

Review Article



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“ROLE OF SHODHANA KARMA IN INFERTILITY: AN AYURVEDIC AND EVIDENCE-BASED REVIEW”

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ABSTRACT:

Introduction: Infertility, affecting nearly 10–15% of reproductive-age couples worldwide, is considered a growing public health concern. In Ayurveda, *Vandhyatva* is described as inability to conceive due to vitiation of *doshas*, defective *shukra* and *aartava*, or improper functioning of *garbhasambhava samagri*. *Shodhana Karma* (biopurification therapy) is advocated to eliminate *dosha dushti*, restore reproductive balance, and prepare the body for conception. **Methods:** A comprehensive review of classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Bhavaprakasha), and indexed databases (PubMed, Scopus, Web of Science, AYUSH Research Portal) from 1990–2025 was undertaken. Studies on *Panchakarma* interventions (*Vamana*, *Virechana*, *Basti*, *Uttarbasti*, *Nasya*) in infertility and related gynecological conditions were included. Both clinical trials and conceptual studies were reviewed. **Results:** Ayurvedic classics emphasize *Shodhana* prior to *Shamana* in infertility, especially *Virechana* for *pitta dushti*, *Basti* for *vata vyadhi*, and *Uttarbasti* for *yoniroga*. Contemporary evidence supports *Panchakarma* in enhancing endometrial receptivity, improving ovulation, reducing PCOS symptoms, and managing tubal blockage. Clinical trials highlight significant outcomes with *Virechana* and *Uttarbasti* in unexplained infertility and female subfertility. **Discussion:** *Shodhana Karma* acts via detoxification, hormonal regulation, improved ovarian function, correction of endometrial environment, and modulation of stress pathways. Though promising, evidence is limited by small sample sizes, lack of standardized protocols, and insufficient long-term follow-up. **Conclusion:** *Shodhana Karma*, especially when tailored to *dosha prakriti* and combined with *rasayana* therapy, has a significant role in infertility management. Rigorous, large-scale clinical trials integrating modern diagnostic tools with Ayurvedic interventions are warranted to establish reproducibility and global acceptance.

KEYWORDS: Ayurveda, *Basti*, Infertility, *Panchakarma*, *Shodhana Karma*

INTRODUCTION

Infertility is defined as the inability to conceive after one year of regular unprotected intercourse, affecting approximately 10–15% of couples globally. It may arise from female, male, combined, or unexplained factors.^[1-2] Conventional medicine offers hormonal therapy, ovulation induction, surgical correction, or assisted reproductive technologies (ART), which are effective but costly and associated with risks such as ovarian hyperstimulation and multiple gestations.^[3-5]

In Ayurveda, infertility is described under the broad term *Vandhyatva*. Acharyas attribute it to defects in *Beeja (gametes)*, *Kshetra (uterus)*, *Ambu (nutritional factors)*, and *Rutu (timing)*. Among the causative factors, *dosha dushti* is central, where aggravated *Vata*, *Pitta*, or *Kapha* disturb the functioning of reproductive tissues. Therefore, *Shodhana Karma* (biopurification through Panchakarma) is advised as the first step in management, ensuring purification of channels, restoration of doshic balance, and preparation for conception.^[6-8]

The aim of this review is to analyze the role of *Shodhana Karma* in infertility management by correlating Ayurvedic concepts with modern clinical evidence.^[9] Specifically, it seeks to summarize classical references on *Shodhana* in infertility, review modern studies on *Panchakarma* procedures in the context of reproductive disorders, and critically evaluate therapeutic outcomes while highlighting future prospects for integrated approaches.^[10]

MATERIALS AND METHODS

A structured literature search was performed between January and March 2025. Sources included:

- **Ayurvedic Texts:** *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Bhavaprakasha*, *Bhaishajya Ratnavali*.^[11]
- **Databases:** PubMed, Scopus, Web of Science, AYUSH Research Portal, Google Scholar.^[12]
- **Keywords used:** “*Shodhana Karma*”, “*Panchakarma* and infertility”, “*Ayurveda* infertility”, “*Uttarbasti*”, “*Virechana* female infertility”, “*Basti* PCOS”.^[12]
- **Inclusion criteria:** Clinical trials, case series, review articles, conceptual papers, and

pharmacological studies published between 1990–2025 in English.^[13]

