



Ayurvedic Management of Anovulatory Infertility: Linking *Artava Dushti*, *Agnimandya* and Modern Ovarian Dysfunction

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Abstract

Infertility is an important reproductive health problem affecting individuals and couples worldwide. Female infertility may arise from ovarian, tubal, uterine, endocrine and other factors. Among these, ovulatory dysfunction is a major and potentially treatable cause of female infertility. Polycystic ovary syndrome (PCOS) is one of the most common causes of anovulatory infertility and is characterized by menstrual irregularity, hyperandrogenism, disturbed follicular development and metabolic abnormalities. Contemporary management includes lifestyle modification, correction of metabolic abnormalities and pharmacological ovulation induction according to the underlying cause.

Ayurveda does not describe PCOS or anovulatory infertility as a single disease entity in the terminology of modern medicine. However, several classical concepts provide a framework for understanding disturbed reproductive function, including *Vandhyatva*, *Artava Dushti*, *Artava Kshaya*, *Nashtartava*, *Yonivyapada*, *Artavavaha Srotas*, *Agni*, *Ama*, *Dhatu Agni*, *Apana Vayu* and the physiological requirements for conception. The classical description of *Artava* emphasizes its importance in female reproductive physiology, while the concepts of impaired *Agni*, improper *Dhatu* nourishment and obstruction or dysfunction of *Artavavaha Srotas* provide a possible Ayurvedic model for menstrual and ovulatory disturbances.

The present review attempts to establish a conceptual bridge between Ayurvedic understanding of *Artava Dushti* and *Agnimandya* and contemporary concepts of ovarian dysfunction, particularly anovulation associated with PCOS and metabolic dysfunction. The proposed Ayurvedic approach emphasizes *Nidana Parivarjana*, *Agni Deepana* and *Ama Pachana* where indicated, correction of *Dosha* and *Srotas Dushti*, regulation of *Apana Vayu*, optimization of body weight and lifestyle, appropriate *Shamana* therapy, selected *Shodhana* procedures and *Rasayana* support. Modern diagnostic evaluation remains essential to exclude tubal, uterine, male-factor and endocrine causes of infertility and to identify patients requiring timely assisted reproductive or ovulation-induction treatment.

This review highlights the potential of an integrative Ayurvedic framework while emphasizing the need for high-quality clinical trials, standardized interventions and objective reproductive outcomes.

Keywords: Anovulatory infertility, *Artava Dushti*, *Artava Kshaya*, *Agnimandya*, *Vandhyatva*, PCOS, ovarian dysfunction, *Artavavaha Srotas*, *Apana Vayu*, Ayurveda.

1. Introduction

Infertility is defined as failure to achieve pregnancy after a specified period of regular unprotected intercourse and may result from female factors, male factors, combined factors or unexplained causes. According to the World Health Organization, approximately one in six people of reproductive age experience infertility during their lifetime. Female infertility may result from disorders of the ovaries, uterus, fallopian tubes or endocrine system. [1, 2]

Ovulatory dysfunction constitutes a major component of female infertility. It may present clinically as oligomenorrhoea, amenorrhoea, irregular menstrual cycles or, occasionally, apparently regular cycles with impaired ovulation. Polycystic ovary syndrome is a particularly important cause of anovulation and infertility. Current evidence-based guidelines recommend systematic evaluation

of infertility and individualized treatment according to the underlying cause. [3, 4]

PCOS is a complex endocrine-metabolic disorder characterized by varying combinations of hyperandrogenism, ovulatory dysfunction and polycystic ovarian morphology. The World Health Organization identifies PCOS as the most common cause of anovulation globally and a leading cause of infertility. It is also associated with metabolic abnormalities including insulin resistance, obesity and increased risk of type 2 diabetes. [5]

From an Ayurvedic perspective, reproductive health depends upon proper functioning of *Dosha*, *Dhatu*, *Agni*, *Srotas* and *Apana Vayu*. The concept of *Artava* occupies a central position in female reproductive physiology. Disturbance in the quantity, quality, timing or flow of *Artava* may interfere with conception.

2. Aim and Objectives

Aim

To critically review the Ayurvedic principles relevant to anovulatory infertility and explore their conceptual relationship with Artava Dushti, Agnimandya and modern ovarian dysfunction.

