



INTEGRATIVE AND PREPARATORY APPROACHES IN FEMALE INFERTILITY MANAGEMENT

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ABSTRACT

Female infertility is rising globally due to delayed childbearing, metabolic disorders, lifestyle imbalance, environmental toxins, and inflammatory conditions such as polycystic ovarian syndrome and endometriosis. Contemporary management mainly focuses on hormonal correction and assisted reproductive techniques, often overlooking systemic co-factors, such as the overall health and lifestyle of the individual, which can significantly impact fertility outcomes. *Ayurveda* explains fertility through the principles of *Rutu*, *Kshetra*, *Ambu*, and *Beeja*, supported by balanced *Vata* and proper *Agni*. Disturbances in these components impair conception. Through individualized *Prakriti*-based management, *Ayurveda* emphasizes *Nidana Parivarjana*, *Agni* correction, *Shodhana*, *Shamana*, and *Rasayana* therapy to improve *Dhatu* quality, enhance reproductive potential, reduce oxidative stress, and strengthen overall vitality. In the era of assisted reproductive techniques, *Ayurveda* can function as a supportive and preparatory approach to the ovarian environment and endometrial receptivity. An integrative and individualized model represents a promising direction for holistic fertility care.

Index Terms- female Infertility, Ayurveda, Rasayana, PCOS, ART

I. INTRODUCTION

Infertility is defined as a medical condition affecting either the male or female reproductive system, characterized by the inability to conceive despite having regular, unprotected sexual intercourse for 12 months. ¹ The rate at which infertility issues, especially in females are increasing is alarming. According to a WHO report, approximately one in six individuals worldwide suffers infertility. ² This highlights the critical importance of making treatment accessible, affordable and effective. *Ayurveda* has immense potential to treat infertility either purely through standalone *Ayurvedic* management or in combination with modern treatment like IVF.

II. MATERIALS AND METHODS

This study is a conceptual narrative review integrating *Ayurvedic* principles with contemporary scientific evidences on female infertility.

2.1 Materials

Data were sourced from classical Ayurvedic texts, including *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*, along with WHO reports and peer-reviewed articles on infertility, PCOS, endometriosis, oxidative stress, and Assisted Reproductive Technology (ART).

2.2 Methods

A structured literature search was conducted using PubMed, Google Scholar, and AYUSH databases with keywords such as female infertility, *Ayurveda*, *Rasayana*, *Panchakarma*, and ART. Classical concepts of *Rutu*, *Kshetra*, *Ambu*, and *Beeja* were critically analyzed and correlated with modern etiological factors like hormonal imbalance, metabolic dysfunction, and inflammation.

The collected data were systematically reviewed and synthesized to develop an integrative framework highlighting the role of *Ayurvedic* interventions in improving reproductive health and supporting ART outcomes.

III. ETIOLOGY OF FEMALE INFERTILITY IN THE MODERN ERA

As per *Ayurveda Ritu* (fertile period), *Kshetra* (reproductive fluids), *Amb* (ovum) and *Beej* (ovum), along with healthy psychological status with normal functioning of *Vata* are mainly responsible for *Garbha* formation. Any abnormality in above said factors can cause infertility.^{2,3}

In modern era many new factors have contributed in increasing prevalence of infertility especially in females which are mainly-

- Delayed marriage and late conception can lead to a decrease in ovarian reserve and declining AMH levels.
- The rising prevalence of PCOS is mainly associated with sedentary lifestyle, obesity, and insulin resistance.
- Lifestyle and metabolic disorders such as obesity, thyroid disorders, sleep disturbances, and chronic stress lead to increased cortisol levels, resulting in ovulation suppression and ultimately *Artava dushti*.
- Environmental toxins including plastics, pesticides, heavy metals, air pollution, cosmetic endocrine disruptors, smoking, and substance abuse contribute to *Beeja dushti*.
- The increasing incidence of endometriosis causing inflammation, Yonivyapad, and implantation failure.
- Repeated abortions due to MTP pills, D&C procedures, and excessive use of contraceptive pills also adversely affect fertility.

