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Bridging Ayurveda, Conventional Medicine, and Modern Health Sciences in the Diagnosis and Management of Colorectal Motility Disorders: A Narrative Review

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Abstract

Objectives: To investigate and explore conceptual, diagnostic, and therapeutic intersections between Ayurveda, conventional medicine, biomedicine, and other modern health sciences in the understanding and management of Colorectal Motility Disorders (CMDs), including chronic constipation, slow-transit constipation, Irritable Bowel Syndrome with Constipation (IBS-C), and pelvic floor dyssynergia. To synthesizes Ayurvedic principles with modern health sciences to propose an integrated diagnostic and therapeutic model for CMDs.

Design: Narrative review.

Data Sources: Narrative synthesis of literature from PubMed, EMBASE, and classical Ayurvedic texts (e.g., Charaka Samhita). Classical Ayurvedic texts, peer-reviewed biomedical literature, integrative medicine research, and global health system reports.

Eligibility Criteria: Sources describing CMDs - including chronic constipation, slow-transit constipation, Irritable Bowel Syndrome with Constipation (IBS-C), and pelvic floor dyssynergia - from Ayurvedic, biomedical, or integrative perspectives.

Data Extraction and Synthesis: A thematic synthesis approach was used to map conceptual parallels, diagnostic frameworks, and therapeutic strategies across systems.

Results: Ayurveda and biomedicine describe CMDs through distinct epistemologies but share convergent themes: dysregulated motility, neuromuscular dysfunction, altered lubrication, microbiome imbalance, and psychosomatic contributors. Ayurvedic constructs such as Vata dosha, Apana Vayu, Agni, and Srotas dysfunction parallel biomedical concepts including enteric nervous system dysregulation, gut-brain axis imbalance, microbiome alterations, and colonic transit abnormalities. Integrative approaches combining dietary modulation, herbal formulations, behavioural therapies, pelvic floor retraining, and pharmacological agents show promise but require rigorous evaluation in rigorous clinical trials.

Conclusions: Ayurveda offers a systems-based, functional framework that complements reductionist biomedical models. A pluralistic, evidence-informed approach may enhance diagnostic precision, personalise therapy, and improve outcomes for CMDs. High-quality comparative effectiveness research is needed.

Keywords: Colorectal Motility Disorders; Ayurveda; Vata Dosha; Agni Dysfunction; Srotas Obstruction; Enteric Nervous System; Gut-Brain Axis; Microbiome Dysbiosis; Pelvic Floor Dyssynergia; Integrative Medicine; Functional Gastrointestinal Disorders; Systems Biology; Prakriti Phenotyping; Herbal Therapeutics; Yoga-Based Rehabilitation; Global Health Frameworks; Comparative Effectiveness; Traditional Medicine Integration; Narrative Review; Multidisciplinary Care Pathways

Summary Box

What is already known on this topic

- Colorectal Motility Disorders (CMDs) such as chronic constipation, slow-transit constipation, IBS-C, and pelvic floor dyssynergia are common, multifactorial, and often chronic.
- Biomedicine explains CMDs through mechanisms including enteric nervous system dysregulation, gut-brain axis imbalance, microbiome alterations, and neuromuscular dysfunction.
- Ayurveda describes similar symptom clusters through Vata dosha imbalance, impaired Agni, Srotas obstruction, and psychosomatic influences.
- Despite conceptual parallels, the two systems are rarely examined together in a structured, comparative framework.

What this study adds

- Provides the first structured mapping of Ayurvedic constructs to biomedical mechanisms in CMDs, highlighting areas of conceptual and mechanistic convergence.
- Demonstrates how Ayurvedic diagnostic elements (e.g., Prakriti, Agni, Srotas) complement biomedical tools such as transit studies, manometry, and microbiome profiling.
- Identifies integrative therapeutic opportunities, including combined herbal–pharmaceutical regimens, yoga-based pelvic floor rehabilitation, and systems-level lifestyle interventions.
- Proposes an evidence-informed integrative clinical pathway for CMD management.

