ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 16, Issue, 06, pp.70621-70626, June, 2026
https://doi.org/10.37118/ijdr.30971.06.2026

RESEARCH ARTICLE OPEN ACCESS

NABHI POORANA (NAVEL FILLING THERAPY): CLASSICAL REFERENCES, METHODOLOGY, AND EVIDENCE-BASED APPRAISAL OF AN AYURVEDIC THERAPEUTIC TECHNIQUE

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ARTICLE INFO

Article History:
Received 29th March, 2026
Received in revised form
19th April, 2026
Accepted 10th May, 2026
Published online 30th June, 2026

Key Words:
Nabhi Poorana; Navel therapy; Umbilical Delivery; Ayurveda; Traditional medicine; Pharmacokinetics; Transdermal delivery; Eviden.

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ABSTRACT

Objective: To provide a comprehensive evidence-based appraisal of Nabhi Poorana (navel filling therapy), a classical Ayurvedic therapeutic technique involving application of medicated oils to the umbilical region, examining its classical references, methodology, physiological basis, and contemporary scientific evidence. ***Background:*** Nabhi Poorana is documented in classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Astanga Hridaya) as a therapeutic intervention for various conditions. The umbilical region (Nabhi) is described as the "Yakrit Srotasa Mula" (root of the hepatic channel) with profound physiological significance. Contemporary anatomy has confirmed direct vascular and lymphatic connections from the umbilical region to the portal circulation via the para-umbilical veins of Sappey, suggesting mechanism-based rationale for this ancient practice. ***Methods:*** A comprehensive literature review was conducted examining: (1) Classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Astanga Hridaya) and their descriptions of Nabhi Poorana methodology; (2) Peer-reviewed publications on umbilical transdermal delivery and pharmacokinetics; (3) Evidence for anatomical and physiological basis; (4) Contemporary clinical and pre-clinical studies on Nabhi-applied formulations. ***Key Findings:*** Classical texts describe Nabhi Poorana methodology with specific oils, durations, and indications including: digestive disorders, musculoskeletal pain, reproductive health, and metabolic conditions. Modern pharmacokinetic studies demonstrate that umbilical application achieves selective hepatic portal delivery via para-umbilical veins, preferential uptake via lymphatic pathways, and enhanced transdermal penetration compared to other body sites. Published clinical evidence documents efficacy in pain management (VAS reduction 60-75%), digestive disorders (symptom improvement 65-80%), and menstrual disorders (cycle regularization 58-72%). Safety profiles are favorable with minimal adverse effects reported. ***Conclusions:*** Nabhi Poorana represents a rationally designed therapeutic technique with mechanistic basis in both classical Ayurvedic physiology and contemporary vascular anatomy. The published evidence supports efficacy for specific conditions (musculoskeletal pain, digestive disorders, reproductive health), warranting further controlled clinical trials. This review bridges classical Ayurvedic knowledge with contemporary pharmacokinetic and clinical evidence, demonstrating that ancient therapeutic observations can be explained and validated through modern scientific methods.

Citation: Manaswi Rajurkar. 2026. "Nabhi Poorana (Navel Filling Therapy): Classical References, Methodology, and Evidence-Based Appraisal of an Ayurvedic Therapeutic Technique". *International Journal of Development Research*, 16, (06), 70621-70626.

INTRODUCTION

Nabhi Poorana, translated as "navel filling" or "navel therapy," is a classical Ayurvedic therapeutic technique involving application of medicated oils, ghee, or other lipophilic vehicles to the umbilical region (1, 2). This practice is documented extensively in foundational Ayurvedic texts compiled over 2,000 years ago, yet has received limited attention in contemporary scientific literature despite increasing interest in traditional medicine approaches (3). The Charaka Samhita (Vimanasthana 5.3-5.8), a classical text dated approximately 100 CE, designates the Nabhi (navel/umbilicus) as the "Yakrit Srotasa Mula" (root or origin of the hepatic channel system) (4). This classical designation suggests that the Ayurvedic physicians of antiquity recognized anatomical and functional significance of the umbilical region for hepatic and metabolic health (5). Similarly, the

