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AN REVIEW ARTICLE ON EFFECT OF DIET AND LIFESTYLE MODIFICATIONS IN THE MANAGEMENT OF GRAHANI ROG

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ABSTRACT

Grahani Roga is a well-established functional gastrointestinal disorder in Ayurvedic medicine, characterised by impairment of the intestinal seat of digestion and absorption, designated *Grahani*. The condition bears significant clinical overlap with what contemporary gastroenterology describes as Irritable Bowel Syndrome (IBS). Classical treatises identify disturbed *Agni* (digestive fire) as the central pathological event, precipitated primarily by faulty dietary practices, irregular lifestyle, and psychosocial stress. To synthesise classical Ayurvedic textual evidence and contemporary scientific literature in elucidating the role of diet and lifestyle in the aetiopathogenesis and management of *Grahani Roga*. A narrative review was conducted drawing from primary Ayurvedic classical texts — *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Madhava Nidana*, *Bhavaprakasha*, *Chakradatta*, and *Yoga Ratnakara* — and from peer-reviewed modern gastroenterological literature retrieved through PubMed, Scopus, and AYUSH-affiliated databases. *Pathya Ahara* (wholesome diet), *Dinacharya* (regulated daily regimen), *Sansarjana Krama* (graduated dietary rehabilitation), and psychosomatic interventions collectively constitute the foundation of *Grahani Roga* management, corroborated by contemporary evidence on gut-brain axis modulation and microbiota regulation.

KEYWORDS: *Grahani Roga*; *Agni*; *Pathya Ahara*; *Agnidushti*; *Dinacharya*; Irritable Bowel Syndrome; Diet Therapy; Lifestyle Medicine; Ayurveda.

INTRODUCTION

Digestive health occupies a central position in Ayurvedic physiology, and no condition illustrates its complexity more comprehensively than *Grahani Roga*. The term *Grahani* denotes both an anatomical–functional entity — corresponding to the mucosal and neuromuscular apparatus of the duodenum and proximal small intestine — and the pathological syndrome arising from its dysfunction. Charaka defines *Grahani* as that which holds ingested food (*grihnanaat gruhyate iti grahani*) until digestion is complete, thereafter releasing the processed substrate for absorption and propelling the residue distally. Its functional vitality is entirely derived from and sustained by *Agni*, the transformative digestive fire.[1,2]

The global burden of functional gastrointestinal disorders has risen considerably over the past three decades, with IBS affecting an estimated 10–15% of the world population. The pathophysiological mechanisms of IBS — encompassing visceral hypersensitivity, altered gut motility, intestinal dysbiosis, and gut-brain axis dysregulation — correspond remarkably with the Ayurvedic constructs of *Agnimandya*, *Ama* formation, *Vata* predominance, and psychosomatic causation described in classical texts. This convergence renders *Grahani Roga* one of the most clinically pertinent diagnostic equivalences in integrative gastroenterology.[1,2] Rapid urbanisation, dietary transition toward ultra-processed foods, disrupted circadian rhythm, occupational stress, and reduction in physical activity have collectively amplified the incidence of functional digestive complaints in contemporary populations. Given the chronic and relapsing natural history of *Grahani Roga*, the Ayurvedic emphasis on sustainable dietary reform and lifestyle correction assumes especial clinical relevance. The present review seeks to articulate this framework with rigorous classical textual substantiation and contemporary scientific context.

AIMS AND OBJECTIVES

The present review was undertaken with the following objectives.

1. To delineate the classical Ayurvedic conception of *Grahani* as an anatomical–functional entity and *Grahani Roga* as a clinical syndrome, with reference to primary classical texts.
2. To identify and analyse the aetiological and aggravating roles of dietary habits and

lifestyle factors in the pathogenesis of *Grahani Roga*.

MATERIALS AND METHODS

This study constitutes a narrative conceptual review. Classical Ayurvedic references were sourced from authenticated editions of *Charaka Samhita* (Chikitsa Sthana, Chapter 15), *Sushruta Samhita* (Uttara Tantra, Chapter 40), *Ashtanga Hridaya* (Nidana Sthana, Chapter 8; Chikitsa Sthana, Chapter 10), *Ashtanga Sangraha* (Nidana Sthana), *Madhava Nidana* (Chapter 6), *Bhavaprakasha* (Madhyama Khanda), *Chakradatta* (Grahani Chikitsa), *Yoga Ratnakara* (Grahani Adhyaya), and *Sharangadhara Samhita*. Modern scientific literature was retrieved from PubMed, Scopus, Google Scholar, and the DHARA (Digital Helpline for Ayurveda Research Articles) repository using terms including *Grahani Roga*, IBS, gut-brain axis, dietary fibre and gut function, stress and intestinal permeability, yoga and IBS, and microbiota dysbiosis. Studies published between 2000 and 2024 were preferentially included. All classical references are cited with text name, *Sthana*, chapter, and verse number; where exact verse identification requires further philological confirmation, this has been noted explicitly.

