



Research Article

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Lodhradiarkaaschyotana in Computer Vision Syndrome (CVS)- A pilot study

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ABSTRACT

Computer vision syndrome, a recent occupational hazard, is a collection of features like 'eye strain', 'blurred vision', 'redness', 'dryness', 'headache', 'diplopia' etc. About 50 to 90% of the regular computer users are affected with these symptoms. Although a number of researches have been carried out, no curative treatment has been achieved yet. Only palliative measures in the form of tear supplements are available which have to be used lifelong by the patients. Hence, aim of this pilot study is to understand the efficacy of 'lodhradiarkaaschyotana' in 'computer vision syndrome'. Here, ten patients were randomly selected and were treated by 'aschyotana' with 'lodhradiarka'.

Keywords: Lodhradiarka, Aschyotana, Computer Vision Syndrome (CVS).

INTRODUCTION

The invention of computer and advancement in information technology has revolutionized and immensely benefited the society but at the same time has caused symptoms related to its usage such as ocular sprain, irritation, redness, dryness, blurred vision and double vision. This cluster of symptoms is known as "computer vision syndrome" which is characterized by the visual symptoms which result from interaction with computer display or its environment^[1].

Since computer use is such a visually demanding task, vision problems and symptoms have become very common in today's work place. Most studies indicate that computer operators who view their video display terminals (VDT) report more eye related problems than non VDT office workers.

NIOSH Survey (National Institute of Occupational Safety and Health) has reported that visual symptoms occur in 75-90% of VDT workers as opposed to 22% of musculoskeletal disorders (carpel tunnel syndrome) in computer users^[2].

The American Optometric Association (AOA) defines computer vision syndrome as "Complex of eye and vision problems related to near work, which are experienced during or related to computer use, like dry eyes, eye strain, neck and/ or back pain, light sensitivity and fatigue, red eyes, burning eyes, inability to focus near objects". These symptoms can result from individual visual problems, poor work station configuration and improper work habits^[3].

Objectives of the study

To know the efficacy of 'lodhradiarka aschyotana' in the management of 'computer vision syndrome'.

MATERIALS AND METHODS

Source of data

The patients with signs and symptoms of 'computer vision syndrome' were selected from OPD and IPD of 'Shalakyatantra' of Sri Jayachamarajendra Institute of Indian Medicine, Bangalore.

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Need for Ayurvedic therapies:

Methods of collection of data

The selection was done on the basis of clinical examination. A careful clinical history of all those patients complaining of 'eyestrain', 'blurred vision', 'redness', 'dryness', 'headache', 'diplopia'— with 3 or more symptoms were considered. After thorough examination and establishment of the diagnosis, the patients were taken for the clinical study.

Inclusion criteria and exclusion criteria

Patients between 16 to 70 years of age who regularly use computer for a minimum 4 hours a day and have used it for a minimum of 6 months continuously; who have the complaints of eye strain, dry eyes, headache, blurred vision, diplopia, redness and progressive refractive changes with 3 or more features are included for the study.

Patients suffering from infectious conditions of the eye like conjunctivitis, scleritis, uveitis, glaucoma, sty etc. Any fundus pathology like optic atrophy, diabetic retinopathy, hypertensive retinopathy, papilledema etc; and patients with neck and shoulder discomfort, back pain are excluded.

Study design

Ten patients were randomly selected and advised 'aschyotana' using 'lodhradi arka'^[4] (self-instillations of two drops of medicine into the conjunctival sac 5 times in a day with two hours gap in between) for 7 days. With a gap of a week, the 'aschyotana' was resumed for another 7 days. Similarly, this procedure was repeated for 3rd and 4th week.

Follow up period

Observations were done regarding the changes after the treatment once in 15 days for a period of 3 months.

Assessment phase:

Effect of the therapies was compared before and after the treatment on the basis of self formulated scoring scale to signs and symptoms in subjective and objective parameters.