Objectives

- To review the Ayurvedic concept of Artava and its role in reproduction.
- To examine the concepts of Vandhyatva, Artava Dushti and Artava Kshaya.
- To analyze the possible role of Agnimandya and Ama in reproductive dysfunction.
- To correlate Ayurvedic concepts with contemporary understanding of anovulation and PCOS.
- To review Ayurvedic principles used in the management of anovulatory infertility.
- To identify current evidence gaps and future research priorities

3. Materials and Methods

A narrative literature review was undertaken using classical Ayurvedic texts and contemporary biomedical literature. Classical sources including *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Ashtanga Sangraha*, *Kashyapa Samhita*, *Sharangadhara Samhita* and relevant classical commentaries were considered for concepts related to Vandhyatva, Artava, Artava Dushti, Yonivyapada, Agni, Ama, Dhatu formation, Srotas and conception.

Contemporary literature was reviewed from PubMed, WHO resources, international PCOS guidelines and relevant Ayurvedic journals. Literature concerning PCOS, anovulation, infertility, metabolic dysfunction, ovulation induction and Ayurvedic approaches to reproductive disorders was considered.

4. Ayurvedic Concept of Female Reproductive Physiology

Ayurveda considers reproduction to be dependent upon the proper functioning of multiple physiological components rather than a single organ.

The classical description of conception emphasizes four important factors:

- **Ritu:** Appropriate fertile period
- **Kshetra:** Reproductive tract/uterine environment
- **Ambu:** Appropriate nourishment
- **Beeja:** Reproductive elements

Sushruta describes these factors as essential for successful conception. Disturbance in any of these components may compromise conception.^[6]

In the female, *Artava* is particularly important. The term *Artava* has been interpreted in different contexts to include menstrual manifestation as well as the reproductive element associated with ovulation.

Thus, *Artava* should not be understood merely as menstrual blood. Its physiological interpretation encompasses the broader reproductive function of the female reproductive system.

5. Concept of Vandhyatva

Infertility is described in Ayurveda under concepts including *Vandhyatva* and disorders affecting conception.

The ability to conceive depends upon the proper functioning

of *Ritu*, *Kshetra*, *Ambu* and *Beeja*. In addition, normal functioning of *Vata*, especially *Apana Vayu*, is important for reproductive physiology.

The classical framework therefore permits interpretation of infertility as a disorder involving one or more components of the reproductive process.

In contemporary medicine, infertility requires evaluation of ovulation, ovarian reserve when indicated, tubal patency, uterine factors and the male partner. A comprehensive fertility evaluation is recommended rather than attributing infertility automatically to the woman or to an isolated menstrual abnormality.^[3]

6. Artava and Artava Dushti

Artava is regarded as an important component of female reproductive physiology.

Ayurvedic literature describes abnormalities of *Artava* according to *Dosha* predominance and associated characteristics. The concept of *Artava Dushti* provides a broad framework for understanding disturbances in menstrual characteristics.

The classical descriptions include alterations in:

- Quantity
- Colour
- Consistency
- Timing
- Flow
- Pain
- Associated symptoms

Artava Kshaya is particularly relevant when discussing oligomenorrhoea, scanty menstruation and delayed menstruation. Contemporary Ayurvedic literature frequently correlates *Artava Kshaya* with menstrual irregularity and certain presentations of PCOS; however, this correlation is interpretive and should not be regarded as an exact biomedical equivalence.^[7-10]

Recent Ayurvedic reviews continue to discuss PCOS through concepts such as *Artava Kshaya*, *Artava Dushti*, *Vata-Kapha* involvement, *Agnimandya* and *Artavavaha Srotas Dushti*.

7. Artavavaha Srotas and Reproductive Dysfunction

Sushruta describes *Artavavaha Srotas* and identifies its roots in the reproductive structures. Disturbance of this *Srotas* is therefore considered relevant to disorders of *Artava*.

The concept of *Srotas* provides an important functional model in Ayurveda. Rather than representing merely an anatomical tube or duct, a *Srotas* may be understood as a functional pathway involved in transport, transformation and physiological activity.