IV. CONCEPTUAL STRENGTH OF AYURVEDA FOR MODERN INFERTILITY MANAGEMENT

Ayurveda has immense scope in the management of infertility, either independently or in combination with modern treatments, due to its systemic and root-cause-oriented approach. It focuses on correcting *Agni*, eliminating *Ama*, and addressing *Srotodushti* and *Beeja/Drava dushti*, rather than targeting isolated hormonal or anatomical factors alone.

The treatment approach is individualized and based on *Prakriti*, ensuring precision and patient-specific care. A combination of therapies including *Shamana*, *Shodhana*, *Sthanik Chikitsa*, along with appropriate *Ahara* and *Vihara*, helps in creating a favourable internal microenvironment necessary for conception and successful implantation.^{5,6}

V. RASAYANA IN INFERTILITY

Fertility is not just about ovulation; it also depends on the quality of *Dhatu* and the strength of *Ojas*. *Rasayana* therapy works at this deeper level.⁷ *Dhatu-poshana* refers to the proper nourishment of all body tissues, especially *Rasa* and *Rakta*, which ultimately support *Artava*. Improved nourishment enhances the quality of the ovum. *Beeja Shuddhi* and *Artava* balance aim at improving the quality of the reproductive elements rather than merely inducing ovulation artificially. This is particularly important in cases of irregular cycles and declining ovarian reserve. Oxidative stress is known to affect oocyte quality and implantation. Many *Rasayana* drugs possess antioxidant and anti-inflammatory properties that help reduce this stress.

Thus, *Rasayana* is not merely a tonic; it enhances *Ojas*, supports hormonal balance, and prepares the body holistically for conception.

VI. AYURVEDA IN ART (ASSISTED REPRODUCTIVE TECHNOLOGY)

In the ART era, *Ayurveda* can also play a supportive and preparatory role rather than just being seen as an alternative. Before IVF, a short phase of *Ayurvedic* priming, including *Shodhana* where indicated and *Rasayana* therapy, may help improve metabolic balance, reduce oxidative stress, and create a healthier ovarian and uterine environment.⁸

Rasayana-based ovarian support focuses on improving oocyte quality, strengthening endometrial receptivity, and enhancing overall reproductive vitality. This is especially relevant in cases like diminished ovarian reserve, PCOS, and recurrent implantation failure. Appropriately selected *Panchakarma* can help correct inflammation, insulin resistance, and stress-related hormonal imbalance.^{9,10}

With proper coordination and monitoring, *Ayurveda* and ART can work together in a safe, evidence-focused model, ultimately aiming not just for pregnancy but for healthy live birth outcomes.

The future of treating female infertility is moving toward precision and integration. Ayurgenomics and precision stratification will help classify patients not only by *Prakriti* but also by genetic susceptibility, allowing early identification of women predisposed to PCOS or ovulatory dysfunction and planning preventive *Shodhana* or *Shamana* therapies.¹¹ The development of mucoadhesive and targeted uterine formulations can enhance local drug delivery, improving endometrial receptivity and follicular health with better standardization. There is also a need for device innovation and procedural standardization for therapies like *Uttarabasti* and local *Yonichikitsa* to improve safety, reproducibility, and global acceptance. Integration of *Ayurveda* alongside ART through well-designed clinical trials can improve IVF outcomes and reduce implantation failures. Digital transformation is another major frontier, where AI-based tools can assess fertility risks and suggest personalized *Dinacharya* and *Ritucharya* modifications. Tele-*Ayurveda* platforms combined with disease-specific *yoga* protocols and remote monitoring can make fertility care more continuous, personalized, and accessible.

VII. RESULTS

The review reveals that female infertility is multifactorial, involving hormonal, metabolic, inflammatory, and environmental factors. *Ayurvedic* principles indicate that proper functioning of *Rutu*, *Kshetra*, *Ambu*, and *Beeja*, along with balanced *Agni* and *Vata*, is essential for conception. Disturbances such as *Agnimandya*, *Ama*, and *Srotodushti* correlate with impaired fertility. *Ayurvedic* interventions, including *Nidana Parivarjana*, *Shodhana*, *Shamana*, and *Rasayana*, show potential in improving systemic health and reproductive function, along with supportive benefits in ART outcomes.

