

THE EFFECT OF EYE EXERCISE AND TRIPHALA KWATH EYE WASH ON COMPUTER VISION SYNDROME

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ABSTRACT

Computer Vision Syndrome is a serious problem for the millions of people who spend hours in front of computer. In modern lifestyle every person is getting affected due to ra-diation may be due to VDT (Video display terminals), computer, T.V. and CFL lamp. Being a disease of modern era, it is difficult to get the nearest resembling disease in Ayurveda excellence. Ayurveda being the science of life, everything including ideal life style has been mentioned in it in the form of Dinacharya, Rituchariya, Ratrichariya etc. Computer vision syndrome (CVS) is a disease related to modern vyadhi and it is expected that relief can be obtained by following Dinacharya etc. Present study was planned with an aim and objectives, to compile and commemorate the references of computer vision syndrome and its related diseases in Ayurveda excellence, postulate the Samprapti Gha-taka (Patho-physiology) of computer vision syndrome according to Ayurveda, hypothetically and rule out the effect of Eye Exercise, Triphala Kwath Eye Wash in reliving the sign and symptoms of computer vision syndrome.

KEYWORDS: *Computer vision syndrome, Dinacharya, Rasayana, Triphala Kwath,*

INTRODUCTION

Studies have shown, however that eye-related symptoms are the most frequently occurring health problems among VDT users¹. The main visual symptoms reported by VDT users include eye strain, tired eye, eye irritation; burning sensation, redness, blurred vision, and double vision thus term the phrase "Computer Vision Syndrome" (CVS). It is estimated according to some reports that the diagnosis treatment of their symptom costs almost US\$2 billion each year. As Computer users become marked aware of CVS, it is important that ophthalmologists should be attentive to this rapidly evolving disorder.

Eye Exercise Effect of intervention was assessed once in 7 days intervals upto 42 day.

Results of the study revealed that showed above average 55% relief for most of the subjective criteria's and objective criteria's like dry eye, eye Strain, headache p value were < 0.0 i.e. highly significant for Itching, Burning sensation, Neck & shoulder pain and p value were < 0.05 is significant while the Result is non-significant in the redness of eye, blurred Vision P>0.05 upto interval of 42 Day.

The numbers of computer, internet etc. users are huge in number not only in developed country, but the number is increasing day by day in developing country also like India. India is world third inter-net user country with over 145 million as on June 2012. Much study had shown that approximate 50 % to 90 % of computer user became victim

of computer vision syndrome in some point of their life. So there is an urgent need to understand the dynamics of this problem and prevent it from assuming epidemic proportions². The prime importance has been given to eye in ancient Ayurveda. Acharyas mentioned urdhangachikitsa separately among Astanga Ayurveda for the treatment of the organ situated in urdhajatra (above clavicle). Acharya Charaka³ elaborated dinacharya starting with anjana kar-ma quotes that, day and night are one and the same for blind person, and value of life goes vain with-out eye. So it is duty of every individual to accept and adopt all the measures which helps to protect our vision. Acharyas of Ayurveda has given advice for Dinachariya, Rituchariyas, Ratricharyas Sadvritta etc which are dealt under Swasthavritta, and all these are helpful in maintaining health and also to overcome disease condition Astanga samgraha elaborates in detail regarding the permissible dietary regimen under the context of “Annapanavidhi adhyaya. Here author explains about the daily intake of “Triphala Kwath Eye Wash” in morning & quick Eye Exercise helps to prevent the diseases of eyes and promote the proper function of visual apparatus. Computer vision syndrome becoming the disease of 21st centuries there is no direct references of this disease in Ayurveda text. But it is possible to understand the disease through fundamental of Ayurveda and it is expected that effective results may obtain through Ayurveda regimen. The process of understanding a disease has been mentioned in astangasamgraha 22nd chapter named as rogabhediyoadhyaya and following this one can nominate CVS as “Vata Pitta Pradhan Tridoshaja vyadhi”. So study over 40 samples has been conducted to evaluate the following objectives.

OBJECTIVES

1. To select the patients having CVS as well as not having CVS but doing computer work more than three hours.
2. To provide easily available, efficient and cheaper medicine
3. To recommend appropriate quick exercise at appropriate time intervals for extensive computer users working more than 3 hours per day.

