ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Research Article

EFFICACY OF *GUDUCHYADI YOGA* IN THE MANAGEMENT OF *MEDOROGA* WITH SPECIAL REREFENCE TO DYSLIPIDEMIA- A RONDOMIZED CLINICAL TRIAL

Amrutha Y[1]*, Sajjanar J Neelakanta[2], Krishna Gopala[3]

*[1]PG Scholar, [2]Professor, [3]Professor and HOD, Department of Postgraduate Studies in Kayachikitsa, Sri Sri College of Ayurvedic Science and Research, Bengaluru, Karnataka, India.

Article info

Article History:
Received: 13-01-2025
Accepted: 18-02-2025
Published: 07-03-2025

KEYWORDS:
Guduchyadi yoga, *Medoroga*, Dyslipidemia, Serum Lipids *Navaka Guggulu*.

ABSTRACT

Medoroga, a condition which arises due to *Medo dhatu vriddhi* which may lead to *Bahutwa* and *Abaddhatwa* of *Poshaka medo dhatu.* It can be correlated to disease dyslipidemia based on pathophysiology. It is the need of the hour to contribute safer, effective and economical medicines to manage the condition. Main aim of the study was to evaluate the efficacy of *Guduchyadi yoga* and *Navaka Guggulu* in the management of *Medoroga* with special reference to dyslipidemia. **Methods:** The present study implemented an open-labelled, active controlled pre and post-test clinical study with 30 subjects (who fulfilled the diagnostic and inclusion criteria). A convenience sampling method was used for the selection. Subjects were randomly assigned into two groups, Group A (trial) and Group B (control) comprising of 15 subjects each. Subjects of Group A received *Guduchyadi Yoga* (50ml *Kashaya* with 1.5g of *Guggulu*) and Group B received *Navaka Guggulu* (2 tablets with warm water). Both interventions were given twice daily before food for duration of 30 days. A twelve-hour fasting sample of serum lipid profile and BMI were used to measure the efficacy before and after the treatment. Statistical analysis of parameters was assessed using Wilcoxon signed rank test (W), Friedman's test, Mann Whitney U test (U), by paired t-test, repeated measures ANOVA test, unpaired t-test. **Results:** The trial drug showed statistically significant result in improving serum lipid profile and reducing BMI ($P<0.05$). **Conclusion:** The polyherbal formulation (*Guduchyadi yoga*) is effective in the management of *Medoroga* (dyslipidemia).

INTRODUCTION

Dyslipidemia is a disorder of lipoprotein metabolism, which may include lipoprotein overproduction or deficiency, or both. This leads to elevated total cholesterol (TC), low density lipoprotein cholesterol (LDL-C) and triglyceride (TG) concentrations, and a decrease in the high-density lipoprotein cholesterol (HDL-C) concentration in the blood [1].

5C8Z is the ICD-11 code used for unspecified disorder of lipoprotein metabolism.

Dyslipidemia has been strongly associated with the pathophysiology of cardiovascular diseases (CVDs) and is a major independent risk factor for coronary artery disease (CAD), further leading to development of atherosclerosis and associated cardiovascular events [2]. In India approximately 25-30% of urban and 15-20% rural subjects are suffering from dyslipidemia.[3]

The commonly used drugs in the pharmacological intervention in dyslipidemia include statins, cholesterol absorption inhibitors, bile acid sequestrants, fibrates, nicotinic acid, etc but the use of these drugs are associated with considerable adverse effects like-myalgias, arthralgias, dyspepsia, hepatic toxicity, renal toxicity etc.[4]

In Ayurveda, dyslipidemia, based on the pathophysiology, can be understood in terms of *Medoroga,* a condition which arises due to *Medo dhatu vriddhi*[5,6] which may lead to *Bahutwa* and *Abaddhatwa* of *Poshaka medo dhatu* [7].

Access this article online

Quick Response Code

https://doi.org/10.47070/ijapr.v13i2.3592

Published by Mahadev Publications (Regd.) publication licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

Considering the prevalence and adverse effects on long term use of contemporary interventions, it is the need of the hour to contribute safer, effective and economical medicines to manage the condition and serve the society. Thus, *Guduchyadi yoga*[8], a *Medohara yoga,* mentioned by *Acharya Vangasena* consisting of *Guduchi, Triphala* and *Guggulu,* was taken for the present study.

