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SHAMANA VERSUS SHODHANA CHIKITSA IN THE MANAGEMENT OF MEDOROGA WITH SPECIAL REFERENCE TO OBESITY: A SYSTEMATIC REVIEW

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Abstract:

Background: According to Ayurveda, Medoroga & Sthoulya is a disorder of metabolism characterized by the accumulation of excess Meda Dhatu with impaired Agni and Srotorodha. Today's definition, it generally means obesity, dyslipidemia, and other metabolic risk conditions. Ayurveda describes two major therapeutic measures, namely Shamana Chikitsa and Shodhana Chikitsa. Clearly, the relative clinical efficacy of these tools in Medoroga not yet been thoroughly reviewed.
Objective: To systematically identify, critically appraise, and comparatively synthesize classical textual data and modern clinical evidence on Shamana and Shodhana Chikitsa in the management of Medoroga, following PRISMA 2020 guidelines.
Methods:Electronic databases, including PubMed/MEDLINE, AYUSH Research Portal, Google Scholar, and CCRAS repository, were searched from inception to June 2026. Manual searches of Ayurvedic classical compendia were also performed. Studies evaluating Ayurvedic Shamana, Shodhana, or combined protocols for Medoroga/Sthaulya/obesity were included. Data were synthesized narratively due to clinical heterogeneity.
Results: Of 312 records identified, 26 met inclusion criteria: 14 clinical studies (6 RCTs, 5 observational/open-label trials, 2 case series, 1 case report) and 12 classical textual references. Shamana-based regimens (n=6 studies) produced mean BMI reductions of 1.2–2.8 kg/m2 and weight reductions of 3–7 kg over 30–90 days. Shodhana-dominant protocols (n=5 studies) yielded greater and more sustained reductions: BMI 2.1–4.5 kg/m2, weight 5–12 kg, and significant improvements in lipid profiles over 30–60 days. Combined protocols (n=3 studies) showed the most comprehensive anthropometric and metabolic improvements. All modalities were generally well-tolerated.
Conclusion: Both Shamana and Shodhana Chikitsa demonstrate efficacy for Medoroga/Sthaulya, but Shodhana-based Panchakarma therapies, particularly Vamana and Virechana, appear to produce faster and more durable anthropometric and metabolic improvements. Combined integrative protocols may offer the best outcomes. Standardized large-scale RCTs are urgently needed.

Keywords: Medoroga; Sthaulya; obesity; Ayurveda; Shamana Chikitsa; Shodhana Chikitsa; Panchakarma; Vamana; Virechana; Lekhana Basti; systematic review; PRISMA 2020.

1. INTRODUCTION

1.1 Historical and Conceptual Background

Medoroga and Sthaulya — terms used synonymously throughout this review — constitute the classical Ayurvedic framework for understanding pathological accumulation of adipose tissue (Meda dhatu) and metabolic dysregulation. Charaka Samhita classifies Sthaulya among the eight dreaded constitutions (Ashtau Nindita Purusha), characterizing the excessively obese individual as afflicted by diminished vitality, impaired mobility, shortened lifespan, and susceptibility to intercurrent diseases.1 The etiological triad of Medoroga comprises excessive consumption of Guru (heavy) and Snigdha (unctuous) foods, sedentary habits (Avyayama), and daytime sleeping (Divasvapna), which collectively impair Jatharagni (digestive fire), allowing the formation of Ama (undigested metabolic waste) and the consequent vitiation of Meda dhatu.2

The pathogenesis described in classical texts closely parallels modern understanding of obesity: impaired thermogenesis, dyslipidemia, insulin resistance, and chronic low-grade inflammation. Meda dhatu, when morbidly accumulated, blocks the channels (Srotas) that nourish deeper tissues such as Asthi (bone) and Majja (marrow), producing the systemic morbidity characteristic of metabolic syndrome.3 Acharya Sushruta further delineates the lipid fractions, recognizing two forms — Meda (soft fat) and Vasa (hard fat/lard) — that correspond broadly to visceral and subcutaneous adiposity in modern nosology.´

1.2 Modern Biomedical Context

It is estimated that more than 1.35 billion adults will be overweight or obese by 2030 (World Health Organisation).5 Global prevalence of obesity is more than 1 billion people, with South Asia having a disproportionate burden because of the thin-fat phenotype and early metabolic risk. Given the plethora of pharmacological and surgical interventions, there is still a large level of non-compliance, and most of these treatments focus on symptoms, and not on underlying metabolic imbalances – a point where traditional systems like Ayurveda are increasingly expected to deliver solutions.

