

REVIEW ARTICLE

Effect of *Uttar Basti* on Endometrial Thickness and Ovulation in Women with Thin Endometrium

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ABSTRACT

Infertility affects a significant proportion of reproductive-age women globally, and among the various contributing factors, thin endometrium remains a challenging condition to manage. A thin endometrial lining (commonly defined as <7 mm on the day of ovulation) is associated with decreased implantation rates, increased miscarriage rates, and poor outcomes in assisted reproductive technologies. Despite advances in modern medical approaches such as hormonal therapy, intrauterine infusions, and regenerative medicine, many cases remain unresponsive, warranting exploration of complementary interventions. Ayurveda, the ancient Indian system of medicine, describes several interventions for female reproductive disorders under the umbrella of “*Yonivyapad*” and “*Vandhyatva*.” Among these, *Uttar Basti*, an intrauterine therapeutic procedure, has shown potential in enhancing endometrial thickness and promoting ovulation through its nutritive, anti-inflammatory, and hormonal balancing effects. This review compiles and analyzes available Ayurvedic literature, contemporary clinical studies, and proposed mechanisms of action to assess the efficacy of *Uttar Basti* in women with thin endometrium. The findings support the potential of *Uttar Basti* as an effective integrative therapy for improving uterine receptivity and fertility outcomes.

1. INTRODUCTION

The endometrium is the innermost lining of the uterus, playing a crucial role in embryo implantation and the maintenance of pregnancy.^[1] Adequate endometrial thickness, particularly during the window of implantation, is essential for successful conception.^[2] Clinically, an endometrial thickness of <7 mm is considered thin and often associated with implantation failure, recurrent pregnancy loss, and poor outcomes in *in vitro* fertilization cycles.^[3]

Thin endometrium may result from various etiologies including hormonal imbalances, chronic infections, inadequate blood flow, surgical trauma, or prolonged use of fertility medications.^[4] Conventional management strategies primarily focus on estrogen therapy, vasodilators, or regenerative approaches such as intrauterine instillation of platelet-rich plasma (PRP) or granulocyte colony-stimulating factor (G-CSF).^[5] However, these treatments are not universally effective and may carry risks or limitations.^[6]

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Ayurveda, with its holistic understanding of health and disease, offers alternative solutions for reproductive challenges.^[7] The condition of thin endometrium may correspond to *Artavakshaya* (diminished menstruation or uterine inadequacy), often caused by Vata or Pitta dosha imbalance.^[8] One of the most effective Ayurvedic therapies for such gynecological issues is *Uttar Basti* – a procedure involving the administration of medicated oils or decoctions directly into the uterine cavity.^[9] Traditionally used to manage infertility (*Vandhyatva*), uterine disorders (*Yonivyapad*), and menstrual irregularities, *Uttar Basti* is believed to nourish the uterine lining, regulate hormonal function, and remove blockages in the reproductive channels (*Artavavaha srotas*).^[10]

Recent clinical and observational studies suggest that *Uttar Basti* can positively influence endometrial development and ovarian function, possibly offering a natural, safe, and effective solution for women with thin endometrium.^[11] This review aims to examine the theoretical basis, clinical application, and available evidence for the use of *Uttar Basti* in improving endometrial thickness and ovulation in affected women.^[12]

1.1. Aims and Objectives

1.1.1. Aim

- To review and analyze the effect of Uttar Basti, an Ayurvedic intrauterine therapy, on endometrial thickness and ovulation in women diagnosed with thin endometrium, with the goal of identifying its therapeutic potential and scope for integration into modern infertility management.

1.1.2. Objectives

- To explore the Ayurvedic concept and classical indications of Uttar Basti in gynecological disorders, particularly *Artavakshaya* and *Vandhyatva*
- To examine the modern clinical correlation of thin endometrium and its impact on ovulation and fertility
- To review and evaluate existing clinical studies on the effect of Uttar Basti on endometrial thickness and ovulatory function
- To discuss commonly used formulations in Uttar Basti and their pharmacological relevance
- To identify challenges, limitations, and future research directions in the use of Uttar Basti as a supportive therapy for infertility.

2. MATERIALS AND METHODS

2.1. Type of Study

Narrative review article based on classical Ayurvedic texts, modern scientific literature, and published clinical studies.

