

“MANAGEMENT OF VANDHYATVA (FEMALE INFERTILITY) THROUGH AYURVEDA: A SCIENTIFIC REVIEW”

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ABSTRACT:

Introduction: Infertility is a growing global health concern, affecting approximately 15% of reproductive-age couples. In Ayurveda, female infertility is described as *Vandhyatva*, arising from imbalances in *doshas*, impairment of *dhatus* (tissues), and derangement of *artavavaha srotas* (reproductive channels). *Beeja* (ovum), *kshetra* (uterus), *rutu* (fertile period), and *ambu* (nutritive fluids) are essential factors in conception, and disruption of any leads to infertility.

Methods: A comprehensive literature review was conducted using Ayurvedic classical texts (*Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*), commentaries, and modern scientific databases (PubMed, Scopus, Web of Science, AYUSH Research Portal). Peer-reviewed articles, clinical trials, and pharmacological studies published between 2000–2024 were included. Keywords such as “*Vandhyatva*,” “Ayurveda and infertility,” “female infertility,” and “herbal management of infertility” were used. **Results:** Ayurvedic management of *Vandhyatva* is multifactorial, involving *nidana parivarjana* (elimination of causative factors), *shodhana* (purification therapies such as *virechana* and *uttarbasti*), and *shamana* (palliative therapy with herbs like *Shatavari*, *Ashoka*, *Lodhra*, *Guduchi*, and formulations like *Phala Ghrita* and *Pushpadhanva rasa*). Diet and lifestyle modifications, yoga, and stress management also play crucial roles. Modern studies support the phytoestrogenic, antioxidant, adaptogenic, and ovulation-inducing properties of these drugs. Clinical trials demonstrate improved ovulatory cycles, endometrial receptivity, and pregnancy rates with integrative approaches. **Discussion:** Ayurvedic principles of balancing *doshas* and restoring *dhatus* align with modern concepts of hormonal balance, ovarian reserve, and uterine health. While preliminary clinical studies are encouraging, large-scale, randomized controlled trials are lacking. Integrative research can bridge traditional wisdom with evidence-based practice. **Conclusion:** Ayurveda offers a holistic, individualized, and safe approach for managing female infertility. Its emphasis on purification, rejuvenation, and lifestyle corrections, supported by emerging scientific evidence, highlights its potential as an adjunct or alternative in infertility care.

KEYWORDS: Ayurveda, Female infertility, *Rasayana*, *Vandhyatva*, Yoga

INTRODUCTION

Infertility is defined as the inability to conceive after 12 months of regular, unprotected sexual intercourse.^[1] It affects nearly 48 million couples worldwide, with female infertility accounting for about 40–50% of cases. The rising prevalence is linked to lifestyle changes, environmental factors, stress, obesity, and late marriages.^[2-3]

Conventional management includes ovulation induction, assisted reproductive techniques (ART), and hormonal therapies, but these are costly, invasive, and associated with adverse effects.^[4]

Ayurveda, the ancient Indian system of medicine, views infertility under the broad spectrum of *Vandhyatva*.^[5] According to classics, successful conception requires the proper functioning of *Garbhasambhavasamagra bhavas*—*Beeja* (healthy ovum), *Kshetra* (uterus), *Rutu* (fertile period), and *Ambu* (nutritive fluid).^[6] Disturbances in *doshas* (Vata, Pitta, Kapha), obstruction of *artavavaha srotas*, or depletion of *shukra/artava dhatu* result in infertility. Various therapies including *shodhana* (detoxification), *rasayana* (rejuvenation), and use of specific *stree-rasayana dravyas* are advocated.^[7-8]

The present review aims to systematically analyze the Ayurvedic understanding of *Vandhyatva*, highlight therapeutic modalities described in classical texts, and evaluate available scientific evidence supporting their efficacy.^[9] The objectives are to (1) explore etiopathogenesis of *Vandhyatva*, (2) describe Ayurvedic management strategies, and (3) assess clinical and pharmacological studies validating Ayurvedic interventions for female infertility.^[10]

MATERIALS AND METHODS

This review followed a systematic approach to collect, analyze, and synthesize information.

1. **Sources:** Primary Ayurvedic sources included *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Kashyapa Samhita*, and *Bhavaprakasha Nighantu* with their commentaries. Secondary sources included contemporary Ayurvedic textbooks and guidelines.^[11]
2. **Databases:** PubMed, Scopus, Web of Science, AYUSH Research Portal, Google Scholar, and ResearchGate.^[12]

3. **Search Strategy:** Keywords used were “*Vandhyatva*,” “Ayurveda and infertility,” “*stree roga*,” “female infertility,” “herbal treatment infertility,” and “Ayurvedic management infertility.” Boolean operators (AND/OR) were applied.^[13]

4. Inclusion Criteria:^[14]

- Articles published between 2000–2024.
- Randomized controlled trials, observational studies, systematic reviews, pharmacological studies, and in vivo/in vitro studies.
- Studies highlighting Ayurvedic formulations, single drugs, or procedures for infertility.

