International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 22s, 2025
https://theaspd.com/index.php

A Clinical Study On The Add-On Effect Of Guduchyadi Rasakriya Anjana With Spectacles In Simple Myopia

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Abstract:
Simple myopia is a common refractive error affecting a significant portion of the population, especially among school-aged children and young adults. While corrective spectacles remain the standard treatment, Ayurvedic interventions may offer potential complementary benefits. This clinical study aims to evaluate the add-on effect of Guduchyadi Rasakriya Anjana, an Ayurvedic ophthalmic preparation, when used alongside spectacles in the management of simple myopia. Comparatively, more relief was observed in objective criteria in patients with Guduchyadi Rasakriya Anjana along with spectacles.
Keywords: *Guduchi, Rasakriya, Anjana, Myopia, Timira, Simple Myopia*

INTRODUCTION:

Myopia, or short-sightedness, is a refractive error where parallel rays of light from infinity focus in front of the retina when accommodation is at rest. Simple myopia is the most common type. Its global prevalence is rising rapidly, with earlier onset in younger generations. In India, the prevalence increased from 28% in 2010 to 34% in 2019, and it is projected that nearly 50% of the world population may be myopic by 2050.

In Ayurvedic literature, myopia resembles the condition known as *Timira*, which begins with blurred vision (*Avyakta Darshana*) and can progress to complete vision loss. One of the key therapeutic procedures in Ayurveda is *Anjana*, the application of medicated formulations to the lower palpebral conjunctiva. As per *Sushruta Samhita*, Anjana is indicated when doshas localize in the eyes and manifest symptoms.

Previous studies have explored Ayurvedic treatments for Timira. Poonam et al. reported that *Jeevantyadi Ghrita* used in *Akshi Tarpana* reduced dioptric power. Similarly, Durgeshprasad Gupta et al. found that combining *Nasya* with *Tarpana* yielded better results than Tarpana alone. However, these procedures are costly, time-consuming, and not easily self-administered—especially for children.

Modern treatments like LASIK and PRK, though effective, are expensive and unsuitable for pediatric cases. Thus, there is a need for accessible, conservative alternatives. *Guduchyadi Rasakriya Anjana*, though not previously studied for simple myopia, offers promise. *Guduchi* acts as a *Rasayana* and balances all three doshas, while *Madhu* and *Saindhava* possess *Chakshushya* (vision-enhancing) properties. Being part of *Kriyakalpa* and mentioned in *Dinacharya*, Anjana may serve as a practical and beneficial adjunct in myopia management.

AIM: To evaluate the efficacy of *Guduchyadi Rasakriya Anjana* in Simple Myopia.

MATERIALS AND METHODOLOGY

MATERIALS:

- **Patients -** Patients visiting Bharati Ayurved Hospital O.P.D. for Simple Myopia were recruited in the trial by following standard protocol.
- **Drug:**

Trial Group: *Guduchyadi Rasakriya Anjana* + Spectacles
Control Group: Spectacles (concave glasses)

METHODOLOGY –

Patients

The grouping of patients was done as follows:

- The study included 60 patients
- They were divided into two groups of 30 patients each.
- **Inclusion Criteria:**
- Patients between age group of 18 to 40 years were included.
- Patients were selected irrespective of gender, socioeconomic status and religion.
- Patients diagnosed with Simple Myopia and refractive power between -0.50D TO -6.00D
- **Exclusion Criteria:**
- Patients suffering from any retinal and ocular surface pathologies
- Patients having congenital anomalies
- One eyed patients

SOP of Trial Group : *Guduchyadi Rasakriya Anjana*

The SOP for manufacturing of *Guduchyadi Rasakriya Anjana* was followed as mentioned below :

- Guduchi churna, Madhu and Saindhava were purchased from authentic Ayuvedic Drug Store.
- Identification and Authentication of all the raw materials of the drug were done in Sheetal Analytical Laboratory, Pune.
- Standardization of each drug was done in the same Analytical lab.
- 1kg of *Guduchi churna* was soaked overnight in appropriate amount of water.
- Soaked *guduchi churna* was used to prepare *guduchi kwatha* using the standard method of preparation of *kwatha*, that is, by adding 8 times water to *guduchi churna* and then reducing it to 1/4th on low gas flame.
- Prepared *kwatha* was filtered using a clean cloth and then boiled again to prepare *Rasakriya*.
- *Saindhava* and *Madhu* were added in equal quantity as per the given ratio when the *Rasakriya*
- became lukewarm.
- The finished product was then filled in sterile containers.