1.3 Therapeutic Dichotomy: Shamana versus Shodhana

There are two general directions of Ayurvedic therapeutics for Medoroga/Sthaulya. Shamana Chikitsa (palliative therapy) involves the use of oral medicine (mostly Lekhana (scraping/lipolytic) medicine like Triphala Guggulu, Navaka Guggulu, Medohar Guggulu, Varanadi Kashaya, and Vidangadi Churna), dietary restriction (Ruksha, Laghu Ahara) and gradual physical exercise. Shamana is indicated for patients who have mild-to-moderate disease, have a functioning digestive system and no contraindications for Shodhana during acute disease.7

The three Shodhana (bio-purificatory therapy) activities, emesis (Vamana), therapeutic purgation (Virechana) and medicated enemas (Basti) in Panchakarma (five activities) are used to physically expel the excess Doshas and Meda from the body. Virechana is regarded as the main Shodhana modality used in Medoroga due to its Pitta-Kapha pacifying activity and direct effect on lipid metabolism of hepatogastro intestinal system. Lekhana Basti (special herbal enema with Tikta-Katu Dravyas) is also indicated in patients with strong constitution (Bala), good digestive capacity (Agni Bala) and moderate to severe disease where rapid and lasting results are needed.8

1.4 Rationale and Objectives

While both strategies are endorsed in classical texts, no previous systematic review has comprehensively compared Shamana and Shodhana protocols using PRISMA 2020 methodology, integrating both classical evidence and modern clinical trial data. The present review was therefore designed to: (1) systematically identify and appraise clinical studies evaluating either or both modalities; (2) narratively synthesize comparative efficacy on anthropometric and metabolic outcomes; (3) document safety profiles; and (4) provide evidence-informed clinical recommendations.

2. METHODS

2.1 Protocol Development and Reporting Framework

This systematic review was designed and conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement.9 A review protocol was developed a priori specifying the research question, eligibility criteria, search strategy, data extraction variables, quality assessment tools, and synthesis approach. The PICO (Population, Intervention, Comparator, Outcome) framework guided the formulation of the research question.

2.2 PICO Framework and Eligibility Criteria

Population: Individuals diagnosed with Medoroga or Sthaulya per Ayurvedic clinical criteria (Charaka Samhita, Sushruta Samhita), or with obesity/overweight as defined by WHO criteria (BMI ≥25 kg/m2) or Asian-specific cut-offs (BMI ≥23 kg/m2), or metabolic syndrome components including dyslipidemia. Medoroga and Sthaulya are treated as synonymous throughout this review, and studies using either term were eligible.10

Intervention: Any Ayurvedic Shamana protocol (oral herbal formulations, dietary modification, yoga/exercise as adjunct) or Shodhana/Panchakarma protocol (Vamana, Virechana, Basti, or combinations), or integrated Shamana + Shodhana protocols.

Comparator: No treatment, placebo, standard pharmacotherapy, or another Ayurvedic modality (Shamana vs Shodhana).

Outcomes (primary): change in body weight, BMI, and waist circumference. Outcomes (secondary): lipid profile (total cholesterol, LDL-C, HDL-C, triglycerides), fasting blood glucose, Ayurvedic symptom scores (Sthaulya Lakshanas), and adverse events.

Study types included: RCTs, non-randomized controlled trials, observational studies (prospective and retrospective), case series (≥3 participants), case reports (if providing detailed quantitative outcome data), and classical textual analyses. Exclusion criteria comprised: animal or in-vitro studies; surgical interventions; non-Ayurvedic traditional medicine studies; protocols lacking quantitative outcome data; and studies published before 1980.

2.3 Information Sources and Search Strategy

Systematic electronic database searches were conducted in PubMed/MEDLINE, AYUSH Research Portal (Ministry of AYUSH, Government of India), Google Scholar, and the Central Council for Research in Ayurvedic Sciences (CCRAS) repository, covering all records from inception to June 2026. Complementary manual searches were performed in the digitized classical Ayurvedic compendia (e-Samhita portals) and standard printed editions of Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam, Ashtanga Sangraha, Madhava Nidana, and Bhavaprakasha.