5. Exclusion Criteria:^[15]

- Non-English or non-Sanskrit sources without translation.
- Studies unrelated to female infertility.
- Case reports without methodological clarity.

6. **Data Extraction and Synthesis:** Relevant data on Ayurvedic concepts, therapeutic procedures, herbal pharmacology, and clinical outcomes were extracted and thematically analyzed under conceptual, pharmacological, and clinical categories.^[15]

OBSERVATION AND RESULTS

The concept of *Vandhyatva* has been extensively elaborated in Ayurvedic classics, with descriptions of its causes, pathogenesis, and management strategies. Traditional Ayurvedic wisdom, when examined alongside modern research, offers a holistic framework for understanding and managing female infertility. The following thematic analysis integrates evidence from ancient texts, experimental studies, pharmacological evaluations, and clinical trials.

1. Ayurvedic Concept of *Vandhyatva*

Ayurveda defines *Vandhyatva* as the incapacity of a woman to conceive despite having regular coitus during fertile age and period. According to *Charaka Samhita*, conception requires the integrity of *Beeja* (healthy ovum), *Kshetra* (uterus), *Rutu* (timely ovulation/fertile period), and *Ambu* (nutritional factors, including *rasa dhatu*). Any defect in these essential factors leads to infertility.

Pathogenesis (Samprapti):

- **Vata vitiation** is the predominant factor, causing obstruction in *artavavaha srotas*,

irregular ovulation, tubal blockage, and implantation defects.

- **Kapha aggravation** results in anovulation, polycystic ovarian morphology, and obesity-related infertility.
- **Pitta vitiation** is linked with inflammatory changes, endometritis, and hormonal imbalances.
- Depletion of *artava dhatu* and defective *shukra/artava dhatu* further hinder conception.

Ayurvedic texts also describe classifications such as *Anapatya* (primary infertility), *Apraja* (secondary infertility), and *Yonivyapat* (gynecological disorders contributing to infertility).

2. Nidana (Etiological Factors)

The causative factors of *Vandhyatva* can be grouped as:

- **Ahara (dietary)**: excessive consumption of *guru* (heavy), *snigdha* (oily), and *sheeta* (cold) foods impair *agni* and lead to *ama* formation, obstructing reproductive channels.
- **Vihara (lifestyle)**: stress, lack of sleep, sedentary lifestyle, and suppression of natural urges disturb *doshas*.
- **Manasika (psychological)**: anxiety, grief, and excessive worry (*chinta*, *shoka*) disturb *manovaha srotas*, influencing hormonal balance.
- **Sharirika (physical)**: congenital anomalies, tubal obstruction, uterine pathologies, and systemic illnesses.

3. Ayurvedic Principles of Management

Management of *Vandhyatva* is based on the principles of:

1. **Nidana Parivarjana** – avoiding causative factors.
2. **Shodhana** – cleansing therapies to expel *doshas*.
3. **Shamana** – use of herbal formulations to pacify imbalances.
4. **Rasayana** – rejuvenation of reproductive tissues.
5. **Pathya-Apathya** – dietary and lifestyle corrections.

4. Shodhana Chikitsa (Purification Therapies)

Ayurveda emphasizes detoxification before conception therapies to prepare the body.

- **Virechana (purgation)**: helpful in *Pittaja yonivyapat* and endometrial pathologies.
- **Basti (enema therapy)**: particularly *uttarbasti*, described as the most effective therapy for *Vandhyatva*. It cleanses *artavavaha srotas*, balances *Vata*, and enhances fertility. Clinical studies (Sharma et al., 2019) have shown improved ovulation and conception rates in women receiving medicated *uttarbasti* with *kshira bala taila* and *phala ghrita*.
- **Vamana (emesis)**: beneficial in *Kaphaja vandhyatva* such as PCOS-related infertility.

5. Shamana Chikitsa (Conservative Management with Herbs)

Numerous single herbs and compound formulations are prescribed for *Vandhyatva*.

a. Single Herbs (Eka Dravya Prayoga)

- **Shatavari (Asparagus racemosus)**: acts as a uterine tonic, galactagogue, and estrogenic agent. Studies confirm its phytoestrogenic and adaptogenic properties, regulating ovulation and improving follicular growth.
- **Ashoka (Saraca indica)**: balances *Kapha* and *Pitta*, used in irregular cycles and endometrial disorders.
- **Lodhra (Symplocos racemosa)**: astringent, anti-inflammatory, useful in leucorrhea and uterine strengthening.
- **Guduchi (Tinospora cordifolia)**: immunomodulator, reduces stress-induced infertility, improves endometrial receptivity.
- **Gokshura (Tribulus terrestris)**: enhances ovarian function and folliculogenesis; modern studies show improved ovarian reserve markers.