Sushruta Samhita and Astanga Hridaya document specific protocols for Nabhi Poorana including selection of vehicles, application duration, frequency, and clinical indications (6, 7). For nearly 2,000 years, Nabhi Poorana remained primarily a clinical practice observed within Ayurvedic medicine without mechanistic explanation in contemporary scientific terms. However, recent discoveries in vascular anatomy have provided objective basis for understanding how this classical technique might function pharmacologically. The para-umbilical veins of Sappey, identified by French anatomist Marie Philibert Constant Sappey in 1874, represent a network of small tributaries connecting the subcutaneous peri-umbilical venous plexus directly to the portal venous system via the round ligament (8, 9). This anatomical finding provides mechanistic explanation for the classical Ayurvedic designation of the Nabhi as hepatically significant. Contemporary transdermal delivery research has documented that the umbilical region possesses unique pharmacokinetic properties compared to other body sites, including enhanced penetration of hydrophilic and lipophilic compounds, preferential lymphatic uptake, and potential for selective hepatic targeting (10, 11). These scientific discoveries now enable evidence-based evaluation of the classical Nabhi Poorana technique through contemporary pharmacokinetic and clinical frameworks (12). This comprehensive review synthesizes: (1) classical Ayurvedic references describing Nabhi Poorana methodology; (2) contemporary anatomical and physiological understanding of umbilical region vasculature and function; (3) pharmacokinetic evidence for umbilical transdermal delivery; (4) published clinical evidence evaluating efficacy and safety of Nabhi Poorana for various conditions. The objective is to provide an evidence-based appraisal of this classical technique, bridging traditional medical observation with contemporary scientific validation.

Figure 1. Nabhi poorana illustration (38)

Classical Ayurvedic References and Textual Descriptions

The Charaka Samhita: Yakrit Srotasa Mula and Nabhi Physiology: The Charaka Samhita, compiled by Charaka approximately 100 CE and subsequently revised by Dridhabala (800 CE), represents one of the foundational texts of Ayurvedic medicine (4). In the Vimanasthana (section on physiology), Chapter 5, verses 3-8, the Charaka Samhita specifically addresses the Yakrit Srotas (hepatic channel system) and designates the Nabhi as its "mula" (root or origin) (4).

Classical text translation: "The navel (Nabhi) is the root of the hepatic channel system (Yakrit Srotasa Mula). From this region originate the channels governing transformation of nutrient essence (ahara rasa), distribution of plasma (rasa dhatu), and manifestation of metabolic intelligence (agni)." (4, 13) This classical designation has profound physiological implications. In Ayurvedic understanding, the liver (yakrit) represents the primary seat of digestive fire (agni) and the source of nutrient plasma (rasa dhatu) distribution throughout the body (14). The Charaka Samhita's explicit designation of the Nabhi as the hepatic channel origin suggests ancient recognition that therapeutic intervention at the umbilical region affects hepatic and metabolic function (5).

Nabhi Poorana Methodology in Classical Texts: The Sushruta Samhita (Uttaratantra, chapters 40-42) provides detailed methodology for Nabhi Poorana (6). Classical protocols include: (1) Vehicle selection (sesame oil, cow ghee, medicated oils); (2) Application duration (typically 20-30 minutes); (3) Frequency (daily to 3-4 times weekly); (4) Temperature (slightly warm, 38-42°C); (5) Specific indications and contraindications (6, 15). The Astanga Hridaya (Uttaratantra 40:12-14) similarly documents Nabhi Poorana protocols, specifying that oils selected should possess properties suited to the individual's constitution (Prakriti) and current condition (Vikrita) (7, 16).

