Available online on 15.09.2026 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

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Review Article

Therapeutic Efficacy and Safety of Multi-Modal Ayurvedic Protocols in the Management of *Garbhashayagata Arbuda* (Uterine Fibroid): A Systematic Review

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Article Info:

Article History:

Received 19 June 2026
Reviewed 06 Aug 2026
Accepted 27 Aug 2026
Published 15 Sep 2026

Cite this article as:

Agrawal V, Jain A, Bharathi K, Therapeutic Efficacy and Safety of Multi-Modal Ayurvedic Protocols in the Management of *Garbhashayagata Arbuda* (Uterine Fibroid): A Systematic Review, Journal of Drug Delivery and Therapeutics. 2026; 16(9):175-181 *DOI:* https://doi.org/10.22270/jddt.v16i9.7952

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Abstract

Background: Uterine fibroids are the most common benign tumors of the female reproductive system and are associated with heavy menstrual bleeding, pelvic pain, dysmenorrhea, infertility, and reduced quality of life. Ayurveda offers a conservative approach to management through *Shodhana* and *Shamana* therapies; however, the available clinical evidence requires systematic evaluation. **Methods:** A systematic search was conducted in PubMed, Scopus, Web of Science, Cochrane Library, AYUSH Research Portal, DHARA, and Google Scholar. Clinical studies evaluating Ayurvedic interventions for uterine fibroids were screened according to predefined eligibility criteria. Data on study characteristics, interventions, outcomes, safety, and risk of bias were extracted and qualitatively synthesized. Risk of bias was assessed using the Cochrane RoB 2 and ROBINS-I tools. **Results:** Seven clinical studies published between 2014 and 2026 were included. The interventions comprised *Panchakarma* procedures (*Vamana, Virechana*, and *Uttara Basti*) and classical Ayurvedic formulations. Most studies demonstrated significant reductions in fibroid size, menstrual bleeding, pelvic pain, and symptom severity. Combined *Shodhana* and *Shamana* therapies generally produced superior outcomes compared with oral therapy alone. No serious adverse drug reactions were reported. The overall risk of bias ranged from some concerns to moderate. **Conclusion:** Ayurvedic interventions appear to be safe and beneficial in reducing fibroid size and improving clinical symptoms. However, larger, well-designed randomized controlled trials with standardized treatment protocols and longer follow-up are required to strengthen the current evidence.

Keywords: Uterine fibroid, *Garbhashaya Granthi, Panchakarma, Uttara Basti*, Systematic review.

INTRODUCTION

Uterine fibroids, also known as leiomyomas, are the most common benign tumors of the female reproductive system, arising from the smooth muscle cells of the myometrium. They are hormone-dependent growths, primarily influenced by estrogen and progesterone, and are frequently observed during the reproductive years. Although many fibroids remain asymptomatic, a significant proportion of women experience symptoms such as menorrhagia, dysmenorrhea, pelvic pressure, infertility, and recurrent pregnancy loss, thereby adversely affecting quality of life. The global prevalence of uterine fibroids varies widely, with estimates suggesting that up to 60–80% of women may develop fibroids by the age of 50 years.[1] The incidence is higher in women of African descent and increases with advancing age, nulliparity, obesity, and genetic predisposition.[2] In India, uterine fibroids constitute a major gynecological concern, contributing substantially to outpatient visits and surgical interventions such as hysterectomy.[3] Despite their benign nature, the clinical burden of fibroids necessitates effective management strategies. Modern medical treatments include pharmacological options such as gonadotropin-releasing hormone (GnRH) agonists, selective progesterone receptor modulators, and symptomatic management with nonsteroidal anti-inflammatory drugs. Surgical interventions, including myomectomy and hysterectomy, remain the definitive treatment for large or symptomatic fibroids. However, these approaches are often associated with limitations such as high recurrence rates, side effects, cost, and loss of fertility in certain cases.[4]

In Ayurveda, uterine fibroids can be correlated with conditions such as *Garbhashaya Granthi* or *Arbuda*, which are primarily attributed to the vitiation of *Kapha*

and *Vata Dosha*, along with involvement of *Mamsa* and *Rakta Dhatu*. The pathogenesis involves *Srotorodha* (obstruction of channels) and abnormal tissue proliferation. Ayurvedic management focuses on correcting the underlying doshic imbalance, improving metabolism (*Agni*), and removing obstructions through various treatment modalities. A wide range of Ayurvedic therapeutic approaches have been described, including *Shodhana Chikitsa* (bio-purificatory therapies such as Vamana, Virechana, and Basti), *Shamana Chikitsa* (palliative treatment using herbal formulations), *Raktashodhaka* (blood-purifying drugs), *Lekhana* (scraping therapy), and *Rasayana* (rejuvenation therapy). Specific formulations and procedures aim to reduce the size of fibroids, alleviate symptoms, and improve reproductive health without compromising fertility. Given the increasing preference for holistic and minimally invasive approaches, there is a growing interest in exploring the role of Ayurveda in the management of uterine fibroids. This review aims to comprehensively analyze various Ayurvedic treatment modalities in the management of uterine fibroids, along with a comparison to modern therapeutic approaches, to provide an integrative perspective for better clinical outcomes.

