

Evaluation of Comparative efficacy of *MatraVasti* versus *AkshiTarpan* with *Yashtimadhu Ghruta* in the Management of *Shushkakshipaka* (~Computer Vision Syndrome): A randomized controlled trial- A study Protocol

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Abstract

Background- The term "computer vision syndrome" refers to eye issues as well as other signs and symptoms carried on by extended computer use. include back, neck, shoulder, and wrist pain, as well as eye strain and irritability. Eye strain/tired eyes, dry eyes, red eyes, burning eyes, headaches, etc. are among the most prevalent complaints among computer users. CVS can be correlated with

Shushkakshipaka in *Ayurveda*. *Shushkakshipaka* is a *Sarvagata Netra Roga*, or a condition that affects all portions of the eye. *Acharyas* have mentioned it under the curable *Vataja* or *VataPittaja/VataRaktaja* condition. Thus, the *Vata* management of medicated *Ghruta* administered by rectal is a better management strategy for the *Shushkakshipaka* clinical condition identified in the current investigation. **AIMS-** Evaluation of Comparative efficacy of *Yashtimadhu Ghruta MatraVasti* versus *Akshi Tarpan* with *Yashtimadhu Ghruta* in the Management of *Shushkakshipaka* (Computer Vision Syndrome) **Methodology-** In the planned study, 60 volunteers will be randomly split into two groups, one in each group. 30 patients will receive treatment from Group A (*Akshi Tarpan*) with a *Yashtimadhu Ghruta* dose of 30ml topically delivered in the eye at the beginning of each day for 7 days and Group B (*Matra Vasti*) with *Yashtimadhu Ghruta* dose of 60ml per day rectal administered after a meal for 7 days. On Day 0, Day 8, and Day 14, an assessment record will be taken. **Result-** Through the use of various graphs, tables, and charts, the results from the follow-up chart and other observations will be applied. **Conclusion-** Based on the observations and the numerous assessment parameters collected in this study, conclusions will be reached.

Keywords- *Shushkakshipaka*, Computer Vision Syndrome, *Akshi Tarpan*, *Matra Vasti*, *Yashtimadhu Ghruta*

Main Manuscript

1. Introduction

Computer Vision Syndrome is a type of repetitive stress injury (R.S.I.) that repeatedly occurs when someone does the same action. The longer one engages in the activity, the worse it may become. The symptoms are vague and slow in onset and drift to intolerable severity by the time they suffer and seek medical advice¹. The complex eye and vision issue known as "Computer Vision Syndrome" is encountered while using a computer or is somehow connected to it. Eye strain, dry eyes, discomfort, blurred vision, and diplopia are all visual signs of CVS².

The American Optometric (A.O.A.) The term "Complex eye and vision problem associated with near work, which is observed during or related to computer use" describes computer vision syndrome²⁻³.

The current computer era has the potential to be an effective tool for improving learning. Still, it can also have harmful impacts owing to incorrect technology use, resulting in eye-related symptoms. Extensive seeing of the gadgets like Computer screens, television, smartphones, etc. It can lead to some eye-related symptoms such as strain, blurred vision, headache, itching, red eyes, diplopia, fatigue, dry eye, and neck, shoulder, and back aches. These symptoms come under the

spectrum of disorders called computer vision syndrome. Individuals are more subject to vision-related problems due to the specific features and high visual demands of computer usage⁴⁻⁶.

As per modern science, medical therapy for Computer Vision Syndrome dry eye symptoms—Topical lubricants, cyclosporine A ophthalmic emulsion, and punctal occlusion. Surgical treatment like punctal plug insertion may be beneficial.⁷ It shows that there are many sources of treatment for CVS in modern science, but they are costly, and it may cause side effects (like burning, eyelid swelling, redness, blurred vision, discomfort, irritation, a scratchy feeling in the inner corner of the eye)⁸

CVS can be correlated with *Shushkakshipaka* in *Ayurveda*. *Shushkakshipaka* is a *Sarvagata Netra Roga*, or a condition that affects all eye portions. *Acharyas* have mentioned it under the curable *Vataja* or *VataPittaja/VataRaktaja* condition⁹. On extensive review of the literature, it is observed that there are many studies carried out regarding various treatments like *kriya Kalpa*, *Shaman*, and *Rasayanas Aushadhis*. Among that, only five *Acharya* has described the term *Shushkakshipaka*. Among them, three have focused or elaborated on the application of *Akshi Tarpana* in the management of *Shushkakshipaka*. Still, many patients have Contraindicated for *Akshi Tarpana*, i.e., anxiety, tiredness, giddiness, and in the eye where complication has not diminished. That's why we are thinking about some alternative but effective and safe treatments. So we decided to give *Yashtimadhu Ghruta Matra Vasti*.