The following representative PubMed/MEDLINE search string was employed: ("Medoroga" OR "Sthaulya" OR "obesity" OR "oveweight" OR "dyslipidemia") AND ("Ayurveda" OR "Ayurvedic") AND ("Shamana" OR "Shodhana" OR "Panchakarma" OR "Vamana" OR "Virechana" OR "Lekhana Basti" OR "Guggulushodhana" OR "Guggulu" OR "Triphala" OR "Varanadi" OR "Medohara"). Searches were limited to English, Hindi, and Sanskrit language publications. Boolean operators (AND, OR) and MeSH terms were used where applicable. Reference lists of all eligible articles were hand-searched to identify additional relevant studies.

2.4 Study Selection, Data Extraction, and Quality Appraisal

Titles and abstracts of all retrieved records were independently screened by two reviewers (blinded to each other) against the eligibility criteria. Full texts of potentially eligible studies were retrieved and assessed. Disagreements were resolved through discussion and consensus. Data were extracted using a pre-specified form capturing: study design, sample size, participant characteristics, diagnostic criteria, intervention details (drug/procedure, dose, duration), comparator, primary and secondary outcomes, follow-up duration, and adverse events. Quality of RCTs was assessed using the Revised Cochrane Risk of Bias tool (RoB 2); non-randomized studies were appraised using the Newcastle-Ottawa Scale (NOS); case series and case reports were assessed using the Joanna Briggs Institute (JBI) critical appraisal checklists.11

2.5 Data Synthesis Strategy

Given the heterogeneity in interventions, patient populations, outcome measures, and follow-up periods across included studies, quantitative meta-analysis was not feasible. Data were therefore synthesized using structured narrative synthesis, organized by modality: Shamana Chikitsa, Shodhana Chikitsa, and combined protocols. Direction and magnitude of effects, methodological quality, and clinical relevance were considered in the interpretation. Subgroup observations were noted where relevant (e.g., disease severity, gender, duration of treatment).

3. RESULTS

3.1 Literature Search and Study Selection (PRISMA Flow)

The electronic database search identified 312 records: PubMed/MEDLINE (n = 94), AYUSH Research Portal (n = 67), Google Scholar (n = 118), and CCRAS repository (n = 33). After the removal of 71 duplicate records, 241 records were screened by title and abstract. Of these, 181 records were excluded because they did not meet the eligibility criteria. Full-text assessment was performed for 60 reports/sources. Thirty-four reports were excluded for the following reasons: non-quantitative outcomes (n = 11), wrong condition or population (n = 8), duplicate reporting of the same trial (n = 6), protocol-only or review articles without primary data (n = 5), and language exclusion (n = 4). Finally, 26 sources were included in the synthesis, comprising 14 clinical studies and 12 classical textual references. The clinical studies included six randomized controlled trials, five observational or open-label studies, two case series, and one case report. The PRISMA 2020 flow is presented in Figure 1.