METHODOLOGY

Study Design

This study was designed as a systematic review and meta-analysis conducted in accordance with the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* guidelines.

Search Strategy

• A comprehensive literature search was performed across multiple electronic databases, including PubMed, Scopus, Web of Science, Cochrane Library, AYUSH Research Portal, DHARA, and Google Scholar. The search covered studies between January 2013 and July 2026. The following keywords and Boolean operators were used:
"uterine fibroid" OR "leiomyoma" AND "Ayurveda" OR "*Garbhashaya Granthi*" OR "*Arbuda*" AND "treatment" OR "management" OR "*Shodhana*" OR "*Basti*" OR "herbal therapy". Additionally, reference lists of relevant articles were manually screened to identify further eligible studies.

Eligibility Criteria

Inclusion Criteria

• Randomized controlled trials (RCTs), case series, quasi-experimental studies, and observational studies

• Studies evaluating Ayurvedic interventions (*Shodhana, Shamana,* herbal formulations) in uterine fibroids

• Studies reporting measurable outcomes (e.g., fibroid size, symptom relief, menstrual changes)

• Studies conducted and/or submitted between January 2013 and July 2026.

• Articles published in English.

Exclusion Criteria

• Case studies, Review articles, background, editorials, and conference abstracts that do not contain original or primary research data.

• Articles in language other than English

• Studies lacking sufficient data for analysis

• Non-human or in vitro studies

• Studies combining Ayurveda with other systems without separate outcome analysis

• Studies lacking well-specified or standardized Ayurvedic treatment protocols.

Study Selection Process

Titles and abstracts of all retrieved records were independently screened by two reviewers for eligibility based on predefined inclusion and exclusion criteria. Duplicate records were removed, and non-clinical studies were excluded during the initial screening phase. Discrepancies between reviewers were resolved through discussion or consultation with a third reviewer.

The process of study selection has been presented in the PRISMA flow diagram (Figure 1).

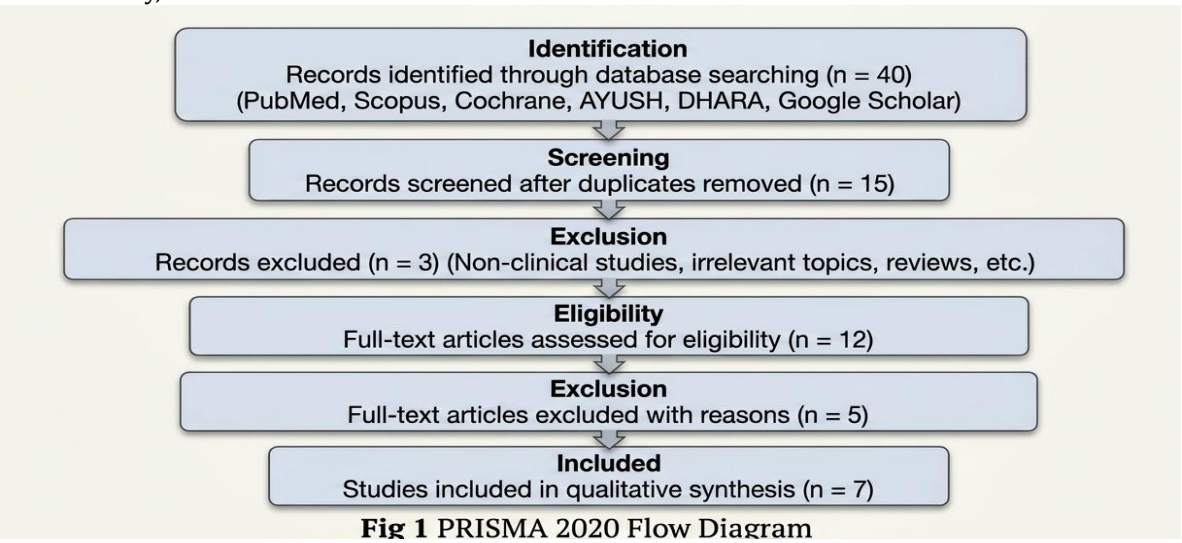

Fig 1 PRISMA 2020 Flow Diagram

Data Extraction

Data were extracted independently by two reviewers using a standardized data extraction form. The following information was collected:

- Author(s) and year of publication
- Study design and sample size
- Type of Ayurvedic intervention
- Duration of treatment and follow-up
- Control/Comparator Group
- Outcome measures (fibroid size, symptom score, menstrual changes, quality of life)
- Adverse effects
- Key results
- Limitations

Table 1: Data Extraction Summary of Included Studies on Ayurvedic Interventions for Uterine Fibroid

Author & Year	Study Design	Sample Size	Type of Intervention	Study Duration	Outcome Measures	Key Results	Control/Comparator Group	Adverse Drug Reaction	Limitations
Sharma et al., 2026[5]	Randomized open-label comparative clinical study	40 patients	Group A: *Vamana Karma + Kanchanara Guggulu + Khadira Sara Kashaya*. Group B: *Uttara Basti (Kshara Taila) + Kanchanara Guggulu + Khadira Sara Kashaya.*	60 days	USG, PBLAC & symptoms	Both groups improved symptoms; comparable efficacy with minimal fibroid size reduction.	Yes	No ADR reported	Small sample size, short treatment duration, open-label design.
Singh et al., 2025[6]	Randomized Pilot Study	n = 18 (9 Trial, 9 Control)	Trial: *Godanti Bhasm, Pushyanug Churna, Bol Parpati, Lodhrasava,* Iron + Intrauterine *Uttar Basti* (*Kapharbuda-har* oil).	3 months	Interval between cycles, bleeding duration/amount, pelvic pain, fibroid size (USG).	Trial group showed significant reduction in fibroid size (p=0.03) and relief in bleeding. Complete resolution in 2 patients.	Yes	No side effects observed in either group.	Restricted sample size; lack of follow-up from some patients; absence of standard modern drug control.
Pooja Shindhe & Rachana HV, 2024[7]	Randomized open-label controlled clinical study	30 patients (15/group)	Group A: *Chitraka Moola Churna*. Group B: *Chitraka Moola Churna + Sarjadi Lepa*.	2 months	Fibroid size & symptoms	Group B showed better fibroid size reduction and symptom relief.	Yes	No adverse drug reaction reported.	Small sample size, short study duration, open-label design
Karunagoda et al., 2021[8]	Randomized single-blind clinical trial	120 enrolled (102 completed)	Two Ayurveda drug regimens	12 weeks + 12-week follow-up	Fibroid volume, PBAC, symptom severity, HRQoL, safety	Both regimens improved symptoms and QoL; Arm II significantly reduced fibroid volume.	Yes	No serious ADR reported	Single-center, short follow-up, some dropouts.

Rajput et al., 2020[9]	Open-label, prospective randomized comparative study	77 enrolled (74 completed)	*Virechana + Triphaladi Yoga* vs *Virechana + Uttarbasti + Triphaladi Yoga*	2 months + 1-month follow-up	Symptom relief and fibroid size reduction	Both groups significantly improved; Group A showed better reduction in fibroid size and symptoms.	Yes	No ADR reported	Small sample, short follow-up, open-label design, fibroids ≤5 cm only.
Akhila VG & Asha ST, 2020[10]	Single-group interventional	n = 30	*Nimbadi Kashayam + Kanchanara Guggulu*	90 days + 90-day follow-up	USG fibroid size & symptoms	Significant reduction in fibroid size with sustained effect during follow-up ($p < 0.01$).	None (Single-arm study)	No ADR reported.	Single-group design, small sample size, no control group.
Dhiman, 2014[11]	Case Series	n = 7	*Shigru Guggulu, Kanchanara Guggulu, Haridra Khanda.*	7 to 12 weeks	Symptoms (pain, bleeding), USG findings.	Clinical improvement in all patients; normal USG (absence of fibroids) reported in 6/7 cases by 7 weeks, and 1/7 by 12 weeks.	None	Considered safe (no adverse reactions specified).	Small sample size; requires large sample clinical study to establish hypothesis.

