



Review Article

Integrating Evidence with Tradition: Clinical Review of Ayurvedic Management of Grahani Dosha (Irritable Bowel Syndrome)

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Received: 20-08-2025

Accepted: 22-03-2026

Published: 31-03-2026

Abstract

Grahani, described in Ayurveda as the functional integrity of the digestive system, is governed by *Agni* (digestive fire). Impairment of *Agni* due to irregular diet, adverse lifestyle, and psychological stress leads to *Grahani Dosha*, which closely parallels irritable bowel syndrome (IBS) in contemporary medicine, a multifactorial functional gastrointestinal disorder characterised by abdominal pain, bloating, and altered bowel habits affecting approximately 10–15% of the global population. Ayurvedic management emphasises rekindling *Agni*, eliminating *Ama* (metabolic toxins), and restoring digestive balance through individualised *Dosha*-based approaches. Classical interventions, including herbal formulations (*Kutaja*, *Bilva*, *Musta*), Panchakarma therapies (*Virechana*, *Basti*), and psychosomatic modalities (yoga, *Medhya Rasayana*), form the backbone of treatment. This review critically evaluates clinical evidence from thirteen studies encompassing diverse formulations — *Bilvadi Churna*, *Bilvadileha*, *Chavyadi Churna*, *Grahaninigraha Churna*, *Kallingadi Churna*, *Kutajadi Avaleha*, *Mustababbula Churna*, *Nagradya Churna*, *Bhunimbadya Churna*, *Pippalyasava-Suranavataka*, *Shalaparnyadi Kwatha*, *Erandamooladi Niruha Basti*, and *Manipura Chakra Yoga*. Response rates ranged from 65% to 86.6% across formulations. The evidence supports that Ayurvedic protocols alleviate IBS symptoms and improve overall well-being, with combination therapies and whole-system protocols showing superior outcomes. Larger, rigorous clinical trials with standardised formulations and validated outcome measures are needed to consolidate these findings.

Keywords: *Grahani*, Irritable Bowel Syndrome, Ayurveda, *Panchakarma*, *Takra*.

Access this article
online

Website:
<https://ijam.co.in>



DOI: <https://doi.org/10.47552/ijam.v17i1.6479>

Introduction

In Ayurveda, *Grahani* is the primary site of *Agni* (digestive fire), responsible for breaking down food and ensuring proper assimilation of nutrients. Anatomically, it is situated between the *Amashaya* (stomach) and *Pakwashaya* (large intestine), just above the *Nabhi* (navel). Its essential functions include holding, retaining, digesting, and absorbing food, ensuring that nutrients are efficiently processed and waste is eliminated (1).

When *Agni* (digestive fire) becomes weak or vitiated due to improper dietary habits (*Viruddha Ahara*) and the accumulation of *Murchita Dosha* (*Sama Dosha*—vitiating *Doshas* associated

with *Ama*), *Grahani's* function is compromised. In this condition, *Grahani* releases undigested food (*Ama*), which disrupts normal digestion when aggravated by *Vata*, *Pitta*, or *Kapha Doshas*. This results in repeated improper retention or expulsion of ingested food, causing *Grahani Doshas* (irritable bowel syndrome) (2).

The root of *Grahani Doshas* lies in disturbed *Doshas* and dysfunction in various *Srotas* or body channels, especially those related to digestion (*Annavaha*), elimination (*Purishavaha*), mental well-being (*Manovaha*), and *Vata* flow (*Vatavaha*). Contributing factors include improper dietary habits such as *Abhojana* (excessive fasting), *Atibhojana* (overeating), *Vishama Bhojana* (irregular eating), and *Asatmya Bhojana* (unwholesome food) (3). Additionally, adverse effects of therapeutic procedures (*Vamana*, *Virechana*, *Snehana*), suppression of natural urges (*Vega Vidharana*), and incompatibilities related to region, season, or time (*Desha*, *Kala*, *Ritu*) further aggravate the condition. Psychological factors such as *Shoka* (grief), *Krodha* (anger), and *Bhaya* (fear) also contribute to the disorder.

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According to Acharya Charaka, Grahani Dosha is classified into four types based on the predominance of Doshas: Vataja, Pittaja, Kaphaja, and Sannipataja (involving all three Doshas) (4). *Ati Srustha Mala Pravritti* (excessive loose stools), *Vibaddha Mala Pravritti* (altered hard and soft stools), *Vairashya* (altered taste), *Praseka* (excessive salivation), *Arochaka* (unhappiness), *Asthiparvaruka* (joint pain), *Chhardana* (vomiting), *Jwara* (fever), and *Lohanugandhi Udgara* (metallic-tasting belching) are some of the clinical features of Grahani Doshas.