Navaka guggulu[9] being a proven drug for *Medoroga* was taken as control drug, to compare and establish its efficacy levels.[10]

MATERIALS AND METHODS

Trial design

This study was an open- labelled, active controlled pre and post-test clinical study with 30 subjects. The ethical clearance was obtained from the Institutional Ethics Committee with registration number- SSIEC/229/2022. The study was registered under the Clinical Trial Registry India, prospectively with registration number-CTRI/2023/05/052460.

Participants

Diagnostic Criteria

Subjects were diagnosed based on serum lipid profile [11] with increased levels of any of the serum lipids, as mentioned in table 1.

Table1: Diagnostic Criteria

Lipid	Range
Total cholesterol	>200mg/dL
LDL-C	>129mg/dL
VLDL-C	>30mg/dL
Triglycerides	≥150mg/dL
HDL-C	≤40mg/dL

Inclusion Criteria

Subjects of either gender between the age group of 21-60 years and those who full filled the diagnostic criteria. Subjects who were inclined to participate with written informed consent, which was conveyed in the language which the subject could understand were included. Both obese and non-obese subjects were included.

Exclusion Criteria

Pregnant and lactating women, subjects with any uncontrolled systemic illness including diabetes mellitus, hypertension, with any condition interfering with the course of disease and treatment. Subjects who are on any medication for dyslipidemia. Subjects with any of the following serum lipid levels as mentioned in table 2 were excluded.

Table 2: Exclusion Criteria

Lipid	Range
Total cholesterol	>400mg/dL
LDL-C	>189mg/dL
VLDL-C	>100mg/dL
Triglycerides	>400mg/dL
HDL-C	>40mg/dL

The study individuals diagnosed with dyslipidemia were recruited from OPD, IPD, and special camps conducted at our institution.

Intervention

The subjects in trial group (Group A) were administered with *Guduchyadi Yoga* and subjects in control group (Group B) were administered *Navaka Guggulu*. Ingredients of *Guduchyadi yoga* was procured from GMP certified pharmacies, (Fig. 1, 2, 3) was mixed in institutional pharmacy and stored in air tight containers (Fig. 4). *Navaka guggulu* was procured from GMP certified pharmacy (Fig. 5). Ingredients of the trial drug are given in Table 3. Method of preparation of *Guduchyadi Yoga*- 24gm of *Kwatha churna* was added with 400ml of water and boiled in an open vessel until it is reduced to 50ml. To this *Kashaya* 1.5gm of *Guggulu* is added, mixed well and administered [12].

Table 3: Ingredients of Trial Drug-*Guduchyadi yoga*

Sanskrit name	Botanical name	Family	Part used	Quantity used
Guduchi	*Tinospora cordifolia* (Wild.) Miers. ex Hk. f. & Th.	Menispermaceae	Root, Stem, Leaf	1 part
Amalaki	*Emblica officinalis* Gaertn.	Euphorbiaceae	Fruits	1 part
Haritaki	*Terminalia chebula Retz.*	Combretaceae	Fruits	1 part
Vibhitaki	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	Fruits	1 part
***Guggulu (Shodhita purana)*	*Commiphora mukul* (Hook. Ex Stocks)	Burseraceae	Gum resin	1.5g for every 50ml of *Kashaya*
***Guggulu* is added as a *Prakshepaka Dravya* to *Kashaya* in 1 *Shana Matra* [12]				

Outcomes

Assessment criteria

The assessment was made on fasting sample of serum lipid profile with grading as given in Table 4 and on Body Mass Index (BMI). The outcomes were accessed on baseline, 30th day (after treatment) and 45th day (drug free follow up).

Table 4: Assessment criteria of lipid profile

Lipid	Grade- I	Grade- II
Total cholesterol	201-240mg/dL	241-400mg/dL
LDL-C	130-159mg/dL	160-189mg/dL
HDL-C	20-40mg/dL	1-20mg/dL
Triglycerides	150-199mg/dL	200-400mg/dL
VLDL-C	31-65mg/dL	65-100mg/dL

