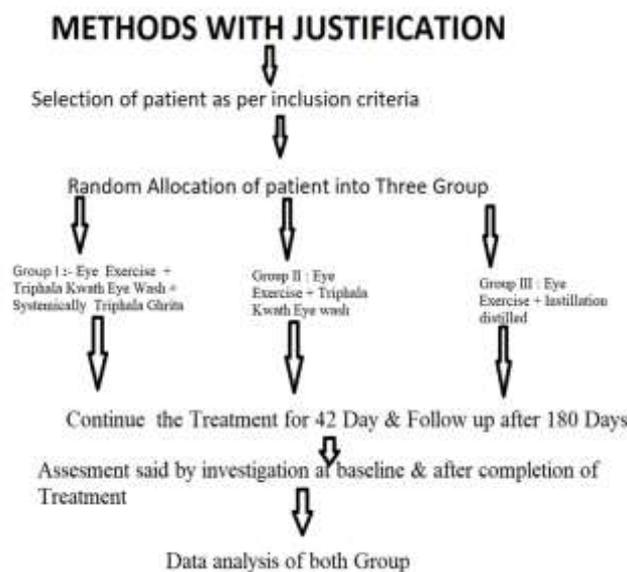


Fig 4: Data collection, management, and analysis methods:

TECHNIQUE OF DATA COLLECTION:

The patient having CVS were selected for the study as per inclusive and exclusive criteria. Detail history in particular format was taken with present complaints, visual acuity and other ocular examination is done thoroughly. Patients were examined after every Seven days or earlier if required as per condition of CVS symptoms If any patient does not responds to treatment in stipulated time period or may get complication, that patient was referred to higher centre for the benefit of patient as well as to avoid complications. These patient were not selected in study. After healing CVS patients were thoroughly examined on slit lamp and

findings were documented including complication during the course of healing like Redness ,Eye Strain ,Headache will magnify .

Data collection methods:

Case Record Form is design to collect the Data

Plans to promote participant : To create awareness about benefit of the treatment by distributing pamphlets in Distributing pamphlets at public places like Eye Hospital , Government Hospital,BusStand,Rly Station ,Banks,School

Statistical methods:

The data will be analyzed by using appropriate statistical methods- StudentT Test , Anova Test , Dropout patient will be replaced with new patient

Ethics and dissemination:

Research ethics approval: Plans for seeking research ethics committee/institutional review board (REC/IRB) approval.

Protocol amendments:

Standard procedure of Triphala Ghrita BD systemically If required result does not get then procedure of Triphala Ghrita TD systemically .

Consent or assent:

PI will obtain consent on consent form

Confidentiality will be maintained

Declaration of interests: None

Access to data: On Demand will be provided

Ancillary and post-trial care: If patients suffers harm, then treatment of Modern science will be provided urgently to trial participant.

Dissemination policy: Specialty camp will be taken, registered patients of CVS after healing will be collected.

Expected Results: Result will be drawn on the basis of observation and detail will written in paper .

Discussion:

Aiming to give Relief by an Ayurveda approach is the reasons behind selection of the topic as research work. According to Bhavprakash and Raj nighantuvibhitak is Caksusya or has netrahit property. The therapeutic medicine contains Triphala Ghrita . According to Ayurveda fundamental, CVS may consider as vata-pitta pradhanvyadhi. Amalakai pacifies vata due to the amla rasa, pitta due to madhura and sheeta and kapha by ruksa and kasayatwa. Haritaki, due to amla it pacifies vata, due to madhura and tikta rasa pitta and kapha by ruksa, kasaya. Vibhitaki is kapha-pitta hara and caksusya. Ghrita is beneficial for eye. It has tridoshaghna property and it reduces burning sensation and dryness of eye due to sheetavirya and snigdha guna. Key results – Triphala Ghrita will prove best drug to remove Dryness of Eye main cause of CVS.

Observations will be made during the treatment and also during follow up period upto 42 days with intermittent recording of the conditions in CRF . Before Treatment (D₀) after treatment 7th 15th 21th ,28th ,35th ,42nd completion of treatment., Follow-up after 180th days from starting of treatment.

Conclusion: Conclusion will be drawn on the basis of results.

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