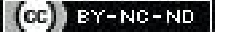


# Comparative Evaluation of Efficacy of *Gomutra Haritaki* versus Atorvastatin in the Management of Obesity: A Randomised Single-blind Standard Control Clinical Trial Protocol

SAKSHI MUTE<sup>1</sup>, SHWETA PARWE<sup>2</sup>, MILIND NISARGANDHA<sup>3</sup>, GARIMA GUPTA<sup>4</sup>

## ABSTRACT

**Introduction:** Obesity is a significant global health concern and is often associated with various complications, including cardiovascular diseases and metabolic disorders. Although drugs such as Atorvastatin are routinely employed to control lipid disturbances, they have unwanted side effects. *Gomutra Haritaki*, a traditional Ayurvedic remedy, offers a potential natural and holistic alternative.

**Need of the study:** The present research may shape integrative treatment strategies for obesity, a condition whose prevalence has more than doubled globally since 1990, affecting 16% of adults by 2022 {World Health Organisation (WHO)}. *Gomutra Haritaki*, as mentioned in *Charaka* and *Sushruta Samhita*, enhances digestion, metabolism, and fat reduction through its *Ushna Virya*, thereby balancing *Kapha* and *Meda*. In contrast, statins, though effective, can cause myalgia (1-10%), rare rhabdomyolysis (<0.1%), and occasionally affect liver function ( $\approx$ 1%) or increase diabetes risk. Risk factors include alcohol use, polypharmacy, and hypothyroidism.

**Aim:** To evaluate and compare the efficacy of *Gomutra Haritaki* and Atorvastatin in reducing obesity-related parameters such as weight, Body Mass Index (BMI), lipid profile, and waist-hip ratio in adult patients

**Materials and Methods:** The present research will be a single-blind, randomised, standard-controlled trial with 40 participants who have newly diagnosed cases of obesity in the age group 20-40 years and a BMI >30 kg/m<sup>2</sup>. Group A participants will be administered *Gomutra Haritaki*-3 g/day (3 tab twice daily), and Group B participants will be given Atorvastatin (10 mg daily). Both *Gomutra Haritaki* and Atorvastatin will be administered for a period of 60 consecutive days.

The trial will be conducted at Mahatma Gandhi Ayurved College and Hospital and Research Centre, Salod, Wardha, Maharashtra, India, between March 2025 and January 2026. Objective parameters, weight, BMI, lipid profile, and hip to waist ratio will be assessed on 0, 15<sup>th</sup>, 30<sup>th</sup>, and 60<sup>th</sup> days. Paired and unpaired t-tests will analyse data, with p<0.05 considered significant. Statistical analysis will be performed using Statistical Package for Social Sciences (SPSS) version 17.0.

## INTRODUCTION

Excessive adipose tissue accumulation, which can be caused by either an increase in the size (hypertrophy) or number (hyperplasia) of fat cells, is a characteristic of obesity. As the fifth most important risk factor for death globally, it has grown to be a serious global health concern. Its incidence is still frighteningly increasing in spite of continuous health initiatives [1]. Its occurrence has been steadily increasing in recent years, ranking as the sixth leading cause of death worldwide. A BMI of 30 or above is classified as obesity. Several causes, such as a poor diet, inactivity, genetic predispositions, or underlying medical conditions, can contribute to obesity. With 5% of the population suffering from morbid obesity, obesity has emerged as an epidemic in India during the 21<sup>st</sup> century [2]. Obesity is associated with various health conditions affecting multiple body systems, including musculoskeletal disorders, heart diseases, type 2 diabetes, and specific types of cancer. These conditions significantly contribute to morbidity and mortality.

Obesity is known in Ayurveda as "*Sthaulya*" or "*Medoroga*," symptoms that indicate an imbalance in the body's metabolic processes and an increase in *Medo Dhatu* (fat). Obesity, according to this ancient medical philosophy, is caused by an increase in *Kapha* dosha and an impairment of *Agni* (digestive fire), which interferes with the body's ability to utilise nutrients efficiently. *Sthaulya* is among the *Santarpanjanya Vikaras*, which are illnesses brought on by overeating, and traditional works like *Acharya Charak*, *Sushrut*,

and *Vagbhat* emphasise the importance of both medical and behavioural care to correct this imbalance [3,4].