Based on its clinical features, Grahani Dosha can be correlated with irritable bowel syndrome (IBS), including constipation, diarrhoea, bloating, excessive gas, and abdominal pain. The severity and duration of symptoms vary among individuals, making it a complex condition with multifactorial origins.

The exact pathophysiology of IBS remains incompletely understood, and there is no definitive diagnostic test or universally effective treatment. However, several contributing factors have been identified, including genetic predisposition, dietary influences, alterations in intestinal microbiota, mucosal low-grade inflammation, abnormal gut motility and sensory functions, as well as psychological stress and emotional disturbances (5).

IBS is classified into three subtypes based on the predominant bowel pattern: (6)

- **IBS-D (Diarrhoea-predominant)** –It is marked by frequent episodes of loose stools.
- **IBS-C (Constipation-predominant)** – characterised by irregular or difficult bowel movements.
- **IBS-M (Mixed type)** – A combination of both diarrhoea and constipation.

From an Ayurvedic perspective, these IBS subtypes can be correlated with different Dosha imbalances associated with Grahani Dosha. IBS-D aligns with Pitta and Vata aggravation, IBS-C with Vata and Kapha imbalance, and IBS-M with a Sannipataja (tri-Doshaja) involvement.

1.1 Classical Ayurvedic Approach: Agni, Ama, and Takra in Grahani Dosha

In the *Samprapti* (pathogenesis) of Grahani Doshas, *Agnimandya* (weakened digestive fire) is a major causative factor. As the primary factor responsible for impaired digestion and metabolism, *Agnimandya* leads to the accumulation of *Ama* (undigested metabolic waste), which further vitiates Doshas and disrupts the physiological functions of Grahani. Therefore, the primary therapeutic approach focuses on *Agnivardhana* (enhancing digestive fire) through *Deepana* (appetite-stimulating) and *Pachana* (digestive) medications (7).

When Doshas are localised in Grahani and associated with partially digested food, *Vamana* (therapeutic emesis) is recommended. Acharya Charaka suggests using warm water or herbal decoctions made from *Madanaphala*, *Pippali*, and *Sarshapa* for this purpose. If *Ama* is localised in the *Pakvashaya* (large intestine) and is in an *Anutklishta* (stagnant) state, *Stravana* (enhancing secretion) with *Deepana Dravyas* (digestive stimulants) is advised. Conversely, if *Ama* has been absorbed into the systemic circulation along with *Rasa Dhatu* (nutrient plasma) and has spread throughout the body, *Langhana* (fasting) and *Pachana* therapy should be implemented to facilitate detoxification and digestion.

Acharya Sushruta also supports using *Vamana* and *Virechana* (purgation) depending on which Dosha is dominant. After cleansing therapies, a light diet including *Peya* (medicated gruel) is recommended, along with *Deepaniya Dravyas* (digestive stimulants). Additionally, *Pachana* (digestive), *Sangrahi* (astringent) and *Deepana* (appetite-stimulating) formulations should be administered in various forms such as: *Sura* (fermented herbal wine), *Arishta* (medicated liquor), *Sneha* (medicated oils or clarified butter), *Go-mutra* (cow's urine) and *Takra* (buttermilk) (8).

Takra (Buttermilk) is a highly beneficial *pathya ahara* (therapeutic diet) in the management of Grahani Dosha. It possesses *Madhura Vipaka* (sweet post-digestive effect), which helps to pacify Pitta Dosha. Its *Kashaya Rasa* (astringent taste), *Ushna Virya* (hot potency), along with *Vikashi* and *Ruksha Guna* (light and drying properties), make it effective in alleviating *Kapha Dosha*. The presence of *Madhura* and *Amla Rasa*, combined with *Sandra Guna* (dense quality) also supports the pacification of Vata Dosha, thereby making *Takra* a *TriDosha Shamaka*. *Takra* possesses *Deepana* (appetite-stimulating) and *Grahi* (fluid-absorbing) properties that enhance digestive fire, improve intestinal absorption, and help control diarrhoea commonly seen in Grahani Dosha. Acharya Vagbhatta recommends buttermilk as a primary drink when *Ama* (toxins/undigested material) is present in Grahani (9). *Takrarishta* (fermented buttermilk preparation) is especially useful for *Kapha-dominant Grahani Dosha*. Acharya Bhavaprakasha compares its health benefits to *Amrita*, the nectar of immortality, highlighting its preventive and curative power (10). Its use as *Anupana* (adjuvant) across multiple formulations in the reviewed studies underscores its central role. Charaka's statement "*Takram Grahaniroga Param*", i.e. buttermilk is the best treatment for Grahani disease, supports this clinical use (11).