How this study might affect research, practice, or policy

- Encourages development of hybrid diagnostic models that incorporate both functional Ayurvedic assessment and biomedical physiological testing.
- Supports the design of comparative effectiveness trials evaluating Ayurvedic therapies alongside standard biomedical treatments.
- Provides a foundation for systems-biology research linking dosha phenotypes with microbiome and metabolomic signatures.
- Offers a framework for integrating traditional medicine into global health strategies for CMDs, particularly in resource-limited settings.

Strengths and Limitations of this Study

- This review is the first to systematically map Ayurvedic constructs (e.g., Vata, Agni, Srotas) to biomedical mechanisms (e.g., enteric nervous system regulation, microbiome imbalance, neuromuscular dysfunction) in colorectal motility disorders.
- It integrates classical Ayurvedic sources, contemporary biomedical evidence, and emerging systems-biology insights to provide a multidimensional understanding of motility disorders.
- The narrative design allows broad conceptual synthesis across medical systems, supporting the development of integrative diagnostic and therapeutic frameworks.
- Heterogeneity in Ayurvedic terminology, variability in herbal formulations, and limited standardisation across traditional practices constrain direct comparison with biomedical evidence.
- The absence of high-quality clinical trials evaluating integrative or Ayurvedic interventions limits the ability to draw firm conclusions about comparative effectiveness.
- As a narrative review, the study does not include meta-analysis or quantitative assessment, which may limit generalisability.

Introduction

Colorectal Motility Disorders (CMDs) represent a major global health burden, affecting quality of life, productivity, and healthcare utilisation. Conventional biomedical models emphasise neuromuscular dysfunction, altered transit, pelvic floor dyssynergia, and gut–brain axis dysregulation [1]. Ayurveda, one of the world's oldest medical systems, conceptualises these disorders through Vata imbalance, impaired Agni (digestive fire), and obstruction or depletion of Srotas (body channels) [2, 3, 4].

Despite differing ontologies, both systems recognise CMDs as multifactorial, chronic, and influenced by diet, lifestyle, stress, and environmental factors [1, 5]. This review investigates the conceptual bridges, diagnostic parallels, and therapeutic synergies between Ayurveda and modern health sciences.

Colorectal motility disorders (CMDs) such as chronic constipation, slow-transit constipation, IBS-C, and pelvic floor dyssynergia represent a substantial global health burden [6]. Despite the growing interest in integrative and systems-based approaches to gastrointestinal disorders, there remains no structured synthesis comparing Ayurvedic frameworks with contemporary biomedical models. This narrative review addresses that gap by mapping conceptual, diagnostic, and therapeutic intersections between Ayurveda, conventional medicine, biomedicine, and emerging health sciences [7, 8].

Methods

Study Design

A narrative review was conducted to synthesise conceptual, diagnostic, and therapeutic perspectives across Ayurveda and modern health sciences.

Search Strategy

Sources were identified through:

- Classical Ayurvedic texts and commentaries
- PubMed, Scopus, and Google Scholar searches
- Integrative medicine journals
- Global health system reports

Search terms included: Ayurveda, Vata, Agni, Srotas, constipation, colorectal motility, IBS-C, pelvic floor dyssynergia, integrative medicine, gut–brain axis, microbiome.

Inclusion Criteria

- Descriptions of CMDs from Ayurvedic or biomedical perspectives.

- Studies on diagnostic frameworks or therapeutic interventions.
- Reviews, clinical trials, observational studies, and authoritative classical sources.

Exclusion Criteria

- Non-digestive Ayurvedic disorders.
- Animal studies without translational relevance.
- Non-English sources without reliable translation.

Synthesis

A thematic synthesis approach was used to map conceptual parallels and identify integrative opportunities.