b. Classical Formulations

- **Phala Ghrita**: a ghee-based formulation described in *Charaka Samhita* for promoting conception. Clinical trials report improved conception rates when used with *uttarbasti*.
- **Pushpadhanva Rasa**: indicated in *Yonivyapat* and infertility; modern studies show hormonal balancing effects.
- **Arogyavardhini Vati**: used in metabolic infertility cases like PCOS.
- **Chandraprabha Vati**: corrects *kapha-vata* imbalances, supports urinary and reproductive health.

6. Role of *Rasayana* in Fertility Enhancement

Ayurveda emphasizes *rasayana* therapy to rejuvenate *dhatu*s, particularly *shukra/artava dhatu*. *Stree rasayana dravyas* like *Shatavari*, *Ashwagandha*, *Vidari*, and *Amalaki* improve oocyte quality, reduce oxidative stress, and delay ovarian aging. Modern studies validate the antioxidant and anti-aging effects of these herbs, showing improvement in anti-Müllerian hormone (AMH) levels and ovarian reserve.

7. Diet and Lifestyle (*Pathya-Apathya*)

Ayurveda advocates a *sattvika ahara* rich in milk, ghee, fresh fruits, and vegetables to nourish *shukra/artava dhatu*. Avoidance of junk food, excessive spicy or fermented items, alcohol, and smoking is emphasized. Regular exercise, yoga (e.g., *Bhujangasana*, *Sarvangasana*, *Baddha Konasana*), and pranayama (e.g., *Anulom-Vilom*) are advised for hormonal balance and stress relief.

8. Yoga and Psychological Well-being

Stress is a significant factor in infertility. Ayurveda recognizes *manasika bhavas* (emotions) as key contributors. Mind-body interventions like meditation, yoga, and *nasya* with *medhya rasayana* oils improve hypothalamic-pituitary-ovarian (HPO) axis function. Clinical studies show that yoga therapy reduces cortisol levels, improves menstrual regularity, and enhances conception rates.

9. Modern Evidence Supporting Ayurvedic Interventions

Pharmacological and clinical studies provide growing evidence:

- **Shatavari:** animal studies reveal increased follicular maturation and estrogenic activity. Human studies show improved ovulatory function.
- **Ashwagandha:** adaptogenic properties reduce stress and normalize reproductive hormones.
- **Phala Ghrita + Uttarakbasti:** clinical trials (Patil et al., 2018) reported 40–50% conception rates in unexplained infertility cases.
- **Gokshura:** randomized controlled trials indicate improved ovarian volume and follicular count in women with diminished ovarian reserve.

- **Combination therapies:** integrative approaches combining Ayurveda with ART show higher success rates and reduced complications.

10. Comparative Effectiveness with Conventional Management

Conventional treatments such as ovulation induction (clomiphene, letrozole), in vitro fertilization (IVF), and hormonal therapies are associated with side effects like ovarian hyperstimulation, multiple pregnancies, and psychological stress. Ayurveda provides safer alternatives with fewer side effects, focusing on overall health and long-term reproductive capacity. However, evidence from large-scale, randomized controlled trials is still limited.

11. Limitations in Current Research

- Most Ayurvedic clinical studies are limited by small sample sizes and lack of blinding.
- Standardization of herbal formulations and dosage is required.
- Integration of classical diagnostic parameters with modern endpoints (AMH, FSH, endometrial thickness) is still evolving.
- More translational research bridging Ayurveda and reproductive endocrinology is needed.

DISCUSSION

The present review highlights the relevance of Ayurvedic principles and therapeutic approaches in the management of *Vandhyatva*. Infertility is a complex condition influenced by anatomical, physiological, psychological, and lifestyle factors. Modern medicine addresses it primarily through pharmacological agents, assisted reproductive technologies (ART), and surgical interventions. While these approaches have demonstrated success, they are often costly, invasive, and associated with adverse effects. Ayurveda, on the other hand, emphasizes a holistic and individualized approach, aiming not only at conception but also at optimizing overall health, psychological balance, and long-term reproductive capacity.^[16]

Holistic Framework of *Garbha Sambhavasamagra Bhava*

The Ayurvedic framework of conception—*Beeja* (healthy gametes), *Kshetra* (uterine environment), *Rutu* (timely ovulation), and *Ambu* (nutritional

support)—remains remarkably relevant even today. Modern reproductive science parallels these factors with oocyte and sperm quality, endometrial receptivity, ovulatory cycles, and hormonal-nutritional balance. This demonstrates the timelessness of Ayurvedic observations and their applicability in contemporary infertility management.^[17]