The prime aim of this study is to evaluate the Comparative efficacy of *Yashtimadhu Ghruta MatraVasti* versus *Akshi Tarpan* with *Yashtimadhu Ghruta* in the Management of *Shushkakshipaka*(Computer Vision Syndrome). This study was planned with a research question of whether *Yashtimadhu Ghruta Matra Vasti* is more efficacious than *Akshi Tarpan* (“to nourish the eye”) with *Yashtimadhu Ghruta* in the Management of *Shushkakshipaka* (Computer Vision Syndrome).

The objectives of the study are as follows:

1. To Study the efficacy of *Yashtimadhu Ghruta MatraVasti* to improve visual acuity in patients with computer vision syndrome.
2. To Study the efficacy of *AkshiTarpan* with *Yashtimadhu Ghruta* to improve visual acuity in managing computer vision syndrome.

3. To compare the efficacy of *Yashtimadhu Ghruta MatraVasti* with *Akshi Tarpan Yashtimadhu Ghruta* to improve visual acuity in a patient with computer vision syndrome.
4. To Study the efficacy of *Yashtimadhu Ghruta MatraVasti* to improve the Schirmer test in patients with computer vision syndrome.
5. To Study the efficacy of *AkshiTarpan* with *Yashtimadhu Ghruta* to improve the Schirmer test in managing computer vision syndrome.
6. To compare the efficacy of *Yashtimadhu Ghruta MatraVasti* with *Akshi Tarpan Yashtimadhu Ghruta* to improve the Schirmer test in patients with computer vision syndrome.

Research Gap Analysis

S.N	Name of author	Article	Conclusion	Remark
1	Dr. Deepak Sawant, Dr. Renu P. Raokhande	Effect of <i>Yashtimadhu Ghruta</i> Tarpan a Single Case Study July – August 2020.	CVS can be referred to as a digital risk that causes a number of eye-related illnesses. This may lead to dry eyes and numerous eye problems as a result. Through the use of Karakalpak, eye exercises, and pharmaceuticals, Ayurveda has a lot to offer in the treatment of CVS. According to the studies mentioned above, Netra-tarpan and <i>Yashtimadhu Ghrut</i> are used in patients with computer vision syndrome.	Indications & contraindications of Tarpan are missing in this article
2	Dr. Amol Shirbhate Clinical,	Study on Efficacy of <i>Goghruta Padabhyanga</i> as an <i>Upkrama</i> in <i>Dincharya</i> in CVS W.S.R. to Ophthalmic Hygiene March 2020, Vol -7.	In this research, <i>Padabhyanga Upkrama's</i> clinical efficacy was demonstrated. In order to ensure eye hygiene, <i>padabhyanga</i> with <i>goghruta</i> is quite useful. It works very well to treat symptoms including eye strain,	In this study, they did not assess subjective criteria with standard protocol.

			eye pain, dry eyes, watery eyes, and <i>alpanidra</i> .	The mode of action of <i>Tarpan</i> are also not explained
3	Varun TV, Jadhav V.	Conceptual analysis of computer vision syndrome in ayurveda and its management by <i>Aschyothana</i>	We are now spending more time than ever before staring at digital devices due to the "digital revolution." The <i>Aschtothana</i> and Ayurvedic therapeutic approaches are more affordable than using synthetic lubricants because they can offer long-term symptom alleviation and protect our good vision.	No result comparison between the symptoms before or after treatment
4	M.P. Gangamma, Poonam, Manjusha Rajagopala	A clinical study on "Computer vision syndrome" and its management with <i>Triphala</i> eye drops and <i>Saptamrita Lauha</i> . Apr-Jun 2010 Vol 31 Issue 2	A computer is now a necessary piece of office equipment. In this case, using eye drops to treat the majority of CVS symptoms is the fundamental therapy strategy. Because it is most practical, affordable, and accessible, it may be used in all computer utility sectors.	The author, doesn't correlate the CVS according to the ayurvedic perspective

2. Material & Method

2.1.Type of Study: Interventional Study

2.2.Study design: Randomized standard controlled single-blind (assessor) superiority clinical trial

2.3.Case definition: A diagnosed *Shushkakshipaka* subject with ocular symptoms including eye strain, dry eyes, eye irritation, redness of the eye, blurred vision, and diplopia along with a positive Schirmer or visual acuity test, with having either gender between the ages of 18 to 35 years.