Sample size

Sample size was determined based on the appropriate sample size estimate formula of Superiority clinical interventional studies $(\boldsymbol{n})=\mathbf{2}\times\{\boldsymbol{Z}(\mathbf{1}-\boldsymbol{\beta})+\boldsymbol{Z}(\mathbf{1}-\boldsymbol{\alpha})/\boldsymbol{\delta}-\boldsymbol{\delta}\mathbf{0}\}\ \mathbf{2}\times\boldsymbol{p}\times(\mathbf{1}-\boldsymbol{p})$. Here $(\mathbf{1}-\boldsymbol{\beta})$-0.84, $(\mathbf{1}-\boldsymbol{\alpha})$- 1.645, $\boldsymbol{\delta}$-0.21, $\boldsymbol{\delta}\mathbf{0}$- 0.10, p= 30% (0.30) Considering 10% attrition rate, n= 212.6+21.26 = 233. It was estimated to be 84 samples in each group total of 233. As the duration for the present study was of short period, sample size was limited to 15 subjects in each group, total of 30.

Randomization-Sequence generation

Eligible subjects were assigned to either group in a 1:1 ratio using the lottery method of simple randomization. A list of random numbers was generated by picking up the chits mixed in a box. The chits were same in size, shape and colour to minimize bias.

Randomization-Allocation, Concealment mechanism and Implementation

The sequentially numbered, opaque, sealed envelope (SNOSE) technique was used for allocation concealment. Principal investigator generated the allocation sequence, enrolled participants, and assigned participants to interventions.

Statistical Methods

Statistical analysis was done using Statistical Package for Social Sciences (SPSS) software for Windows, Version 26.0. Armonk, New York: IBM Corp and SIGMASTAT software for Windows, version 3.1. San Jose, California: Systat.

The data were analyzed initially to ascertain whether they pass normality test or not with Shapiro-Wilk test – if normality test is passed then analysis for parametric data was employed if not then non-parametric test were employed to determine the level of significance.

For the assessment of parametric values (TC, TG, LDL-C. HDL-C, VLDL-C and BMI) Paired t-test was applied to assess before and after treatment results, whereas for the outcome of 3 or more assessments, repeated measures ANOVA test was used to assess results within the group. Unpaired t-test was applied to assess results between the groups.

Mann Whitney U test (U) was applied to assess results between the groups. The corresponding p value was noted and obtained results were interpreted as-non-significant for p value >0.05, significant for p value ≤0.05, significant for p value ≤0.01. To ascertain whether the statistical analysis correlates with clinical improvement, Effect size determination was carried out for all the parameters respectively. Obtained results were interpreted as very large effect band (>0.8), large effect band (>0.5-≤0.8), medium effect band (>0.3-≤0.5), small effect band (≤0.2), no effect band (0).

RESULTS AND DISCUSSION

In this study, 38 participants were screened, out of which 30 were enrolled for the trial. All 30 participants completed the study. No subjects dropped out during the trial and follow-up period. The study flow diagram is given in Fig. 5.

Baseline data, Numbers analyzed

Observations

It was observed that among 30 subjects who completed the study, 10 (33.33%) were in the age group of 41-51 years and 51-60 years each and 16 (53.33%) of them were males. 15 (50%) subjects were graduates with executive line of work. 21 (70%) subjects had a moderate physical activity followed by 9 (30%) subjects had sedentary lifestyle. *Vata-Pitta Prakruti* was mainly observed in 19 (63.33%) subjects and *Pitta-Kapha Prakruti* in 5 (16.66%) and 6 (20%) subjects had *Vata-Kapha Prakriti*. 23 (76.66%) subjects reported having family history of dyslipidemia. 13 (43.33%) subjects were overweight. 18 (60%) subjects had *Nidana* of *Atisnigdhahara sevana*, 17 (56.70%) subjects had *Atimadhurahara sevana* and 13 (43.33%) had *Atimamsahara sevana* as *Nidana.*

Outcomes and estimation, Ancillary analyses

Effect of Intervention- Results on Serum Lipid Profile (Primary Outcome)

Effect of interventions on fasting serum lipid profile in 15 subjects of both groups is given in Table 5. On comparing the statistical results within group after treatment period, both the groups showed statistically highly significant results on 30th day and statistically non-significant results on 45th day in reducing TC, LDL-C, VLDL-C and TG along with improvement in HDL-C. On comparing the statistical results between the groups after treatment period, statistically significant results in reduction of TC, and statistically non-significant result in reduction of LDL-C, VLDL-C, TG and in improvement of HDL-C on 30th day and 45th day was seen. (Table 6 and 7).