Ayurvedic obesity management entails a comprehensive strategy that includes dietary adjustments, lifestyle changes, and herbal therapies to restore balance and support healthy weight loss. Ayurvedic remedies for obesity include the combination of *Gomutra* (cow urine) and *Haritaki* (*Terminalia chebula*). *Gomutra*, regarded as a holy *Rasayana* (rejuvenating agent), balances bioactive chemicals at the tissue level. In contrast, *Haritaki*, another *Rasayanadravya*, has qualities such as *Deepan* (digestive stimulant) and *Pachan*. Both drugs have similar pharmacological effects and efficiently remove excess fat and alleviate *Kapha* and *Medogat Vikaras* (fat metabolism diseases) [5].

Obesity is closely linked to dyslipidemia, leading to higher Triglyceride (TG) levels, lower High-Density Lipoprotein (HDL), increased Low-Density Lipoprotein (LDL), and insulin resistance. Excess body fat disrupts lipid metabolism, promotes inflammation, and raises the risk of cardiovascular diseases [6-8]. This combination helps to improve metabolism and lessen the long-term issues linked to fat. On the other hand, pharmacological medications like statins are frequently used in conventional medicine to reduce cholesterol and the risk of cardiovascular diseases. The way statins work is by blocking the  $\beta$ -Hydroxy  $\beta$ -methylglutaryl-CoA (HMG-CoA) reductase enzyme, which is essential for the synthesis of cholesterol. While both Ayurvedic and conventional medical approaches aim to

minimise obesity-related health risks, they do so through different mechanisms and medical perspectives. The present study seeks to evaluate the effectiveness of *Gomutra Haritaki* and statins in managing obesity.

#### Primary objectives:

1. To evaluate the effectiveness of *Gomutra Haritaki* on weight, BMI, waist-hip ratio, and lipid profile in obese individuals.
2. To assess the efficacy of Atorvastatin on the same parameters- weight, BMI, waist-hip ratio, and lipid profile.
3. To compare the effects of *Gomutra Haritaki* and Atorvastatin in managing obesity.

#### Secondary objectives:

1. To evaluate the safety, tolerability, and any adverse effects of *Gomutra Haritaki* compared with Atorvastatin.
2. To observe any additional health benefits, such as improved digestion, metabolism, and overall well-being in the *Gomutra Haritaki* group

**Null Hypothesis (H<sub>0</sub>):** There is no difference between the efficacy of *Gomutra Haritaki* and Standard Control Atorvastatin in managing obesity.

**Alternative Hypothesis (H<sub>1</sub>):** *Gomutra Haritaki* is more efficacious than standard control atorvastatin in the management of obesity.

## REVIEW OF LITERATURE

Preiss D et al., (2011) conducted a meta-analysis comparing the risk of incident diabetes between intensive-dose and moderate-dose statin therapy. The study revealed that high-dose statin therapy significantly increased the risk of new-onset diabetes without proportional benefits in weight reduction. These findings indicated that while statins effectively control lipid levels, they may adversely affect glucose metabolism, highlighting the metabolic limitations of conventional statin therapy in obesity management [9].

Swerdlow DI et al., (2015) explored the relationship between HMG-CoA reductase inhibition, type 2 diabetes and body weight using genetic and randomised trial data. Their findings demonstrated that statin-induced inhibition of HMG-CoA reductase was associated with modest increases in both blood glucose and body weight. The study concluded that long-term statin use could impair glycaemic control and energy metabolism, posing a challenge in obese or insulin-resistant individuals [10].

Thompson PD et al., (2016) provided a comprehensive review of statin-associated adverse effects. The study emphasised that prolonged statin therapy could lead to myalgia, fatigue, elevated hepatic enzymes, and insulin resistance. These adverse outcomes indicate that although Atorvastatin is effective in lipid regulation, it may not be suitable for patients with metabolic disorders such as obesity or prediabetes, due to its potential diabetogenic effects [11].