Subjective Parameters

Eyestrain, dry eyes, blurred vision, headache, redness and diplopia

Objective Parameters

Refractory changes – Snellen's chart assessment, Schirmer's Test, Tear Break up Time (TBUT), Rose Bengal staining.

Gradation index for overall response

The overall results were assessed based on data obtained before and after the treatment. The percentage of improvement is calculated and graded in following ways:

- No Improvement: Less than 24% relief in signs, symptoms and clinical tests
- Mild Relief: 25% to 49% relief in the signs, symptoms and clinical tests
- Moderate Relief: 50% to 74% relief in the signs, symptoms and clinical tests
- Marked Relief: >74% but <100% relief in the signs, symptoms and clinical tests
- Complete Relief: 100% relief in the signs, symptoms and clinical tests

RESULTS

To evaluate the effect of treatment on individual parameters, paired t-test was applied. Significance is accessed at 5% level of significance. A null hypothesis has been stated that the results significance is at 0.05. The obtained results are as shown below.

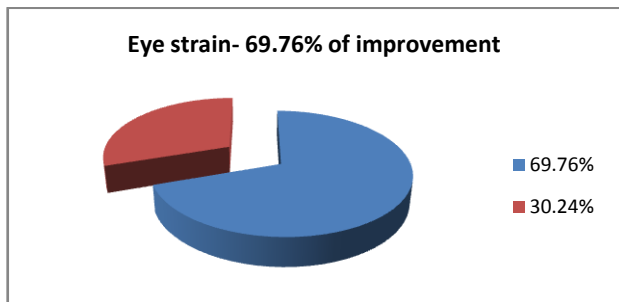
Table 1: Showing Individual study of the parameters

Parameter	Average Differ		Differ	Percen differ	SD	SE	T value df=19	P value	Remark	
	BT	AT	(d)	% d						
Eye strain	2.15	0.75	1.4	69.767	0.606	0.1357	11.05	<0.001	H.S	
Blurred vision	1.3	0.6	0.7	53.8	0.444	0.0993	7.549	<0.001	H.S	
Dryness	0.65	0.2	0.45	69.23	0.604	0.1352	3.3274	<0.05	S	
Redness	1.15	0.35	0.8	69.5	0.470	0.1051	6.658	<0.001	H.S	
Headache	1.5	0.8	0.7	53.333	0.833	0.1863	4.292	<0.05	S	
Diplopia	0.05	0.05	0	0	0	0	0	1.0000	N.S	
Refractory changes	RE	1.4	0.6	0.8	64.28	1.239	0.2772	2.8859	<0.05	S
	LE	1.1	0.25	0.85	77.272	1.18	0.2643	3.2157	<0.05	S
Schirmer's	RE	0.5	0.15	0.35	70	0.587	0.1312	2.6658	<0.05	S
	LE	0.45	0.15	0.3	66.666	0.470	0.1051	2.8535	<0.05	S
TBUT	RE	0.3	0.2	0.1	33.333	0.307	0.0688	1.4529	>0.05	N.S
	LE	0.3	0.2	0.1	33.333	0.307	0.0688	1.4529	>0.05	N.S
RBS	RE	0.1	0.05	0.05	50	0.223	0.05	1	>0.05	N.S
	LE	0.1	0.05	0.05	50	0.223	0.05	1	>0.05	N.S

Effect of therapy on individual parameter

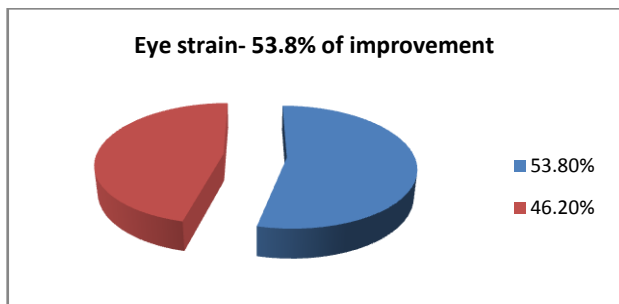
1. Eye strain

There was 69.76% of improvement in the symptom, with t value 11.05, the result was extremely statistically significant ($p < 0.001$).