Results

Ayurveda and biomedicine describe CMDs through distinct epistemologies but share convergent themes: dysregulated motility, neuromuscular dysfunction, altered lubrication, microbiome imbalance, and psychosomatic contributors. Ayurvedic constructs such as Vata dosha, Apana Vayu, Agni, and Srotas dysfunction parallel biomedical concepts including enteric nervous system dysregulation, gut–brain axis imbalance, and colonic transit abnormalities. Integrative approaches combining dietary modulation, herbal formulations, behavioural therapies, pelvic floor retraining, and pharmacological agents show promise but require rigorous evaluation.

Conceptual Frameworks (Table 1)

Ayurvedic Concepts

CMDs are primarily attributed to:

Ayurvedic Construct	Description	Biomedical Parallel	Interpretation
Vata dosha imbalance (especially *Apana Vayu*)	Governs downward movement, elimination, neuromuscular activity	Enteric nervous system dysregulation; autonomic imbalance	Both systems recognise impaired neuromuscular coordination as central to CMDs
Agni dysfunction	Impaired digestive fire leading to incomplete digestion	Dysbiosis; impaired motility; altered fermentation	Functional digestive impairment maps onto microbiome and motility abnormalities
Srotas obstruction (*Purishavaha Srotas*)	Blockage of colon channels	Pelvic floor dyssynergia; outlet obstruction	Structural/ functional outlet dysfunction conceptualised as channel obstruction
Ama accumulation	Metabolic toxins from poor digestion	Low-grade inflammation; altered metabolites	Both describe toxic/ metabolic by-products contributing to symptoms
Mind–gut linkage (*Manas, Satva–Rajas–Tamas*)	Psychological states influence gut function	Gut–brain axis; stress-induced motility changes	Shared recognition of psychosomatic contributors

Table 1: Conceptual Parallels Between Ayurveda and Biomedicine in Colorectal Motility Disorders. This table compares foundational Ayurvedic constructs - Vata dosha, Agni, Srotas, and Ama - with their closest biomedical correlates, including enteric nervous system regulation, dysbiosis, neuromuscular dysfunction, and psychosomatic influences. It highlights areas of conceptual convergence relevant to the pathophysiology of colorectal motility disorders.

Points of Convergence

Ayurvedic Concept	Biomedical Parallel
Vata imbalance	Enteric nervous system dysregulation
Agni dysfunction	Impaired motility, dysbiosis
Srotas obstruction	Pelvic floor dyssynergia, outlet obstruction
Ama accumulation	Low-grade inflammation, altered metabolites
Mind–gut linkage	Gut–brain axis dysfunction

- Vata dosha imbalance, especially Apana Vayu
- Agni dysfunction, leading to impaired digestion
- Srotas obstruction, particularly Purishavaha Srotas
- Mind–gut interactions, reflecting psychosomatic influences

Biomedical Concepts

CMDs arise from:

- Enteric nervous system dysregulation
- Altered serotonin signalling
- Microbiome dysbiosis
- Smooth muscle dysfunction
- Pelvic floor dyssynergia
- Gut–brain axis imbalance

Conceptual Convergence

Ayurvedic and biomedical constructs align in recognising:

- Motility dysregulation
- Neuromuscular dysfunction
- Psychosocial contributors
- Microbiome involvement
- Dietary and lifestyle influences

Diagnostic Approaches (Table 2)

Ayurvedic Diagnostics

- Nidana (causes): diet, lifestyle, suppression of urges
- Rupa (symptoms): dryness, bloating, hard stools
- Lakshana (signs): tongue coating, pulse characteristics
- Rogi–Roga Pariksha: constitution, chronicity, strength

Biomedical Diagnostics

- Colonic transit studies
- Anorectal manometry
- Balloon expulsion test
- Defecography
- Colonoscopy
- Microbiome profiling (emerging)