2.4.Diagnostic Criteria:

- Visual acuity test (Near vision & far vision)
- Tear film test
- B.S.L.- Fasting
Post-meal

2.5. Research Question: Whether *Yashtimadhu Ghruta Matra Vasti* is more efficacious than *Akshi Tarpan* (“to nourish the eye”) with *Yashtimadhu Ghruta* in the Management of *Shushkakshipaka* (Computer Vision Syndrome)?

Alternative hypothesis(H1)

- *Yashtimadhu Ghruta Matra Vasti* is more efficacious than *Yashtimadhu Ghruta Akshi Tarpan* in Management of *Shushkakshipaka*(Computer vision syndrome)

Null hypothesis (Ho)

- There is no significant difference between the efficacy of *Yashtimadhu Ghruta Matra Vasti* and *Yashtimadhu Ghruta Akshi Tarpan* in Management of *Shushkakshipaka*(Computer vision syndrome).

2.6. PICO MODEL

1.	P	Recently diagnosed case of <i>Shushkakshipaka</i> (Computer vision syndrome)
2.	I	<i>Yashtimadhu Ghruta Matra Vasti</i>
3.	C	<i>Akshi Tarpan with Yashtimadhu Ghruta</i>
4.	O	<ol style="list-style-type: none"> 1. Improvement in visual acuity 2. Improvement in the Schirmer test 3. Improvement in sign and symptoms of <i>Shushkakshipaka</i>

2.7.Ethics & Dissemination: I.E.C. Certificate, obtained I.E.C. Ref No. MGACHRC/ IEC/ July-2022/554 dated 11.08.2022 from the institutional ethics committee, Mahatma Gandhi Ayurved College, Hospital and research center, Salod (H), Wardha, Maharashtra. C.T.R.I.'s registration number is C.T.R.I./2022/10/046916.

2.8.Study Setting The subject will be recruited from *Panchkarma* and *Shalakya* O.P.D. and I.P.D. of Mahatma Gandhi Ayurveda College, Hospital and research center, Salod (Hirapur), Wardha, and Also from Periphery camp.

2.9.Eligibility criteria

➤ Inclusion criteria:

- Patients who are willing to give written informed consent
- Recently diagnosed patients of CVS having either gender between the ages of 18 to 35 years⁹
- who used a computer for at least 4 hours each day,¹⁰
- Patients who are indicated for Tarpana.¹¹
- Patients who are fit for Vasti.
- ICD10 Criteria for Visual disturbance – H53.8: (a) Amblyopia (b) Polyopia (c) Blurred vision

➤ **Exclusive criteria-**

- Patients with Road Traffic Accident (R.T.A.) or Traumatic condition
- Patients with fundus pathology, such as papilledema, optic atrophy, diabetic retinopathy, or hypertensive retinopathy.
- Who is contraindicated for *Tarpana*, i.e., *Durdina* (cloudy), *Ati Ushna* & *Ati-Sheeta* Weather, *Chintya* (Stressed), *Ayasa*(Tired), *Bhrama* (Giddiness), *Ashantaupadrava* (Complications).¹²

2.10. Interventions

Group-wise details of intervention in the study are given in table no.1.

- Group A (Control group): *Akshi Tarpan* with *Yashtimadhu ghruta*
- Group B (Trial group): *Yashtimadhu Ghruta Matra Vasti*

The study design is mentioned in figure no.1.

2.11. Criteria for discontinuing or modifying allocated interventions:

- Patients who wish to stop treatment during this time may do so and will be replaced.
- If a patient becomes acutely unwell while participating in the trial, the study may harm.
- Patients who withdraw will be replaced.
- If any unfavorable incident, drug sensitivity characteristics, or other illness or issue occurs, the subject will solve the problem without taking responsibility.

2.12. Follow up:

1st Follow-up: on the 8th day

2nd Follow-up – After 14 days of 1st Follow up (22thDay)

2.13. Assessment criteria:

With the following symptoms were selected and assessed before and after treatment.