Eye Exercises

Eye exercises help the eyes in two important way as follows.

Mechanically

Eye exercise helps to improve the mechanical stability of the eye by coordinating and strengthening the eye muscles. The eye exercises strengthen the convergence power of the eye & balance its function with that of accommodation.

Optically

Eye exercises improve the optical image coordination between the two eyes, there by permitting a proper three dimensional accurate picture to be received & subsequently evaluated by the brain.

It also helps to improve the mechanical stability of the eye in the following ways.

- Allowing eye movement especially in people who have their eyes fixed at a particular position for long periods, or people who wear spectacles, by relieving congestion and permitting a more comfortable vision.
- Exercising a weak muscle can increase the range a movement of an eye
- Eye exercises reduce an imbalance between the convergences & accommodation, if done correctly, thus reducing tiredness & strain of the eyes & headaches.
- Eye exercises also improve the power of the eye to maintain convergence in depressed position, & therefore permit long comfortable application to near work.

MATERIALS AND METHODS

A Single group of Clinical Study over 40 samples of CVS was done with the trial drug Triphala Kwath Eye wash & Eye Exercise for 42 day decided for treatment period 6 week)

Triphala Kwath preparation procedure: Triphala Kwath 5 g coarse powder are added 16 parts of water of water i.e 80 ml, boiled and reduced to 1/4th part 20ml, filter with filter paper and used wash both eyes

Eye Exercise

Appropriate quick Eye exercise at appropriate time interval for extensive computer users working more than 3 hours per day.

Computer vision Syndrome Causes:

Decreased blinking rate: As we stare at the computer screen or while reading, our blink rate decreases. We actually blink 66% less while working on the computer. This will cause dryness & burning

How to do Eye Exercises?^{4,5}

1. Blinking it washes eyes in naturally therapeutic tears .the average human being blinks 20 times a minute – but only 7 times a minute when using a computer. The longer the eye remains open between blinks, the more likely the cornea is to dehydrate burn or ache. Blink often to keep the eyes moist. It keeps in naturally moisture therapeutic tears.

2. Remember 20-20-20. Every 20 minutes, spend 20 seconds looking at something 20 feet away minimum.

One of the catch phrases is the "20 20 20 rule" every 20 mins, focus the eyes on an object 20 feet (6 meters) away for 20 seconds. This basically gives a convenient distance and timeframe for a person to follow the advice from the optometrist and ophthalmologist. Otherwise, the patient is advised to close his/her eyes (which has a similar effect) for 20 seconds, at after minute

Do to remedy CVS:

3. Corner-to-corner eyeball shifting: Takes 1 minute

How to do it –

Shift/swing eyes from right to left alternately a few times, and then stop. Repeat 5-6 times.

The purpose –

To help eyes relax and smooth out eye movements.

To isolate and separate eye movement from head movement.

To reduce muscular strain and tension in eyes, neck and head.

To increase the ability of the eyes to focus on one point (called central fixation).

To develop better control over the focusing mechanisms of our eyes.

4. Palming: Takes 2 minutes

How to do it –

Rub palms together till they feel warm.

Cup hands over eyes with fingers overlapping and resting on forehead.

Ensure there is no contact between palms and eyelids; you should not apply pressure on them.

The Purpose –

The sole aim is to completely relax and soothe mind and eyes.

Look out for –

Seeing sparks or dots of light indicates that you are releasing mental strain & tension. This helps to cure eye strain, which leads to better vision.

As eyes relax, it will become darker and you will stop seeing those sparks of light.

5. Coordinated head & eye movements: Takes 1 minute

How to do it –

Imagine there is a pen pointing out from the tip of nose. Now imagine are drawing aline moving head & eyes. Draw a rectangle in a clockwise direction, then draw an 'X' covered at the top and bottom, next draw a rectangle in the anti-clockwise direction and finally draw the 'X' in the opposite direction as well.

Follow this by moving only eyes and create the rectangle and the 'X'.

Repeat 10 times.

The purpose is to achieve relaxation of eye muscles.

Things to look out for trying to see. Kept breathing and allow self to blink when you need to.