Domain	Ayurvedic Approach	Biomedical Approach	Overlap / Integrative Insight
Clinical history	*Nidana* (causes), bowel habits, diet, lifestyle, suppression of urges	Detailed symptom history, Rome IV criteria	Both emphasise chronicity, triggers, lifestyle
Physical examination	*Darshana, Sparshana, Prashna*; tongue, pulse, abdomen	Abdominal exam, rectal exam	Shared focus on abdominal findings
Functional assessment	*Agni, Vata* status, *Srotas* patency	Transit studies, manometry, balloon expulsion	Ayurveda's functional lens complements physiological tests
Psychosocial evaluation	*Manas* assessment, stress patterns	Gut–brain axis, psychological screening	Strong convergence on stress-related motility effects
Constitution /	*Prakriti* analysis	Emerging interest in phenotyping,	Potential for hybrid personalised models

Table 2: Diagnostic Approaches in Ayurveda and Modern Medicine. This table outlines diagnostic domains across Ayurveda and biomedicine, including clinical history, physical examination, functional assessment, psychosocial evaluation, and constitutional or phenotypic analysis. It demonstrates complementary strengths and identifies opportunities for hybrid diagnostic models.

Ayurvedic Diagnosis	Key Features	Likely Biomedical Correlate
Vibandha	Hard stools, dryness, incomplete evacuation	Chronic constipation (slow or normal transit)
Grahani	Irregular digestion, bloating, variable stools	IBS-C; functional bowel disorders
Udavarta	Reverse peristalsis, bloating, discomfort	Dysmotility; visceral hypersensitivity
Pakvashayagata Vata	Colonic Vata disorder with pain, dryness	Slow-transit constipation; colonic inertia
Apana Vayu dysfunction	Impaired downward movement	Pelvic floor dyssynergia; outlet obstruction

Table 4: Mapping Ayurvedic Diagnoses to Biomedical Categories. This table maps classical Ayurvedic diagnostic entities - such as Vibandha, Grahani, Udavarta, and Pakvashayagata Vata - to their closest biomedical equivalents, including chronic constipation, IBS-C, dysmotility, and pelvic floor dyssynergia. It supports translational understanding and integrative clinical reasoning.

Therapeutic Domain	Ayurvedic Interventions	Biomedical Interventions	Integrative Opportunities
Diet	Warm, oily foods; spices (ginger, cumin, ajwain); hydration	Fibre, low-FODMAP diet	Combine Ayurvedic digestive spices with evidence-based dietary plans
Herbal / pharmacological	*Triphala, Haritaki*, castor oil, *Isabgol*	Laxatives, secretagogues, prokinetics	Evaluate herbal–pharmaceutical combinations in trials
Behavioural	Yoga, meditation, bowel-habit training	CBT, gut-directed hypnotherapy	Yoga-based pelvic floor rehabilitation
Procedures	*Basti* (medicated enemas), *Abhyanga, Swedana*	Biofeedback, pelvic floor physiotherapy	Compare *Basti* with biofeedback for dyssynergia
Systems-level	Vata-pacifying lifestyle, daily routines	Digital therapeutics, neuromodulation	Hybrid behavioural–digital protocols

Table 3: Therapeutic Strategies Across Ayurveda, Biomedicine, and Integrative Health Sciences. This table presents a comparative overview of dietary, behavioural, pharmacological, and procedural interventions across systems. Ayurvedic therapies (e.g., Triphala, Basti, yoga) are contrasted with biomedical treatments (e.g., laxatives, secretagogues, biofeedback), with integrative opportunities highlighted in a dedicated column.

Area	Current Limitations	Needed Research
Clinical trials	Few high-quality RCTs of Ayurvedic therapies	Comparative effectiveness trials vs standard care
Diagnostics	No unified integrative framework	Hybrid models combining Prakriti + transit studies
Mechanistic studies	Limited molecular mapping of dosha theory	Systems biology, microbiome, metabolomics
Standardisation	Variability in herbal formulations	GMP-grade standardisation and safety profiling
Implementation	Limited integrative clinical pathways	Global health models incorporating traditional medicine

Table 5: Research Gaps and Future Directions. This table summarises key limitations in current evidence and outlines priority areas for future research, including the need for comparative effectiveness trials, hybrid diagnostic frameworks, systems-biology investigations, standardisation of herbal formulations, and integrative clinical pathways.