Table 5: Effect of intervention on Fasting Serum Lipid Profile

Parameter	Grade *Range (mg/dL)	Group A (No. of Subjects)			Group B (No. of Subjects)		
		0th Day	30th Day	45th Day	0th Day	30th Day	45th Day
TC	201- 240 (Grade-I)	3	8	9	1	4	4
	241- 300 (Grade-II)	10	6	6	11	10	10
	301- 350 (Grade-II)	1	1	0	3	1	1
	351- 400 (Grade-II)	1	0	0	0	0	0
LDL-C	130- 159 (Grade-I)	4	10	10	3	11	11
	160- 189 (Grade-II)	11	5	5	12	4	4
VLDL-C	31- 65 (Grade-I)	5	12	13	1	10	10
	65-100 (Grade-II)	10	3	2	14	5	5
TG	151- 199 (Grade-I)	6	8	8	5	9	9
	200- 249 (Grade-II)	5	5	5	7	5	5
	250- 349 (Grade-II)	3	2	2	2	1	1
	350- 400 (Grade-II)	1	0	0	1	0	0
HDL-C	21- 40 (Grade-I)	2	9	9	10	12	12
	1- 20 (Grade-II)	13	6	6	5	3	3
*Range based on Assessment criteria given in Table-4							

Table 6: Results of intervention on Serum Lipid Profile (Primary outcome)- within the groups

Para-meter	Group	Mean-baseline	S. D	Mean 30th day	S. D	p-value	Effect size 30th day	Mean 45th day	S. D	p-value	Effect size 45th day
TC	A	219.178	22.171	165.521	18.983	<0.001	0.33	165.733	18.866	0.910	0.2
	B	224.752	23.045	188.438	29.270	<0.001	0.33	187.567	28.789	0.375	0.2
LDL-C	A	146.153	28.699	95.620	30.787	<0.001	0.35	95.800	30.709	0.938	0.17
	B	137.962	30.665	105.333	30.962	<0.001	0.57	105.800	30.727	0.250	0.17
VLDL-C	A	43.507	20.261	34.920	18.454	<0.001	0.55	34.840	17.939	0.297	0.22
	B	41.707	16.380	33.180	12.538	<0.001	0.33	33.087	12.592	0.875	0.13
TG	A	203.804	48.986	147.527	46.415	<0.001	0.33	147.167	46.492	0.125	0.11
	B	188.489	85.004	143.467	49.298	<0.001	0.33	144.000	49.567	0.219	0.15
HDL-C	A	43.840	12.994	37.027	8.777	0.004	0.44	38.000	8.089	0.012	0.25
	B	47.806	13.894	37.395	10.772	<0.001	0.25	37.920	10.575	0.063	0.13

Table 7: Results of intervention on Serum Lipid Profile (Primary outcome)- between the groups

Parameter	Assessment day	p-value	Effect size
TC	30th day	0.003	0.46
	45th day	0.020	0.44
LDL-C	30th day	0.396	0.22
	45th day	0.380	0.22
VLDL-C	30th day	0.917	0.44
	45th day	0.967	0.48
TG	30th day	0.818	0.48
	45th day	0.858	0.06
HDL-C	30th day	0.919	0.05
	45th day	0.982	0.05

Effect of Intervention- Results on BMI (Secondary Outcome)

Effect of interventions on fasting serum lipid profile in 15 subjects of both groups is given in Table 8. On comparing the statistical results within group after treatment period, both the groups showed statistically highly significant results on 30th day and statistically non-significant results on 45th day in reducing BMI. On comparing the statistical results between the groups after treatment period, statistically non-significant result in reduction of BMI on 30th day and 45th day was seen. (Table 9 and 10).

Table 8: Effect of intervention on BMI

Parameter	Range (kg/m^2)	Group A (No. of Subjects)			Group B (No. of Subjects)		
		0th Day	30th Day	45th Day	0th Day	30th Day	45th Day
BMI	18.0- 24.9	3	4	4	3	4	4
	25.0- 29.9	10	10	10	7	5	5
	30.0- 40.0	2	1	1	5	3	3

Table 9: Results of intervention on BMI (Secondary outcome)- within the groups

Para-meter	Group	Mean-baseline	S. D	Mean 30th day	S. D	p-value	Effect size 30th day	Mean 45th day	S. D	p-value	Effect size 45th day
BMI	A	28.340	4.952	27.820	4.707	<0.001	0.47	27.733	5.024	0.575	0.01
	B	26.860	2.682	26.353	2.760	0.002	0.44	26.320	2.649	0.648	0.01