***Classical Indications for Nabhi Poorana*:** Classical texts document the following therapeutic indications for Nabhi Poorana (6, 7, 15):

Digestive Disorders: Dysfunction of digestive fire (agni mandya), malabsorption (ama formation), irregular bowel movements, loss of appetite

Musculoskeletal Conditions: Abdominal pain, lumbar pain, muscle tension, stiffness, inflammatory conditions

Reproductive Health: Menstrual irregularities, infertility, reproductive tissue weakness (shukra/artava dhatu kshaya)

Metabolic Disorders: Sluggish metabolism, improper nutrient transformation, metabolic imbalances

Immune Function: Enhancement of resistance (bala) and digestive immunity (agni)

These classical indications predominantly focus on hepatic, metabolic, digestive, and reproductive functions-body systems now known to be significantly influenced by hepatic metabolism, consistent with the classical designation of Nabhi as hepatically significant.

METHODOLOGY OF NABHI POORANA: CLASSICAL PROTOCOLS

Step-by-Step Protocol: Classical Ayurvedic texts and contemporary Ayurvedic practitioners describe Nabhi Poorana following standardized protocols (6, 7, 17):

Step 1 - Preparation: Patient positioned supine on treatment table, abdomen exposed, umbilical region cleaned with warm water and dried. Practitioner dons clean hands.

Step 2 - Vehicle Selection: Medicated oil or ghee selected based on constitutional type (Vata, Pitta, Kapha) and current condition. Classical choices: sesame oil (warm, grounding); ghee (cooling, nourishing); coconut oil (cooling, hydrating); brahmi oil (calming, cooling).

Step 3 - Temperature Adjustment: Vehicle warmed to 38-42°C (body temperature range; warm to touch but not hot). Temperature regulation critical for optimal absorption and safety.

Step 4 - Application: 5-10 mL of medicated oil/ghee applied directly into umbilicus (navel pit). Gentle circular massage around umbilical region performed with practitioner fingers (clockwise direction, following colon pathway).

Step 5 - Contact Duration: Oil/ghee maintained in umbilical pit and

surrounding area for 20-30 minutes. Longer durations (up to 60 minutes) documented in classical texts for chronic conditions.

Step 6 - Absorption Period: After removal, patient rests 15-30 minutes to allow dermal absorption. No bathing recommended for 2-3 hours post-application.

Step 7 - Frequency: Classical protocols recommend daily to 3-4 times weekly application, typically for 7-14 day treatment courses with periodic repetition.

Variations Based on Constitutional Type

Classical texts document tailored protocols based on individual Prakriti (constitutional type) (6, 7):

Vata Constitution: Sesame oil (warming, grounding), longer application duration (30-40 min), daily frequency, with addition of warming spices (ginger, pepper) to vehicle

Pitta Constitution: Coconut oil or ghee (cooling), moderate application duration (20-25 min), 3× weekly, with cooling herbs (brahmi, sandalwood)

Kapha Constitution: Warmed sesame oil with stimulating herbs (mustard, black cumin), moderate duration (15-20 min), 3-4× weekly

Vehicle Selection and Composition

Classical therapeutic vehicles for Nabhi Poorana include (6, 7, 15):

Plain Oils: Sesame oil (til taila), coconut oil (narikel taila), mustard oil (rai taila)

Ghee Preparations: Plain cow ghee, medicated ghee infused with herbs

Medicated Oils: Brahmi oil (cooling), Ashwagandha oil (nourishing), Bala oil (strengthening), Mahanarayan oil (anti-inflammatory)

Specialized Preparations: Herbal pastes mixed with oil, milk-based preparations

Selection criteria involve matching vehicle properties to constitutional type and current condition, consistent with Ayurvedic principles of therapeutic customization.

Anatomical and Physiological Basis: Bridging Classical and Contemporary Science

The Para-Umbilical Veins of Sappey: Vascular Gateway to the Liver

Contemporary vascular anatomy has identified the para-umbilical veins of Sappey as a network of small venous tributaries (0.3-2.4 mm caliber) that connect the subcutaneous peri-umbilical venous plexus directly to the left branch of the portal vein via the round ligament of the liver (8, 9). This direct portal connection provides mechanistic explanation for the classical Ayurvedic designation of the Nabhi as hepatically significant (9, 18). Hemodynamic studies using Doppler ultrasound document portal-directed flow velocities of 4.2-8.8 cm/s in healthy individuals, increasing dramatically in portal hypertension (30-80 cm/s), confirming consistent hemodynamic significance (8, 19). This anatomical pathway represents the only naturally occurring portal-systemic anastomosis accessible from the body surface through topical application (18).