Role of Dosha Imbalance and Srotodushti

Ayurveda attributes infertility to *dosha vitiation* and obstruction of *artavavaha srotas*. This resonates with modern pathophysiological concepts such as anovulation, tubal blockage, endometrial pathologies, and metabolic syndromes. For instance, *Vata* aggravation corresponds to tubal dysfunction and implantation failures, *Kapha* aggravation reflects PCOS and obesity-related infertility, while *Pitta* disorders mirror inflammatory pelvic conditions. Thus, *dosha*-based classification can guide personalized therapies, which is increasingly valued in modern precision medicine.^[18]

Integration of Shodhana and Shamana Therapies

Shodhana chikitsa (purification) holds a unique position in Ayurveda, aiming to restore *doshic* balance and clear obstructions. *Uttarabasti* has been reported to improve ovulation, regulate menstrual cycles, and enhance conception rates. From a biomedical perspective, intrauterine administration of medicated oils or ghee may enhance endometrial receptivity, modulate local inflammation, and regulate uterine contractility. Similarly, *Vamana* and *Virechana* could influence metabolic and endocrine regulation, relevant to conditions like PCOS.^[19]

Shamana chikitsa and *rasayana* provide sustained nourishment to reproductive tissues. Herbs like *Shatavari*, *Ashwagandha*, and *Gokshura* have shown estrogenic, adaptogenic, and antioxidant activities, supporting follicular growth and reducing oxidative stress on oocytes. Clinical evidence, though limited, suggests improved ovarian reserve and conception rates, aligning with the Ayurvedic view of *dhatu poshana*.^[19]

Diet, Lifestyle, and Mind-Body Interventions

Ayurveda emphasizes *ahara* (diet) and *vihara* (lifestyle) as central to reproductive health. Current research strongly supports the role of diet, body

weight, stress, and circadian rhythms in fertility outcomes. Ayurvedic prescriptions of *sattvika ahara*, yoga, and pranayama directly align with modern evidence linking healthy lifestyle and stress reduction to improved fertility. Yoga-based interventions have been shown to reduce cortisol levels, regulate menstrual cycles, and improve ART success rates, highlighting the clinical relevance of ancient practices.^[20]

Limitations and Research Gaps

Despite encouraging findings, limitations exist in current Ayurvedic infertility research. Most clinical studies suffer from small sample sizes, lack of standardization in formulations, and absence of rigorous controls. Integrating traditional diagnostic parameters with modern biomarkers such as anti-Müllerian hormone (AMH), follicle-stimulating hormone (FSH), endometrial thickness, and ovarian reserve markers is essential to validate efficacy. Further, translational research is needed to explain mechanisms of action of *uttarabasti*, *ghrita* formulations, and *rasayana* therapy.^[20]

Potential for Integrative Medicine

The discussion underscores the potential for an integrative approach, where Ayurveda complements modern infertility treatments. Ayurveda may help reduce the side effects of hormonal therapies, enhance endometrial receptivity before ART, and improve psychological resilience in couples undergoing treatment. Such integration can offer cost-effective, safe, and culturally acceptable solutions, particularly in resource-limited settings where advanced ART facilities are inaccessible.^[20]

CONCLUSION

Infertility, or *Vandhyatva*, is a rising global health concern with profound physical, emotional, and social implications. Conventional management strategies, though effective in many cases, are often invasive, expensive, and associated with limitations such as adverse effects and restricted accessibility. Ayurveda offers a holistic, individualized, and preventive approach to female infertility, emphasizing balance of *doshas*, purification of *srotas*, and optimization of the essential factors of conception—*Beeja*, *Kshetra*, *Rutu*, and *Ambu*.

This review reveals that Ayurvedic therapies such as *Shodhana*, *Shamana* with *rasayana* herbs like

Shatavari, *Ashwagandha*, and *Gokshura*, and lifestyle modifications rooted in *ahara* and *vihara* hold significant promise in improving reproductive health and enhancing conception rates. Modern research provides supportive evidence for the hormonal, adaptogenic, antioxidant, and immunomodulatory properties of many classical Ayurvedic interventions, highlighting their biological plausibility.

While the convergence between Ayurvedic concepts and biomedical findings is promising, more robust scientific validation is needed. Well-designed randomized controlled trials, standardized formulations, and integration of modern diagnostic biomarkers with Ayurvedic frameworks will strengthen the evidence base. Moreover, exploring the role of Ayurveda in complementing assisted reproductive technologies could open new avenues for integrative infertility care.

In conclusion, Ayurveda provides not only therapeutic measures for infertility but also a holistic pathway to reproductive well-being. Bridging traditional wisdom with modern evidence may pave the way for safe, effective, and culturally resonant strategies for the management of *Vandhyatva*.

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