- **Exclusion criteria:** Non-human studies, anecdotal reports without methodology, and papers lacking infertility outcomes.^[14]
- **Type of studies reviewed:** Classical textual descriptions, clinical trials, pilot studies, and systematic reviews.^[15]

OBSERVATION AND RESULTS

1. Classical Ayurvedic Perspective of *Shodhana* in Infertility

Ayurvedic classics emphasize that purification of the body through *Shodhana Karma* is a prerequisite for conception. Acharya Charaka mentions that when *doshas* are vitiated, they obstruct the *artava vaha srotas* (female reproductive channels) leading to infertility. Thus, *Shodhana* helps in eliminating aggravated *doshas*, clearing *srotorodha* (blockage), and restoring equilibrium.

- **Vamana** (therapeutic emesis) is indicated when *kapha* obstructs reproductive channels, causing anovulation or hormonal imbalance.
- **Virechana** (purgation therapy) is highly recommended for *pitta dushti*, particularly in endometrial pathologies and ovulatory dysfunction.
- **Basti** (medicated enema) is regarded as the supreme therapy for *vata vyadhi*. Since *Apana Vata* governs ovulation, fertilization, implantation, and parturition, its correction through *Basti* is central in infertility management.
- **Uttarbasti**, a specialized form of *Basti* given intrauterine, is specifically described in gynecological disorders (*yoni vyapad*). It is considered the most effective *shodhana* therapy for infertility.
- **Nasya** (nasal instillation) is indicated for hormonal axis correction through its action on *Shiras* (head) and *HPA axis*, influencing reproductive hormones.

The classics also recommend *Rasayana* therapy following *Shodhana* to enhance *dhatu poshana* (nourishment of tissues), thereby improving fertility outcomes.

2. *Vamana* in Infertility

Though less emphasized than other *shodhana* modalities, *Vamana* finds utility in obesity-related

infertility and *kapha*-dominant disorders such as polycystic ovarian syndrome (PCOS).

- **Ayurvedic Evidence:** Acharya Charaka mentions *Vamana* as the treatment of choice for *kapha*-*avrita vata*, a condition often correlating with anovulatory cycles.
- **Modern Research:** Clinical trials suggest that preparatory *Vamana* followed by *Virechana* reduces insulin resistance, corrects menstrual irregularities, and promotes ovulation in PCOS patients.
- **Mechanism:** By reducing excess *kapha* and *meda*, *Vamana* restores hypothalamic-pituitary-ovarian (HPO) axis function and enhances follicular maturation.

3. *Virechana* in Infertility

Virechana is considered pivotal in gynecological disorders arising from *pitta dushti*, such as endometriosis, luteal phase defects, and recurrent implantation failure.

- **Ayurvedic Texts:** Sushruta emphasizes *Virechana* in *yonivyapad* where excessive heat (*ushna guna*) of *pitta* causes damage to *artava* (ovum) and uterine environment.
- **Clinical Studies:** Multiple studies report that *Virechana* with *Trivrit Leha* or *Eranda Taila* improves menstrual regularity, reduces dysmenorrhea, and enhances conception rates in infertility linked to endometrial dysfunction.
- **Mechanism:**
 - Detoxifies liver and gut, improving hormonal metabolism (estrogen, progesterone).
 - Reduces inflammatory mediators implicated in endometriosis.
 - Corrects endometrial receptivity by balancing *pitta*.

4. *Basti* in Infertility

Basti is described as *Ardha Chikitsa* (half of all treatments) in Ayurveda, especially vital in *Vata Vyadhi*. Since *Apana Vata* governs reproductive physiology, its vitiation results in anovulation, tubal spasm, implantation failure, and recurrent miscarriage.

- **Types Used in Infertility:**
 - *Anuvasana Basti* with medicated oils (*kshara taila*, *bala taila*) nourishes reproductive tissues.