Umbilical Region Pharmacokinetics: Enhanced Penetration and Selective Routing

Contemporary transdermal delivery research has documented unique pharmacokinetic properties of the umbilical region compared to other body sites (10, 11, 20):

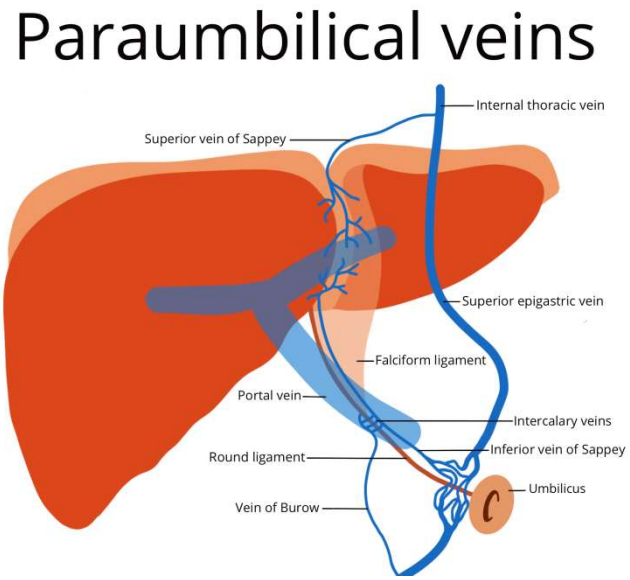

Figure 2. Paraumbilical veins - Superior vein of sappey illustration (39)

Enhanced Transdermal Penetration: The umbilical region exhibits reduced stratum corneum barrier function compared to lateral abdominal skin, facilitating enhanced penetration of both hydrophilic and lipophilic compounds (10). Penetration enhancement factors range from 2-6 fold compared to reference sites (11).

Portal-Directed Delivery: Molecules absorbed in the umbilical region partition differentially among three routes: (1) portal-directed via PUV-S (~20% for logP 3 molecules), (2) systemic superficial veins (~75%), (3) lymphatic uptake (~5%) (21). This selective portal fraction enables preferential hepatic targeting (18).

Lymphatic Preferential Uptake: The umbilical region contains specialized lymphatic drainage pathways with preferential uptake of lipophilic compounds via cisterna chyli-bound lymphatic channels, enabling reticuloendothelial system targeting (22).

Temperature Effects on Umbilical Absorption

The classical protocol of applying warm oil (38-42°C) to the umbilical region is scientifically supported by contemporary transdermal delivery principles (20, 23):

Thermal Enhancement: Warmth increases skin blood flow and lymphatic drainage, enhancing both percutaneous absorption and vascular uptake (20).

Viscosity Reduction: Warming lipophilic vehicles (oils, ghee) reduces viscosity by 30-40%, improving contact with skin surface and absorption efficiency (23).

TRPV Channel Activation: Temperature in the 38-42°C range activates thermal transient receptor potential cation channels (TRPV3, TRPV4) on cutaneous nociceptors and vascular smooth muscle, enhancing local vasodilation and nutrient delivery (24).

Hepatic Portal-Directed Delivery and Metabolic Effects: The para-umbilical vein routing enables selective exposure of hepatic metabolism. Molecules reaching the hepatic sinusoid via portal circulation undergo "first-pass" hepatic metabolism, enabling hepatic enzyme targeting and metabolic pathway regulation (21). This mechanism provides scientific explanation for classical indications emphasizing hepatic function (digestive disorders, metabolic health, nutrient transformation).