INTERVENTION:

The patients were selected and randomized into Group A (Trial group) and Group B (Control group) with 30 patients each.

GROUP A (Trial group): These patients were given *Guduchyadi Rasakriya Anjana* once in a day and Spectacles after refraction.

GROUP B (Control group): These patients were given spectacles (concave glasses) after refraction.

Follow up: Follow up was done on 15th, 30th ,45th days.

TRIAL METHODOLOGY:

- Permission of the Institutional Ethics committee was obtained.
- Registration at CTRI was done.
- Screening of the patients was done in OPD. A proper Slit lamp examination, Refraction and Fundoscopy was conducted to assess and select the patient for clinical trial.
- An information sheet about the clinical trial was provided to the patient.
- Informed consent form duly signed by the patient was taken after explaining the trial.
- Findings were recorded in case record form for each patient.
- Follow up was done on 15th, 30th and 45th day.

ASSESSMENT CRITERIA

Observations were noted in tabular form according to the following criteria of assessment.

Subjective parameters -

Sr. No.	**Signs and Symptoms**	**0th day**	**15th day**	**30th day**	**45th day**
1.	Headache				
2.	Eye strain				
3.	Blurring of vision				

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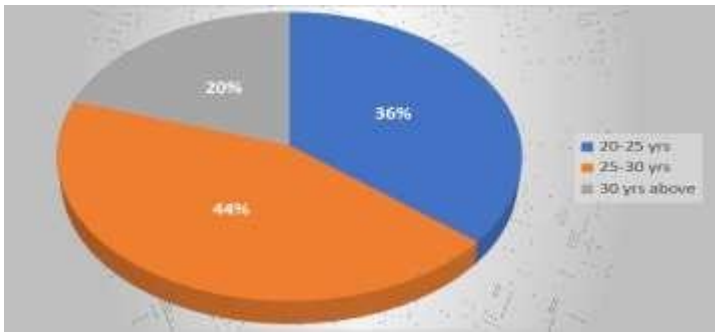
Objective parameters -

Sr. No.	Signs and Symptoms	0th day	15th day	30th day	45th day
1.	Visual acuity				
2.	Reduction in refractive power				

OBSERVATION AND STATISTICAL ANALYSIS

- **AGE WISE DISTRIBUTION**

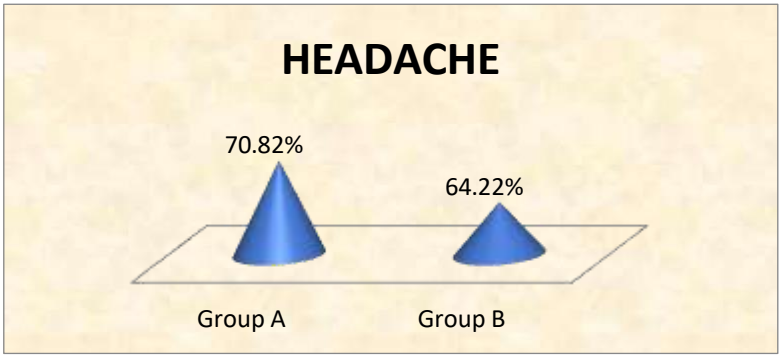


From above table we found that maximum numbers of patients were from age group 20 to 30 years.