A. Subjective criteria

1. Eye strain

2. Eye pain
3. Lacrimation(watering from Eyes)
4. Dryness of eyes
5. Headache
6. Redness of eyes
7. Blurred vision

B. Objective criteria:

- a) Visual acuity test (Near vision & far vision)
- b) Tear film test

2.14. Screening investigations (baseline): B.S.L.- Fasting

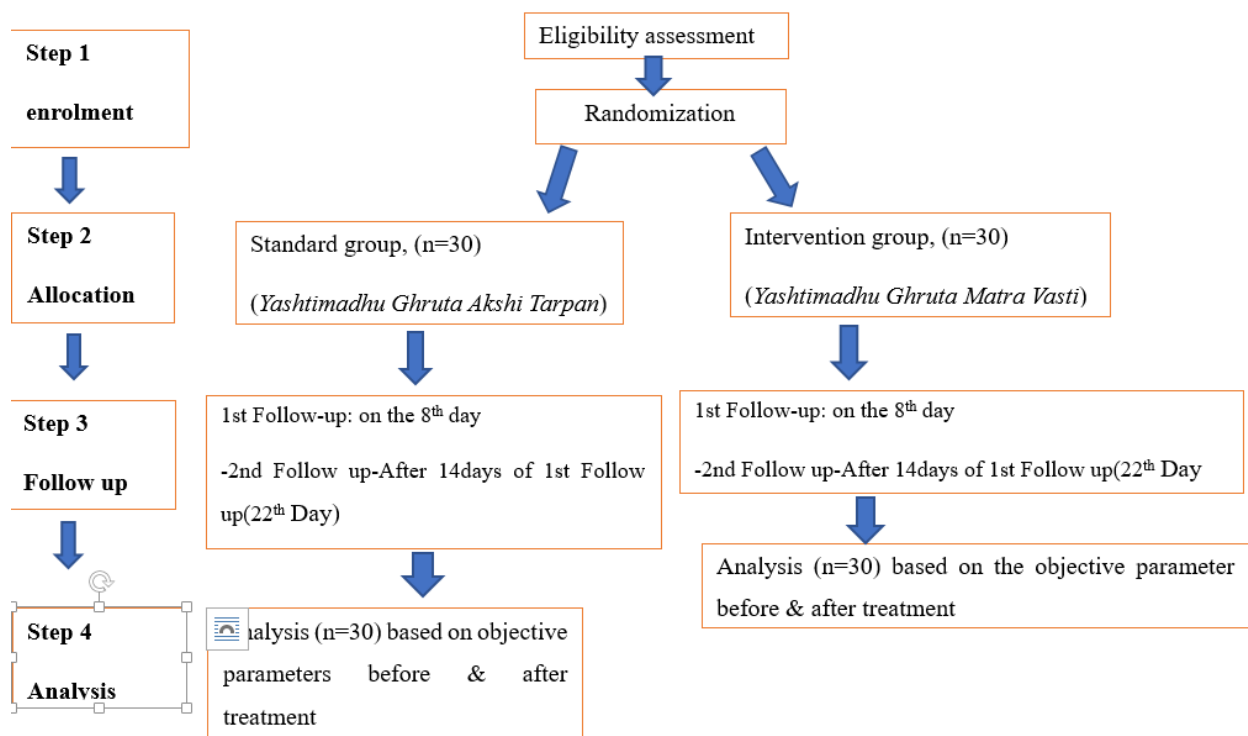
Table 1:Group-wise details of the intervention

Group	Sample Size	Intervention	Quantity and frequency	Duration	Follow up
A	30	<i>Akshi Tarpan with Yashtimadhu ghruta</i>	once daily (For single used-30ml)	Seven days	- 1st Follow-up: on the 8 th day - 2nd Follow-up – After 14 days of 1st Follow-up (22 th Day)
B	30	<i>Yashtimadhu ghruta Matra Vasti</i>	60 ml Daily once	Seven days	-1st Follow-up: on the 8 th day - 2nd Follow up – After 14 days of1st Follow up (22 th Day)

Drug Collection / Authentication –

The raw material will be procured from the local market and reliable sources and drugs will be identified and authenticated by the department of *Dravyaguna* and *Rasashastra* of MGACH &RC, Salod, Wardha