Diagnostic Parallels

Ayurvedic Srotas obstruction parallels outlet obstruction; Vata imbalance parallels neuromuscular dysregulation; Agni dysfunction parallels dysbiosis and impaired motility.

Therapeutic Approaches (Table 3 and 4)

Ayurvedic Interventions

- Diet: warm, oily foods; digestive spices
- Herbal formulations: Triphala, Isabgol, Haritaki, castor oil
- Panchakarma: Basti (medicated enemas), Abhyanga, Swedana
- Lifestyle: yoga, meditation, bowel-habit training

Biomedical Interventions

- Laxatives (osmotic, stimulant)
- Secretagogues (lubiprostone, linaclotide)
- Prokinetics
- Biofeedback therapy
- Low-FODMAP diet
- Psychological therapies

Integrative Approaches

- Combined herbal–pharmacological regimens
- Yoga-based pelvic floor rehabilitation
- Microbiome-targeted therapies
- Digital therapeutics for bowel retraining

Discussion

Colorectal Motility Disorders (CMDs), including slow-transit constipation and dyssynergic defecation, significantly impact global quality of life [8]. While conventional medicine excels in objective diagnostics, Ayurveda offers a personalised, holistic framework

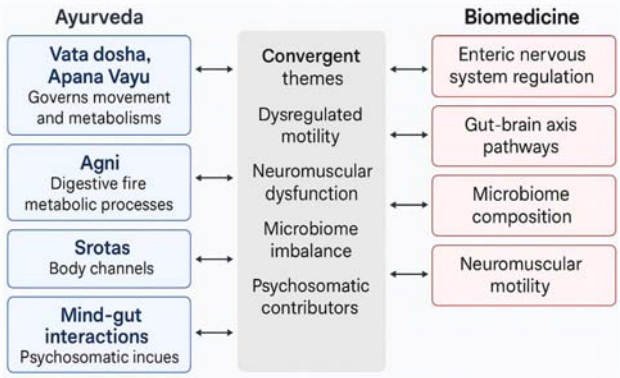


Figure 1: Conceptual Integration of Ayurvedic and Biomedical Frameworks in Colorectal Motility Disorders. A schematic diagram illustrating parallel constructs from Ayurveda (e.g., Vata dosha, Agni, Srotas) and biomedicine (e.g., enteric nervous system regulation, gut-brain axis, microbiome composition), converging on shared pathophysiological themes such as dysregulated motility, neuromuscular dysfunction, microbiome imbalance, and psychosomatic contributors.

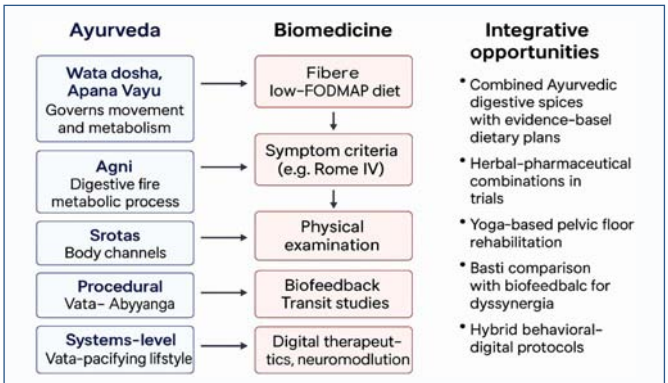


Figure 3: Therapeutic Strategies Across Ayurveda, Biomedicine, and Integrative Health Sciences. A tri-column schematic mapping dietary, behavioural, pharmacological, and procedural interventions across systems. Ayurvedic therapies (e.g., Triphala, Basti, Vata-pacifying diet, yoga) are shown alongside biomedical treatments (laxatives, secretagogues, biofeedback, low-FODMAP diet). Integrative opportunities - such as yoga-based pelvic floor rehabilitation and combined herbal–pharmaceutical regimens - are highlighted.