2. AIM

To critically review and evaluate the evidence-based Ayurvedic approach in the management of Grahani Dosha (irritable bowel syndrome), integrating classical principles with contemporary clinical research.

3. OBJECTIVE

To review clinical evidence on the efficacy of Ayurvedic interventions, including herbal formulations, dietary regimens and *Panchakarma* therapies in the management of Grahani Dosha.

4. MATERIALS AND METHODS

4.1 Search Strategy

A comprehensive electronic literature search was conducted from inception to March 2024 using the following databases: PubMed, Google Scholar, Research Gate, and the official repositories of Ayurvedic journals. Search terms included: Grahani Dosha, Irritable Bowel Syndrome Ayurveda, Ayurvedic IBS treatment, Churna in IBS, Basti in Grahani, Panchakarma in IBS, Takra in Grahani, Yoga in IBS

4.2 Inclusion Criteria

- Clinical studies (randomized controlled trials, comparative trials, single-arm trials) reporting outcomes for Grahani Dosha or IBS.
- Studies employing Ayurvedic formulations, Panchakarma therapies, yoga, or dietary interventions.

- Studies with clearly defined interventions, patient numbers, assessment parameters, and outcome measures.

4.3 Exclusion Criteria

- Case reports without defined outcome parameters.
- Review articles, editorials, and opinion papers without original clinical data.
- Studies using patented or undisclosed proprietary formulations.
- Preclinical (animal or in vitro) studies.

Thirteen clinical studies meeting the inclusion criteria were identified and reviewed. The search methodology is summarised in Figure 1. An overview of the included studies is provided in Table 1

Figure 1. Search Methodology (PRISMA flow chart)

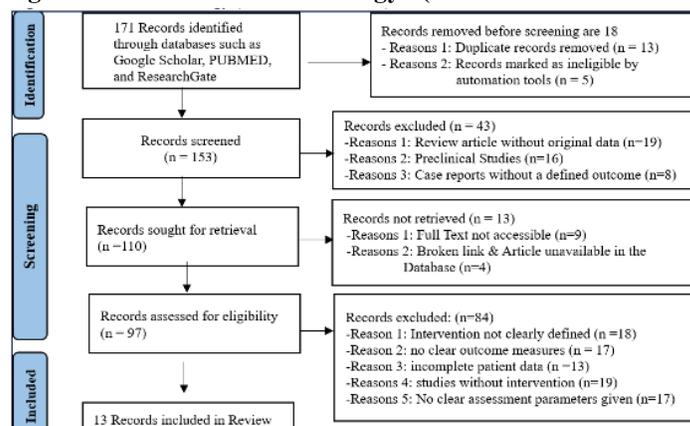


Table 1: Overview of Clinical Evidence and Research Studies on Ayurvedic Management of *Grahani Dosha* (IBS)