Koh KK et al., (2010) investigated the metabolic impact of Atorvastatin in hypercholesterolemic patients. Their findings revealed that while Atorvastatin effectively lowered lipid levels, it simultaneously caused insulin resistance and elevated fasting blood glucose. The study highlighted that statins might interfere with normal glucose metabolism, leading to metabolic imbalance during long-term therapy [12].

Gujarathi RA et al., (2014) conducted an observational pilot study to evaluate the effect of *Gomutra Haritaki* along with diet control and exercise in the management of *Sthaulya* (obesity). The study demonstrated significant improvement in body weight, Body Mass Index (BMI), and obesity-related symptoms. The findings support the *Medohara* (fat-reducing) and *Lekhana* (scraping) properties of *Gomutra Haritaki*, highlighting its potential role as a safe and effective Ayurvedic intervention in obesity management [13].

Patel S et al., (2022) reviewed the therapeutic role of *Haritaki* in the management of *Sthaulya* (obesity). The authors reported that *Haritaki* possesses *Deepana* (digestive stimulant), *Pachana* (digestive), *Lekhana* (scraping), and *Medoghna* (anti-obesity) properties. Pharmacological studies have also demonstrated its hypolipidemic, antioxidant, and metabolic regulatory effects, supporting its utility in improving lipid profiles and reducing obesity-related complications [14].

Giri SK et al., (2025) evaluated the safety and efficacy of an Ayurveda multi-herbal formulation in obese individuals. The study demonstrated significant reductions in BMI, waist circumference, body weight, and serum cholesterol levels, indicating that Ayurvedic interventions can play an effective role in obesity management while maintaining a favourable safety profile [15].

The *Charaka Samhita* describes *Haritaki* as *Medohara* (fat-reducing) and *Deepaneeya* (digestive stimulant). Acharya Charaka emphasised that regular consumption of *Haritaki* enhances Agni, promotes proper digestion, and prevents abnormal accumulation of *Meda Dhatu*. It is classified as *Rasayana* and *Tridosahara*, highlighting its rejuvenating and balancing effects on all *Doshas* [16].

In the *Sushruta Samhita*, *Haritaki* is described as *Tridosahara* and *Rasayana*, capable of balancing *Vata*, *Pitta*, and *Kapha Doshas*. Acharya Sushruta emphasised its tissue-strengthening and rejuvenative actions, particularly its ability to reduce excess *Meda Dhatu* and support healthy metabolism. This classical evidence reinforces *Haritaki*'s therapeutic potential in obesity management [17].

## MATERIALS AND METHODS

A single (assessor) blind, randomised, double-arm superiority clinical trial will be conducted at Mahatma Gandhi Ayurved College and Hospital and Research Centre, Salod, Wardha, Maharashtra, India, March 2025 to January 2026. Ethical permission has been sought from the Institutional Ethics Committee of the said Institute under registration number MGACHRC/IEC/Oct-2024/888. The CTRI registration number for the trial is REF/2024/11/094275. This committee will be responsible for monitoring the trial's progress and determining its final outcomes.

**Drug preparation:** *Gomutra Haritaki* is prepared following the guidelines mentioned in *Ashtanga Hridayam* (15/19-20). The required ingredients were collected, and dry crude *Haritaki* was finely powdered. This powder underwent *Bhavana* (levigation) using purified *Gomutra Arka*. The *Haritaki Churna* was triturated with *Gomutra* for six hours, then dried and powdered. The *Bhavita Haritaki* powder was initially dried under sunlight for a specific duration, followed by drying in indirect light. Once completely dried, the formulation was processed into tablets, each weighing 500 mg. This procedure will be performed under the supervision of the Head of *Rasa-Shastra* and *Bhaishajya Kalpana* at the institute [18]. [Table/ Fig-1] below gives the process of medicine preparation.