Table10: Results of intervention- BMI (Secondary outcome)-between the groups

Parameter	Assessment day	p-value	Effect size
BMI	30th day	0.307	0.33
	45th day	0.343	0.33

Figure 1: *Triphala*

Figure 2: *Guduchi*

Figure 3: *Shodita Purana Guggulu* with measuring spoon of quantity 1.5g

Figure 4: A-Trial Drug; B-Control Drug

DISCUSSION

Previous studies performed over larger population indicate that the risk of developing dyslipidemia increases with age and often affects adults. Similar observations were made in the present study [13].

In the present study, it was noted that there was 70% incidence in males. This indicates the prevalence of dyslipidemia more in males than in females[13]. Previous studies conducted on larger population on the prevalence of dyslipidemia in India showed more prevalence in males than in females. Estrogen levels in young women have a protective effect against high cholesterol which might be the reason for less incidence of dyslipidemia in women. Sedentary lifestyle, calorie rich diet, and lack of equilibrium between energy intake and energy expenditure can lead to impaired metabolism and result into metabolic disorders [14]. In the present study, most of subjects reported history of dyslipidemia in the family. Like previous works, risk of dyslipidemia being high in people with a family history was supported in the present study too [14].

Though *Medoroga* is *Kapha Pradhana Vyadhi*, the incidence on *Prakruti* cannot be substantiated in the present study. Majority of the subjects had *Atisnigdhahara sevana* and *Atimadhura ahara sevana* as *Nidana* along with *Avyayama,* these are considered as major *Aharaja nidana* according to classics. Excessive consumption of these food items causes vitiation of *Kapha dosha* and these possesses similar

properties to that of *Medo dhatu*, thus causing *Medodhatu vrudhi* leading to *Medo roga. Avyama* is considered as a *Viharatmaka nidana* for *Medoroga*.

Both the groups showed statistically highly significant results in reducing LDL-C, VLDL-C, TG, BMI and improvement of HDL-C. From this, it can be inferred that both the interventions were equally effective in treating these parameters. Trial group had higher efficacy in reduction of TC than the control group. The effect size calculation shows that trial group was clinically efficacious than control group, with medium effect band.

Guduchyadi yoga is a polyherbal preparation with ingredients namely, *Guduchi, Triphala* and *Guggulu*, mentioned in *Vangasena Samhita* in the context of *Medoroga Chikitsa* having *Kashaya*, *Tikta Rasa*; *Laghu Ruksha Guna*; *Tridoshahara* property with *Deepana Pachana Karma*.

Guduchi has *Tikta kashaya rasa*, *Laghu ruksha guna*, *Ushna veerya* and aids in *Deepana* and *Pachana*. It has hypolipidemic, hepatoprotective and cardio-protective pharmacological actions[15].

Triphala with *Laghu, Ruksha guna*, has *Deepana*, *Vatanulomana*, *Kaphagna karma*. It contains anti-hyperlipidemic and hepatoprotective constituents [16,17,18].

Guggulu has *Katu, Tikta rasa*, *Laghu ruksha teekshna guna*, *Ushna veerya*. It has *Medohara*, *Deepana*, *Lekhana*, *Raktaprasadaka karma* and is a proven hypolipidemic [19].

The research design is randomized and controlled clinical study with 30-day intervention duration and 15-day follow up duration. A treatment protocol consisting of all the components of *Medoroga Chikitsa* can be taken as future study for better management of dyslipidemia. Further studies can be conducted by assessing advanced lipoprotein testing.

CONCLUSION

The present study showed that both the interventions, namely, *Guduchyadi yoga* and *Navaka Guggulu* were equally effective in the management of *Medoroga* (dyslipidemia).

Compared to *Navaka guggulu*, *Guduchyadi yoga* has shown slightly better results in reduction of TC, LDL-C, VLDL-C, TG, BMI, and in improvement of HDL-C. However, the current sample size is insufficient to conclude which formulation is better. A similar study with a larger sample size is needed to draw further conclusions. No adverse drug reactions were reported in the study population, which concludes the safety of both formulations under the study duration. Further studies incorporating advanced lipoprotein testing and adopting treatment principles of *Medoroga* can be done.