Ayurvedic Conceptual Review

1 Concept and Anatomy of Grahani

Charaka defines *Grahani* as the organ located above the navel (*nabher adho grahani*) that retains food for the duration necessary for *Agni* to complete its work of digestion and absorption. It is specifically described as the seat of *Agni* (*agner adhisthanam*), and its structural integrity is wholly dependent on the strength of *Jatharagni*. When *Agni* is robust, *Grahani* functions normally; when it is vitiated, *Grahani* loses its retentive and selective function. *(Charaka Samhita, Chikitsa Sthana 15/56–57).*

Sushruta places *Grahani* between the *Amashaya* (stomach) and *Pakvashaya* (large intestine), identifying it as the site of pivotal transformative activity. *Vagbhata* in *Ashtanga Hridaya* confirms this anatomical localisation and emphasises that *Pitta* residing in *Grahani* (*pachaka pitta*) is the functional correlate of digestive enzymatic activity. Modern anatomy identifies this region as the duodenum and proximal jejunum — the principal loci of enzymatic digestion and selective nutrient absorption — validating the classical anatomical description. *(Sushruta Samhita, Uttara Tantra 40/167–168; Ashtanga Hridaya, Nidana Sthana 8/1–3).*

2 Aetiopathogenesis of Grahani Roga

Charaka enumerates the causative factors of *Grahani Roga* comprehensively in the fifteenth

chapter of *Chikitsa Sthana*. Dietary causes include consumption of heavy (*guru*), incompatible (*viruddha*), unwholesome (*ahitahara*), cold (*sheeta*), and stale (*paryushita*) foods; eating before the previous meal is digested (*ajirne bhojana*); and excessive intake of fatty, sour, or fermentative substances. Behavioural causes include irregular meal timings, prolonged fasting, suppression of natural urges (*vegadharana*), grief, anxiety, and excessive physical exertion during illness. Iatrogenic causation through improper or untimely purificatory procedures is also recognised. *(Charaka Samhita, Chikitsa Sthana 15/42–44).*

Madhavakara in *Madhava Nidana* reinforces the central role of *Agnimandya* in the aetiology, stating that *Grahani Roga* is fundamentally a disease of impaired *Agni* — specifically *Jatharagni* — and that all other causative factors operate through this primary mechanism. When *Agni* is weakened, ingested food undergoes fermentation rather than proper digestion, yielding *Ama* — a heterogeneous, sticky, malodorous, immunoreactive metabolic by-product that accumulates in the intestinal channels and disrupts both absorption and motility. *(Madhava Nidana, Grahanidosha Nidana 6/1–6).*

Vagbhata in *Ashtanga Hridaya* provides an additional pathophysiological dimension, noting that weakened *Grahani* becomes incapable of distinguishing digested from undigested food, releasing both prematurely (*pakwapakwa vibhajana asaktah*). This leads to the characteristic symptom of alternating or unstable stools — sometimes formed, sometimes liquid — a feature that closely corresponds to the mixed subtype of IBS. *(Ashtanga Hridaya, Nidana Sthana 8/12–14).*

3 Classification and Symptomatology

Classical texts describe four doshic variants of *Grahani Roga*: *Vataja*, *Pittaja*, *Kaphaja*, and *Sannipataja*. In the *Vataja* type, symptoms include colicky abdominal pain, gurgling sounds (*antarakujana*), alternate constipation and diarrhoea, frothy stools, flatulence, and bodyache. The *Pittaja* variant manifests with burning sensation, yellowish or greenish stools, excessive thirst, nausea, and foul odour. *Kaphaja Grahani* presents with heaviness, mucoid stools, nausea, excessive salivation, and sluggish digestion. The *Sannipataja* form, being tridoshic and most complex, carries the gravest prognosis. *(Charaka Samhita, Chikitsa Sthana 15/51–71; Ashtanga Hridaya, Nidana Sthana 8/14–22).*

Bhavaprakasha and *Yoga Ratnakara* additionally describe *Grahani* symptoms in children, noting that repeated diarrhoeal episodes with nutritional wasting (*karshya*) and pallor

(*panduta*) are particularly characteristic of the paediatric presentation. [Exact verse reference requires verification — Bhavaprakasha, Madhyama Khanda, Grahani Rogadhikara; Yoga Ratnakara, Grahani Adhyaya].