### Medication Dose

**Group A (Intervention Group):** Participants in Group A will receive *Gomutra Haritaki* tablets, 3 g/day (3 tablets twice daily), taken with lukewarm water during *Prāgbhaktakāla* (before lunch and dinner) for 60 days.

**Group B (Control Group):** Participants in Group B will receive Atorvastatin 10 mg once daily after dinner with lukewarm water for 60 days. The dose is based on standard clinical guidelines for lipid management.

Both groups will continue a similar dietary regimen without additional *Pathya-Apathya* restrictions.

The drug's raw components will be purchased from a licensed retail establishment. The drug will be standardised by the Mahatma Gandhi Ayurved College and Hospital Wardha's Department of *Dravya Guna*. According to *Ashtanga Hridayam*'s standard



[Table/Fig-1]: Medicine preparation.

operating procedure, *Gomutra Haritaki* will be made in Dattatreya Ayurved Rasashala Salod (H), Wardha.

#### Inclusion criteria:

- Patients who are prepared to provide informed consent in writing [19];
- Patients who meet the ICD-10 criteria for obesity (E 66.9-obesity, undefined) will be recruited [20];
- Patients are between 20-40 years of age [20];
- A newly diagnosed patient with dyslipidaemia (obesity) who has [20]:

Serum cholesterol levels (between 200 and 239 mg/dL)

TGs in serum (150-199 mg/dL)

HDL in serum <40 mg/dL (males) and <50 mg/dL (females)

LDL serum >159 mg/dL

VLDL serum >30 mg/dL

- Individuals with BMI  $\geq 30$  to 40 kg/m<sup>2</sup>.

#### Exclusion criteria:

- Individuals having a history of cardiovascular disease, diabetes mellitus, hypothyroidism, renal disorders, drug-induced obesity, etc.,
- Women who are nursing or pregnant.
- Any other ailments that arose while receiving treatment.

**Sample size calculation:** Sample size calculation for comparing two groups.

Formula -

$$n \geq \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 (\sigma_1^2 + \sigma_2^2 / r)}{(\mu_1 - \mu_2)^2}$$

Where:

- n represents the sample size for each group.
- $\sigma_1^2$ ,  $\sigma_2^2$ : Variances of Group 1 and Group 2
- r: Ratio – Group 2 to Group 1
- Significance level ( $\alpha$ ): 0.01
- Power of the test ( $\beta$ ): 0.01
- Mean value for Group 1 ( $\mu_1$ ): 230.0
- Standard deviation for Group 1 ( $\sigma_1$ ): 22.23
- Mean value for Group 2 ( $\mu_2$ ): 185.3
- Standard deviation for Group 2 ( $\sigma_2$ ): 33.1
- Group ratio (Group 2/Group 1): 1
- Sample size per group (n): 20

The sample size calculation was based on the mean and standard deviation values evaluating the efficacy of *Gomutra Haritaki* in the management of obesity.

### Criteria for Discontinuance or Alteration of Assigned Interventions

- Patients will be withdrawn if BMI rises above 40 and lipid profile rises above a set range.
- Participants who choose to withdraw during the study will be allowed to do so and will be substituted.
- Patients will be withdrawn if they experience any acute illness during the trial that could interfere with the study.
- If there are untoward events, drug sensitivity, or any other medical condition during the test, the patient will be treated for free until the condition is addressed, and such patients will also be withdrawn and replaced.

**Assessment schedule:** All participants will be assessed at four intervals during the study-Day 0 (Baseline), Day 15, Day 30, and Day 60 of the treatment period.

Parameters including Weight, BMI, Waist-Hip Ratio, and Lipid Profile (TC, HDL, LDL, Very Low-Density Lipoprotein (VLDL), TG) will be evaluated at each visit.

Final assessment and statistical analysis will be performed after the completion of the 60 day intervention period.

[Table/Fig-2] shows the ayurvedic properties of drugs used and [Table/Fig-3] depicts the role of *Gomutra* and *Haritaki* based on properties of each component [14].