Risk of Bias[12,13]

The risk of bias assessment, summarized in Table 2, demonstrated varying methodological quality among the seven included studies. Among the five randomized clinical trials assessed using the RoB 2 tool, two studies (Karunagoda et al., 2021 and Rajput et al., 2020) were judged to have low risk in the randomization process, while the remaining three randomized studies showed some concerns due to insufficient reporting of allocation concealment and randomization methods. In the two non-randomized studies assessed using ROBINS-I, the randomization domain was not applicable. Deviations from intended interventions were predominantly rated as some concerns in randomized trials because of the open-label design and lack of blinding, whereas the non-randomized studies demonstrated moderate risk due to the absence of control groups and potential performance bias. Missing outcome data was generally well addressed, with low risk observed in six studies, while one pilot study (Singh et al., 2025) showed some concerns because of participant attrition. Outcome measurement was considered low risk in most studies, as ultrasonography and standardized clinical assessments were used; however, one case series (Dhiman, 2014) demonstrated moderate risk owing to the lack of blinded outcome assessment. Selective reporting was rated as low risk in two studies, while the remaining studies showed some concerns because trial registration or published protocols were not consistently reported. Overall, five studies were judged to have "some concerns", whereas two non-randomized studies demonstrated a moderate overall risk of bias. These findings highlight the need for future well-designed randomized controlled trials with robust allocation concealment, blinding, protocol registration, and standardized outcome assessment to strengthen the evidence regarding the efficacy and safety of Ayurvedic interventions in the management of uterine fibroids.

Table 2: Risk of Bias Assessment for Included Studies

Study (Author, Year)	Tool Used	Randomization Process	Deviations from Intended Interventions	Missing Outcome Data	Measurement of Outcome	Selective Reporting	Overall Risk
Sharma et al., 2026	RoB 2	Some concerns	Some concerns	Low	Low	Some concerns	Some concerns
Singh et al., 2025	RoB 2	Some concerns	Some concerns	Some concerns	Low	Low	Some concerns

Pooja Shindhe & Rachana HV, 2024	RoB 2	Some concerns	Some concerns	Low	Low	Some concerns	Some concerns
Karunagoda et al., 2021	RoB 2	Low	Some concerns	Low	Low	Some concerns	Some concerns
Rajput et al., 2020	RoB 2	Low	Some concerns	Low	Low	Low	Some concerns
Akhila VG & Asha ST, 2020	ROBINS-I	Not applicable	Moderate	Low	Low	Some concerns	Moderate
Dhiman, 2014	ROBINS-I	Not applicable	Moderate	Low	Moderate	Some concerns	Moderate

Table 3. Summary of Interventions and Outcomes in Included Studies

Study (Author, Year)	Type of Intervention	Duration	Key Outcomes
Sharma et al., 2026	*Vamana Karma + Kanchanara Guggulu + Khadira Sara Kashaya vs Uttara Basti + Kanchanara Guggulu + Khadira Sara Kashaya*	60 days	Improved symptoms; comparable efficacy with minimal fibroid size reduction.
Singh et al., 2025	Oral Ayurvedic medicines + *Kapharbuda-har Oil Uttara Basti*	3 months	Significant reduction in fibroid size, decreased bleeding, and complete resolution in 2 patients.
Pooja Shindhe & Rachana HV, 2024	*Chitraka Moola Churna vs Chitraka Moola Churna + Sarjadi Lepa*	2 months	Improved symptoms; greater fibroid size reduction with combined therapy.
Karunagoda et al., 2021	Two Ayurvedic treatment regimens	12 weeks + 12-week follow-up	Reduced fibroid volume, improved PBAC score, symptom severity, and quality of life.
Rajput et al., 2020	*Virechana + Triphaladi Yoga vs Virechana + Uttara Basti + Triphaladi Yoga*	2 months + 1-month follow-up	Significant reduction in fibroid size and menstrual symptoms in both groups.
Akhila VG & Asha ST, 2020	*Nimbadi Kashayam + Kanchanara Guggulu*	90 days + 90-day follow-up	Significant reduction in fibroid size with sustained improvement during follow-up.
Dhiman, 2014	*Shigru Guggulu + Kanchanara Guggulu + Haridra Khanda*	7–12 weeks	Clinical improvement in symptoms; disappearance of fibroids on USG in most cases.

RESULTS

Study Selection

A total of 40 records were identified through database searching. After removing duplicates and screening titles and abstracts, 12 full-text articles were assessed for eligibility. Following exclusion of five studies, seven studies met the inclusion criteria and were included in the qualitative synthesis (Figure 1).

Study Characteristics

The included studies were published between 2014 and 2026 and involved 322 participants. Sample sizes ranged from 7 to 120, with treatment durations of 7–12 weeks. Five studies were randomized comparative trials, one was a single-arm interventional study, and one was a case series. Interventions included *Shodhana* therapies (*Vamana, Virechana, Uttara Basti*) and Shamana therapies using various Ayurvedic formulations. Primary outcomes were fibroid size/volume, menstrual symptoms, pain, and quality of life. No serious adverse drug reactions were reported.