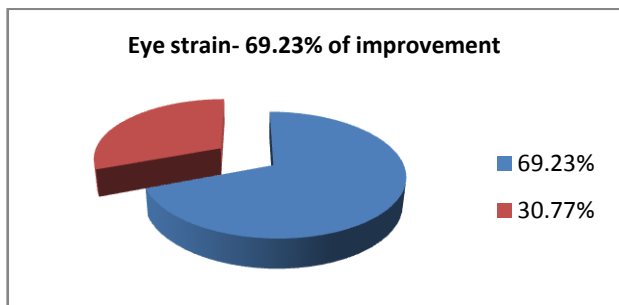
2. Blurred vision

There was a 53.8% improvement in the symptom, with t value 7.549, the result was extremely statistically significant ($p < 0.0001$).



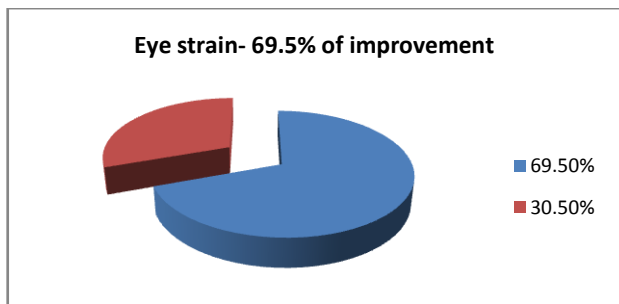
3. Dryness

There was a 69.23% improvement in the symptom, with t value 3.3274, the result was statistically significant ($p = 0.0035$).



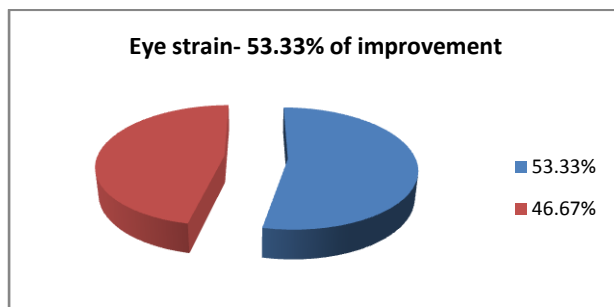
4. Redness

There was 69.5% improvement in the symptom, with t value 6.658, the result was statistically extremely significant at ($p < 0.0001$).



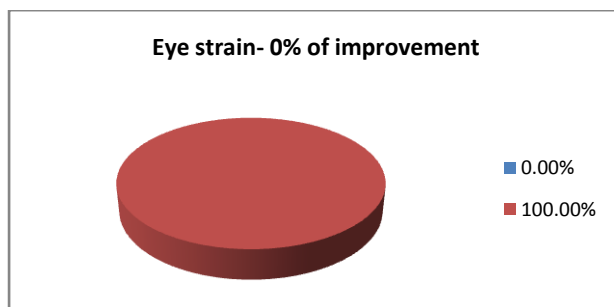
5. Headache

There was a 53.33% of improvement in the sign, with t value 4.292, the result was statistically extremely significant ($p < 0.0004$).



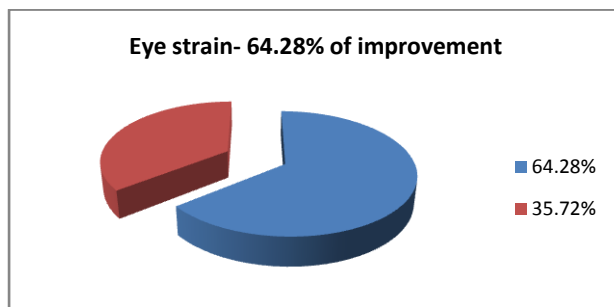
6. Diplopia

There was a 0% improvement in the symptom, with t value 0, the result was statistically non-significant ($p = 1.000$).