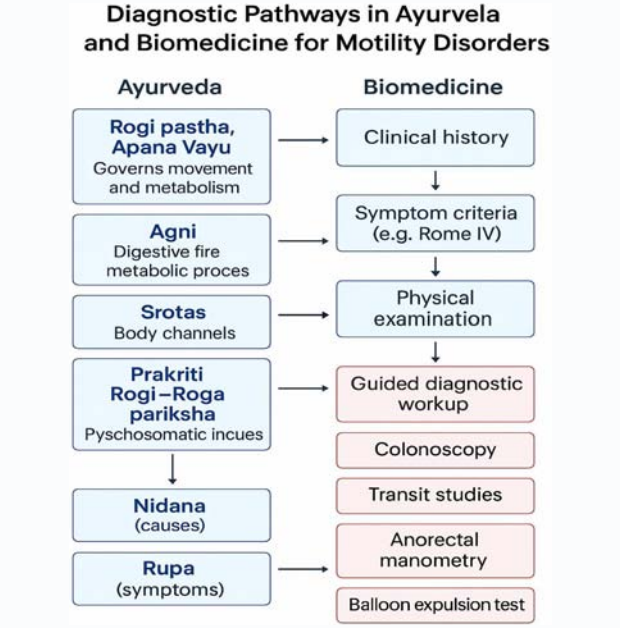


Figure 2: Diagnostic Pathways in Ayurveda and Biomedicine for Motility Disorders. A comparative flowchart showing parallel diagnostic processes: Ayurvedic assessment (Nidana, Rupa, Lakshana, Prakriti, Srotas evaluation) alongside biomedical investigations (clinical history, Rome IV criteria, physical examination, colonic transit studies, anorectal manometry, balloon expulsion test, defecography). The figure highlights complementary strengths and potential points for hybrid diagnostic models.

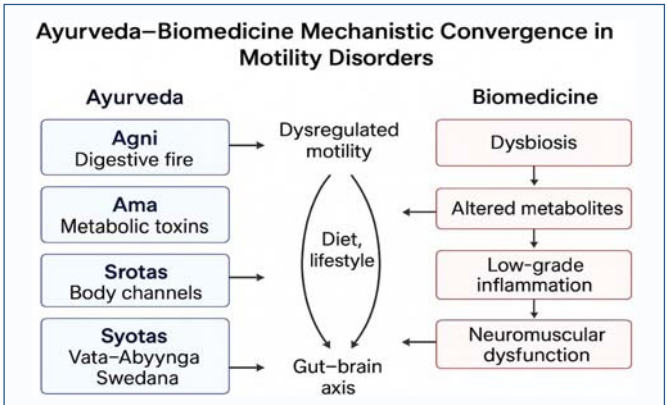


Figure 4: Ayurveda–Biomedicine Mechanistic Convergence in Motility Disorders. A mechanistic diagram linking Ayurvedic concepts (Agni, Ama, Srotas) with biomedical correlates (dysbiosis, altered metabolites, low-grade inflammation, neuromuscular dysfunction). Arrows depict bidirectional interactions between diet, lifestyle, microbiome, and gut–brain axis pathways, illustrating shared mechanisms underlying colorectal motility disorders.

focusing on Agni and Vata balance [3, 4].

This review highlights meaningful intersections between Ayurveda and modern health sciences in understanding CMDs. Ayurveda's systems-based approach contextualises motility disorders within broader physiological and psychosocial patterns, while biomedicine provides mechanistic clarity and diagnostic precision [1, 8, 9].

Integrating these perspectives may enhance personalisation of therapy, address root causes rather than symptoms, improve patient engagement, and reduce long-term pharmacotherapy dependence [9, 10].

Challenges include heterogeneity in Ayurvedic formulations, limited clinical trials, variability in herbal preparations, regulatory and safety considerations, and the need for standardised integrative diagnostic criteria [3, 4].