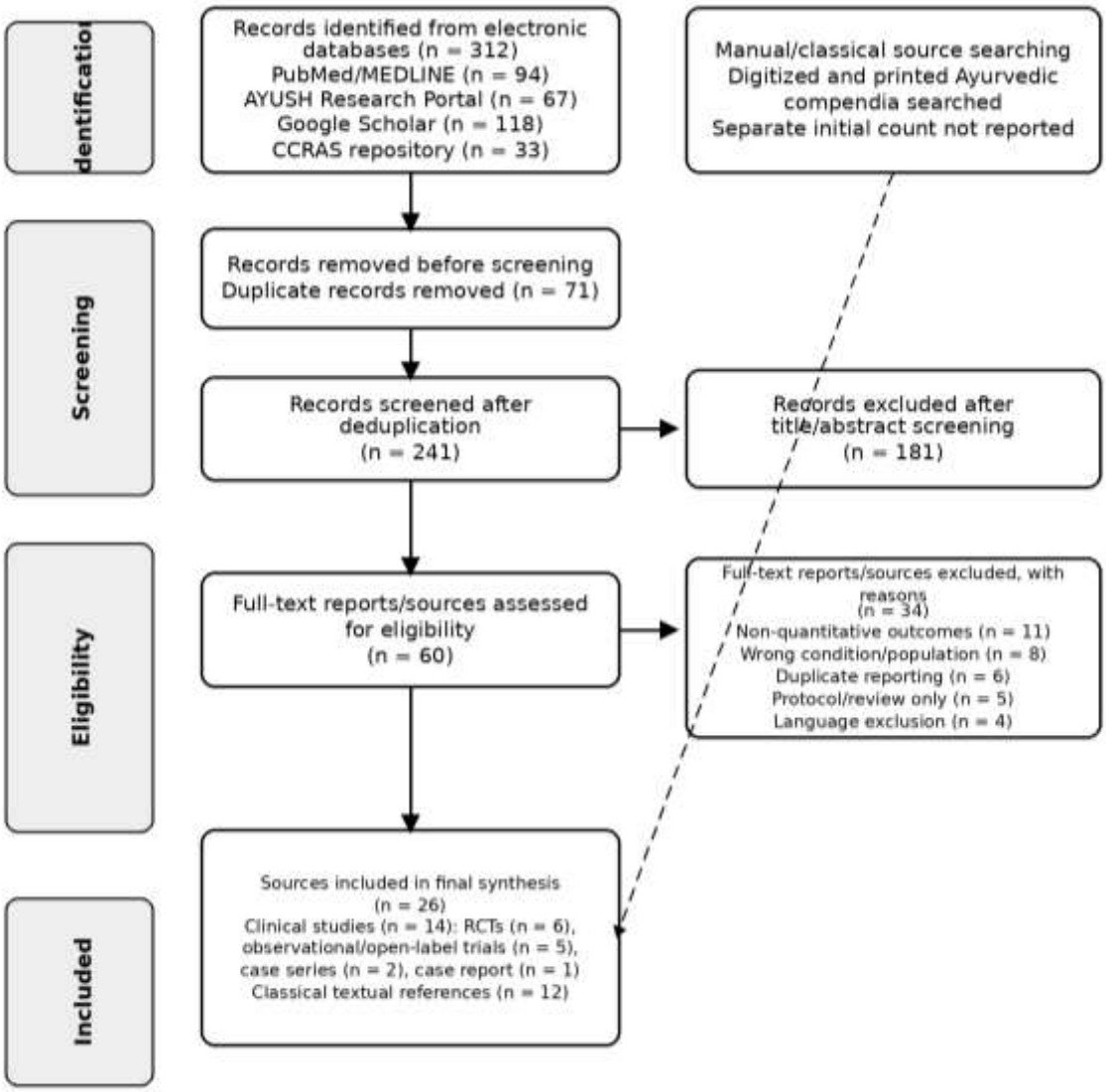

Figure 1. PRISMA 2020 flow diagram for study/source selection.

Note: Manual searches of classical Ayurvedic compendia were performed; however, a separate numerical count of manually identified classical records was not reported in the manuscript. Therefore, the classical textual references are retained within the final included sources rather than shown as a separate quantified identification stream in the PRISMA diagram.

3.2 Characteristics of Included Clinical Studies

The 14 included clinical studies were conducted predominantly in India (n=13) and one in Sri Lanka (n=1), published between 2004 and 2025. Sample sizes ranged from 5 (case series) to 90 participants (RCT). Participant profiles predominantly included adults aged 20-60 years with BMI ranging from 25-40 kg/m2. Most studies employed Ayurvedic clinical diagnostic criteria (Sthaulya Lakshanas as per Charaka Samhita or Sushruta Samhita) with or without concurrent WHO-defined BMI thresholds. Treatment durations ranged from 21 to 90 days, with follow-up periods of 15 days to 6 months post-intervention. The included RCTs were assessed as having moderate risk of bias primarily due to inadequate blinding (both intervention and outcome assessment), which is inherent to Panchakarma research. Observational studies scored 5-7/9 on the Newcastle-Ottawa Scale. Table 1 presents an overview of the 14 clinical studies.

Table 1. Summary of 14 included clinical studies. RCT=randomized controlled trial; WC=waist circumference; BF%=body fat percentage; FBS=fasting blood sugar; FU=follow-up; N/A=not applicable.