4 Dietary Management (Ahara Chikitsa)

Diet is simultaneously the foremost cause and the primary therapeutic instrument in *Grahani Roga*. Charaka devotes considerable textual space to the delineation of *Pathya* and *Apathya* in this condition. Among wholesome (*Pathya*) dietary articles, old varieties of *Shali* rice (*Oryza sativa* L.) prepared as *Yavagu* (thin gruel), *Mudga* (green gram; *Vigna radiata* L.) soup, thin lentil preparations, and medicated buttermilk (*takra*) are specifically recommended. Foods exhibiting *Laghu* (lightness), *Deepana* (digestive-stimulant), *Pachana* (digestant), and *Grahi* (absorptive/binding) properties are particularly indicated. *(Charaka Samhita, Chikitsa Sthana 15/97–109).*

Chakradatta and *Yoga Ratnakara* emphasise the role of medicinal dietary preparations incorporating *Shunthi* (dry ginger; *Zingiber officinale* Roscoe), *Jeeraka* (cumin; *Cuminum cyminum* L.), *Dhanyaka* (coriander; *Coriandrum sativum* L.), and *Ajwain* (*Trachyspermum ammi* L.) as carminative adjuncts that kindle *Agni* and facilitate *Ama* resolution. Buttermilk (*Takra*) prepared with digestive spices is considered a near-specific dietary adjunct, combining probiotic properties with digestive stimulation. *[Exact verse reference requires verification — Chakradatta, Grahanichikitsa Adhyaya; Yoga Ratnakara, Grahani Chikitsa]*.

Contraindicated (*Apathya*) dietary items include heavy (*guru*), cold (*sheeta*), fermented, and stale foods; dietary incompatibilities (*viruddha ahara*) such as milk with sour fruits, fish with dairy, or heated honey; excessive leguminous preparations; junk and ultra-processed foods; alcohol (*madya*); and eating prior to complete digestion of the preceding meal. Both extremes of dietary behaviour — prolonged fasting (*atilangahana*) and overeating (*atibhojana*) — are equally proscribed, as both destabilise *Jatharagni*. Meal timings should be regular and synchronised with physiological hunger signals (*kshudha*), preferably at fixed intervals aligned with the natural circadian peak of digestive activity. *(Charaka Samhita, Chikitsa Sthana 15/42–44; Ashtanga Hridaya, Chikitsa Sthana 10/1–5).*

In severely debilitated or post-purificatory cases, *Sansarjana Krama* — a structured dietary rehabilitation protocol described in *Charaka Samhita* — is prescribed. Commencing with thin liquid preparations such as *Peya* (thin rice gruel) and progressing incrementally through *Vilepi*

(thick gruel), *Akrita Yusha* (unseasoned lentil soup), *Krita Yusha* (seasoned soup), and finally solid foods over seven or more days, this protocol permits stepwise restoration of digestive capacity without imposing undue burden on a compromised *Agni*. *(Charaka Samhita, Chikitsa Sthana 15/197–214; Ashtanga Hridaya, Sutra Sthana 18/1–10).*

5 Lifestyle Management (Vihara Chikitsa)

Psychosomatic causation is explicitly recognised in classical Ayurvedic texts in relation to *Grahani Roga*. Grief (*shoka*), anxiety (*chinta*), fear (*bhaya*), and anger (*krodha*) are enumerated as direct causative factors (*nidana*) by Charaka, establishing the gut-brain axis as a fundamental Ayurvedic clinical principle long before its modern neurobiological characterisation. The doctrine of *Manasika Dosha* — wherein excess *Raja* and *Tama* generate psychosomatic pathology — provides the conceptual substrate for understanding stress-induced intestinal dysfunction. *(Charaka Samhita, Chikitsa Sthana 15/42–44; Charaka Samhita, Sutra Sthana 25/40).*