Sr.No.	Study	Sample size	Intervention	Duration	Assessment Parameters	Key Findings
(1)	<i>Kutajadi Avaleha</i> and <i>Medhya Rasayana</i> in <i>Grahani Dosha</i> (IBS) (12).	100 (50 each group)	Group A: <i>Kutajadi Avaleha</i> 10 g BD before meals with warm water Group B: <i>Kutajadi Avaleha</i> 10 g BD + <i>Medhya Rasayana Granule</i> 5 g BD before	45 days	Rome III criteria; Brief Psychiatric Rating Scale; Hamilton Anxiety & Depression Scale; Manasika Bhavas; disease-specific	<i>Medhya Rasayana</i> with <i>Kutajadi Avaleha</i> better addresses psychological triggers (tension, anger, fear, grief) of <i>Grahani Dosha</i> .
(2)	<i>Nagradya Churna</i> vs <i>Bhunimbadya Churna</i> in <i>Grahani Dosha</i> (IBS) (13).	40 (20 each group)	Group A: <i>Nagradya Churna</i> 2 g BD with honey Group B: <i>Bhunimbadya Churna</i> 2 g BD with	45 days	Subjective symptom scoring (0–3); assessed on 15th, 30th, 45th day	Group A: 65% highest improvement; Group B: 75% highest improvement. Both showed significant results
(3)	<i>Bilvadi Churna</i> in the management of <i>Grahani Dosha</i> (14).	24	<i>Bilvadi Churna</i> 3 g BD with <i>Takra</i> (buttermilk) after meals	4 weeks	<i>Rogabala</i> , <i>Dehabala</i> , <i>Chetasabala</i> , <i>Agnibala</i> , weekly scoring	Marked improvement in 33.34%; moderate in 62.5%. <i>Deepana-Pachana</i> and <i>Vata-Kapha</i> balancing
(4)	Clinical evaluation of <i>Bilvadileha</i> in the management of irritable bowel syndrome (15).	46	<i>Bilvadileha</i> 10 g BD with lukewarm water	12 weeks	IBS severity score; chief symptoms; disease-specific Ayurvedic parameters; assessed	Among 46 patients, 80.4% shows positive response: <i>Tridoshahara</i> and digestive properties.
(5)	The effect of <i>Mustakarishtha</i> and <i>Chavyadi Churna</i> in <i>Grahani Dosha</i> (16).	30	<i>Chavyadi Churna</i> 3 g BD with buttermilk + <i>Mustakaarista</i> 15 ml with 15 ml water BD after food	40 days	<i>Baddamala Pravritti</i> , <i>Drava Mala Pravritti</i> , <i>Muhur Muhur Mala Pravritti</i> , <i>Udara Shoola</i> , <i>Amayukta Mala</i> ; structured scoring pre-	86.6% significant relief; 13.33% moderate improvement. <i>Deepana</i> , <i>Pachana</i> , <i>Grahi</i> properties; effectively manage <i>Grahani</i> (IBS). <i>Arishta</i> 's calming effect, along with meditation,
(6)	Clinical study on <i>Erandamooladi Niruha Basti</i> in <i>Grahani Dosha</i> (17).	15	<i>Yoga Basti</i> pattern: <i>Erandamooladi Niruha Basti</i> + <i>Changeryadi Ghrita Anuvasana Basti</i>	16 days	<i>Baddha Mala</i> , <i>Muhur Muhur Mala Pravritti</i> , <i>Amayukta Mala</i> ; recorded pre-, post-40 days, and	Impressive results across all parameters. <i>Deepaniya</i> , <i>Pachaniya</i> , <i>Grahi</i> , <i>Krimighna</i> , <i>Vata-Kapha</i> balancing properties.
(7)	Ayurvedic Approach of <i>Grahaninigraha Churna</i> in <i>Grahani Dosha</i> (IBS) (18).	20	<i>Grahaninigraha Churna</i> 4 g BD with buttermilk after meals	30 days	Comprehensive Ayurvedic symptom grading (24 parameters, including <i>Udara Agnimandya</i> , <i>Udara</i>	Significant relief in most symptoms. <i>Deepana</i> , <i>Pachana</i> , <i>Grahi</i> , <i>Vatakapha Shamana</i> ; anti-inflammatory, anti-diarrheal, antispasmodic,

(8)	<i>Kallingadi Churna</i> in <i>Grahani Dosha</i> (19).	21	<i>Kallingadi Churna</i> 3 g BD before meals with <i>Takra</i> (buttermilk)	6 weeks	Classical signs and symptoms of <i>Grahani dosha</i> : severity scoring	71.20% overall relief; 5 marked, 12 moderate improvements. <i>Agnideepaka</i> and <i>Amapachaka</i> effects
(9)	<i>Mustababbula Churna</i> and <i>Takrarishta</i> in <i>Grahani Dosha</i> (20).	80 (40 per group)	Group A: <i>Mustababbula Churna</i> Group B: <i>Mustababbula Churna</i> + <i>Takrarista</i>	3 months	Clinical signs, symptoms, and investigation findings; 0–3	Group A: 68.57% relief; Group B: 80% improvement. Combination enhances
(10)	<i>Pippalyasava</i> and <i>Suranavataka</i> in <i>Grahani Dosha</i> (IBS) (21).	30	<i>Suranavataka</i> 2 g tablet + <i>Pippalyasava</i> 20 ml TDS after food	30 days	observing changes in the disease's signs and symptoms <i>Muhurbaddha/Drava Malapravruthi, Aruchi, Udara</i>	81.9% improvement. Regulates <i>Jatharagni</i> and <i>Grahani</i> functions.
(11)	<i>Shalaparnyadi Kwatha</i> with <i>Panchamooladya Churna</i> in <i>Vataja Grahani</i> (22).	41 (Trial 21; Control 20)	Trial: <i>Shalaparnyadi Kwatha</i> 20 ml before food + <i>Panchamooladya Churna</i> 3 g BD after food with lukewarm water Control: <i>Panchamooladya Churna</i> 3 g BD	30 days	<i>Punaha Punaha Mala Pravritti, Drava Mala Pravritti, Amayukta Mala Pravritti, Chirath Dukha Mala Pravritti, Udara Shoola</i> (0–3); secondary	Trial group superior in <i>Amayukta Mala Pravritti</i> and <i>Udara Shoola</i> of <i>Vataja Grahani</i> .
(12)	Whole System Ayurveda Protocol (WSAP) in <i>Grahani Dosha</i> (IBS) – RCT (23).	48 (Rome IV, age 20–60)	KC group: <i>Kalingadi Churna</i> 3 g BD with buttermilk WSAP group: Whole System Ayurveda Protocol	2 months (15-day follow-up)	IBS-SSS (primary); IBS-AR; GSRS; IBS-VAS; CSBM; Bristol Stool Form; Hamilton Anxiety & Depression; IBS-QoL; Ayurvedic <i>Grahani</i> symptom grading (0–3); CBC; stool exam —	WSAP is superior to KC in reducing physical IBS symptoms (IBS-SSS). Both offered similar psychological and digestive health improvement.
(13)	<i>Manipura Chakra Yoga</i> in <i>Vatika Grahani</i> (IBS) – RCT (24).	50 (25 each group)	Intervention: <i>Pavanamuktasana</i> + <i>Bhastrika Pranayama</i> + <i>Uddiyana Bandha</i> (no dietary restrictions) Control: Medication only	60 days	Rome II criteria; <i>Vatika Grahani</i> clinical symptom grading; Hamilton Anxiety & Depression; CBC; LFT; lipid profile; demographic and anthropometric data	Yoga significantly improved both physical and psychological symptoms. Outcomes diverged progressively between groups over time. First study validating this specific yoga protocol for IBS without dietary