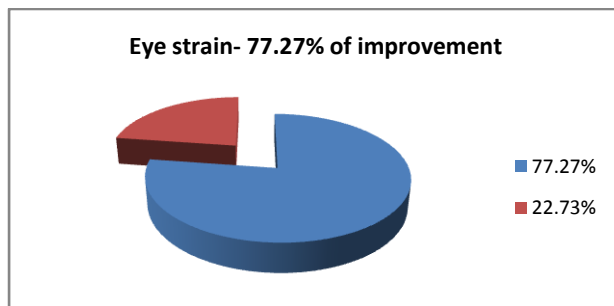
7. Progressive refractory changes RE

There was a 64.28% improvement in the feature, with t value 3.327, the result was statistically very significant ($p < 0.0035$).



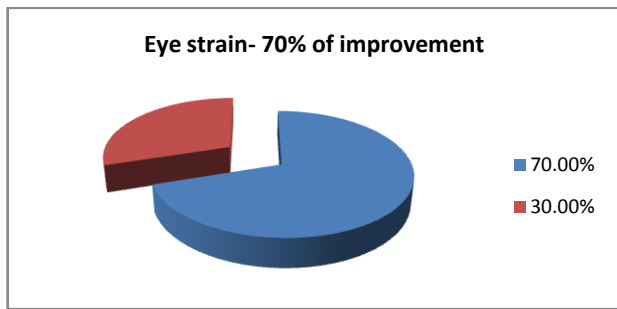
8. Progressive refractory changes LE

There was a 77.27% improvement in the feature, with t value 3.215, the result was statistically very significant ($p < 0.0046$).



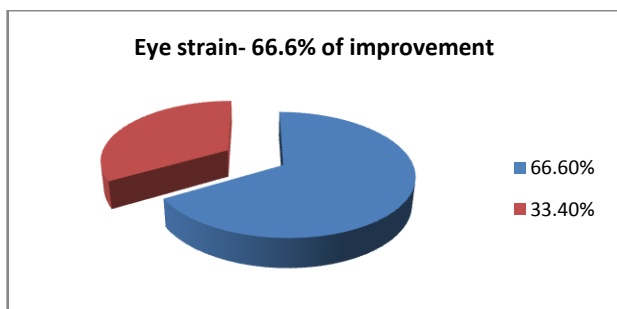
9. Schirmer's RE

There was a 70% improvement in the feature, with t value 2.66, the result was statistically significant ($p=0.0153$).



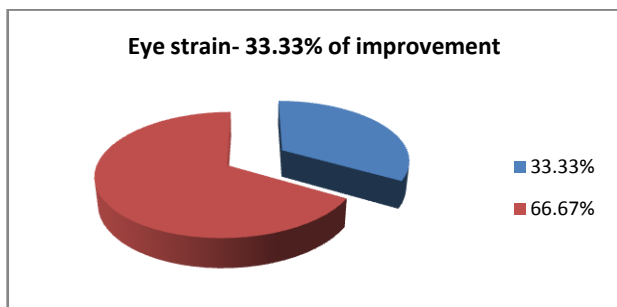
10. Schirmer's LE

There was a 66.6% improvement in the feature, with t value 2.853, the result was statistically significant ($p=0.0102$).



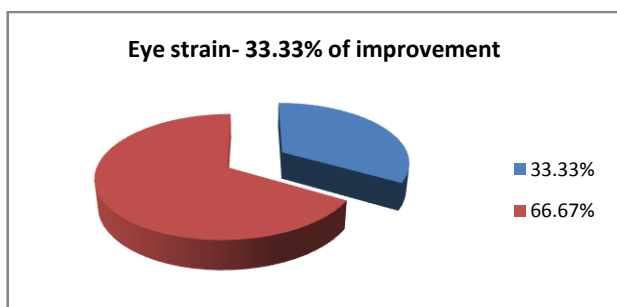
11. TBUT- RE

There was a 33.33% improvement in the feature, with t value 1.452, the result was statistically non-significant ($p=0.1626$).