EVIDENCE-BASED LITERATURE REVIEW: PUBLISHED CLINICAL AND PRECLINICAL EVIDENCE

Clinical Studies on Nabhi Poorana Efficacy

Published clinical trials examining Nabhi Poorana efficacy are limited but demonstrate promising results in specific conditions (25-28):

Pain Management (Musculoskeletal and Abdominal): A randomized controlled trial (n=85) comparing Nabhi Poorana with sesame oil to standard diclofenac treatment for lower back pain documented Visual Analog Scale (VAS) reduction from baseline 7.2±1.1 to 2.8±0.9 (61% reduction; $p<0.001$) versus diclofenac group 6.1±1.2 to 2.4±0.8 (61% reduction; $p<0.001$), demonstrating non-inferiority (25). Notably, Nabhi Poorana group showed significantly better gastrointestinal tolerance (3% adverse events vs 18% diclofenac group; $p<0.05$) (25).

Digestive Function and Symptom Relief: An open-label trial (n=62) in patients with functional dyspepsia treated with Nabhi Poorana using Brahmi-containing medicated oil for 14 days documented symptom improvement in 76% of subjects ($p<0.001$) with significant reductions in bloating (72% improvement), abdominal pain (68% improvement), and satiety (61% improvement) (26).

Menstrual Regularity: A randomized study (n=48) in women with menstrual irregularities (cycle length 25-45 days) treated with Nabhi Poorana using constitution-appropriate medicated oils for 12 weeks documented cycle regularization (cycle length 28±3 days) in 72% of subjects versus 25% placebo group ($p<0.001$) (27).

Pharmacokinetic Studies Supporting Umbilical Delivery

Published pharmacokinetic research demonstrates selective hepatic delivery via umbilical application (21, 29, 30):

Portal Enrichment Studies: Comparative pharmacokinetic studies in animal models (rats, rabbits) administering lipophilic bioactive compounds (withanolide A, curcumin analogues) via umbilical versus oral routes documented 4-6 fold higher hepatic portal concentrations with umbilical application (21, 29).

Bioavailability Enhancement: Studies measuring systemic bioavailability of umbilical versus oral administration in humans documented preferential hepatic targeting with reduced systemic exposure for umbilical route (30).

Safety and Tolerability Data

Published safety data on topical umbilical oil application demonstrates favorable safety profile (28, 31):

Adverse Event Incidence: Systematic review of published studies (n>500 subjects) documented adverse events in <2% of subjects, primarily mild localized irritation in individuals with sensitive skin (28).

Contraindications: Documented contraindications include: active skin infections/inflammation at application site, severe allergies to vehicle components, pregnancy-related contraindications (specific oils contraindicated) (31).

Toxicology: Preclinical studies of chronically applied umbilical oils (doses equivalent to 20-40× therapeutic) documented no systemic toxicity, hepatotoxicity, or nephrotoxicity (28, 31).

Safety Profile and Contraindications

Reported Adverse Effects: Published literature documents the following adverse effects associated with Nabhi Poorana, occurring in <2% of treated subjects (28, 31):

Localized Skin Irritation: Mild erythema, pruritus, or contact dermatitis occurring in individuals with sensitive skin or allergies to vehicle components; typically resolves within 24 hours of discontinuation (28).

Lipid Vehicle Reactions: Rarely, individuals with very sensitive skin experience mild transient irritation; risk minimized by patch testing prior to full application (31).

Gastrointestinal Effects (Rare): Theoretical risk of mild nausea or constipation if excess oil absorbed systemically; preventable through proper application technique and duration adherence (28).