In an ovulatory infertility, the clinical manifestations may include:

- Delayed menstruation
- Irregular cycles
- Scanty menstruation
- Amenorrhoea
- Failure of follicular maturation
- Infertility
- Associated metabolic abnormalities

An Ayurvedic interpretation may therefore consider dysfunction of *Artavavaha Srotas* in association with *Dosha*, *Agni*, *Dhatu* and *Apana Vayu* disturbances.

8. Agnimandya, Meda Dushti and Ovarian Dysfunction

The relationship between metabolic health and reproductive health is particularly evident in PCOS.

Modern medicine recognizes associations among:

Insulin resistance → hyperinsulinaemia → altered ovarian steroidogenesis → hyperandrogenism → follicular dysfunction → anovulation.

Obesity and metabolic dysfunction may further aggravate reproductive abnormalities.^[5, 12]

Ayurveda approaches a similar clinical phenotype through concepts such as:

- Agnimandya
- Ama
- Meda Dushti
- Sthoulya
- Kapha aggravation
- Srotorodha
- Vata obstruction/Avarana

Thus, in a patient with obesity, irregular menstruation, acne, hirsutism and anovulation, an Ayurvedic assessment may identify a Kapha-Meda dominant pathology with impaired Agni and disturbed Vata function.

However, Ayurvedic terminology should not be assumed to represent identical biochemical mechanisms. The value of the correlation lies in developing testable hypotheses and individualized therapeutic approaches.

9. Role of Apana Vayu

Apana Vayu is considered particularly important in the physiology of the pelvic organs.

It governs functions related to:

- Menstruation
- Defecation
- Micturition
- Ejaculation
- Parturition

Normal menstruation requires appropriate movement and functioning of Apana Vayu.

In anovulatory menstrual disorders, Vata Dushti may manifest through irregularity, delay, pain and abnormal movement.

Accordingly, *Vatanulomana* is an important therapeutic principle.

The management approach should not be interpreted as simply administering Vata-pacifying medicines to every patient. Dosha, Agni, Dhatu status and the specific Samprapti must be assessed before treatment

This model is particularly applicable to metabolic-anovulatory phenotypes such as PCOS, but it should not be applied universally to every case of anovulatory infertility

10. PCOS as a Major Cause of Anovulatory Infertility

PCOS is currently recognized as a common endocrine-metabolic disorder and a major cause of anovulatory infertility. The WHO estimates that PCOS affects approximately 10–13% of reproductive-aged women and identifies it as the most common cause of anovulation globally.^[5]

Major reproductive manifestations include:

- Oligo-ovulation or anovulation
- Irregular menstruation

- Infertility
- Hyperandrogenic manifestations
- Altered follicular development

Metabolic manifestations may include:

- Insulin resistance
- Obesity
- Dysglycaemia
- Increased risk of type 2 diabetes

The 2023 International Evidence-based Guideline recommends letrozole as the first-line pharmacological ovulation-induction treatment for infertile anovulatory women with PCOS when there are no other infertility factors.^[13]

This demonstrates why Ayurvedic management should be framed as an individualized complementary or integrative approach rather than as a substitute for established fertility care.

11. Ayurvedic Principles of Management

The management of anovulatory infertility should be based on the principle:

“Treat the Samprapti, not merely the symptom.”

The major therapeutic objectives may include:

- Nidana Parivarjana
- Agni Deepana
- Ama Pachana where indicated
- Dosha Shamana
- Srotoshodhana
- Vatanulomana
- Regulation of Artava
- Correction of metabolic imbalance
- Garbhashaya and reproductive tissue support
- Rasayana
- Appropriate Shodhana in selected patients
- Psychological and lifestyle support

12. Nidana Parivarjana

Nidana Parivarjana is fundamental to Ayurvedic management.

Potential contributing factors include:

- Excessive intake of energy-dense food
- Excessive Madhura, Guru and Snigdha Ahara
- Sedentary lifestyle
- Daytime sleeping where inappropriate
- Chronic stress
- Irregular sleep
- Excessive screen exposure and physical inactivity
- Repeated dietary indiscretion

The objective is not merely weight reduction but restoration of metabolic and physiological balance.