Our review offers several contributions that we believe are highly relevant to the readership:

- It provides the first structured comparison of Ayurvedic constructs - Vata dosha, Agni, Srotas, Ama - with biomedical mechanisms including enteric nervous system regulation, gut-brain axis pathways, microbiome dysbiosis, and neuromuscular dysfunction [1, 5, 8].
- It highlights diagnostic parallels and complementary strengths between Ayurvedic assessment and biomedical investigations such as transit studies, anorectal manometry, and microbiome profiling [8, 9].
- It identifies integrative therapeutic opportunities, including combined herbal–pharmaceutical regimens, yoga-based pelvic floor rehabilitation, and systems-level lifestyle

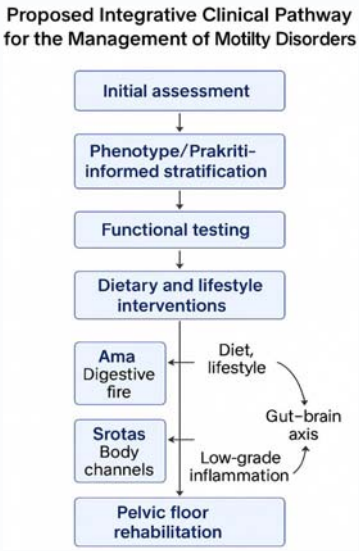


Figure 5: Proposed Integrative Clinical Pathway for the Management of Colorectal Motility Disorders. A stepwise clinical pathway combining Ayurvedic and biomedical approaches: initial assessment, phenotype/Prakriti-informed stratification, functional testing, dietary and lifestyle interventions, targeted herbal or pharmacological therapy, pelvic floor rehabilitation, and follow-up monitoring. The figure illustrates how integrative care may enhance personalisation and therapeutic outcomes.

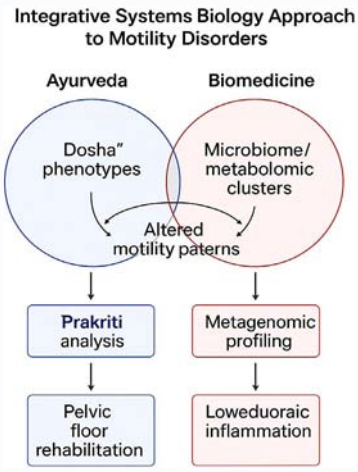


Figure 6: Systems Biology Model Linking Dosha Theory with Microbiome and Metabolomic Profiles. A conceptual model showing how Ayurvedic dosha phenotypes (Vata, Pitta, Kapha) may correspond to emerging biomedical clusters based on microbiome composition, metabolomic signatures, and motility patterns. The figure proposes hypotheses for future research in integrative systems biology and personalised medicine.

interventions [2, 3, 4, 5].

- It proposes an evidence-informed integrative clinical pathway and outlines research priorities for comparative effectiveness trials and systems-biology investigations [10].

Conventional Diagnosis and Management

Modern medicine utilizes sophisticated tools to categorize CMDs:

Diagnostics: Anorectal manometry, balloon expulsion tests, and wireless motility capsules (WMC) provide mechanistic data.

Management: Focuses on pharmacological agents (e.g., lubiprostone) and biofeedback for dyssynergic defecation.



Figure 7: Global Health Framework for Integrating Traditional Medicine in Colorectal Motility Care. A flowchart illustrating how global health policy, regulatory reform, integrated health systems, and education can support the inclusion of traditional medicine - such as Ayurveda - into colorectal motility disorder care pathways. The figure highlights the role of multidisciplinary CMD clinics and culturally grounded interventions.