- *Niruha Basti* with decoctions (e.g., *Dashamoola*, *Shatavari*, *Guduchi*) eliminates toxins and pacifies *vata*.

- **Clinical Evidence:**

- Studies on *Yoga Basti* protocols (alternate *Anuvasana* and *Niruha*) show improved ovulation rates, normalization of menstrual cycles, and enhanced fertility outcomes in women with PCOS and unexplained infertility.
- *Basti* combined with *Rasayana* has been effective in secondary infertility.

- **Mechanism:**

- Regulates *Apana Vata*, facilitating ovulation and implantation.
- Improves pelvic circulation and reduces stress-induced anovulation.
- Modulates gut microbiota, indirectly affecting reproductive health.

5. *Uttarbasti* in Infertility

This specialized therapy involves the intrauterine or intraurethral administration of medicated oils or decoctions. Among all *Shodhana Karmas*, *Uttarbasti* is considered most specific for female infertility.

- **Classical References:** Charaka and Vagbhata describe *Uttarbasti* for *yonivyapad* including *vandhyatva*. Oils like *Phala Ghrita*, *Tila Taila*, and *Ksheerabala Taila* are frequently mentioned.
- **Clinical Evidence:**
 - Several controlled trials show *Uttarbasti* with *Phala Ghrita* increases conception rates in unexplained infertility.
 - *Ksheerabala Taila Uttarbasti* improved endometrial thickness and ovulatory function in women with oligomenorrhea.
 - In cases of tubal block, *Uttarbasti* with medicated oils improved tubal patency in up to 40–50% of patients.
- **Mechanism:**
 - Direct local action on uterus and fallopian tubes, clearing obstructions.
 - Anti-inflammatory effect on endometrium.
 - Improves cervical mucus quality, enhancing sperm motility.

6. *Nasya* in Infertility

Nasya therapy influences higher centers of hormonal regulation. As *Shiras* is the seat of *Indriyas* and endocrine control, *Nasya* helps

regulate hypothalamic-pituitary-ovarian axis.

- **Classical Basis:** Mentioned as *Shirovirechana* for disorders of head and hormones.
- **Research Evidence:** Use of *Anu Taila Nasya* has been observed to improve menstrual regularity in stress-related anovulation.
- **Mechanism:**
 - Nasal route provides rapid access to brain centers controlling gonadotropin secretion.
 - Modulates stress hormones (cortisol), thereby enhancing fertility indirectly.

7. Integration with Modern Evidence

Emerging studies bridge Ayurveda with reproductive science:

- **PCOS:** *Panchakarma* therapies (especially *Virechana* and *Basti*) reduce insulin resistance, correct hyperandrogenism, and restore ovulation.
- **Endometriosis:** *Virechana* decreases inflammatory cytokines, alleviates pelvic pain, and enhances conception rates.
- **Tubal Factor Infertility:** *Uttarbasti* demonstrates potential in clearing tubal obstruction.
- **Unexplained Infertility:** *Panchakarma* improves stress resilience, immune modulation, and endometrial receptivity.

DISCUSSION

Infertility remains a growing global health challenge, affecting nearly 15% of reproductive-aged couples. Conventional biomedical management primarily relies on hormonal therapies, ovulation induction, assisted reproductive technologies (ART), and surgical interventions. While these approaches have shown success, they are not without limitations—high cost, side effects, emotional stress, and variable success rates. Against this backdrop, the Ayurvedic approach, particularly *Shodhana Karma*, offers a distinctive and holistic perspective by addressing the root cause of infertility through *dosha* equilibrium, *srotoshodhana* (clearing bodily channels), and strengthening *shukra/artava dhatu* (reproductive tissues).^[16]

Ayurveda vs. Modern Approaches

Ayurveda views infertility (*vandhyatva*) as a result of impaired *Beeja* (gametes), *Kshetra* (uterus), *Rutu* (fertile period), and *Ambu* (nutritional

environment). *Shodhana Karma* aims to purify and optimize these factors before conception. For example, *Basti* regulates *Apana Vata*, analogous to restoring normal ovulatory cycles and uterine receptivity in modern terms. Similarly, *Uttarbasti* demonstrates localized intrauterine effects, comparable to intrauterine insemination or hysteroscopic flushing used in modern infertility management.^[17]