Dravya	Taste (Rasa)	Properties (Guna)	Potency (Veerya)	Post digestion effect (Vipaka)	Action (Karma)
Haritaki (Terminalia chebula) [14]	Lavanavarjita Pancha-rasayukta	Laghu, Ruksha	Ushna	Madhura	Anulomak, Deepaniya

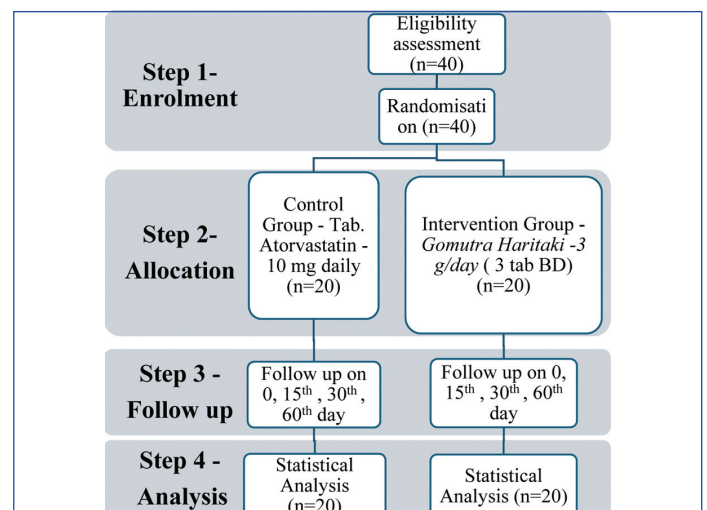
[Table/Fig-2]: Showing ayurvedic properties of drugs used [14].

Name of the drug	Latin Name	Properties of drugs which break the disease pathology
Haritaki [14]	Terminalia Chebula	Hypolipidemic activity, Hypo-cholesterolemic activity, Anti-inflammatory activity, Anti-diabetic effect, Antioxidant, and free radical scavenging activity, Gastrointestinal motility improvement, Purgative property, Immunomodulatory activity, Antibacterial activity, Antiviral activity

[Table/Fig-3]: Role of *Gomutra* and *Haritaki* based on properties of each component [14].

**Intervention modification:** The authors will notify the ethical committee of any unfavourable side-effects. The patients will receive treatment for the negative effects. If participants decide to stop the treatment, they must explain why.

[Table/Fig-4] below shows consort diagram and [Table/Fig-5] shows the Gantt chart.



[Table/Fig-4]: Research flow diagram (Study design in CONSORT form).

Scholar/Investigator	Sakshi Mute							
Title	Comparative evaluation of efficacy of gomutra haritaki versus atorvastatin in the management of obesity							
Steps	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
IEC authorisation	█							
Overview of literature	█							
Medicine preparation	█							
Patients enrolled		█						
Data collection		█						
Analysis		█						
Manuscript Writing		█						
Submission		█						

**[Table/Fig-5]:** Participant timeline (Gantt Chart).

## Study outcomes

### Primary outcomes:

1. Change in Body Weight (kg) from baseline to Day 60.
2. Change in BMI from baseline to Day 60.
3. Change in Waist-Hip Ratio from baseline to Day 60.
4. Change in Lipid Profile parameters -TC, LDL, HDL, VLDL, and TG- from baseline to Day 60.

### Secondary outcomes:

1. Assessment of safety and tolerability of *Gomutra Haritaki* compared with Atorvastatin through observation of adverse effects and patient-reported symptoms.
2. Evaluation of subjective parameters such as appetite, digestion, and energy level as supportive indicators of improved metabolism.
3. Monitoring of Liver Function Tests (LFTs) to assess drug safety.
4. Overall patient satisfaction and compliance with the intervention.

**Recruitment:** Patients of recently diagnosed obesity will be selected by the Mahatma Gandhi Ayurved College and Hospital and Research Centre, Salod, Wardha, Maharashtra, India, from Panchakarma Department, and peripheral camps. There will be 30 volunteers for the experiment.

**Allocation implementation:** The original author or the researcher will enroll the participants, administer the intervention, and determine the allocation sequence.