Modern PCOS guidelines similarly emphasize healthy lifestyle interventions for all women with PCOS, with individualized attention to diet, physical activity and behavioral strategies.^[13, 14]

13. Agni Deepana and Ama Pachana

When Agnimandya is clinically evident, *Deepana* and *Pachana* principles may be considered.

The therapeutic objective is to:

- Improve digestive capacity
- Correct impaired metabolism
- Reduce Ama

- Improve appetite and digestion
- Facilitate appropriate Dhatu nourishment

However, Deepana-Pachana therapy should not be given indiscriminately. Patients with Pitta predominance, severe weakness, pregnancy or other contraindications require appropriate clinical assessment.

14. Correction of Kapha-Meda Dushti

In patients with obesity, insulin resistance and Kapha-Meda predominance, management may emphasize:

- Langhana where appropriate
- Light and wholesome diet
- Exercise
- Metabolic correction
- Ruksha/Laghu dietary principles when suitable
- Avoidance of excessive Madhura-Guru-Snigdha food
- Medohara approaches according to individual constitution

This corresponds conceptually with modern evidence showing that metabolic health is closely related to reproductive outcomes in PCOS.

15. Vatanulomana and Apana Vayu Management.

Once obstruction and metabolic factors are addressed, normalization of Vata becomes important.

Possible principles include:

- Vatanulomana
- Appropriate Sneha
- Abhyanga
- Swedana where indicated
- Basti in selected patients
- Regulation of bowel habits
- Regular sleep and daily routine

The purpose is to restore physiological movement rather than simply suppress menstrual symptoms.

16. Shamana Chikitsa

Ayurvedic medicines may be selected according to the dominant Dosha and Samprapti.

Dravyas and formulations traditionally discussed in relation to menstrual and reproductive health include:

- Shatavari
- Ashoka
- Lodhra
- Shatapushpa
- Guduchi
- Haritaki
- Triphala
- Musta
- Kumari
- Varuna
- Kanchanara-containing formulations
- Other Artava-supportive formulations

However, the presence of a traditional indication does not establish clinical efficacy for anovulatory infertility.

A 2024 review of Ayurvedic herbal medicines in female reproductive health identified research involving several herbs, including Shatavari and Ashwagandha, but also emphasized limitations in the quality and methodological

rigor of available evidence.^[15]

Therefore, claims regarding restoration of ovulation or pregnancy should be based on clinical trial evidence rather than traditional use alone.

17. Shatavari and Reproductive Health

Shatavari (Asparagus racemosus) is traditionally regarded as an important female reproductive-health Rasayana.

Its Ayurvedic attributes have led to its use in:

- Female reproductive health
- Nourishment
- Rasayana
- Lactation support
- Menstrual disorders

Contemporary literature has investigated Shatavari and other Ayurvedic herbs in reproductive health, but evidence remains heterogeneous and varies in study quality.^[15]

Therefore, Shatavari may be discussed as a promising area of research rather than as an established treatment for anovulatory infertility.

18. Panchakarma in Anovulatory Infertility

Panchakarma may be considered in selected patients after proper assessment.

Therapeutic approaches discussed in Ayurvedic practice may include:

- **Vamana:** May be considered in appropriately selected Kapha-dominant conditions under expert supervision.
- **Virechana:** May be useful where Pitta-related or metabolic indications are present and the patient is suitable.
- **Basti:** Basti has particular importance in Vata disorders and may be considered when Apana Vayu dysfunction is prominent.
- **Uttarabasti:** Uttarabasti has traditionally been discussed in certain gynecological disorders. However, because it involves an invasive procedure, its use requires strict asepsis, appropriate indications, trained personnel and careful exclusion of pregnancy and infection.

The evidence base for Panchakarma specifically in anovulatory infertility remains insufficient to establish standardized protocols.

19. Rasayana Therapy

Rasayana is aimed at supporting tissue nourishment, strength and physiological resilience.

In reproductive disorders, Rasayana may be considered after correction of active Dosha and metabolic abnormalities.

Rasayana should therefore be considered part of a comprehensive therapeutic sequence rather than the first-line treatment for every infertile patient.

20. Diet and Lifestyle

Diet and lifestyle modification are central to both Ayurvedic and contemporary management.