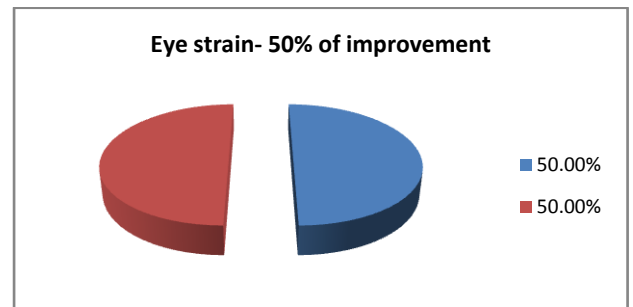
12. TBUT- LE

There was a 33.33% improvement in the feature, with t value 1.452, the result was statistically non-significant ($p=0.1626$).



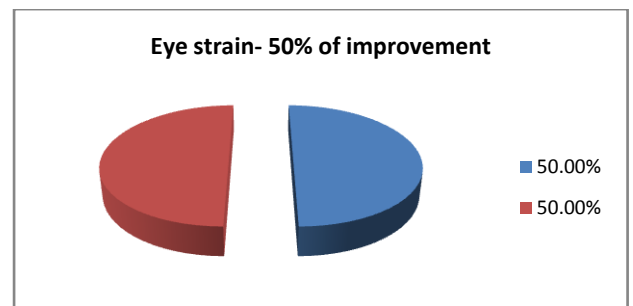
13. Rose Bengal staining - RE

There was a 50% improvement in the feature, with t value 1, the result was statistically non-significant ($p=0.3299$).



14. Rose Bengal staining - LE

There was a 50% improvement in the feature, with t value 1, the result was statistically non-significant ($p=0.3299$).



DISCUSSION

During the post treatment period, seven out of 10 of treated patients had recurrence of the complaints. Therefore treatment of 'computer vision syndrome' with 'lodhradiarkaaschyotana' alone may not be a smart approach. This treatment needs to be assessed with other mainline eye treatment methods explained in classical books, especially 'tarpana' with any suitable medicated ghee.

However, the action of 'lodhradiarka' cannot be completely ruled out. The action of 'chakshushyadravyas' it has as ingredients is significant.

Among the ingredients of 'lodhradiarka'; 'lodhra', 'yashtimadhu' and 'amalaki' have madhura rasa, sheeta virya, shighraguna, chakshushya and rasayana properties. By virtue of their vata-pittahara property, all these three drugs make it as doshapratyaneekachikitsa for CVS which has vata-pittajalaxanas. Vagbhata explains that aschyotana can enter shiro-srotas, hence acts on headache. Hence acts effectively on eyestrain, dryness, blurred vision and redness.

Yashtimadhu contains a compound called 'glycyrrhizic acid' within its roots and has an anti-ulcerative and anti-inflammatory activity.

Lodhra contains several flavonoids and antioxidants which have anti-inflammatory, anti-stress and soothing activity. Hence, these constituents can effectively cure redness, dryness and asthenopic symptoms like eyestrain, blurred vision and headache.

Amalaki, a well-known drug contains 'vitamin C', proteins, carbohydrates, amino acids (like glutamic acid, aspartic acid, alanine, cysteine and lysine), flavanoids, alkaloids and minerals. It has antioxidant, hypolipidemic, immuno-stimulant, antimicrobial, analgesic,

anti-inflammatory properties. Hence, it effectively acts on stress induced eyestrain, blurriness, transient diplopia, headache and other associated asthenopic symptoms.

CONCLUSION

CVS is a new occupational hazard seen in computer users, hence cannot be expected to be in Ayurvedic period, which is going to be a key health threat in near future. This pilot study of 'lodhradiarkaaschyotana' shows moderately encouraging results in the improvement of different symptoms of 'computer vision syndrome'.

As the results are not so encouraging, it is not wise to venture into the treatment of 'computer vision syndrome' with 'aschyotana' alone. This treatment can be done along with any of the other main line eye treatment especially 'netra-tarpana' with suitable medicated ghee.

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Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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