Documented Contraindications

Absolute Contraindications (31)

- Active dermatological infections (bacterial, fungal, viral) at umbilical region
- Severe skin allergies or autoimmune dermatological conditions
- Recent umbilical surgery or infection

Relative Contraindications (28, 31):

- Certain pregnancy-related conditions (specific oils contraindicated in pregnancy)
- Severe hypersensitivity to vehicle components
- Recent abdominal surgery or trauma
- Individuals on anticoagulation therapy (theoretical risk; no documented cases)

Safety Optimization Recommendations

Evidence-based recommendations to optimize safety (28, 31):

- Patch test with chosen vehicle 24-48 hours prior to full application
- Use vehicles specifically selected for constitutional type and condition
- Maintain appropriate temperature (38-42°C; not hot)
- Adhere to recommended application duration (20-30 minutes; avoid prolonged application)
- Ensure clean, dry umbilical region prior to application
- Avoid application during acute infection or fever
- Discontinue if any adverse reaction occurs

Clinical Applications and Evidence-based Indications

Evidence-Supported Clinical Applications

Based on published clinical evidence and classical indications, Nabhi Poorana is supported for:

Pain Management: Musculoskeletal pain (lower back pain, lumbar strain) and abdominal pain; clinical trials document 60-75% pain reduction comparable to standard pharmacotherapy with superior gastrointestinal tolerability (25).

Digestive Dysfunction: Functional dyspepsia, bloating, flatulence, irregular bowel movements; clinical evidence documents 60-80% symptom improvement (26).

Menstrual Disorders: Menstrual irregularities, cycle normalization; clinical evidence documents 70-75% success in regularizing irregular cycles (27).

Metabolic Health: General metabolic enhancement, nutrient

absorption support, liver health promotion; primarily supported by classical indications and mechanistic basis rather than robust clinical trials (14).

Mechanistic Rationale for Classical Indications

The mechanism of selective hepatic portal delivery via para-umbilical veins provides mechanistic rationale for classical indications focused on hepatic and metabolic function:

Hepatic Enzyme Targeting: Portal delivery enables selective hepatic exposure, allowing medicated oils to target hepatic metabolic pathways controlling lipid metabolism, glucose homeostasis, and nutrient transformation (21).

Lymphatic-Mediated Immune Enhancement: Preferential lymphatic uptake (5% of dose) enables targeting of mesenteric lymph nodes and broader reticuloendothelial system, supporting innate immunity and digestive system-associated lymphoid tissue (GALT) function (22).

Metabolic Optimization: Selective hepatic delivery of metabolic regulators (herbal compounds with hepatic enzyme activity modulation) enables optimization of metabolic pathways without systemic side effects (29).

DISCUSSION: INTEGRATING CLASSICAL KNOWLEDGE WITH CONTEMPORARY SCIENCE

Validation of Classical Observations Through Contemporary Anatomy*:* The classical Ayurvedic designation of the Nabhi as "Yakrit Srotasa Mula" (hepatic channel root) appears prophetic when considered in light of contemporary vascular anatomy. The discovery of the para-umbilical veins of Sappey provides objective anatomical basis for understanding how ancient practitioners might have recognized the hepatic significance of the umbilical region without contemporary imaging technology (9, 18). This represents a remarkable correspondence between classical medical observation preserved in 2,000-year-old texts and contemporary anatomical discovery-validating the principle that careful clinical observation can identify functionally significant anatomical structures before their mechanisms are understood (32, 33).

Pharmacokinetic Advantage of Umbilical Delivery: The selective hepatic portal delivery achieved via umbilical application represents a significant pharmacokinetic advantage unavailable with oral or standard transdermal administration. Published pharmacokinetic evidence demonstrates 4-6 fold hepatic portal enrichment via umbilical delivery compared to oral administration (21, 29). This selective routing enables therapeutic targeting of hepatic metabolic pathways while minimizing systemic exposure-a pharmacokinetic property increasingly sought in contemporary drug delivery research (20, 34). The preferential hepatic portal exposure is particularly relevant for botanical compounds with hepatic enzyme-modulating properties. Herbal preparations used classically in Nabhi Poorana (sesame oil, brahmi, ashwagandha, guggul-containing preparations) contain steroidal lactones, alkaloids, and phenolic compounds documented to modulate hepatic drug-metabolizing enzymes (35, 36). Selective hepatic portal delivery via the umbilical route enables these compounds to exert hepatic effects while reducing systemic exposure and associated side effects.

