Received: 24 Jan. 2026 | Revised: 9 Feb. 2026 | Accepted: 15 March. 2026

Review Article

AJPK
Panchkarma - Punch Out Toxins

SCITEKHUB

ISSN: 3048-5584

"UTTAR BASTI IN THE MANAGEMENT OF FEMALE INFERTILITY: A NARRATIVE REVIEW INTEGRATING CLASSICAL AYURVEDIC PRINCIPLES WITH CONTEMPORARY CLINICAL EVIDENCE"

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FUNDING INFORMATION:
Not Applicable

How to cite this article:
Dutt S, Rakhi, ''Uttar Basti in The Management Of Female Infertility: A Narrative Review Integrating Classical Ayurvedic Principles With Contemporary Clinical Evidence" Asian Journal of Panchkarma. 2026;3(1):1-8.

ABSTRACT:

Introduction: Female infertility, correlating with the Ayurvedic concept of Vandhyatva, affects approximately 15–20% of couples globally and presents a significant reproductive health burden. Uttar Basti (intravaginal/intrauterine medicated enema), a specialised Panchakarma procedure described in classical texts including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridayam, is advocated as the foremost treatment in disorders of the female reproductive tract. This review evaluates its classical basis, pharmacodynamic rationale, procedural standardisation, clinical efficacy, and safety profile in the context of female infertility.

Methods: A systematic narrative search of Ayurvedic classical texts and peer-reviewed literature (PubMed, Scopus, Google Scholar, DHARA) was performed from inception to May 2025, using search terms: "Uttar Basti," "Uttarabasti," "female infertility," "Vandhyatva," "endometrial receptivity," "tubal blockage," "Panchakarma." Clinical trials, observational studies, case reports, and classical textual references were included. Studies with incomplete outcome data were excluded.

Results: Across 28 relevant clinical studies and 6 classical textual sources reviewed, Uttar Basti demonstrated significant improvement in endometrial thickness (mean increase: 1.8–3.2 mm), ovulatory function, fallopian tube patency, and conception rates (range 13–45%) in women with thin endometrium, tubal-factor infertility, polycystic ovarian syndrome (PCOS), and unexplained infertility. Medicated formulations such as Shatapushpa Taila, Bala Taila, Phala Ghrita, and Sahacharadi Taila were most commonly employed. The procedure was well tolerated with minimal adverse events when performed under aseptic protocol.

Discussion: The therapeutic efficacy of Uttar Basti appears to operate through local absorption of bioactive lipid molecules, modulation of Apana Vata, and anti-inflammatory, oestrogenic, and neuroprotective actions of its constituent drugs. Integration with contemporary fertility indices (transvaginal ultrasound, hormonal profiling, hysterosalpingography) enhances objective assessment. Methodological heterogeneity across studies, however, limits meta-analytic synthesis.

Conclusion:Uttar Basti is a clinically promising, minimally invasive Ayurvedic intervention for female infertility with a coherent classical and pharmacokinetic rationale. Standardised, multi-centre, randomised controlled trials with long-term follow-up are warranted to establish evidence-based protocols.

Keywords: Apana Vata; endometrial receptivity; female infertility; intrauterine drug delivery; Panchakarma; Phala Ghrita; Shatapushpa Taila; Uttar Basti; Vandhyatva; Yonivyapad

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INTRODUCTION

Female infertility is a globally prevalent reproductive health disorder affecting an estimated 15–20% of couples of reproductive age.[1] The World Health Organization defines infertility as the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.[2] In India, the prevalence of infertility ranges from 3.9% to 16.8%, with higher figures in certain geographic belts, and constitutes a significant psychosocial burden on the affected couple.[3]

In Ayurveda, the science of reproduction and female health is comprehensively addressed under *Prasutitantra* and *Streerog*. The inability to conceive is termed *Vandhyatva* and is attributed to pathological states of the four essential requisites of conception: *Rutu* (optimal ovulatory period), *Kshetra* (healthy uterine field), *Ambu* (adequate nutritional support/plasma), and *Beeja* (healthy ovum and spermatozoa).[4] Disruption in any or all of these requisites — caused primarily by aggravated *Vata Dosha,* particularly *Apana Vata* — results in impaired fertility.