Do you feel tension in neck/shoulders or jaws? If so, do some head rolls to relax; remember that the intention of these exercises is to help you relax the strained muscles and thereby help them work better.

6. Eye stretches – Takes 3 minutes

How to do it –

First close eyes and relax temples, forehead, neck, shoulders and head and breathe easily. Now imagine face to be a clock with nose at the center. Stretch eyes all the way up and then down; then while stretching eyes, also rotate it in a clockwise and then in anticlockwise direction. Repeat each position/movement 20 times. Relax.

The Purpose –

To reduce the pressure in eyes and thereby relax them.

To tone the six muscles that surrounds each eye and control eyeball movement.

7. Eye squeezes: Takes 1 minute

How to do it –

Inhalation: Squeeze all the muscles in face by tightly shutting eyes while inhaling and hold breath for a few seconds.

Selection of Sample:

Study was conducted in SRC Ayurved collage Chikhli which is the centre for studies.

Patients attending the OPD of SRC Ayurvedic Collage and hospital Chikhli were taken up for studies.

Collection of the Trial Drug

Tripha kwatha churna is also purchased from market. Triphala Kwath was prepared by patient

Consent to participate in study

A detailed consent form given by MUHS Nasik with respect of this Study. Subjects were detailed about the merit & demerit of research work, duration of trail drug, about of administration of formulation before taking the Consent. During follow regular records were further documented in

Performa

Method of Selection of patient for data:

Patients were selected randomly irrespective of sex, religion and social-economic status.

Case sheet was prepared initially as per the details required pertaining to the disorder along with vital data for the statistics to be collected. All the cases were recorded in these sheets and finally data were drawn based on the information furnished in the sheets. Charts were prepared based on the data wherever necessary and represented in the form of bar diagrams and graphs as per the requirement.

Inclusion Criteria:

1. Computer user between the age group 18- 35 yrs.
2. Daily Computer users 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 Other than Inclusion criteria:

Clinical presentation

VDT user /computer clinical performa will be based on questionnaire

Discontinuation Criteria

If any adverse effect of therapy is seen

Any acute or severe illness

Patient not willing to continue the treatment

Drug Schedule

GROUP: Eye Exercise + Triphala Kwath Eye wash (5g Triphal Bhard for one time)

10ml in BT (Morning & Evening) for 42 day Clinical Eye Examination Duration

All Treatment advice for 6 Week, Before Treatment (D0),

Follow up

7th, 14th, 21st, 28th, 35th, 42nd, days after completion of treatment.

Assessment Criteria

Self-gradation was given to Symptoms
 Assessment done at interval of 7 day on the basis of pre & post observation found on this scale after completion of treatment 42nd day & 6 month to see the long term effect.

The sample size is 40 (one Group) which were with 40 cases in Patients were selected randomly and distributed into and treatment was advised without consideration of any factors. Patients were not allowed to compare their treatment or made aware of the complete study, but only consent was taken for the treatment.

Diagnosis

Clinical presentation:

VDT users/computer users clinical Performa was based on questionnaire.

Complete eye exam:

Clinical Examination of follow up

It will be repeated at the selected intervals of the treatment.

Clinical Examination of follow up questionnaire.

Observations were made during the treatment and also during follow up period of a month with an intermittent recording of the conditions on Clinical Eye exam will be done Before Treatment (D0), 7th, 14th, 21st, 28th, 35th, 42nd, 180th days after completion of treatment.

Clinical presentation of sign and symptoms were graded as

Mild + (1)

Moderate++ (2)

Severe +++ (3)

and absent (0)

Schirmer's test was done to see lubrication of eye

All the findings were compared & analysis was done accordingly

Adverse events

It may be classified as mild, moderate, and severe

Mild causing no limitation of usual activity although the patient may experience slight discomfort

Moderate- Causing some limitation a usual activity & patient may experience annoying discomfort

Severe- Causing inability to carryout usual activity the patient may experience intolerable discomfort, burning sensation, eye strain, loss of a focus; all the adverse events findings will be probably recommended.

Subjective parameters for the assessment of result:

Result assessment: - The clinical efficacy of the drug is assessed objectively as well as subjectively.

Subjective Assessment

Gradation:-

The symptoms gradation is in the four groups.