**Blinding:** Randomised single (assessor) blind double arm superiority comparative clinical trial.

**Dissemination:** The present study will also be published as an original article for further research work. The current study Protocol includes a discussion of the methodology, data-gathering strategies, data-processing tactics, and Ethical Approval. The authors hope to expand the corpus of knowledge in this field and facilitate further research.

## STATISTICAL ANALYSIS

The information will be examined by Statistical Package for Social Sciences (SPSS) 7.0 software. Changes in weight, lipid profile, and BMI levels will be analysed within the groups using paired t-tests. Unpaired t-tests will be used to compare differences between groups, with a p-value below 0.05 indicating statistical significance.

## Acknowledgement

The authors sincerely acknowledge the contributions of experts whose work has been referenced in this manuscript. They also

extend their appreciation to the authors, editors, and publishers of the books and articles utilized for research and discussion in this project.

**Conflict of Interest:** No conflicts of interest are associated with the present study.

**Grant Information:** The study will be financially supported by DMIHER University.

**Guidelines:** For the study, Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) Guidelines are being followed.

## REFERENCES

- [1] Parwe S, Mohan M, Bhagwat P, Nisargandha M. Effect of Rodhradi Gana Udavartana in the Management of Sthaulya (Overweight) with special reference to obesity. *Int J Life Sci Pharma Res.* 2022;11(3):30-37.
- [2] Park K. Park's textbook of preventive and social medicine. 23<sup>rd</sup> ed. Jabalpur: Bhanot Publications; 2015. Chapter 6, Epidemiology of non-communicable diseases/Obesity; p. 397.
- [3] Agnivesha, Charaka, Dridhabala. Vimaanasthana: Rasavimana Adhyaya (1/9–10). In: Acharya YT, editor. Charaka Samhita. 5<sup>th</sup> ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2001.
- [4] Agnivesha, Charaka, Dridhabala. Sutrasthana: Ashtaninditiya Adhyaya (21/4–8). In: Acharya YT, editor. Charaka Samhita. 5<sup>th</sup> ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2001. p. 116
- [5] Gujarathi RA, Dwivedi R, Vyas MK. An observational pilot study on the effect of Gomutra Haritaki, diet control and exercise in the Management of Sthaulya (obesity). *Ayu.* 2014;35(2):129-34. Doi: 10.4103/0974-8520.146206.
- [6] Swerdlow DI, Preiss D, Kuchenbaecker KB, Holmes MV, Engmann JEL, Shah T, et al. HMG-coenzyme A reductase inhibition, type 2 diabetes, and body weight: Evidence from genetic analysis and randomized trials. *Lancet.* 2015;385(9965):351-61. Doi: 10.1016/S0140-6736(14)61183-1.
- [7] Bays HE, Toth PP, Kris-Etherton PM, Abate N, Aronne LJ, Brown WV. Obesity, adiposity, and dyslipidemia: A consensus statement from the National Lipid Association. *J Clin Lipidol.* 2013;7(4):304-83. Doi: 10.1016/j.jacl.2013.04.001.
- [8] Powell-Wiley TM, Poirier P, Burke LE, et al. Obesity and Cardiovascular Disease: A Scientific Statement From the American Heart Association. *Circulation.* 2021;143(21):e984-e1010. Available from: <https://www.ahajournals.org/doi/10.1161/CIR.0000000000000973>.
- [9] Preiss D, Seshasai SRK, Welsh P, Murphy SA, Ho JE, Waters DD, et al. Risk of incident diabetes with intensive-dose compared with moderate-dose statin therapy: A meta-analysis. *JAMA.* 2011;305(24):2556-64. Doi: 10.1001/jama.2011.860.
- [10] Swerdlow DI, Preiss D, Kuchenbaecker KB, Holmes MV, Engmann JEL, Shah T, et al. HMG-coenzyme A reductase inhibition, type 2 diabetes, and body weight: Evidence from genetic analysis and randomized trials. *Lancet.* 2015;385(9965):351-61. Doi: 10.1016/S0140-6736(14)61183-1.
- [11] Thompson PD, Panza G, Zaleski A, Taylor B. Statin-associated side effects. *J Am Coll Cardiol.* 2016;67(20):2395-410. Doi:10.1016/j.jacc.2016.02.071.
- [12] Koh KK, Quon MJ, Han SH, Lee Y, Kim SJ, Shin EK. Atorvastatin causes insulin resistance and increases ambient glycaemia in hypercholesterolemic patients. *J Am Coll Cardiol.* 2010;55(12):1209-16.
- [13] Gujarathi RA, Dwivedi R, Vyas MK. An observational pilot study on the effect of Gomutra Haritaki, diet control and exercise in the management of Sthaulya (obesity). *AYU.* 2014;35(2):129-34. Doi: 10.4103/0974-8520.146206.
- [14] Patel S, Marwaha N, Bansal C, Jain T. Critical review on Haritaki w.s.r. to Sthaulya (obesity). *J Ayurveda Integr Med Sci.* 2022;7(1):187-90.
- [15] Giri SK, Vedi SK, Doddamani S, Naik R, Sharma S, Gavali K, et al. Clinical safety and efficacy of Ayurveda multi-herbal formulation in the management of obesity. *Glob Adv Integr Med Health.* 2025;14:27536130251356447.
- [16] Agnivesha, Charaka, Dridhabala. *Charaka Samhita*, with the commentary of Chakrapani Datta, edited by Acharya YT. 5<sup>th</sup> ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2001. Sutrasthana, chapter 21, verses 4-8.
- [17] Sushruta. *Sushruta Samhita*, with NibandhaSangraha commentary by Dalhana. 7<sup>th</sup> ed. Varanasi: Chaukhambha Orientalia; 2002. Sutrasthana, chapter 15, verse 44.
- [18] Joshi S, Goyal M, Harisha CR, Sukla VJ. Pharmacognostical and pharmaceutical assay of Gomutra Haritaki with special reference to three different samskaras (Klinna, Swedana and Bhavana). *Global J Res Med Plants Indigen Med.* 2016;5(5):146-57.
- [19] International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH). ICH harmonised guideline: Guideline for good clinical practice E6(R3). Final version. Geneva: ICH; 2025. Available from: ICH E6(R3) Final Guideline PDF.
- [20] Satone S, Parwe S, Sawarkar P, Nisargandha M. Comparative efficacy of Lekhan Basti with Ushkadi Gana versus Triphala Gana as against standard control in dyslipidaemia (Medoroga): A research protocol for a randomised controlled trial. *J Clin Diagn Res.* 2026;20(4):JK01-JK05. Doi: 10.7860/JCDR/2026/78390.22706.