Adherence to *Dinacharya* (structured daily regimen) is prescribed as a cornerstone of preventive and therapeutic management. Classical texts recommend consistent wake times, morning evacuation (*shaucha*), oil massage (*abhyanga*), moderate physical exercise (*vyayama*) proportionate to individual constitution (*prakriti*), mindful eating in a calm environment, and regular sleep. The suppression of natural urges (*vegadharana*) — particularly defaecation, urination, and flatus — is specifically proscribed as a primary cause of *Vata* derangement contributing to bowel irregularity and *Grahani* dysfunction. *(Ashtanga Hridaya, Sutra Sthana 4/1–8; Charaka Samhita, Sutra Sthana 7/3–7).*

6 Yoga, Pranayama, and Satvavajaya Chikitsa

Classical Ayurveda prescribes *Satvavajaya Chikitsa* — psychotherapeutic intervention directed at conquering the mind through reasoning, patience, and meditative practice (*gnana, vignana, dhairya, smriti, samadhi*) — as a necessary component of management wherever psychosomatic causation is operative. *(Charaka Samhita, Sutra Sthana 1/58; Ashtanga Hridaya, Sutra Sthana 1/5)* Classical texts also recommend *Pranayama* and yogic practices as adjuncts to digestive health through regulation of *Prana Vayu* and reduction of *Manasika Dosha*. [Exact verse reference requires verification — Yoga Ratnakara, Grahani Adhyaya; Bhavaprakasha, Grahani Rogadhikara]

In contemporary literature, a systematic review by Schumann et al. (2016) demonstrated significant improvements in IBS symptom severity scores, stool frequency, and quality of life following structured yoga programmes.[3] Mindfulness-based stress reduction (MBSR) has shown comparable efficacy in reducing abdominal pain and improving bowel function in IBS patients in randomised controlled trials.[4] Specific *asanas* particularly indicated in *Grahani Roga* include *Pawanmuktasana, Vajrasana, Paschimottanasana, Ardha Matsyendrasana*, and *Trikonasana*. *Nadi Shodhana Pranayama* and *Bhramari* are recommended for autonomic nervous system regulation. [Exact classical references for specific asana prescription require verification — Yoga Ratnakara, Grahani Adhyaya]

7 Panchakarma and Pharmacological Interventions

The management of *Grahani Roga* in classical texts follows a structured therapeutic sequence. Preparatory *Deepana-Pachana* (kindling of digestive fire and resolution of *Ama*) using formulations such as *Chitrakadi Vati, Trikatu Churna*, and *Hingwashtak Churna* constitutes the initial phase, aimed at rendering the patient fit for purificatory therapy. Oleation (*Snehana*) followed by selective *Shodhana* — specifically *Virechana* (therapeutic purgation) in *Pittaja* and mixed types — is prescribed to achieve fundamental *dosha* elimination. In *Kaphaja* predominance, *Vamana* (therapeutic emesis) may be employed. *(Charaka Samhita, Chikitsa Sthana 15/74–96; Ashtanga Hridaya, Chikitsa Sthana 10/1–25).*

Key pharmacological formulations described across classical sources include *Kutajarishta* (from *Holarrhena antidysenterica* Wall.), the first-line preparation in diarrhoea-predominant *Grahani Roga* by virtue of its *Grahi*, anti-infective, and intestinal tonic properties; *Bilwadi Churna* incorporating *Aegle marmelos* (L.) Corr., for binding and astringent action; *Nagaradya Churna* for *Agni* restoration in chronic presentations; and *Dadimashtaka Churna* for convalescent *Agni* stimulation. *Takrarishta* is specifically mentioned in *Chakradatta* as an effective fermented preparation for chronic *Grahani*. *(Charaka Samhita, Chikitsa Sthana 15/74–96; Chakradatta, Grahani Chikitsa Adhyaya; Bhavaprakasha, Madhyama Khanda, Grahani Rogadhikara).*

Sharangadhara Samhita provides detailed pharmaceutical preparations including compound churnas, asavas, and arishtas applicable to *Grahani Roga* management, noting specific anupana (vehicle) recommendations that optimise drug bioavailability and synergy with the digestive substrate. *[Exact verse reference requires verification — Sharangadhara Samhita, Madhyama Khanda, Chapter 6–7]*

DISCUSSION

The present review reveals a conceptually integrated and clinically robust Ayurvedic model for *Grahani Roga* that achieves substantial convergence with modern gastroenterological understanding of IBS. The primacy of *Agni* as the determinant of intestinal health in classical Ayurveda finds its functional parallel in the modern understanding of digestive enzyme activity, intestinal motility, and mucosal barrier integrity as integrated determinants of gastrointestinal homeostasis.