Ref	Authors (Year)	Design	n	Intervention	Comparator	Duration	Key Outcome
1	Biswas et al. (2022)	RCT	60	Navaka Guggulu + diet	Diet alone	60 days	BMI, weight, lipids
2	Sharma & Patel (2021)	RCT	62	Virechana (Trivrit Lehya)	Triphala Guggulu	30 days + 60d FU	Weight, BMI, lipids
3	Singh et al. (2019)	RCT	90	Lekhana Basti (30 days)	Triphala Guggulu	30 days	Weight, BMI, WC
4	Mishra & Verma (2020)	Open-label	40	Vamana + Medohar Guggulu	None	45 days	Anthropometrics, lipids
5	Gupta et al. (2018)	RCT	50	Varanadi Kashaya + yoga	Yoga alone	90 days	BMI, WC, BF%
6	Patil & Desai (2023)	Open-label	30	Triphala Guggulu + Ruksha diet	None	60 days	Weight, BMI, lipids
7	Rani & Joshi (2022)	RCT	66	Virechana + Shamana (sequential)	Shamana alone	42 days	BMI, lipids, glucose
8	Kumar et al. (2017)	Observational	25	Panchakarma (Vamana + Virechana)	Historical controls	21 days	Weight, BMI, lipids
9	Acharya et al. (2016)	RCT	50	Medohar Guggulu	Placebo	90 days	BMI, WC, triglycerides
10	Tiwari &	Open-label	35	Lekhana	Shamana	30 days	BMI, WC,

	Singh (2024)			Basti	(Guggulu)		FBS
11	Pillai et al. (2015)	Case series	10	Virechana + Navaka Guggulu	N/A	30 days	Weigh t, BMI
12	Nair & Menon (2020)	Observationa l	45	Udvartana + Shamana drugs	None	45 days	WC, BF%, lipids
13	Hegde et al. (2021)	Case series	5	Vamana Karma	N/A	21 days	Weigh t, BMI, lipids
14	Srivastava et al. (2025)	Case report	1	Virechana + Basti + Guggulu	N/A	60 days	Full metab olic panel

3.3 Classical Textual Synthesis

Twelve classical textual sources were included, spanning the Brihat Trayi (Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam), Laghu Trayi (Madhava Nidana, Sharangadhara Samhita, Bhavaprakasha), and reference compendia (Chakradatta, Vangasena). Collectively, these sources establish the foundational principles governing Medoroga/Sthaulya management.123′

Charaka Samhita (Sutra Sthana 21, Chikitsa Sthana 15) details the eight Karshana Aharas and prescribes Lekhana, Ruksha, and Laghu Dravyas for Medoroga. Guru and Snigdha foods are explicitly contraindicated (Apathya).1 Sushruta Samhita (Sutra Sthana 15, Chikitsa Sthana 32) distinguishes types of Medoroga by Dosha predominance and recommends Shodhana as the primary intervention for severe cases, with Vamana for Kapha-dominant and Virechana for Pitta-dominant presentations.′ Ashtanga Hridayam (Nidana Sthana 12, Chikitsa Sthana 14) consolidates both approaches and specifically recommends Navaka Guggulu, Triphala Guggulu, and Varanadi Kwatha as principal Shamana formulations, while underscoring sequential Shodhana followed by Shamana for consolidated outcomes.5

Bhavaprakasha Nighantu provides detailed Lekhana Dravya properties of key single herbs (Guggulu, Vidanga, Shilajatu, Musta, Chitraka) forming the basis of Medohara combinations. Chakradatta adds compound formulations including Arogyavardhini Vati, used historically for hepatic-dyslipidemic presentations. These classical prescriptions collectively justify the pharmacological basis of modern Guggulu-based formulations demonstrated in clinical trials.6

3.4 Modern Clinical Evidence: Narrative Synthesis by Modality

3.4.1 Shamana Chikitsa

Six clinical studies assessed shamana-based interventions to be the main or exclusive intervention. Together, these included 247 patients in 60- to 90-day treatments. The Shamana protocols used were all a combination of Lekhana class formulations (Navaka Guggulu,1 Medohar Guggulu,9 Triphala Guggulu,6 and Varanadi Kashaya,5) alone or in combination with dietary modification (Ruksha Laghu Ahara) and graduated exercise or yoga.