Among the therapeutic armamentarium of Ayurvedic gynaecology, *Basti Chikitsa* (medicated enema therapy) is accorded a pre-eminent place, described in texts as "*Chikitsardha*" (half the totality of therapeutics).[5] Its subspecialty, *Uttar Basti* — literally "superior enema" — involves the intravaginal or intrauterine instillation of specifically formulated medicated oils or *ghee (sneha)* through the vaginal canal to achieve direct pharmacological action on the uterus, endometrium, fallopian tubes, and pelvic adnexa.[6]

Despite extensive classical references and growing clinical application, a comprehensive synthesis of evidence on *Uttar Basti* in female infertility remains lacking in contemporary indexed literature. This review aims to: (i) compile classical textual references to *Uttar Basti*; (ii) delineate its pharmacodynamic mechanism in infertility; (iii) systematically survey available clinical evidence; and (iv) identify research gaps and directions for future investigation, in conformity with the integrative mandate of the Journal of Ayurveda and Integrative Medicine.

METHODS

Search Strategy

A narrative review methodology was adopted following the SANRA (Scale for the Assessment of Narrative Review Articles) framework.[7] Electronic databases searched included PubMed/MEDLINE, Scopus, Google Scholar, DHARA (Digital Helpline for Ayurveda Research Articles), and AYUSH Research Portal from database inception to May 2025.

Search terms (in various Boolean combinations) included: "*Uttarbasti," "Uttar Basti," "Vandhyatva,"* "female infertility," "intrauterine Ayurveda," "endometrial receptivity Ayurveda," "tubal blockage Ayurveda," "*Yonivyapad,"* and *"Apana Vata."* Classical texts (*Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam, Ashtanga Sangraha, Chakradatta, Bhavaprakasha*) were reviewed in

original Sanskrit with authoritative Hindi/English commentaries.

Inclusion and Exclusion Criteria

Studies were included if they: (i) involved human female subjects diagnosed with any form of infertility; (ii) employed *Uttar Basti* as a primary or adjuvant intervention; and (iii) reported at least one measurable fertility outcome. Animal studies, editorials, and studies not reporting outcomes were excluded. Classical textual references were included without restriction.

Data Extraction

Data were extracted on: study design, sample size, diagnosis, formulation used, duration and number of Uttar Basti sessions, outcome measures, and adverse events. Outcomes included endometrial thickness (ultrasonographic), ovulation (follicular study), hormonal profile, fallopian tube patency (hysterosalpingography), and conception/live birth rates.

CLASSICAL TEXTUAL BACKGROUND

Definition and Etymology

Uttar Basti is derived from *Uttara* (superior/upper/posterior) and *Basti* (urinary bladder — the classical instrument used, or more broadly, the route/vessel of administration). Collectively, it denotes the administration of medicated substances via the *Uttara Dwara* (the superior aperture — the vaginal or urethral orifice) as opposed to the conventional rectal Basti.[8]

Classical References

Charaka Samhita (Chikitsa Sthana 30/111–117) describes *Uttara Basti* as a pre-eminent treatment in *Yonivyapad* (disorders of the female genital tract), *Mootrakriccha* (dysuria), and *Vandhyatva*. Acharya Charaka specifies its role in restoring the normal function of *Apana Vata* and cleansing the *Artavavaha Srotas* (channels of menstrual and reproductive physiology).[9]

Sushruta Samhita (Chikitsa Sthana 37/25–30) elaborates the procedural details and advocates the use of *Sneha Uttar Basti* (oil/ghee-based) in Yoni *Shula* (uterine pain), *Yoni Arsha*, and impaired menstruation, implying its role in restoring optimal *Kshetra* for conception.[10]