Abbreviations: BD – Twice Daily; TDS – Thrice Daily; IBS-SSS – IBS Symptom Severity Score; IBS-AR – IBS Adequate Relief; GSRS – Gastrointestinal Symptom Rating Scale; IBS-VAS – IBS Visual Analogue Scale; IBS-QoL – IBS Quality of Life; CSBM – Complete Spontaneous Bowel Movement; VAS – Visual Analogue Scale; RCT – Randomised Controlled Trial; WSAP – Whole System Ayurveda

Discussion

This discussion combines traditional Ayurvedic concepts of *Grahani Dosha* with modern pathophysiological insights into IBS, critically examining treatment strategies and clinical effectiveness through an evidence-based, integrative perspective as given below:

Textual Evidence and Pathophysiological Correlation of *Grahani dosha* with IBS

Classical Ayurvedic texts comprehensively describe *Grahani Dosha* as a consequence of *Mandagni* (hypofunction of digestive fire), leading to *Ama* formation and *Tridosha* vitiation. It identifies *Agnimandya* as the root cause and emphasises that

restoring *Agni* is the cornerstone of treatment (25). Acharya Vagbhata's *Ashtanga Hridayam* further elaborates on *Srotodushiti* (channel obstruction) as a pathological mechanism underlying gut dysfunction. These classical concepts find remarkable parallels in modern gastroenterological understanding of IBS, which implicates gut microbiome dysbiosis, increased intestinal permeability, low-grade mucosal inflammation, altered motility, and visceral hypersensitivity (26).

The psychosomatic dimension of *Grahani Dosha* is explicitly recognised in classical texts. Acharya Charaka lists *Chinta* (anxiety), *Shoka* (grief), *Bhaya* (fear), and *Krodha* (anger) as precipitating factors (27). This aligns with the well-established role of the gut-brain axis in IBS pathophysiology, wherein bidirectional dysregulation between the enteric and central

nervous systems mediates the generation and perpetuation of symptoms (28). Sushruta Samhita's fourfold *Dosha*-based classification (*Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja*) maps onto the IBS subtypes (IBS-D, IBS-C, IBS-M) identified by the Rome IV criteria, enabling individualised treatment selection, a key advantage of the Ayurvedic approach (29).

Clinical Efficacy of Churna & Avaleha Formulations in Grahani Dosha Management

Bilvadi Churna (3 g BD with *Takra*) demonstrated marked improvement in 33.34% and moderate improvement in 62.5% of 24 patients over a four-week period. *Bilva* (*Aegle marmelos*) is one of the most extensively documented anti-diarrheal herbs in Ayurveda, possessing *Grahi* (absorbent), *Deepana*, and *Pachana* properties. Pharmacologically, marmelosin, its primary active constituent inhibits intestinal smooth muscle contraction and reduces gut motility, consistent with its classical indications (30). *Takra* functions effectively as an *Anupana* through its *Srotoshodhana* action, promoting optimal Rasa circulation within the *srotas*. Its diverse *Gunas* confer *Tridoshatmaka* properties, rendering it highly suitable for management in Grahani dosha (31).