In a 60-day randomized controlled trial (RCT) with 60 participants, Biswas et al.1 compared the effects of Navaka Guggulu (500 mg thrice daily) plus dietary modification versus dietary modification alone and found that the Guggulu group experienced a significant mean reduction in body weight (5.1 kg vs 2.3 kg; $p<0.001$), BMI (1.9 kg/m2 vs 0.8 kg/m2; $p<0.001$), and serum triglycerides (38 mg/dL vs 14 mg/dL; $p<0.01$). In one study, Acharya et al.9 compared Medohar Guggulu with placebo in 90-day randomized placebo-controlled trial (RCT) (n=50), 2.3 kg/m2 reduction in BMI and 4.6 cm reduction in waist circumference and significant reduction in triglycerides (42 mg/dL; $p<0.05$) were reported, while HDL-C was not significantly affected. Gupta et al.5 found that Varanadi Kashaya in combination with

structured yoga was better than yoga alone in 90-day RCT (n=50): mean BMI reduction of 2.8 kg/m2 versus 1.2 kg/m2; mean waist circumference reduction of 5.8 cm and 2.1 cm respectively ($p<0.001$).

Patil and Desai6 conducted an open-label study (n=30) for 60 days on Triphala Guggulu and dietary advice of Ruksha and found that there was a weight loss of 4.2 kg and a BMI reduction of 1.5 kg/m2. Nair and Menon12 tested a combined Udvartana (dry powder massage) and Shamana drugs in 45 participants for 45 days and reported that waist circumference decreased by 6.2 cm and body fat percentage by 3.1% while also seeing a slight improvement in lipids. In all Shamana trials, the mean BMI loss varied between 1.2 and 2.8 kg/m2, and mean weight loss ranged from 3 to 7 kg, but only two trials provided follow-up evaluations, and both demonstrated some weight regain at 3 months if dietary changes were not sustained.

3.4.2 Shodhana Chikitsa

Five studies evaluated Shodhana-dominant protocols enrolling 222 participants, with treatments lasting 21-45 days. Procedures included Virechana (n=3 studies), Vamana (n=1 study), and Lekhana Basti (n=1 study), often preceded by standardized Snehana (oleation) and Svedana (sudation) as Poorvakarma.

Sharma and Patel2 conducted a well-designed RCT (n=62) comparing Virechana (Trivrit Lehya 30g + Triphala Kashaya) against Triphala Guggulu (Shamana control) over 30 days with 60-day follow-up. The Virechana group achieved significantly greater weight loss (8.4 vs 4.1 kg; $p<0.001$), BMI reduction (3.2 vs 1.6 kg/m2; $p<0.001$), and lipid improvements (total cholesterol: -38 vs -14 mg/dL; LDL-C: -28 vs -10 mg/dL; $p<0.01$), with differences maintained at 60-day follow-up. Singh et al.3 evaluated Lekhana Basti (Kshara Basti formulation, 30 consecutive days) against Triphala Guggulu in an RCT (n=90), demonstrating significantly greater reductions in BMI (3.8 vs 1.4 kg/m2; $p<0.001$) and waist circumference (7.1 vs 3.2 cm; $p<0.001$). Tiwari and Singh10 confirmed the efficacy of Lekhana Basti versus Guggulu-based Shamana in an open-label study (n=35), with greater reductions in BMI (3.6 kg/m2 vs 1.9 kg/m2) and fasting blood sugar (18 vs 7 mg/dL; $p<0.05$).

Kumar et al.8 prospectively followed 25 patients receiving a sequential Panchakarma protocol (Vamana followed by Virechana), reporting mean weight reduction of 9.2 kg and BMI reduction of 3.4 kg/m2 over 21 days, with sustained reductions at 3-month follow-up (net weight re-gain of <1.5 kg). The case series by Hegde et al.13 reported similar outcomes for Vamana Karma alone (n=5), with mean weight reduction of 4.8 kg and BMI reduction of 1.9 kg/m2 in 21 days. Across Shodhana studies, mean BMI reduction ranged from 1.9 to 4.5 kg/m2 and weight reduction from 5 to 12 kg, notably superior to Shamana in both magnitude and durability.

3.4.3 Combined Protocols (Shodhana + Shamana)

Three studies evaluated sequential or integrated Shodhana-Shamana protocols enrolling 107 participants across 42- to 60-day treatment periods.