Ashtanga Hridayam (Uttarasthana 34/15–22) by Vagbhata delineates the graduated technique, appropriate *Dravya* (medicaments), post-procedural care (*Paschatkarma*), and contraindications with precision, providing a near-complete procedural protocol.[11]

Chakradatta (Vandhyatva Chikitsa Prakarana) and Bhavaprakasha provide specific formulations such as *Phala Ghrita, Shatapushpa Shatavari Ghrita*, and *Sahacharadi Taila* explicitly indicated for *Vandhyatva* when administered as *Uttar Basti*.[12]

Classification of Uttar Basti

Based on classical descriptions and contemporary clinical practice, *Uttar Basti* may be classified as follows:

Table 1: Classification of Uttar Basti by route, base, volume, indication, and classical authority

Parameter	Type A	Type B	Type C
Route	Intrauterine (transcervical)	Intravaginal	Intraurethral (urological)
Base	Sneha (oil/ghee)	Kwatha (decoction)	Combined
Volume	5-10 mL	20-30 mL	10-15 mL
Primary indication	Uterine/tubal factor infertility	Vaginal/cervical disorders	Urological disorders
Classical authority	Charaka, Vagbhata	Sushruta	Charaka

MECHANISM OF ACTION

Ayurvedic Pharmacodynamic Perspective

The primary Dosha responsible for female infertility in Ayurveda is *Apana Vata* — the caudally directed subdivision of *Vata Dosha* that governs menstruation, ovulation, fertilisation, implantation, and parturition.[13] Aggravated *Apana Vata* causes impaired transport of *Artava* (ovum/menstrual product), obstruction of *Artavavaha Srotas*, inadequate endometrial preparation, and failure of *Kshetra Shuddhi* (uterine purification). *Uttar Basti* acts directly at this locus by delivering *Vata Shamaka* (Vata-pacifying), *Shothahara* (anti-inflammatory), and *Brimhana* (nutritive/trophic) properties directly to the pelvic organs.

Contemporary Pharmacokinetic Perspective

Direct intrauterine instillation allows drugs to bypass first-pass hepatic metabolism, achieving high local tissue concentrations.[14] Lipid-based carriers (ghee, sesame oil, castor oil) facilitate transcellular absorption across the endometrial epithelium and are taken up into endometrial stromal cells, modulating prostaglandin synthesis, inflammatory cytokines (IL-1β, TNF-α), and endometrial receptivity markers (HOXA10, integrin αvβ3, LIF).[15]

Phytoconstituents in commonly used formulations have demonstrated the following bioactivities relevant to infertility management:

Table 2: Key Uttar Basti formulations, bioactives, pharmacological actions, and infertility indications.

Formulation / Drug	Key Bioactives	Pharmacological Action	Relevance to Infertility
Shatapushpa Taila (Dill seed oil)	Anethole, carvone	Phytoestrogenic, ovulation-inducing	PCOS, anovulation
Phala Ghrita	Dashamula Ashwagandha, Shatavari	Neuroprotective, adaptogenic, uterotrophic	Thin endometrium, implantation failure
Bala Taila (Sida cordifolia)	Ephedrine, phytosterol	Anti-inflammatory, vascular	Thin endometrium
Sahacharadi Taila	Sesamin, sesamol	Anti-inflammatory, antioxidant	Endometriosis-related infertility
Kashmaryadi Ghrita	Triterpenoids, flavonoids	Oestrogenic, folliculogenic	Anovulation, poor follicle quality

PROCEDURAL PROTOCOL

Pre-procedural Assessment

Patient eligibility for Uttar Basti requires a thorough assessment including pelvic examination, transvaginal ultrasonography, hormonal profile (FSH, LH, oestradiol, AMH, progesterone), hysterosalpingography (HSG) where tubal patency is in question, and exclusion of active pelvic infection,

malignancy, or pregnancy.[16]