Grade I --- Normal Mark given 0

Grade II --- Mild Mark given 1

Grade II --- Moderate Mark given 2

Grade II --- Severe Mark given 3

RESULT

Table 14.16. 1 The Effect of Eye Exercise + Triphala Kwath CVS (42 Day Effect) Treatment

Symptom	BT D0	AT D42	S42	% Relief In after 42 Day	Mea n D0	Mean D42	Mean Diff(D0-D42)	SD +/- (S42)	SE +/- (S 42)	T (42)	P (42)	Rema rk
Dry, tired or sore eyes	72	37	35	49%	1.80	0.93	0.88	0.97	0.15	2.88	<0.01	H.S
Eye Strain	45	16	29	64%	1.13	0.40	0.73	0.82	0.13	3.42	<0.01	H.S
Redness Of Eye	45	25	20	44%	1.13	0.63	0.50	0.72	0.11	1.10	>0.05	N.S

Itching of Eye	32	15	17	53%	0.80	0.38	0.43	0.64	0.10	1.16	>0.05	N.S
Burning of Eye	39	16	23	59%	0.98	0.40	0.58	0.87	0.14	2.22	<0.05	.S
Headche	54	25	29	54%	1.35	0.63	0.73	0.91	0.14	2.98	<0.01	H.S
Blurred Vision	50	25	25	50%	1.25	0.63	0.63	0.81	0.13	-0.69	>0.05	NS
Neck ,shoulder ,or back pain	50	15	35	70%	1.25	0.38	0.88	1.02	0.16	3.26	<0.01	H.S
Total Average Result	48	22	27	55%	1.21	0.54	0.67	0.84	0.13	2.04	<0.05	S

Treatment Result % of Relief in patients after 42Days as per various symptoms are 1.for Dry, tired or sore Mean Difference is 0.88 & Relief is 49%.2, for Eye strain Mean Difference is 0.73 & Relief is 64%.3 Redness of Eye Mean Difference is 0.63 & Relief is 44%, 4. Itching of Eye Mean Difference is 0.43 & Relief is 53%, 5. Burning of Eye Mean Difference is 0.58 & Relief is 59%, Headache Mean Difference is

0.73 & Relief is 54% 7. Blurred Vision Mean Difference is 0.53 & Relief is 50% 8.Neck,Shoulder, Back pain Mean Difference is 0.88 & Relief is 70%.The Average result of Mean Difference is 0.54 & Relief is Group II is 55%.Its P value is<0.05, so result Significant at 0.05 level we can compare the result ,got the relief after 42 day.

Graph 4.16. 2 The Effect of Eye Exercise + Triphala Kwath on CVS (42 Day) result

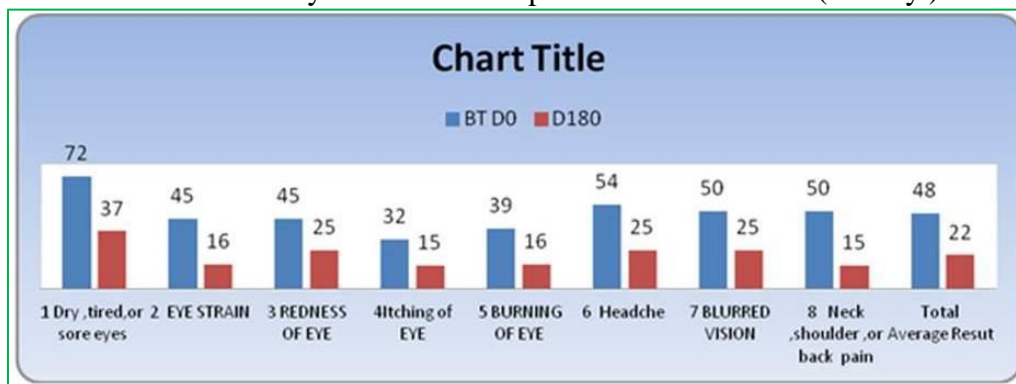


Figure 1The Effect of Eye Exercise + TriphalaKwath on CVS (42 Day)

Graph 4.16. 3 Mean Difference the Effect of Eye Exercise + TriphalaKwath on CVS (42 Day) result



Figure 2The Effect of Mean Diff Eye Exercise + TriphalaKwath on CVS (42 Day)