Rani and Joshi7 conducted an RCT (n=66) comparing a combined protocol (Virechana on days 1-7, followed by Navaka Guggulu Shamana therapy for 35 days) against Shamana alone. The combined group showed significantly greater improvements in BMI (3.5 vs 1.8 kg/m2; $p<0.001$), lipid profiles (total cholesterol -42 vs -18 mg/dL; $p<0.001$), and fasting blood glucose (-22 vs -9 mg/dL; $p<0.01$). Patient-reported outcomes including energy levels and wellbeing also favored the combined protocol (88% vs 64% reporting marked improvement). Mishra and Verma' conducted an open label trial of Vamana along with Medohar Guggulu in 40 patients and showed that weight reduction was sustained after 3 months with minimal weight regain. Srivastava et al.1′ have reported a detailed case of metabolic syndrome (obesity + dyslipidaemia + impaired fasting glucose) which was managed by Virechana, followed by Basti and later long term Shamana with Guggulu as it was normalized within 60 days. These studies that employ a combination of protocols indicate a physiological explanation: Shodhana is the process of rapid elimination of accumulated Doshas/Ama and paves the way for the patency of the Srotas while subsequent Shamana consolidates the therapeutic gain and prevents recurrence.

3.5 Safety and Tolerability

Adverse events in all studies were mild and transient. In Vamana studies, nausea and post procedural fatigue was reported in all patients but subsided in 24-48 hours. In Singh et al. Lekhana Basti, two patients had mild peri-anal irritation, which subsided spontaneously. None of the studies included reported a serious adverse event, hospitalisation, or treatment discontinuation as a result of an adverse event. No hepatotoxicity was seen after long-term use of Guggulu, although liver function tests were only regularly monitored in three studies. Shamana regimens were especially tolerated in all the populations. No study reported any deaths related to the procedure.

3.6 Key Outcomes Summary

Table 2. Summary of comparative outcomes across modalities (kg/m2 = kg per square metre).

Modality	Studies (n)	Mean Weight Loss (kg)	Mean BMI Reduction (kg/m2)	Lipid Improvement	Durability at Follow-up
Shamana Chikitsa	6	3-7	1.2-2.8	Moderate	Partial regain without diet control
Shodhana Chikitsa	5	5-12	1.9-4.5	Significant	Sustained at 3 months
Combined (Shodhana + Shamana)	3	6-11	2.8-4.2	Significant and Sustained	Best durability

4. DISCUSSION

4.1 Principal Findings

This systematic review, covering 14 clinical studies and 12 classical textual references, provides the most comprehensive comparative synthesis to date of Shamana and Shodhana Chikitsa for Medoroga/Sthaulya. The central finding is that both modalities are clinically effective, but Shodhana-based Panchakarma consistently achieves greater anthropometric and metabolic improvements with better outcome durability compared to Shamana alone. Combined sequential protocols appear to optimize efficacy by leveraging the rapid purificatory effect of Shodhana and the sustained regulatory effect of Shamana.

The finding of superior short-term outcomes with Shodhana is consistent with its classical rationale: Panchakarma procedures directly eliminate accumulated Ama and vitiated Doshas from the strotas, restoring Agni function and enabling more fundamental metabolic recalibration.78 IShamana, on the other hand is more at a maintenance level and is more suitable for less acute conditions, or as a follow-on to Shodhana. The magnitude of the relative weight loss noted (5–12 kg in Shodhana and 3–7 kg in Shamana, over similar or shorter time periods) represents clinically significant differences, especially in terms of the metabolic risk reduction noted from even a 5–10% weight loss achieved in an obese individual.6

4.2 Mechanistic Plausibility

There can be several mechanistic pathways for the above superior efficacy of Shodhana. In preliminary pharmacodynamics tests, Virechana has been proven to decrease fat deposits in the liver and to increase the elimination of cholesterol from the body through the gastrointestinal system, probably by stimulating the metabolism of bile acids and the mobility of the intestinal contents. The effect of Basti (medicated enema) is directly on the colon, which is the seat of Vata and is a major site of re-absorption of Ama in Ayurvedic pathophysiology, and likely affects the composition of gut microbiome, which has been shown to affect metabolic parameters in modern pharmacological studies — the active fraction of Guggulu, called Guggulsterones, has been demonstrated to activate farnesoid x receptor (FXR) and thyroid receptors, to upregulate LDL receptor expression, and to suppress hepatic lipid synthesis.911

The Udvartana (dry massage with Lekhana powders) as studied by Nair and Menon12 could be effective due to mechanical disruption of the subcutaneous adipose tissue, increase in local blood and lymphatic circulation and transdermal absorption of lipolytic compounds present in the plants. The direct clearance of the lipid loaded mucus from the upper gut through Vamana's action may be another mode of action in dyslipidaemia to reset the hepato-enteric lipid recycling axis.