GENDER WISE DISTRIBUTION:

From above table we found that maximum number of patients in this study were female

Parameter	Group	% of Improvement	Mann whitney u	Z	P VALUE
HEADACHE	Group A	70.82%	375.000	-1.317	0.0188
	Group B	64.22%			



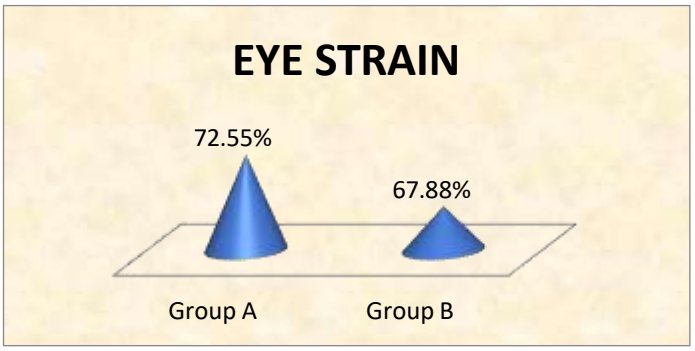
As p value <0.05, we found that there was statistically significant difference between Group A and Group B on HEADACHE in Simple Myopia.

Also, percentage of improvement in Group A was more than Group B. Hence we can say that Group A is slightly more effective as compared to Group B on HEADACHE in Simple Myopia.

2. COMPARISON OF GROUP A AND GROUP B ON EYE

Parameter	Group	% of improvement	Mann whitney u	z	P VALUE
EYE STRAIN	Group A	72.55%	403.500	-0.910	0.0363
	Group B	67.88%			

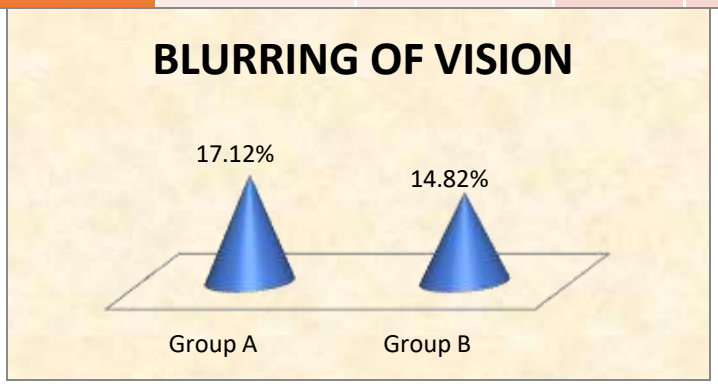
STRAIN IN SIMPLE MYOPIA



As p value is <0.05 we found that there is statistically significant difference between Group A and Group B on EYE STRAIN in Simple Myopia.
Also, percentage of improvement in Group A was more than Group B. Hence we can say that Group A is slightly more effective as compared to Group B on EYE STRAIN in Simple Myopia.

COMPARISON OF GROUP A AND GROUP B ON BLURRING OF VISION IN SIMPLE MYOPIA

Parameter	Group	% of improvement	Mann whitney u	Z	P VALUE
BLURRING OF VISION	Group A	17.12%	439.000	-0.176	0.860
	Group B	14.82%			



As p value > 0.05, we found that there was no statistically significant difference between Group A and Group B on BLURRING OF VISION in Simple Myopia. But the percentage of improvement in Group A was more than Group B.

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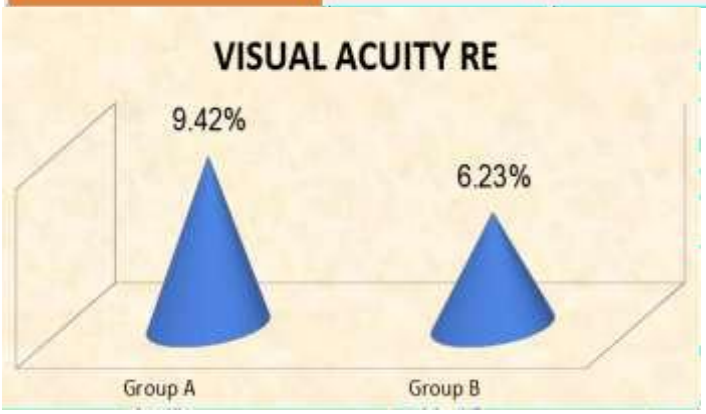
COMPARISON OF GROUP A AND GROUP B ON VISUAL ACUITY RE IN SIMPLE MYOPIA