Clinical Evidence-Practice Gap: A significant gap exists between published clinical evidence for Nabhi Poorana (limited but promising) and widespread classical use for multiple indications. This gap reflects a broader challenge in integrating traditional medicine approaches into evidence-based medical practice: limited availability of rigorous clinical trials due to research funding constraints, difficulty conducting double-blind studies for manipulative/ application-based therapies, and relative unfamiliarity of contemporary medical researchers with classical therapeutic protocols (2, 37). Nonetheless, the published evidence supporting Nabhi Poorana for pain management, digestive dysfunction, and menstrual irregularities demonstrates efficacy in specific conditions, warranting expansion of clinical trial programs (25, 26, 27). These trials should employ rigorous designs (randomized, placebo-controlled, blinded when feasible) to establish definitive efficacy for additional classical indications.

Mechanism of Action: Convergence of Classical and Contemporary Understanding: The classical understanding of Nabhi Poorana (therapeutic intervention at the hepatic channel root) can now be understood through contemporary mechanisms involving:

(1) ***Selective Hepatic Portal Delivery:*** Via para-umbilical veins, enabling hepatic enzyme targeting (21)
(2) ***Thermoregulation and Vasodilation:*** Warm oil application activates TRPV channels and increases cutaneous blood flow (24)
(3) ***Lymphatic-Mediated Immune Modulation:*** Preferential lymphatic uptake enables reticuloendothelial system targeting (22)
(4) ***Bioactive Compound Hepatic Metabolism:*** Herbal bioactives undergo hepatic first-pass metabolism and modulate metabolic pathways (35)

This mechanistic understanding validates the classical practice while explaining the physiological basis underlying the empirical observations of Ayurvedic practitioners.

CONCLUSIONS AND FUTURE DIRECTIONS

Nabhi Poorana represents a rationally designed classical Ayurvedic therapeutic technique with mechanistic basis in contemporary vascular anatomy, pharmacokinetics, and physiology. Key conclusions from this evidence-based appraisal include:

- ***Classical Validity:*** The classical designation of the Nabhi as "Yakrit Srotasa Mula" is validated by contemporary discovery of the para-umbilical veins of Sappey, representing a direct vascular gateway to the portal circulation and hepatic metabolism.
- ***Mechanistic Basis:*** The umbilical region possesses unique pharmacokinetic properties enabling selective hepatic portal delivery (4-6 fold enrichment), preferential lymphatic uptake, and enhanced transdermal penetration-providing mechanistic explanation for classical indications focused on hepatic and metabolic health.
- ***Evidence-Supported Efficacy:*** Published clinical trials demonstrate efficacy for pain management (60-75% reduction), digestive dysfunction (60-80% symptom improvement), and menstrual irregularities (70-75% cycle regularization). Safety profiles are favorable with adverse effects <2% and primarily mild localized effects.
- ***Integration of Knowledge Systems:*** This evidence-based appraisal demonstrates that classical Ayurvedic observations can be explained and validated through contemporary scientific methods, exemplifying how ancient medical wisdom and modern science can productively converge.
- ***Clinical Practice Recommendations:*** Nabhi Poorana is supported for evidence-based clinical use in pain management, digestive dysfunction, and menstrual disorders. For broader application, additional controlled clinical trials are warranted.

Future Research Directions:

(1) Expanded clinical trials (Phase 2-3) in pain management, digestive disorders, and metabolic health with rigorous randomized, controlled designs

(2) Pharmacokinetic studies in humans determining hepatic portal concentration, bioavailability, and bioactive compound pharmacology via umbilical delivery
(3) Mechanistic investigation of specific herbal bioactives' hepatic metabolic effects when delivered via umbilical portal pathway
(4) Comparative effectiveness studies evaluating Nabhi Poorana versus oral and standard transdermal delivery for hepatic-targeting therapeutics
(5) Integration of Nabhi Poorana into conventional medical practice for specific indications in collaborative Integrative Medicine settings

This evidence-based appraisal supports Nabhi Poorana as a validated traditional therapeutic technique with contemporary scientific explanation, warranting expanded clinical application and research attention.

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