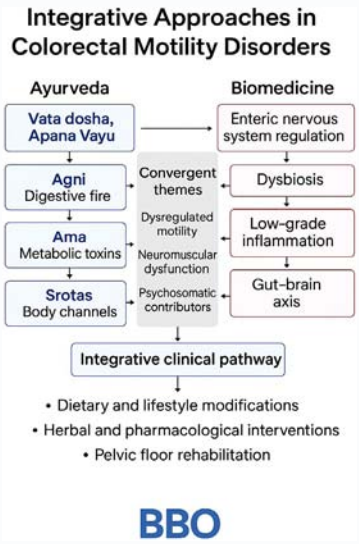


Figure 8: Graphical Abstract: Integrative Approaches in Colorectal Motility Disorders. A visual summary of the review article, showing conceptual parallels between Ayurveda and biomedicine, shared pathophysiological themes, and a proposed integrative clinical pathway. The abstract highlights key therapeutic domains including dietary and lifestyle modifications, herbal and pharmacological interventions, and pelvic floor rehabilitation.

Limitations: High costs and poor correlation between symptom severity and physiological findings often lead to patient dissatisfaction.

Ayurvedic Perspective on Colorectal Health

In Ayurveda, CMDs are primarily linked to the imbalance of Apana Vata (the energy governing downward movement) and the state of Agni.

Diagnostic Framework: Uses Trividha Pariksha (observation, palpation, interrogation) and Ashtavidha Pariksha (eight-fold examination) to assess the patient's constitution (Prakriti) and current imbalance (Vikriti).

Therapeutic Approaches:

Dietary (Ahara): Warm, oily, and fiber-rich foods (e.g., Ghee,

moong dal) to lubricate the colon.

Herbal (Aushadha): Formulations like Triphala (antioxidant/ laxative) and Avipattikar Churna to regulate motility.

Procedures: Basti (medicated enemas for dilution of pollution, cleansing effects and hydrostatic dilation and distention of the hind gut spastic left colon)) is considered the "gold standard" for Vata-related colon disorders, helping to re-establish motility.

Challenges and Future Directions

Standardization: Resolving the ontological differences between Ayurvedic holistic models and modern reductionist science is critical**.**

Evidence-Based Practice: There is an urgent need for more high-quality, randomized controlled trials (RCTs) that utilize modern biomarkers to validate Ayurvedic protocols.

Safety: Ensuring heavy-metal-free herbal preparations and professional Ayurvedic supervision to prevent adverse interactions with conventional drugs.

Research Gaps and Future Directions (Table 5)

1. Comparative effectiveness trials of Ayurvedic *vs* biomedical treatments
2. Hybrid diagnostic models integrating Prakriti typing with transit studies
3. Systems biology research linking dosha theory with microbiome and metabolomics
4. Development of integrative clinical pathways for CMDs
5. Global health frameworks incorporating traditional medicine into colorectal care

Bridging the Systems: An Integrated Model

The integration of these systems offers a "Predictive, Preventive, and Personalized" (PPPM) approach.

Integrative Diagnostics: Combining manometric data (objective) with Ayurvedic metabolic assessments (subjective) to refine treatment plans.

Synergistic Management: Utilizing Ayurvedic nutritional therapy alongside conventional low-FODMAP diets for IBS-related motility issues.

Integrating herbal compounds like curcumin, which has shown potential in modulating gut health and preventing colorectal complications**.**

Scientific Validation: Recent studies show Ayurvedic nutritional therapy can be non-inferior - and in some cases superior - to conventional interventions for functional bowel symptoms.

Conclusion

Ayurveda and modern health sciences offer complementary frameworks for diagnosing and managing CMDs. A pluralistic, evidence-informed approach may improve outcomes for patients with chronic motility disorders. Future research should prioritise comparative effectiveness trials, systems-biology investigations, and development of integrative clinical pathways. A collaborative model that respects the diagnostic precision of modern health sciences and the holistic, lifestyle-based wisdom of Ayurveda can address the unmet needs of patients with colorectal motility disorders. Future research should focus on "reverse pharmacology" to identify active Ayurvedic compounds that can be safely integrated into mainstream clinical practice. Integrating Ayurvedic dietary and detoxification protocols with modern manometric and pharmacological tools can enhance patient-cantered care and improve long-term outcomes for CMDs.

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