Bilvadileha (10 g BD with lukewarm water for 12 weeks) produced one of the highest response rates in this review 80.4% among 46 patients. As an *Avaleha* (electuary), it benefits from prolonged gastrointestinal contact time compared to aqueous preparations, potentially enhancing the bioavailability of active phytoconstituents. Its *Tridoshahara* (balancing all three *Doshas*) property is particularly suited to *Sannipataja* presentations. The 12-week treatment duration also aligns with modern IBS management guidelines, which recommend minimum of 8–12 weeks before assessing clinical response. *Grahaninigraha Churna* (4 g BD with buttermilk for 30 days) produced significant relief across a comprehensive 24-parameter clinical assessment battery in 20 patients. It contains *Jatiphal* (*Myristica Fragrans* Houtt.), *Kutaja* (*Holorrhena antidysenterica* Linn.), *Mustaka* (*Cyperus rotundus* Linn.), and *Bilva* (*Aegle marmelos* Corr.) in equal proportion (32). Its breadth of pharmacological activity anti-inflammatory, anti-diarrheal, antispasmodic, antioxidant, analgesic, gut motility regulatory, and immunomodulatory, reflects the multi-target therapeutic approach. This multi-target mechanism is increasingly recognised in integrative medicine literature as advantageous over single-target pharmacotherapy in multifactorial disorders like IBS.

Kallingadi Churna (3 g BD before meals with *Takra*, 6 weeks) yielded 71.20% overall relief in 21 patients. Its *Agnideepaka* and *Amapachaka* effects directly address the root cause of *Mandagni* and *Ama* accumulation. A subsequent RCT comparing *Kallingadi Churna* monotherapy against a Whole System Ayurveda Protocol (WSAP) found WSAP superior in reducing physical IBS severity (IBS-SSS), though both yielded comparable improvements in psychological well-being and digestive health, underscoring the value of comprehensive, individualised treatment strategies.

A 45-day comparative study of *Nagradya Churna* versus *Bhunimbadya Churna* (both 2 g BD with honey) in 40 patients showed 65% and 75% highest-level improvement respectively. The superior performance of *Bhunimbadya Churna* may be attributed to the *Tikta Rasa* (bitter taste) predominance of *Bhunimba* (*Andrographis paniculata*), which has established hepatoprotective and gut-modulatory properties (33). A 3-month comparative trial of *Mustababbula Churna* alone versus its combination with *Takrarista* in 80 patients demonstrated that combination therapy outperformed monotherapy (80% vs

68.57%). This validates the classical *Anupana* principle, whereby fermented preparations enhance the bioavailability and efficacy of accompanying *Churnas*.

Therapeutic Efficacy of Fermented Formulations (*Arishta* & *Asava*) in Grahani Dosha Management

The 40-day combination trial of *Chavyadi Churna* (3 g BD with buttermilk) and *Mustakaarista* (15 ml BD after food) in 30 patients achieved the highest response rate in this review, 86.6% significant relief and 13.33% moderate improvement. *Musta* (*Cyperus rotundus*) is a classical herb with well-documented *Deepana*, *Pachana*, *Grahi*, and *Shoola*-relieving properties; its fermented *Arishta* formulation ensures the extraction of both water-soluble and alcohol-soluble phytoconstituents. Notably, this study incorporated meditation alongside pharmacotherapy the only study to do so, addressing the psychological dimension of IBS. This integrative approach is supported by modern evidence demonstrating that psychological interventions such as cognitive behavioural therapy and mindfulness-based stress reduction significantly improve IBS outcomes.

The combination of *Suranavataka* (2 g tablet) with *Pippalyasava* (20 ml TDS after food for 30 days) produced 81.9% overall improvement in 30 patients. *Pippala* (*Piper longum*) is one of the most potent *Agni*-stimulating herbs in Ayurveda; its bioactive constituent piperine has been shown to enhance digestive enzyme secretion, improve gut motility, and augment bioavailability of co-administered drugs via P-glycoprotein inhibition. *Surana* (*Amorphophallus campanulatus*) is a rich source of dietary fibre with established prebiotic activity, favourably modulating gut microbiota directly relevant to the dysbiotic intestinal environment in IBS (34).