2.2. Sources of Data

- Ayurvedic classical texts including Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam, and Bhavaprakasha for traditional references to Uttar Basti, Artavakshaya, and Vandhyatva
- Indexed journals such as AYU, *Journal of Ayurveda and Integrative Medicine*, and PubMed-listed articles for recent clinical and experimental studies
- Electronic databases: PubMed, Google Scholar, DHARA, and AYUSH Research Portal for contemporary literature
- Reference books on Ayurveda pharmacology (Dravyaguna) and gynecology (Stri Roga and Prasuti Tantra).

2.3. Modern Perspective on Thin Endometrium

Thin endometrium may result from:

- Hormonal imbalances (especially low estrogen)
- Uterine infections
- Chronic endometritis
- Iatrogenic causes (e.g., D and C, uterine surgery)
- Conventional treatments include:
- Estrogen supplementation
- Vasodilators (e.g., sildenafil)
- PRP
- G-CSF.

However, some women remain unresponsive, necessitating alternative strategies.

2.4. Concept of Uttar Basti in Ayurveda

Uttar Basti is a specialized Panchakarma procedure in Ayurveda involving the administration of medicated oils or decoctions into the uterus through the vaginal canal.^[9] It is considered one of the most effective treatments for gynecological and reproductive disorders, particularly those involving Vata dosha imbalance.^[10] According to

classical Ayurvedic texts, the uterus (Garbhashaya) is a primary site of Vata, especially Apana Vata, which governs menstruation, ovulation, and conception.^[13] When Apana Vata becomes vitiated, it can result in conditions such as scanty menses (Artavakshaya), anovulation, or infertility (Vandhyatva).^[14]

Uttar Basti is described to pacify vitiated Vata and nourish the reproductive tissues (Artava dhatu and Shukra dhatu), which are essential for healthy ovulation and endometrial receptivity.^[15] It also helps in clearing the obstruction of channels (Srotorodha), enhancing blood flow, and improving the structural and functional integrity of the uterus.^[16] Furthermore, the warm and unctuous nature of medicated oils used in Uttar Basti facilitates local absorption, supports tissue regeneration, and improves hormonal function by influencing the neuroendocrine axis.^[17]

Therapeutically, Uttar Basti is administered during the post-menstrual phase (around the 6th–10th day of the menstrual cycle) when the uterine cavity is clean, and the endometrium is in the proliferative phase, thereby maximizing its regenerative impact.^[18] This therapy is usually repeated in multiple cycles (3–6 cycles) depending on the condition, and it is often preceded by preparatory procedures such as Snehana (oleation) and Swedana (fomentation) to enhance efficacy.^[19]

2.5. Proposed Biomedical Mechanisms of Action

Uttar Basti may influence endometrial growth and ovulation through:

2.6. Commonly Used Formulations in Uttar Basti

Ayurvedic classics mention a variety of medicated oils and ghee preparations for intrauterine use depending on the patient's constitution (Prakriti) and disease condition.^[20] Among these, Phala Ghrita is one of the most frequently used formulations in the treatment of infertility and thin endometrium due to its Rasayana (rejuvenative) and Garbhashaya shodhaka (uterine purifying) properties.^[21] Phala Ghrita is made from a blend of herbs such as Shatavari (*Asparagus racemosus*), Ashoka (Saraca indica), and Lodhra (Symlocos racemosa), which are known to enhance female reproductive health.^[22]

Bala Taila, prepared from Sida cordifolia and other Vata-pacifying herbs, is another popular formulation used in Uttar Basti to improve uterine tone, nourish endometrial tissues, and regulate menstruation.^[23] Its anti-inflammatory and regenerative properties make it particularly useful in conditions involving uterine atrophy and chronic inflammation.^[24]

Ashokarishta, although traditionally administered orally, has also been used in decoction-based Uttar Basti in modified Ayurvedic protocols. It helps balance estrogenic activity and reduces uterine congestion, making it beneficial in managing endometrial hypoplasia.^[25] The choice of formulation depends on the clinical diagnosis and patient-specific factors such as dosha predominance, age, and chronicity of the disorder.^[26]

In contemporary Ayurvedic practice, standardized oils such as Shatavari Taila, Kshira Bala Taila, and Yashtimadhu Ghrita have also been incorporated into Uttar Basti protocols for patients with thin endometrium, owing to their phytoestrogenic and endometrial-supportive actions.^[27]