The concept of *Ama* — arising from incomplete digestion and exerting systemic toxic and local mucosal effects — resonates compellingly with contemporary research on gut microbiota dysbiosis, increased intestinal permeability, and endotoxemia. Studies have demonstrated that IBS patients exhibit significantly elevated serum lipopolysaccharide (LPS) levels and reduced tight-junction protein expression compared to healthy controls, reflecting the mucosal barrier dysfunction that classical Ayurveda would attribute to *Ama Dosha* accumulation.[5,6] Fermentation of incompletely digested dietary substrates by colonic microbiota generates short-chain fatty acids, hydrogen, methane, and inflammatory metabolites that provoke visceral hypersensitivity — a mechanistic correlate of the classical description of *Ama* aggravating *Vata* in the intestinal channels (*Purishavaha Srotas*).

Contemporary nutritional science validates the Ayurvedic dietary prescriptions through independent mechanisms. The low-FODMAP (Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols) dietary protocol — currently the most rigorously evidence-supported dietary intervention in IBS — functions by restricting precisely those food categories that generate fermentative gas and osmotic load in the intestine, corresponding functionally to the classical *Apathya* proscriptions of *Guru*, fermentative, and *Viruddha Ahara*. A systematic review by Altobelli et al. (2017) demonstrated that low-FODMAP diet achieved symptom response in 50–80% of IBS patients.[7] Warm, freshly prepared, carminative-spiced foods recommended as *Pathya* in *Grahani Roga* reduce fermentative colonic load, enhance gastric emptying, and promote regular motility — mechanisms well-documented for *Shunthi* (ginger) and *Jeeraka* (cumin) in modern pharmacognosy.[8]

The gut-brain axis — a bidirectional neurohumoral communication network linking the enteric and central nervous systems through vagal, hormonal, serotonergic, and immunological pathways — provides the modern neurobiological substrate for the Ayurvedic recognition of psychosocial stress as a primary *Nidana* in *Grahani Roga*. Psychological stress

activates the hypothalamic-pituitary-adrenal (HPA) axis, elevating corticotropin-releasing factor (CRF) levels that increase colonic motility, mucosal permeability, and mast cell degranulation — mechanisms that parallel the *Pittaja* and *Vataja Grahani* phenotypes described in classical texts.[9] This neurohumoral model validates *Satvavajaya Chikitsa* and *Dinacharya* as evidence-congruent interventions, not merely cultural prescriptions.

The individualised Ayurvedic approach — stratifying patients by doshic predominance and prescribing targeted interventions — anticipates the precision medicine paradigm increasingly advocated in modern functional gastroenterology, wherein IBS subtypes (IBS-D, IBS-C, IBS-M) and biomarker profiles guide personalised therapy. The Ayurvedic model extends this individualisation to incorporate dietary constitution (*Prakriti*), seasonal variation (*Ritucharya*), and psychological temperament (*Satva*), offering a more holistic personalisation matrix than conventional IBS subtyping.

CONCLUSION

Grahani Roga represents one of the most clinically significant and comprehensively described functional gastrointestinal disorders in the Ayurvedic classical literature. Its pathological substrate — *Agnidushti* and consequent *Ama* accumulation — provides a mechanistically coherent explanation for the symptom complex that contemporary medicine classifies as IBS. The unambiguous identification of faulty dietary practices and irregular lifestyle as primary aetiological determinants in classical texts, corroborated by modern gastroenterological evidence on diet, stress, and gut-brain axis dysregulation, establishes the Ayurvedic framework as both ancient in origin and contemporary in relevance.

The therapeutic architecture described across *Charaka Samhita*, *Ashtanga Hridaya*, *Chakradatta*, *Bhavaprakasha*, and *Yoga Ratnakara* — encompassing *Pathya Ahara*, *Sansarjana Krama*, *Dinacharya*, *Satvavajaya Chikitsa*, and targeted *Panchakarma* — constitutes a holistic, multi-dimensional management paradigm that is validated, not contradicted, by contemporary biomedical science. Integrating this paradigm into evidence-based clinical practice requires systematic prospective research employing standardised Ayurvedic diagnostic protocols alongside validated modern outcome measures. The present review underscores the intellectual depth of the Ayurvedic tradition and its enduring relevance to the contemporary management of functional digestive disorders.

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