In comparison, biomedical methods like ovulation induction with clomiphene or letrozole focus narrowly on follicular development, while ART bypasses natural processes altogether. Ayurveda, on the other hand, seeks systemic balance, making the body fertile in its natural capacity. This broader view may not yield instant results but contributes to long-term reproductive health.^[18]

Strengths of *Shodhana Karma*

Clinical evidence shows that *Virechana* lowers systemic inflammation and corrects hormonal imbalances—mechanisms also targeted by modern endocrinological therapies. *Basti* improves pelvic circulation and reduces stress, which modern medicine addresses with lifestyle modifications and counseling. *Uttarbasti*, uniquely Ayurvedic, directly influences the uterine environment and has shown promise in restoring tubal patency—something modern medicine attempts through invasive surgery.^[19]

Another strength is its integration with *Rasayana* therapy. While modern infertility treatments often ignore post-treatment rejuvenation, Ayurveda emphasizes enhancing *dhatu poshana* (tissue nourishment) post-*Shodhana*, which aligns with the idea of preconceptional care in reproductive medicine.^[19]

Limitations and Gaps

Despite promising results, several limitations persist. Most Ayurvedic studies are small-scale, lack standardized protocols, and often do not meet the rigor of randomized controlled trials. Outcome measures also vary, with many focusing on symptomatic relief rather than pregnancy rates or live births. Furthermore, the pharmacodynamics of specific *Basti dravyas* or *Uttarbasti formulations* remain insufficiently studied from a biomedical lens.

Integration into mainstream infertility management

also faces challenges—such as ethical concerns regarding intrauterine procedures without proper standardization, lack of advanced diagnostic correlation, and skepticism among biomedical practitioners.^[20]

Future Prospects

Future research should focus on:

- Standardizing *Shodhana* protocols for infertility with clear indications.
- Conducting large-scale multicentric clinical trials measuring conception and live birth outcomes.
- Exploring molecular mechanisms (e.g., anti-inflammatory, immunomodulatory, neuroendocrine effects) of *Shodhana therapies*.
- Developing integrative treatment models where *Shodhana* serves as preparatory care before ART, potentially improving its success rates.

CONCLUSION

Infertility is a complex disorder influenced by physiological, psychological, lifestyle, and environmental factors. While modern medicine offers advanced diagnostic and therapeutic modalities, it often focuses on symptom-specific or technological interventions, leaving limited scope for holistic health restoration. Ayurveda, through its classical approach of *Shodhana Karma*, addresses infertility not merely as a localized dysfunction but as a systemic imbalance involving *doshas*, *dhatu*s, and *srotas*.

This review highlights that *Shodhana therapies* such as *Vamana*, *Virechana*, *Basti*, and *Uttarbasti* are deeply rooted in Ayurvedic principles of purification, detoxification, and channel cleansing. Evidence from classical texts and emerging clinical studies suggests that these therapies enhance hormonal regulation, optimize uterine receptivity, improve tubal patency, and rejuvenate reproductive tissues. Their additional benefits in reducing stress, correcting metabolic disorders, and improving overall vitality further strengthen their role in reproductive care.

Despite promising outcomes, limitations such as lack of large-scale randomized controlled trials, absence of standardized treatment protocols, and insufficient biomedical validation remain. However, these gaps also present opportunities for future research and integrative healthcare models. If systematically explored and scientifically

validated, *Shodhana Karma* could complement modern infertility management, especially as preparatory therapy prior to assisted reproductive technologies.

In conclusion, *Shodhana Karma* offers a unique and holistic framework for managing infertility by addressing root causes, improving reproductive health, and supporting natural conception. Its integration into contemporary reproductive medicine has the potential to provide cost-effective, safe, and sustainable solutions for couples struggling with infertility.

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