Impact of Avaleha Formulations and Medhya Rasayana on the Gut-Brain Axis in Grahani Dosha

The 45-day RCT of *Kutajadi Avaleha* alone (Group A, n=50) versus combined with *Medhya Rasayana* granules (Group B, n=50) is methodologically one of the most rigorous studies reviewed. Diagnosis was based on Rome III criteria, and psychological assessment included the Brief Psychiatric Rating Scale, Hamilton Anxiety Scale, and Hamilton Depression Scale tools not consistently employed across other studies. *Kutaja* (*Holorrhena antidysenterica*) is the foremost anti-diarrheal herb in Ayurveda; its alkaloids (conessine, kurchinine) demonstrate antimotility, anti-secretory, and anti-amoebic properties. The additive psychological benefit in Group B from *Medhya Rasayana*, a class of *Rasayana* herbs promoting neurological and psychological health strongly supports the Ayurvedic gut-brain axis framework and justifies targeting both somatic and psychological IBS dimensions in treatment (35).

Efficacy of Kwatha Combination Therapy in Vataja Grahani: Controlled Trial Insights

The 30-day controlled trial comparing *Shalaparnyadi Kwatha* (20 ml before food) combined with *Panchamooladya Choorna* (3 g BD after food) against *Panchamooladya Choorna* alone in 41 patients with *Vataja Grahani* found the combination superior, specifically in *Amayukta Mala Pravritti* (mucus-mixed stools) and *Udara Shoola* (abdominal pain). *Shalaparni* (*Desmodium gangeticum*), a member of the *Dashamula* group, possesses significant *Vata-Shamana* properties, making this combination particularly suited for *Vataja* presentations. This study's inclusion of a control arm adds methodological rigour compared to single-arm studies, allowing attribution of the incremental benefit specifically to *Shalaparnyadi Kwatha*.

Role of Basti (Medicated Enema) Therapy in Grahani Dosha Management

Erandamooladi Niruha Basti combined with *Changeryadi Ghrita Anuvasana Basti* in the *Yoga Basti* pattern (16 days, n=15) yielded impressive outcomes across all assessed parameters. *Basti* therapy is classified in classical texts as the supreme treatment for *Vata* disorders. Its efficacy in *Grahani* is attributed to direct colonic action modulating gut motility, reducing visceral inflammation, and restoring intestinal mucosal barrier integrity. *Eranda* (*Ricinus communis*) root contains ricinoleic acid, which modulates prostaglandin secretion and gut motility via EP3 receptor pathways, providing pharmacological substantiation for its classical *Vata-Kapha Shamana* and *Deepaniya* properties (36). The 16-day *Yoga Basti* pattern represents an intensive detoxification protocol that targets the root *Dosha* imbalance rather than merely suppressing symptoms. The small sample (n=15) limits generalizability, but results are consistent with the classical indication of *Basti* in *Grahani Dosha*.

Effect of Yoga and Psychosomatic Interventions on Grahani Dosha and IBS

The 60-day RCT evaluating Manipura Chakra Yoga (Pavanamuktasana, Bhastrika Pranayama, and Uddiyana Bandha) in 50 *Vatika Grahani* patients represents a landmark contribution. The yoga group demonstrated significantly greater improvement in both gastrointestinal symptoms and psychological parameters (anxiety and depression) compared to medication-only controls, with outcomes diverging progressively over time. The *Manipura Chakra*, located at the solar plexus, is anatomically associated with digestive organs in Ayurvedic and yogic traditions. Modern neuroscientific evidence supports yoga's ability to modulate the autonomic nervous system, reduce cortisol levels, and improve parasympathetic tone mechanisms directly relevant to IBS pathophysiology. The absence of dietary restrictions in the yoga intervention strengthens external validity. These findings are consistent with a systematic review by Schumann et al., which found that yoga significantly reduced IBS symptom severity.

Efficacy of Whole System Ayurveda Protocol (WSAP) in Integrated Management of Grahani Dosha

The 2-month RCT comparing a Whole System Ayurveda Protocol against *Kalingadi Churna* monotherapy in 48 patients (Rome IV criteria) is the most methodologically comprehensive study reviewed. It employed a robust panel of validated outcome measures — IBS-SSS, IBS-AR, GRSR, IBS-VAS, Bristol Stool Form Scale, Hamilton Anxiety and Depression Scales, IBS-QoL, CBC, and stool examination — with five assessment time points. WSAP proved superior in reducing physical IBS symptom severity, while both treatments produced comparable psychological improvements. This finding mirrors conclusions from integrative medicine research that holistic, patient-centred models consistently outperform symptom-focused pharmacotherapy in functional gastrointestinal disorders. The WSAP design encompassing *Nidana Parivarjana*, dietary modification, herbal formulations, lifestyle guidance, and possibly Panchakarma exemplifies the classical Ayurvedic principle of treating *Sarvanga* (whole individual) rather than isolated symptoms.