**PARTICULARS OF CONTRIBUTORS:**

1. Intern, Department of Panchakarma, Mahatma Gandhi Ayurveda College Hospital and Research Centre, Wardha, Maharashtra, India.
2. Professor and Head, Department of Panchakarma, Mahatma Gandhi Ayurveda College Hospital and Research Centre, Wardha, Maharashtra, India.
3. Associate Professor, Department of Physiology, Sunderlal Patwa Government Medical College, Wardha, Maharashtra, India.
4. Postgraduate Scholar, Department of Panchakarma, Mahatma Gandhi Ayurveda College Hospital and Research Centre, Wardha, Maharashtra, India.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**

Shweta Parwe,  
Professor and Head, Department of Panchakarma, Mahatma Gandhi Ayurveda  
College Hospital and Research Centre, Wardha, Maharashtra, India.  
E-mail: shweta.parwe@dmr.edu.in

**PLAGIARISM CHECKING METHODS:** [\[Main H et al.\]](#)

- Plagiarism X-checker: Mar 20, 2025
- Manual Googling: Jan 05, 2026
- iThenticate Software: Jan 07, 2026 (1%)

**ETYMOLOGY:** Author Origin**EMENDATIONS:** 6**AUTHOR DECLARATION:**

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Mar 06, 2025**Date of Peer Review: **Jun 08, 2025**Date of Acceptance: **Jan 09, 2026**Date of Publishing: **Aug 01, 2026**