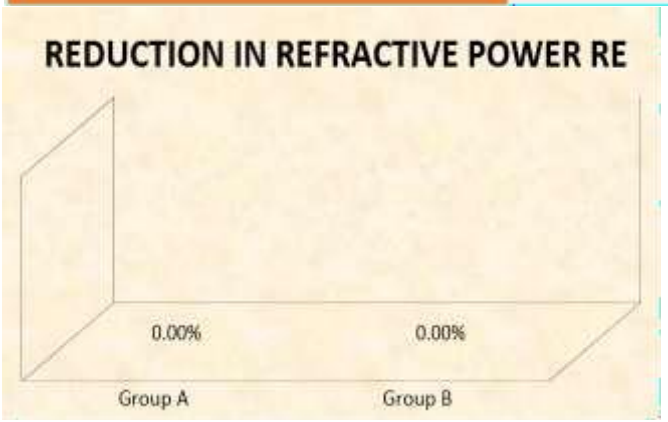
Parameter	Group	% of improvement	Mann whitney u	Z	P VALUE
VISUAL ACUITY RE	Group A	9.42%	422.000	-0.463	0.643
	Group B	6.23%			



As p value > 0.05, we found that there was no statistically significant difference between Group A and Group B on VISUAL ACUITY RE in Simple Myopia. But we get that the percentage of improvement in Group A was more than Group B.

COMPARISON OF GROUP A AND GROUP B ON REDUCTION IN REFRACTIVE POWER RE IN SIMPLE MYOPIA

Parameter	Group	% of improvement	Mann whitney u	Z	P VALUE
REDUCTION IN REFRACTIVE POWER RE	Group A	0.00%	450.000	0.000	1.000
	Group B	0.00%			



Here both Group A and Group B were not effective on REDUCTION IN REFRACTIVE POWER RE in Simple Myopia.

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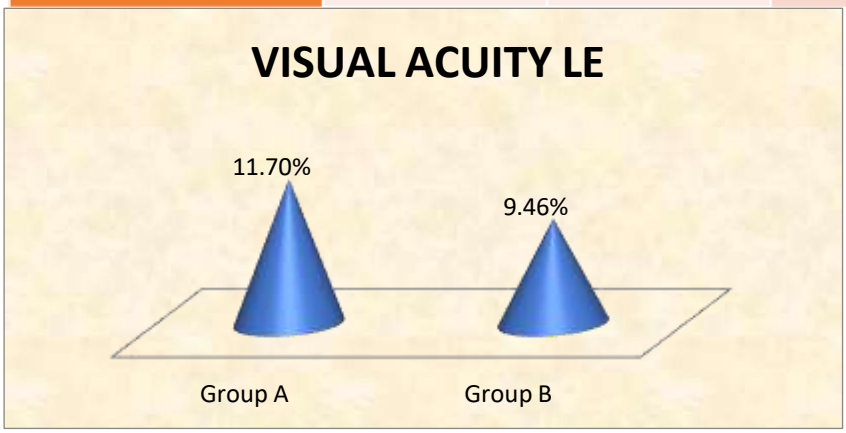
COMPARISON OF GROUP A AND GROUP B ON VISUAL ACUITY LE IN SIMPLE MYOPIA

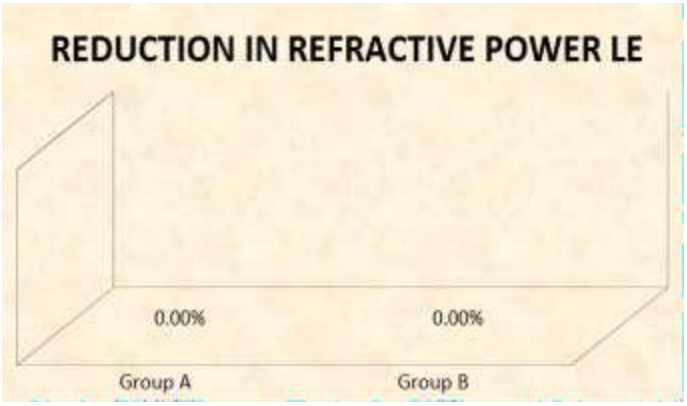
parameter	Group	% of improvement	Mann whitney u	Z	P VALUE
VISUAL ACUITY LE	Group A	11.70%	421.500	-0.468	0.640
	Group B	9.46%			



As p value > 0.05, we found that there was no statistically significant difference between Group A and Group B on VISUAL ACUITY LE in Simple Myopia. But as percentage of improvement seen from above table, we get percentage of improvement in Group A was more than Group B. Hence we can say that Group A is more effective as compared to Group B on VISUAL ACUITY LE in Simple Myopia but the difference between them is not so significant.