Figure No. 1: CONSORT FLOW CHART



3. Result and observations: Data obtained from the followup chart and other observations will be used, and the results will be drawn because of various charts, graphs, and tables

4. Discussion

The computer has become a standard household device in the modern day, used by people from all walks of life. However, as with any human advancement, convenience has its drawbacks. Eye-related issues have become more prevalent in modern medical science as computer use has overgrown⁷⁻⁹. According to the American Optometric Association (A.O.A.), Computer Vision Syndrome is a complex of near vision and eye disorders experienced using a computer¹⁰⁻¹². The prevalence of Computer Vision Syndrome ranges from 50% to 90% among computer users.¹³ This issue causes the individual distress, and carelessness could damage their career and health.¹⁴

The present state of medical fields solely treats the symptoms of tear film abnormalities caused by incomplete computer work. To treat the disease's underlying causes, topical medicine alone is

insufficient. We, therefore, require a treatment that produces a better and more satisfying outcome. Local symptoms might result from the underlying causes of a systemic illness and vice versa. Therefore, it was assumed that systemic intervention is necessary for improved management of Computer Vision Syndrome, which is why the current study was planned with *Yashtimadhu Ghruta Matra Vasti*. The proposed line of ayurvedic management compared with *Yashtimadhu Ghruta Akshi Tarpan*.

We know that *Netra Rogas* has explained a total of 76 eye illnesses. However, we have not found an accurate correlation for Computer Vision Syndrome in any *Ayurvedic* literature. Therefore, before beginning treatment, a doctor should try to understand the *dosha* (disease), the site of manifestation, and the etiological elements. The rapidly developing sickness (*Anukta Vyadhi*) has been described by *Acharya Charaka* using a total of 13 tools, all of which are thoroughly explained by correlating each factor. As a result, an effort has been made to understand Computer Vision Syndrome in terms of *Anukta Vyadhi*.¹⁵

Here we treat the *Shushkakshipaka* (Computer Vision Syndrome) with *Yashtimadhu Ghruta Matra Vasti*, It has the property of *Brihmana* (Nutritious), *Balya* (Strengthen), and *Vatarogahara* (Pacifies Vata dosha)¹⁶ In CVS *Vata*, *Pitta*, and *Rakta doshas* are involved. For that, it is the best treatment for *Vata Vitiated* disease. Both *Yashtimadhu* and *Ghruta* have *Netra* property. K2 and linoleic acid are found in *Ghruta*; It has anti-inflammatory qualities and *Vatapittahara* quality; Vitamin A is abundant in *ghruta*. Dryness brought on by a vitamin A deficiency can be treated and reduced with vitamin supplements. Additionally, *Yashtimadhu* possesses the qualities of *Vata-Pittahara*, *Chakshusya*, *Balakrita*, *Shothaara*, *Nadibalya*, *Shonitasthapana*, *Rasayana*, and *Balya* in addition to being *Madhura*, *Snigdha*, *Guru*, and *Shita* in nature¹⁸ So, *Yashtimadhu Ghruta* helps treat this condition (Computer Vision syndrome). The health of the eyes is improved by its *Chakshushya guna*¹⁸⁻²⁰.

5. Scope and Implications of the proposed study

If *Yashtimadhu Ghruta Matra Vasti* is efficacious in reducing the ocular symptoms then the clinical evidence with a simple, safe, and effective formulation can be generated for the management of *Shushkakshipaka* (Computer vision syndrome).

6. Conclusion

Based on the observations and the numerous assessment parameters collected in this study, conclusions will be reached.

7. Conflict of interest- Nil

8. Acknowledgment: I would like to offer my sincere thanks to Research Team, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Wardha, Maharashtra.

9. Funding source: Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra.

10. Ethical statement: I.E.C. Certificate, obtained I.E.C. Ref No. MGACHRC/ IEC/ July-2022/554 dated 11.08.2022 from the institutional ethics committee, Mahatma Gandhi Ayurved College, Hospital and research center, Salod (H), Wardha, Maharashtra. The recruitment of the patient will be started soon as the C.T.R.I. The registration number is received, i.e., C.T.R.I./2022/10/046916.

Each patient will be enrolled only after receiving the written informed consent.

11. Author's Contribution statement- Dr. Punam Sawarkar conceptualized the study. Soniya Mandal designed the primary draft of the study. All authors gave their valuable inputs in the preparation of the final draft.

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