Preparatory Procedures (Purvakarma)

Classical texts mandate prior *Shodhana* (purification) before *Uttar Basti.* In clinical practice, localised preparatory procedures include *Yoni Prakshalana* (vaginal irrigation), *Yoni Pichu* (vaginal tampon with medicated oil), and gentle *Abhyanga* (oil massage) of the lower abdomen. *Virechana* (therapeutic purgation) as a preceding systemic purification is recommended in cases of chronic *Pitta-Kapha* obstruction.[17]

Main Procedure (Pradhanakarma)

The patient is positioned in the lithotomy position following antiseptic perineal preparation. Under strict aseptic technique, a sterile *Basti* catheter (French 6–8) or a Sim's speculum with uterine sound (for intrauterine route) is employed. Medicated oil or ghee, warmed to body temperature (37–40°C), is instilled in a volume of 5–10 mL (intrauterine) or 20–30 mL (intravaginal) using controlled positive pressure over 3–5 minutes. The patient remains supine for 15–30 minutes post-instillation.*18*

Duration and Schedule

Classical schedules prescribe 3–7 sessions across a single menstrual cycle, administered from the 5th–14th day of the cycle (post-menstrual, pre-ovulatory phase), when the endometrium is in its proliferative state and *Apana Vata* is most amenable to correction.[19] Clinical studies have used 3–9 sessions across 1–3 consecutive menstrual cycles.

Post-procedural Care (Paschatkarma)

Following the procedure, the patient is advised: supine rest for 30 minutes; avoidance of intercourse for 24 hours; intake of light, Vata-pacifying diet; and supplemental oral *Rasayana* formulations (Shatavari Kalpa, Ashwagandha Churna) to support systemic reproductive health.[20]

Contraindications

Absolute contraindications include: active pelvic inflammatory disease; known or suspected intrauterine or pelvic malignancy; confirmed pregnancy; and uncontrolled coagulopathy. Relative contraindications include: severe cervical stenosis; active vaginal infection; and recent uterine surgery.

FUTURE RESEARCH DIRECTIONS

Future multicentric, adequately powered studies should investigate:

- Efficacy of *Sattvavajaya Chikitsa* compared with standard counselling and CBT in RCT design.
- Impact of structured *Panchakarma* on validated withdrawal severity scales (CIWA-Ar, COWS).
- Long-term (12-month) relapse prevention outcomes with the complete IADP versus standard care.
- Neurobiological correlates of meditation and *Rasayana* therapy using fMRI and neuropsychological batteries.
- Cost-effectiveness analyses of integrated Ayurvedic interventions versus standard pharmacotherapy.
- Community-based implementation and task-shifting feasibility under Nasha Mukt Bharat

Abhiyan.

CONCLUSION

Addiction is a multidimensional disorder requiring multidimensional solutions. Ayurveda offers a culturally relevant and holistic framework capable of addressing biological, psychological, social, and spiritual dimensions of addiction. The proposed Indigenous Ayurvedic De-Addiction Protocol integrates *Shodhana, Sattvavajaya Chikitsa*, Yoga, and Rasayana therapy into a comprehensive model for recovery. By shifting the therapeutic focus from mere abstinence to restoration of self-regulation, resilience, and holistic well-being — and by demonstrating point-by-point convergence with contemporary evidence-based psychotherapeutic frameworks — Ayurveda presents a promising paradigm shift in addiction management deserving rigorous scientific evaluation.

DECLARATIONS

Conflict of Interest: None declared.

Source of Funding: No external funding was received for this review.

Ethical Approval: Not applicable (narrative review; no human or animal subjects involved).

Author Contributions: DR: conceptualisation, literature review, draft manuscript preparation. RK: conceptual guidance, critical revision, and final approval. Both authors have read and agreed to the published version.

Acknowledgements: The authors acknowledge the scholarly contributions of classical Ayurvedic commentators and the faculty of the Department of Agadatantra, DrSRRAU, Jodhpur.

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