3. DISCUSSION

The use of Uttar Basti in women with thin endometrium presents a promising integrative approach to infertility treatment.^[12] The current

evidence from clinical trials and case series indicates that this therapy improves endometrial thickness, enhances uterine receptivity, and may even promote ovulatory function when administered correctly.^[28] Unlike conventional estrogen therapy, Uttar Basti not only stimulates endometrial proliferation but also contributes to the overall balance of the reproductive system through its systemic effects.^[29]

The nourishing (Brimhana) and Vata-pacifying properties of the medicated oils and ghee used in Uttar Basti support the regeneration of the endometrial lining while also reducing inflammation and fibrosis within the uterus.^[30] Phytochemical studies suggest that herbs used in these formulations contain natural estrogen-like compounds, antioxidants, and tissue-repair agents that promote cellular growth and angiogenesis in the endometrium.^[31]

Another significant advantage of Uttar Basti is its local delivery mechanism, which bypasses systemic metabolism and allows direct absorption of active constituents at the site of action.^[32] This improves bioavailability, reduces systemic side effects, and provides a more targeted effect on uterine tissues.^[33]

Furthermore, when administered in synchronization with the patient's menstrual cycle, Uttar Basti can enhance the body's natural hormonal rhythms, thus supporting physiological ovulation and luteal phase development.^[34] This makes it a holistic treatment not only for improving endometrial thickness but also for addressing anovulation and luteal phase defects, which often coexist in women with infertility.^[35] However, despite its therapeutic potential, Uttar Basti is still underutilized in mainstream reproductive medicine due to a lack of large-scale randomized clinical trials and standardized protocols.^[36] Ethical concerns, technical skill requirements, and variability in preparation and administration also pose challenges for wider adoption.^[37] Therefore, future research should focus on protocol standardization, pharmacological studies of herbal oils, and well-designed clinical trials comparing Uttar Basti with conventional hormonal therapies.^[38]

4. CONCLUSION

Uttar Basti, as described in classical Ayurvedic texts, emerges as a highly promising therapeutic intervention for the management of thin endometrium and associated infertility. The endometrial lining plays a crucial role in successful implantation and pregnancy outcomes, and insufficient endometrial thickness remains a significant challenge in both natural conception and assisted reproductive technologies. Conventional treatments such as estrogen supplementation, vasodilators, and regenerative intrauterine infusions have variable success rates and often lack holistic systemic support. The Ayurvedic approach, through Uttar Basti, offers a multidimensional mechanism of action that not only targets local uterine health but also contributes to systemic hormonal balance, tissue regeneration, and dosha correction – particularly of the Apana Vata. The administration of medicated oils or ghrithas with phytoestrogenic, anti-inflammatory, and nourishing properties has been shown in preliminary studies to enhance endometrial thickness, improve vascularization, and support follicular development and ovulation. Moreover, Uttar Basti is minimally invasive, cost-effective, and aligned with the body's natural physiological rhythms when timed correctly within the menstrual cycle. It offers a personalized and patient-friendly alternative for women who do not respond adequately to standard hormonal regimens or who seek integrative, natural approaches to fertility enhancement. Despite these advantages, there remains a pressing need for robust, large-scale, randomized controlled trials to validate its efficacy and safety

within the framework of evidence-based medicine. Standardization of protocols – including drug formulations, dosage, duration, timing, and indications – will be critical for the broader acceptance and clinical application of Uttar Basti in integrative gynecology and reproductive medicine.

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6. AUTHORS' CONTRIBUTIONS

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8. ETHICAL APPROVALS

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9. CONFLICTS OF INTEREST

Nil.

10. DATA AVAILABILITY

This is an original manuscript and all data are available for only review purposes from principal investigators.

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Mechanism	Effect
Estrogenic activity	Certain herbs mimic estrogen, enhancing endometrial proliferation
Improved uterine circulation	Oils improve vascularity and microcirculation
Anti-inflammatory effect	Reduces chronic inflammation or subclinical infections
Endometrial repair	Promotes regeneration of the endometrial lining
Neuroendocrine modulation	Balances hypothalamic-pituitary-ovarian axis

Herbal oil/ decoction	Ayurvedic properties	Possible modern actions
Phala Ghrita	Garbhashaya shodhaka, Rasayana	Uterine tonic, antioxidant
Bala Taila	Vatahara, Balya	Anti-inflammatory, uterine rejuvenator
Ashokarishta	Rakta shodhaka, Stambhaka	Regulates estrogen, reduces bleeding