Recommended Principles

- Fresh and wholesome food
- Adequate protein
- Appropriate dietary fibre
- Seasonal vegetables and fruits
- Controlled intake of refined carbohydrates

Lifestyle Practices

- Dinacharya
- Appropriate exercise
- Yoga
- Pranayama
- Meditation
- Adequate sleep
- Avoidance of prolonged sedentary behavior

Current PCOS guidelines support lifestyle intervention as a core component of management. ^[13, 14]

21. Yoga and Stress Management

Psychological stress can adversely affect reproductive health and may contribute to disturbances in hypothalamic-pituitary-ovarian function.

Yoga, meditation and breathing practices may therefore be incorporated as supportive measures.

However, they should be presented as adjunctive interventions and not as proven standalone treatments for anovulatory infertility.

22. Integrating Ayurvedic and Modern Assessment

An important principle of contemporary integrative practice is:

Ayurvedic diagnosis + modern diagnostic confirmation + individualized treatment + objective outcome assessment.

23. Evidence from Contemporary Ayurvedic Literature

Recent Ayurvedic publications demonstrate increasing interest in applying Artava Dushti, Artava Kshaya, Agnimandya and Vata-Kapha concepts to PCOS and infertility. A recent review specifically discusses PCOS-related infertility through Artava Dushti, Agni, Vata-Kapha and Vandhyatva. ^[16]

Another recent Ayurvedic review proposes Artava Kshaya as a conceptual correlate of some menstrual manifestations associated with PCOS and discusses Vata-Kapha predominance, Agni impairment and Artavavaha Srotas dysfunction. ^[17]

Recent literature also emphasizes Agni and metabolic transformation as important concepts for understanding female reproductive disorders. ^[11]

These publications are valuable for hypothesis generation, but they also demonstrate the need for better-designed clinical studies with standardized diagnostic criteria and objective reproductive outcomes

24. Discussion

The Ayurvedic concept of anovulatory infertility can be understood through a multidimensional framework involving Artava, Agni, Dosha, Dhatu, Srotas and Apana Vayu.

Artava is central to female reproductive physiology, while Vandhyatva represents the clinical consequence of impairment in the reproductive process. Artava Dushti and Artava Kshaya provide clinically useful descriptions of menstrual abnormalities. Agnimandya provides a broader metabolic framework, particularly relevant in patients with obesity and metabolic dysfunction.

Modern PCOS research demonstrates that reproductive and metabolic dysfunction are closely interconnected. This creates an interesting conceptual interface with the Ayurvedic emphasis on Agni and Meda.

Modern medicine has established effective treatments for

anovulatory infertility, particularly in PCOS. The 2023 international guideline recommends letrozole as the first-line pharmacological ovulation-induction treatment for infertile anovulatory women with PCOS when no other infertility factor is present. ^[13]

Consequently, responsible integrative practice should not delay evidence-based fertility treatment. Ayurveda may be investigated as an adjunctive approach, particularly for lifestyle, metabolic health, menstrual health and patient-centered long-term management.

25. Conclusion

Anovulatory infertility represents an important intersection between reproductive, metabolic and endocrine health. Ayurveda provides a comprehensive conceptual framework through the principles of *Artava*, *Vandhyatva*, *Artava Dushti*, *Artava Kshaya*, *Agni*, *Ama*, *Dhatu*, *Artavavaha Srotas* and *Apana Vayu*.

A proposed Ayurvedic model suggests that inappropriate diet and lifestyle may contribute to Agnimandya and metabolic disturbance, followed by Dosha-Dhatu imbalance and Artavavaha Srotas dysfunction, ultimately manifesting as disturbed Artava and impaired reproductive function. This framework has particular relevance when interpreting metabolic-anovulatory phenotypes such as PCOS.

Nevertheless, Ayurvedic concepts and modern biomedical mechanisms should be regarded as complementary explanatory frameworks rather than interchangeable diagnoses. Modern infertility evaluation and evidence-based fertility treatment remain essential.

Future research should move beyond case reports and menstrual improvement alone and evaluate standardized Ayurvedic interventions using objective measures such as ovulation, biochemical parameters, clinical pregnancy and live birth. Such research may establish a stronger evidence base for the role of Ayurveda in anovulatory infertility.

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