Effect of Interventions

All studies reported improvement in at least one clinical outcome. Most demonstrated significant reduction in fibroid size, improvement in menstrual bleeding, pelvic pain, and symptom severity. Comparative studies

indicated that combined *Shodhana* and *Shamana* therapies generally produced better outcomes than oral therapy alone. Quality of life improved in studies where it was assessed. The findings are summarized in Table 3.

Comparative Efficacy

Comparative studies showed that combined Ayurvedic interventions, particularly those including Uttara Basti or Panchakarma, were more effective than oral formulations alone in reducing fibroid size and improving symptoms.

Adverse Events and Compliance

No serious adverse drug reactions were reported. Ayurvedic interventions were generally well tolerated, with good treatment compliance across the included studies.

DISCUSSION

This systematic review synthesized seven clinical studies evaluating the efficacy of Ayurvedic interventions in the management of uterine fibroids. Overall, the findings indicate that Ayurvedic therapies, including *Shodhana* procedures (*Vamana, Virechana, and Uttara Basti)* and *Shamana* formulations, were associated with significant improvement in fibroid-related symptoms and reduction in fibroid size. Most studies demonstrated a significant reduction in fibroid size or volume, along with improvement in menstrual bleeding, dysmenorrhea, pelvic pain, and quality of life. Comparative studies suggested that combined therapeutic approaches, particularly Panchakarma procedures with oral Ayurvedic medications, produced better clinical outcomes than oral therapy alone. Studies involving *Uttara Basti* and *Sarjadi Lepa* also reported superior symptomatic relief and greater reduction in fibroid size compared to conventional Ayurvedic oral formulations.

An important finding of this review was the favorable safety profile of Ayurvedic interventions. None of the included studies reported serious adverse drug reactions, and treatment compliance was generally satisfactory. These observations support the potential role of Ayurveda as a conservative and fertility-preserving therapeutic option for women with uterine fibroids. However, the findings should be interpreted cautiously because most studies had methodological limitations, including small sample sizes, open-label design, short treatment duration, and limited follow-up. Furthermore, considerable heterogeneity in interventions and outcome measures limited direct comparison between studies. Therefore, although the available evidence is encouraging, stronger clinical evidence is required before definitive recommendations can be made.

LIMITATIONS AND FUTURE DIRECTIONS

Although the included studies demonstrated promising clinical outcomes, several limitations were identified. Most studies involved small sample sizes, were conducted at single centers, and had short treatment and follow-up durations, limiting the generalizability of their findings. Open-label study designs and inadequate reporting of allocation concealment increased the risk of bias. In addition, the Ayurvedic interventions varied considerably with respect to drug formulations, Panchakarma procedures, treatment duration, and outcome measures, making direct comparison difficult. Most studies primarily evaluated fibroid size and clinical symptoms, whereas long-term outcomes such as recurrence rate, fertility outcomes, pregnancy rate, and live birth rate were rarely assessed. Standardized quality-of-life instruments were also used in only a limited number of studies. Furthermore, protocol registration and adherence to international reporting guidelines were inconsistently reported. Future research should focus on large multicenter randomized controlled trials with standardized Ayurvedic treatment protocols, adequate blinding, longer follow-up, and validated outcome measures. Studies evaluating fertility outcomes, recurrence after treatment, reproductive performance, and long-term safety would further strengthen the evidence for the Ayurvedic management of uterine fibroids.

CONCLUSION

The findings of this systematic review indicate that Ayurvedic interventions are effective in reducing fibroid size and improving fibroid-related symptoms. Among the included studies, the randomized clinical trial by Karunagoda et al. (2021), involving 120 participants, provided the strongest clinical evidence and demonstrated significant improvements in fibroid volume, menstrual symptoms, and quality of life. Similarly, Singh et al. (2025) reported significant reduction in fibroid size and menstrual bleeding, with complete resolution of fibroids in two patients following combined oral therapy and *Uttara Basti*. Comparative studies further suggested that combined *Shodhana* and *Shamana* therapies, particularly those incorporating *Uttara Basti*, produced better clinical outcomes than oral medications alone. Overall, the available evidence supports the potential role of multimodal Ayurvedic treatment in the conservative management of uterine fibroids. However, further large-scale, well-designed randomized controlled trials are required to confirm these findings.

Conflicts of Interest: Nil

Acknowledgements: The authors sincerely acknowledge the institutional and departmental support received during the conduct and preparation of this review.

Author's Contribution: All authors contributed to the conception and design of the review, literature search and screening, data extraction, interpretation of findings, manuscript preparation, critical revision, and approval of the final manuscript.

Funding Source: No external funding was received for this work.

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