Figure 3The Effect of (Mean +/- SD) Eye Exercise + TriphalaKwath on CVS (42 Day) result

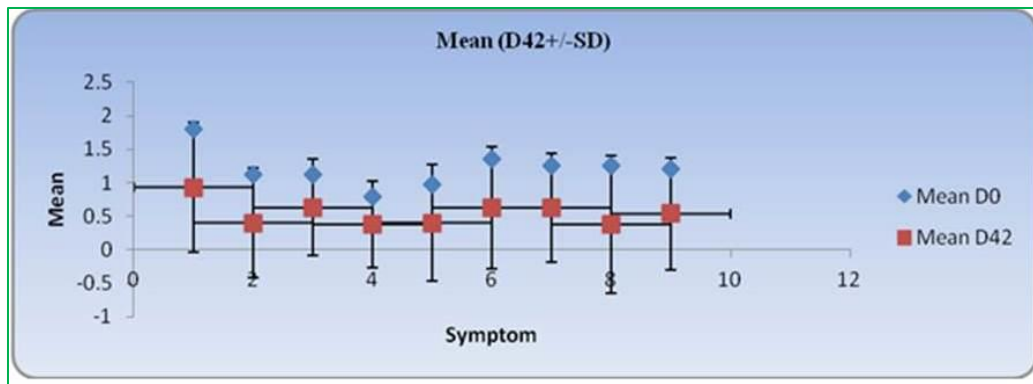
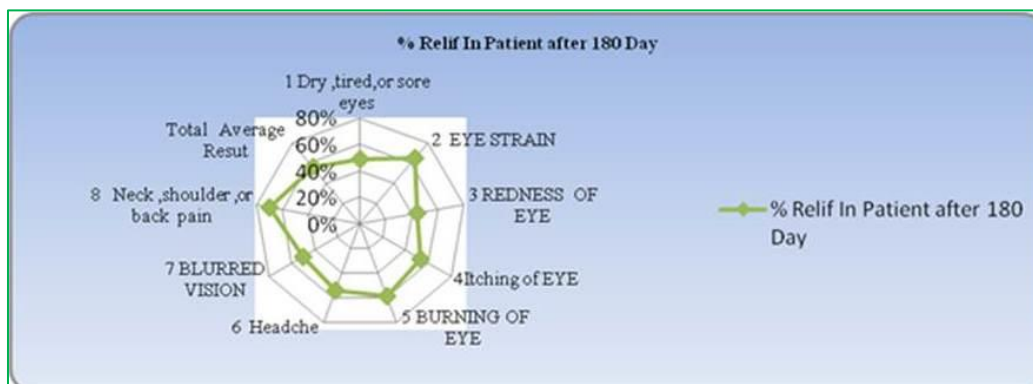


Figure 44.16.4 % of Relief the Effect of Eye Exercise + Triphala Kwatha on CVS (42 Day) result



The Effect of Eye Exercise + Triphala Kwatha CVS (all Follow-up to 42 Day Effect) Treatment (Point)

Symptoms	BT D0	D7	D14	D21	D28	D35	AT D42
1 Dry ,Tired,or Sore Eyes	72	44	46	40	41	41	37
2 Eye Strain	45	38	35	25	19	18	16
3 Redness of Eye	45	35	27	26	26	25	25
4. Itching of EYE	32	29	28	25	22	17	15
5 Burning of Eye	39	33	25	19	16	16	16
6 Headche	54	31	30	27	27	25	25
7 Blurred Vision	50	45	41	36	36	29	25
8 Neck ,Shoulder ,or Back Pain	50	39	28	20	15	15	15

The Effect of Eye Exercise + Triphala Kwath CVS (all Follow -up to 42 Day Effect) Treatment (Mean)

Symptoms	D7	D14	D21	D28	D35	AT D42
Gr II 1 Dry ,Tired,or Sore Eyes	1.8	1.1	1.15	1	1.025	1.025
Gr li 2 Eye Strain	1.125	0.95	0.875	0.625	0.475	0.45
Gr li 3 Redness of Eye	1.125	0.875	0.675	0.65	0.65	0.625
GR II 4Itching of EYE	0.8	0.725	0.7	0.625	0.55	0.425
Gr li 5 Burning of Eye	0.975	0.825	0.625	0.475	0.4	0.4
Gr li 6 Headche	1.35	0.775	0.75	0.675	0.675	0.625
Gr li 7 Blurred Vision	1.25	1.125	1.025	0.9	0.9	0.725