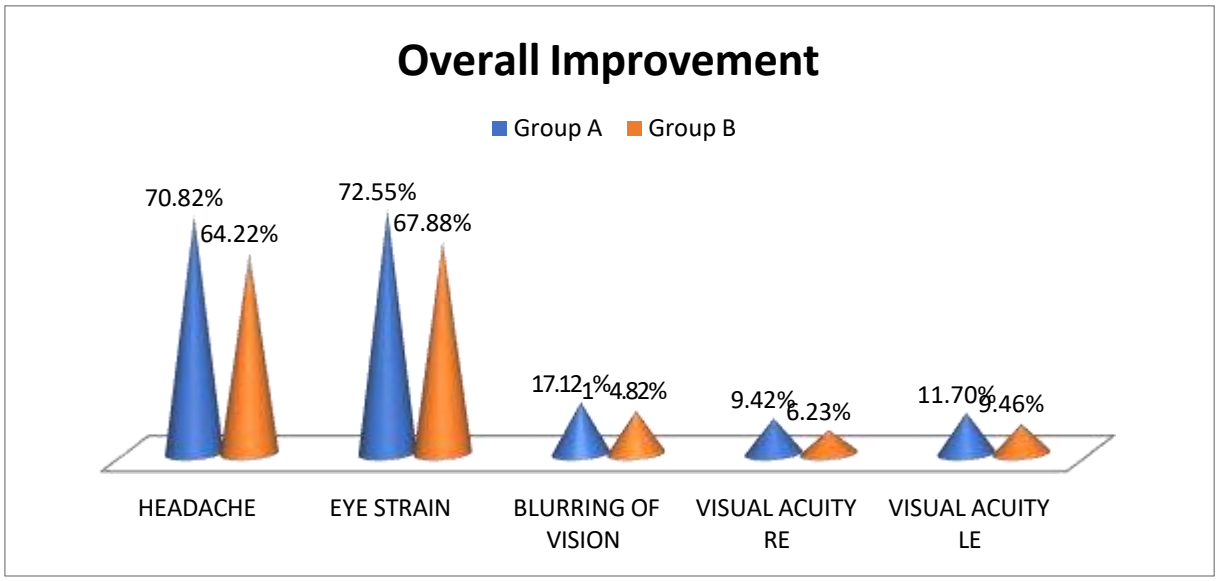
COMPARISON OF GROUP A AND GROUP B ON REDUCTION IN REFRACTIVE POWER LE IN SIMPLE MYOPIA

Parameter	Group	% of improvement	Mann whitney u	Z	P VALUE
REDUCTION IN REFRACTIVE POWER LE	Group A	0.00%	450.000	0.000	1.000
	Group B	0.00%			



Here both Group A and Group B were not effective on REDUCTION IN REFRACTIVE POWER LE in Simple Myopia.

OVERALL IMPROVEMENT



From the above graph, it is seen that Group A is more effective as compared to Group B in Simple Myopia but the difference between them is not so significant.

DISCUSSION

This study bridges classical Ayurvedic understanding of *Timira* with its modern counterpart—simple myopia. *Timira*, a progressive eye disorder described in Ayurvedic texts, ranges from blurred vision (*Avyakta Darshana*) to complete blindness (*Linganasha*), and is classified under *Drishtigata Vikaras*. Acharya Sushruta and Vagbhata differ in their classifications, with Sushruta viewing *Timira*, *Kacha*, and *Linganasha* as stages of a single disease, while Vagbhata treats them as distinct entities. The disease progression is linked to the involvement of ocular layers (*Patalas*), with deeper penetration of doshas leading to worsening vision.

Modern medicine defines simple myopia as a refractive error causing impaired distant vision, with increasing global prevalence—especially among youth. In India, prevalence ranges from 6.9% to 19.7%. Current treatments like spectacles, contact lenses, and surgeries offer symptomatic relief but do not address the root cause or prevent progression, and are often unsuitable for children.