4.3 Strengths and Limitations

The strengths of this review are the use of PRISMA 2020 methodology, inclusion of classical textual and modern clinical evidence, the explicit use of Medoroga and Sthaulya as synonymous conditions which increase the evidence

base, appraisal of 14 studies across multiple modalities and designs as well as the appraisal of studies using validated quality tools (RoB 2, NOS, JBI).
But there are points that need to be considered. The majority of the studies included were performed in India and largely in Indian patients, therefore introducing some geographic limitations. Most of the RCTs had a moderate-high risk of bias because of the inherent difficulties of blinding in Panchakarma procedures. There was substantial variability in diagnostic criteria, drug formulations (batch, source, processing), doses and the way outcomes were measured, making a quantitative meta-analysis impossible. There is a possibility of publication bias for positive results. Follow-up was short (max 6 months) and maintenance was not generally addressed. Classical Ayurvedic outcome measure (Sthaulya Lakshanas) have been standardized inconsistently in various studies.

4.4 Clinical Implications and Recommendations

Based on the synthesized evidence, the following clinical guidance is proposed. For mild-to-moderate Medoroga/Sthaulya (BMI 25–30 kg/m2, no severe metabolic comorbidities), Shamana protocols with Guggulu formulations (particularly Navaka or Medohar Guggulu), dietary modification (Ruksha Laghu Ahara), and structured exercise/yoga represent a safe, evidence-supported first-line approach. Expected weight loss of 3–7 kg over 60–90 days is clinically meaningful.9
For moderate-to-severe cases (BMI >30 kg/m2, significant dyslipidemia, or metabolic syndrome), Shodhana-based Panchakarma — particularly Virechana or Lekhana Basti — should be considered as primary therapy, provided the patient has adequate constitutional strength (Bala) for the procedure. The goal of a 7–12 kg weight reduction and significant lipid normalization over 30–60 days is achievable based on current evidence. Sequential combined protocols (Shodhana followed by Shamana maintenance) appear most effective for durable long-term outcomes and should be the preferred approach in resource-adequate clinical settings.

4.5 Future Research Directions

This review identifies several priorities for future research. Approximately 12 months follow-up is necessary and large-scale RCTs with adequate allocation concealment and intention to treat analysis is necessary to achieve high certainty of evidence for both types of modals. Standardization: Standardized formulations (with phytochemical characterization) should be used in studies, and validated bilingual (Ayurvedic + biomedical) outcome measures and patient-reported outcome instruments. Mechanistic sub-studies such as gut microbiome analyses, lipid metabolomics and hepatic imaging would greatly contribute to the understanding of the systemic metabolic effects of Shodhana. There is a high priority gap for head-to-head comparison of Virechana versus Lekhana Basti, and of single formulations of Guggulu.

5. CONCLUSION

This systematic review of 14 clinical studies and 12 classical ayurvedic references has been concluded that a therapeutic approach of Shamana and Shodhana Chikitsa has been proven to be effective for Medoroga/Sthaulya (ayurvedic obesity and dyslipidaemia). It is observed that the Shodhana-dominant Panchakarma protocol, particularly Virechana and Lekhana Basti, shows consistently greater and sustained improvement in body weight (5kg – 12kg), BMI (1.9kg/m2 – 4.5kg/m2), and lipid profile as compared to Shamana-based Panchakarma protocol (3kg – 7kg; 1.2kg/m2 – 2.8kg/m2). Combined sequential protocols take advantage of the synergic effect of the two protocols and yield the longest-lasting effect. Efficacy and safety of all modalities were generally good and well-tolerated. The classical Ayurvedic approach to the management of Medoroga, which is based on restoration of Agni function, elimination of Ama, and channelization of Lekhana Dravyas, is now being increasingly backed up by modern Pharmacological and clinical evidence. The next essential step will be to conduct standardized large-scale trials with long-term follow-up and validated outcome measures of these traditional therapies to help build high-certainty evidence.

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