VIII. DISCUSSION

Female infertility requires a comprehensive approach beyond hormonal correction. *Ayurveda* correlates well with modern concepts by linking *Agni*, *Ama*, and *Dosha* imbalance with metabolic dysfunction, oxidative stress, and inflammation seen in conditions like PCOS and endometriosis. Therapies such as *Shodhana* and *Rasayana* help in detoxification, improving *Dhatu* quality and *Ojas*. When integrated with ART, *Ayurveda* may enhance endometrial receptivity and overall reproductive health, offering a more holistic management strategy.

IX. CONCLUSION

Female infertility is a complex condition best managed through an integrative approach. *Ayurveda* addresses root causes through correction of *Agni*, elimination of *Ama*, and strengthening of reproductive tissues via *Rasayana* therapy. Combining *Ayurveda* with modern reproductive techniques offers a promising pathway for improved fertility outcomes, with future scope in standardized protocols and personalized treatment approaches.

REFERENCES

- [1] Is infertility a disease, and does it matter? Maung HH. *Bioethics*. 2019;33:43–53. doi: 10.1111/bioe.12495. [DOI] [PMC free article] [PubMed] [Google Scholar]
- [2] World Health Organization WHO. [Dec; 2023]; 23–2024. [Google Scholar]
- [3] Pandit Pandey Kashinath, AgnPandey. *Charaka Samhita, Chaukhambha Visvabharti, Varanasi, Reprint 2016, Sharira Sthana 2016, Sharira: 925.*
- [4] Shastrino.: 925.att, *Sushruta Samhita, Sushruta Samhita. Sharira Sthana. 2. Varanasi: Sthana.ambha Sanskrit Sansthan, Varanasi, Sansthan,018, SharirReprint 2018, Sharirasthan.*
- [5] Deepikno.:adre, Mangesh Mundhe, Reshma Halambre. Unexplained Infertility and Ayurveda, A Case Study, *AYUSHDHARA*, 2024;11AYUSHDHARA, 2024;11(6):351-354.0.47070/ayushdhara.v1i6.1830
- [6] Dr. Shweta Raturi, Dr. Anil Bhardwaj, and Dr. Bhardwaj, andl. Effect of Virechana Karma on Beeja Dushti (Anovulation) Janya Vandhyatva: A Case Study:J *Ayurveda Integr Med Sci* [Internet]. 2020 Aug. 31 [cited 2026 Apr. 17];5(04):392-6. Available from: <https://jaims.in/jaims/article/view/1004>
- [7] Gandham Neelima, V. Narasimha, AV. Narasimha,shmi. Role of Rasayana Chikitsa in thChikitsament of Female Infertility w.s.r. Hypothyroidism: A Case Study: A Case Study. *Journal of Ayurveda and Pharma Research*. 2019;7(9):59-63. <https://doi.org/10.47070/ijapr.v7i10.1296>
- [8] Anjaly Murlidharan, Avani Pillai, Bipin Pillai, Bipinshi Shivapura Krishnarajabhath, “An exploratory single-arm study to e-armate the role of an Ayurvedic treatment protocol as a prerequisite for in vitro fertilization in women with diminished ovarian reserve incorporating multi-omics approaches: study protocol,” 25 Nprotocol,” 25ps://2025. ncbi.nlm.nih.gov/?term=%22Muraleedharan%20A%22[Author]
- [9] Srivastava, R., & Agarwal, A. (2013). Ayurvedic concepts in the management of female infertility. *Sisted vitro clSisted by Jouclinical byman Reproductive Sciences*, 6(1), 13-19. <https://doi.org/10.4103/0974-1208.114539>
- [10] Ravindra, J. D., & Arora, R. (2017). The Role of Shodhana and Rasayana Therapy in Reproductive Health. *Ayurveda and Modern Medicine*, 23(4), 221-228.
- [11] Anagha B. 11. Anagha B. R.hanaal.: PCOS-relatedPCOS-related International Ayurvedic Medical Journal (onliJournal (online)January 2024} Available from <http://wfrom> http://www.iamj.in/posts/images/upload/134_140.pdf.agbhata. Ashtanga Hridaya. Sharira Sthan a. VaraSthan Chaukhambha Surbharati Prakashan; Reprint edition.