GR II 8 Neck ,Shoulder ,or Back Pain	1.25	0.975	0.7	0.5	0.375	0.375
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1. The Effect of Eye exercise + Triphala Kwath CVS (all Follow –up 42 Day Effect) Treatment (Score)

Symptoms	S7 (D7-D0)	S14 (D14-D0)	S21 (D21-D0)	S28(D28-D0)	S35	S42
1 Dry ,Tired,or Sore Eyes	28	26	32	31	31	35
2 Eye Strain	7	10	20	26	27	29
3 Redness of Eye	10	18	19	19	20	20
4 Itching of Eye	3	4	7	10	15	17
5 Burning of Eye	6	14	20	23	23	23
6 Headche	21	23	27	27	29	29
7 Blurred Vision	5	9	14	14	21	25
8 Neck ,Shoulder ,or Back Pain	11	22	30	35	35	35

The Effect of Eye Exercise + Triphala Kwatha CVS (All Follow up 42 Day Effect) Treatment (Relief)

Symptoms	% Relief In Patient after 7 Day	% Relief In Patient after 14 Day	% Relief In Patient after 21 Day	% Relief In Patient after 28 Day	% Relief In Patient after 35 Day	% Relief In Patient after 42 Day
1 Dry, Tired, or Sore Eyes	39%	36%	44%	43%	43%	49%
2 Eye Strain	16%	22%	44%	58%	60%	64%
3 Redness of Eye	22%	40%	42%	42%	44%	44%
4 Itching of EYE	9%	13%	22%	31%	47%	53%
5 Burning of Eye	15%	36%	51%	59%	59%	59%
6 Headache	39%	43%	50%	50%	54%	54%
7 Blurred Vision	10%	18%	28%	28%	42%	50%
8 Neck, Shoulder ,or Back Pain	22%	44%	60%	70%	70%	70%

DISCUSSION AND CONCLUSION

The Acharya Nimi & Acharya Sushrut scholar of shalakyatantra, has enlisted many general etiological factors is Samanya hetu for ocular diseases among them sukshma nireekshana, ushnabhithapthasya jala praveshad, swapnaviparyaya, abhigatha, bhashpavinigraha an can be considered as causes responsible for creating khavaigunya in visual apparatus and also vitiating doshas present in netra that are responsible for CVS. Laying emphasis on the involved doshas, all these causes lead to vitiation of vata pitta pradhana tridoshas.

Computer vision syndrome is vata-pitta pradhana tridoshaja vyadhi. Aasatmyaindriyartha samyoga and pragyaparadha parinama are three main

causative factors behind the pathogenesis, according to Ayurveda. Low distance of screen from eye, improper room light and low blinking rate are the main causative factors; Dryness of Eye, eye strain, Redness of eye, itching, burning sensation of eye, blurring of image, Headache and neck/shoulder/back pain were the main symptoms and complaint for majority of patient. The disease is not related with refractory error, but intensity of signs, symptoms increase for those persons with incorrect or under correct refractory error. Vata-pitta shareerika prakriti users are the main victim of this disease. Rajasika manasik prakriti person are more prone to the disease. Young (18 to 30) educated adults are the main victims of the disease.

The present study, The Effect Eye exercise, Triphala Kwath Eye Wash, on Computer Vision Syn-drome has taken for Clinical Evolution of different sign & Symptom. Study drug, Triphala Kwath Eye Wash & Eye exercise showed statistically significant result for most of the signs and symptoms According modern view, CVS is disorder caused due to nutritional deficiency .In modern science Vitamin A deficiency causes computer related Eye problem Mucin is also one important cause of Dryness, to Eye which result into normal Eye Physiology .Triphala Kwath is used for Eye Wash where chaksushya effect of Triphala Effect seen locally also in Faster way relive patient can get cheaper medicine easily without admitting in hospital exercise can be done when the patient in work time also so Ayurvedic medicine & recommendation study was fulfill.

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