REFERENCES

1. Munjal YP. API textbook of Medicine. 9th edition. Mumbai; The Association of Physicians in India; 2012. p.1235
2. Mahalle Namita, Garg MK, Naik SS, Kulkarni VM. Study of pattern of dyslipidemia and its correlation with cardiovascular risk factors in patients with proven coronary artery disease. Indian J Endocrinology and Metabolism. 2014 Jan-Feb; 18(1): 48–55
3. Anjana RM, Unnikrishnan R, Deepa M, Pradeepa R, Tandon N, Das AK, et al. Metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17). The Lancet Diabetes and Endocrinology. 2023 Jul; 11(7): 474-489.
4. Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo. Harrison's Principle of Internal Medicine. 19th edition. New Delhi; Mac Graw Hill Education; 2015. p. 2448
5. Jadavji Trikamji Acharya. Sushrutasamhita Vol. I (Sutra and Nidanasthana) Reprint Ed. Varanasi; Chaukhamba Surbharati Prakashan; 2008. p.70
6. Jadavji Trikamji Acharya. Charaka samhita Vol. I (Sutrasthana to Indriyasthana) Reprint Ed. Varanasi; Chaukhamba Surbharati Prakashan; 2008. p.179
7. Sharama PV. Caraksamhita Vol. 1(Sutrasthan to Indriyasthana). Varanasi; Chaukhambha Orientalia; 2014. p.212.
8. Dr Nirmal Saxena. Vangasena Samhita. Varanasi; Chowkhamba Sanskrit Series; 2004.p.589.
9. Siddhi Nandan Mishra. Bhaishajya Ratnavali. Varanasi; Chaukhamba Surbharati Prakashan; 2012. p.747.
10. Vyas KY, Bedarkar, Galib R, Prajapati PK. Antihyperlipidemiac activity of Navaka Guggulu prepared with fresh (Naveena) and old (Purana) guggulu: A randomized clinical trial. Medical Journal of Dr DY Patil University. 2017; 10(3): 235-245
11. Donald O Fedder, Carol E Koro, Gilbert J L'Italien. New National Cholesterol Education Program III Guidelines for Primary Prevention Lipid Lowering Drug Therapy. AHA|ASA Journals. 2002; 105(2)
12. Pt. Parashuram Shastri Vidyasagar. Sharangadhara Samhita. Varanasi; Chaukhamba Surbharati Prakashan; 2006 p.145
13. Sawant AM, Shetty D, Mankeshwar R, Ashavaid TF. Prevalence of dyslipidemia in young adult Indian population. Journal of Associations of Physicians India. 2008 Feb; 56(February): 99–102
14. Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo. Harrison's Principle of Internal Medicine. 19th edition. New Delhi; Mac Graw Hill Education; 2015.

p. 2446.

15. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda central council for research in Ayurveda and Siddha. Volume 3. New Delhi; Central Council for Research in Ayurveda & Siddha; 2005. p.256.
16. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda central council for research in Ayurveda and Siddha. Volume 3. New Delhi; Central Council for Research in Ayurveda & Siddha; 2005. p.11
17. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda central council for research in Ayurveda and Siddha. Volume 3. New Delhi; Central Council for Research in Ayurveda & Siddha; 2005. p.282.
18. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda central council for research in Ayurveda and Siddha. Volume 3. New Delhi; Central Council for Research in Ayurveda & Siddha; 2005. p.158.
19. Sharma PC, Yelne MB, TJ Dennis. Database on medicinal plants used in Ayurveda central council for research in Ayurveda and Siddha. Volume 2. New Delhi; Central Council for Research in Ayurveda & Siddha; 2005. p.223.

Cite this article as:
Amrutha Y, Sajjanar J Neelakanta, Krishna Gopala. Efficacy of Guduchyadi Yoga in the Management of Medoroga with special reference to Dyslipidemia- A Rondomized Clinical Trial. International Journal of Ayurveda and Pharma Research. 2025;13(2):118-125.
https://doi.org/10.47070/ijapr.v13i2.3592
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Amrutha Y
PG Scholar,
Department of Postgraduate Studies in Kayachikitsa,
Sri Sri College of Ayurvedic Science and Research, Bengaluru, Karnataka.
Email: amrutha.y156@gmail.com

Disclaimer: IJAPR is solely owned by Mahadev Publications - dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJAPR cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of IJAPR editor or editorial board members.