Given these limitations, Ayurvedic approaches offer promising alternatives. Classical texts emphasize early intervention using *Chakshushya* drugs and *Kriyakalpa* procedures. Acharya Sushruta notes that *Timira* affecting the first two *Patalas* is treatable, suggesting potential for managing simple myopia through Ayurveda.

Among *Kriyakalpa* therapies, *Anjana* (medicated collyrium) is highlighted for its ocular benefits. The concept of *Chakshushya Rasayana*—a rejuvenative approach to eye health—is well-documented, encompassing diet, herbs, and procedures. Based on this rationale, *Guduchyadi Rasakriya Anjana*, with its *Rasayana* and *Tridosha Shamak* properties, was selected as the focal therapy for this study.

Discussion on Selection of topic :

A total of 60 participants with simple myopia were enrolled, with no bias regarding gender, occupation, or religion. After applying inclusion and exclusion criteria, subjects were randomly divided into two groups. Four participants dropped out—three from Group B and one from Group A—primarily due to relocation or missed follow-ups. The remaining individuals completed the treatment and follow-up sessions.

Age Distribution: Most participants (80%) were aged 20–30 years, while 20% were above 30. Myopia typically begins in childhood and progresses through early adulthood, with slower progression in older age groups. This aligns with previous studies showing higher prevalence in individuals over 15 years compared to younger children.

Gender Distribution: Of the 60 participants, 45% were male and 55% female. Research indicates a higher prevalence of myopia among females, possibly due to earlier puberty and lifestyle factors. Recent trends show younger females are increasingly affected, emphasizing the need for targeted preventive strategies in this demographic.

Results:

Clinical results demonstrated notable improvement in both headache and eyestrain across all study groups:

- Headache relief was 76.92% in the trial group and 65.00% in the control group.
- Reduction in eyestrain reached 78.79% in the trial group and 68.57% in the control group.
- Improvement in visual acuity was modest, with 09.42% in the trial group and 06.23% in the control group.
- No change was observed in refractive power in either group.
- **Probable mode of action:**
- It is caused by vitiation of the doshas, especially Vata and Kapha leading to blurred vision, headache and eye strain.
- Guduchyadi Rasakriya Anjana is a classical preparation mentioned in ayurveda for ocular disorders with its properties being Chakshushya and Rasayana.
- The ingredients being tridosha shamak act on both vata and kapha dosha.
- Guduchi (Tinospora cordifolia) is a Rasayana with anti-inflammatory, antioxidant, and immunomodulatory properties which may potentially improve ocular tissue nourishment and reduce oxidative stress.
- Honey (Madhu) is known for its tridosha-balancing properties and is characterized by Kashaya and Madhura taste. Due to its Laghu and Ruksha qualities, it effectively reduces Kapha. It is especially useful in treating Netrasrava. Honey exhibits a wide range of therapeutic actions, including pacifying Vata and Pitta, Chakshushya, Lekhaniya, Vishaghna, Shodhana, Ropana, Balya, Sandhana, and Shlesma Prasamana. As a yogawahi, it also enhances the potency and efficacy of other medicinal substances.
- Anjana therapy may enhance ocular surface health and improve microcirculation which may lead to better visual comfort and reduce ocular fatigue.

CONCLUSION

- Simple myopia aligns with the Ayurvedic concept of *Drishtigata Roga*, specifically *Timira*, which is a Tridoshic disorder with a dominant Vata component.
- The condition predominantly affects younger individuals, with a higher incidence in females. Rapid progression of myopia is consistently observed in younger age groups across all ethnicities.
- Students and IT professionals are more susceptible due to prolonged near-work activities such as studying and computer use, supporting the theory that excessive accommodation contributes to myopia development.
- A strong familial link was identified, indicating that individuals with a parental history of myopia are at greater risk.
- The trial group treated with Guduch*yadi Rasakriya Anjana* in combination with corrective glasses showed marginally better improvement in subjective symptoms like headache and eye strain.
- No statistically significant difference was observed between the trial and control groups in terms of measurable clinical indicators.

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