Comparative Outcomes and Therapeutic Hierarchy in Grahani Dosha Management

Across all 13 studies, a gradient of efficacy is observed consistent with classical Ayurvedic therapeutic hierarchy. Single-formulation *Churna* therapies yielded 65–75% improvement

rates; combination formulation therapies (*Churna* + *Arishta*, *Churna* + *Kwatha*) achieved 80–87% improvement; *Avaleha* formulations demonstrated 80.4% response; *Basti* therapy yielded impressive results across all parameters; and comprehensive protocols (WSAP, yoga combined with medication) showed superiority in specific domains. This hierarchy is consistent with the classical Ayurvedic framework: *Shodhana* (purification therapy, e.g., *Basti*) is indicated for established disease, followed by *Shamana* (palliative therapy, e.g., *Churna/Kwatha*) for symptom management and maintenance. Longer treatment durations (3 months vs 16–30 days) generally correlated with higher response rates, reflecting the chronic relapsing nature of IBS.

Pharmacological Mechanisms Underlying Ayurvedic Interventions in Grahani Dosha

The therapeutic efficacy of reviewed formulations is understood through four complementary mechanisms that bridge classical and modern frameworks. First, *Agni* restoration: *Deepana-Pachana* properties of *Bilva*, *Pippala*, *Musta*, *Chavya*, and *Kalinga* correspond to enhancement of digestive enzyme secretion, gastric acid output, and gastric motility. Second, *Ama Pachana* (clearance of undigested metabolic waste) aligns with gut microbiome rebalancing and improvement of intestinal barrier integrity. Third, *Vata Shamana* corresponds to antispasmodic, prokinetic, and autonomic nervous system-modulating effects. Fourth, psychological modulation via *Medhya Rasayana* and yoga addresses the gut-brain axis dysregulation central to IBS pathophysiology. Fermented formulations (*Arishta*, *Asava*, *Takra*) may additionally confer probiotic-like microbiome benefits, consistent with growing evidence for probiotic efficacy in IBS symptom management.

Methodological Limitations and Recommendations for Future Research

Several methodological limitations are apparent across reviewed studies. Most trials have small sample sizes (n=15 to n=50), limiting statistical power and generalizability. The majority are single-arm, open-label trials without placebo control or blinding, introducing performance and detection bias. Use of validated outcome tools (Rome III/IV criteria, IBS-SSS, Hamilton scales) was commendable when employed, but inconsistent — several studies relied solely on traditional Ayurvedic symptom scoring. Follow-up periods were short or absent in most studies, precluding assessment of long-term treatment durability. Standardisation of herbal formulations varied, and batch-to-batch variation in herb quality and processing may affect pharmacological potency. Future research should prioritise double-blind, placebo-controlled RCTs with adequate sample sizes (minimum n=50 per arm), standardised quality-certified formulations, combined Ayurvedic and modern validated outcome measures, and follow-up periods of at least 3 months.

Conclusion

The collective evidence from thirteen clinical studies confirms that Ayurvedic interventions spanning *Churnas*, *Avalehas*, *Arishtas*, *Bastis*, yoga, and whole-system protocols offer meaningful, clinically significant therapeutic benefit in *Grahani Dosha* (IBS). Classical Ayurvedic frameworks centred on *Agni* restoration, *Ama* clearance, *Dosha* balance, and psychosomatic integration are increasingly substantiated by modern gastroenterological and pharmacological evidence. Response rates across formulations ranged from 65% to 86.6%, with combination and whole-system approaches consistently

outperforming single-formulation therapies validating the Ayurvedic principle of holistic, individualised care.

The integration of stress management modalities (*Medhya Rasayana*, yoga) alongside digestive formulations addresses the gut-brain axis dimension of IBS, an aspect often neglected in conventional symptomatic management. Panchakarma, particularly *Basti* therapy, demonstrated notable efficacy as a *Shodhana* intervention targeting root pathogenesis. *Takra* (buttermilk) emerges consistently across studies as an important *Anupana* and therapeutic adjuvant, corroborating its classical designation as foremost in *Grahani* management.

To consolidate these findings within evidence-based integrative medicine frameworks, future research must prioritise large-scale RCTs with rigorous methodology, standardised formulations, comprehensive multi-domain outcome assessment, and adequate long-term follow-up. Such efforts will facilitate the translation of these time-tested Ayurvedic therapies into globally accessible, guideline-endorsed treatment options for IBS and related functional gastrointestinal disorders.

Conflict of Interest: None declared.

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