

"MANAGEMENT OF PRIMARY INFERTILITY WITH IMMATURE FOLLICLES USING GARLIC OIL NASYA: A CASE STUDY"

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ABSTRACT

Infertility, particularly due to anovulation, can be a challenging experience for individuals or couples trying to conceive. Anovulation can be caused by factors like hormonal imbalances, PCOS, thyroid disorders, stress, excessive exercise, and certain medical conditions. In Ayurveda, achieving Sreyasi Praja involves key components such as Ritu, Kshetra, Ambu, and Beeja, with the ovum (Beeja) being most important. PCOS disrupts the H.P.O. axis, leading to anovulation in 70-73% of affected women. Tridosha plays a role in ovulation, with Vata, Pitta, and Kapha influencing cell division, follicle maturation, and growth. Nasya Karma, an Ayurvedic treatment, stimulates GnRH secretion and promotes ovulation. Remedies like garlic, which said Bijashuddhikara in Ayurveda is rich in allicin, selenium, and vitamins, help regulate FSH levels, improve blood circulation, and support ovulation. **Methods:** In this case study, a 30-year-old woman, married for 8 years, presented to the Gynecology OPD with complaints of infertility for 4-5 years and abdominal pain for 4-6 months, along with a history of recurrent hemorrhagic ovarian cysts. Her menstrual cycles were regular, and ultrasonography revealed polycystic ovaries with a hemorrhagic cyst measuring 2.8 × 3.5 cm. She had previously undergone a two-month course of letrozole therapy for ovulation induction at a conventional hospital but was not satisfied with the outcome. Consequently, she sought alternative management at our hospital and opted for Ayurvedic treatment for her fertility concerns, wherein she underwent a therapeutic procedure, *Nasyakarma*, using Nasulate Garlic Nasya. **Result:** Within a period of three months, the Ayurvedic treatment resulted in successful conception. **Discussion:** The present study emphasizes the crucial contribution of Ayurveda in obtaining positive results in ovulation induction.

Key words: PCOS, Anovulation, Garlic, *Nasyakarma*, Ayurveda

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INTRODUCTION

Infertility not only poses a threat to physical health but also significantly affects the psychological and social well-being of couples. Achieving Sreyasi Praja involves the integral components known as Garbhsambhava Samagri, which include Ritu, Kshetra, Ambu, and Beeja. Among these, Beeja is the most essential, often regarded as Antahpushpa, referring to the ovum. Several factors, such as Dushtartava, Artava Nasha, and Nastartva, can lead to anovulation. One of the main causes of anovulation is Polycystic Ovary Syndrome (PCOS), which disrupts the H.P.O. axis, causing anovulatory menstrual cycles.^[1] Anovulation can be classified as Beeja Dushti. Depending on diagnostic criteria 6% - 10% of reproductive aged women are affected with PCOS among which 70% - 73% females face anovulation^[2]. Also the ovarian factor contributes to 15-25% of infertility cases and is the second most common cause. Tridosha plays a

significant role in the processes involved in ovulation. Vata is responsible for the proliferation and division of cells and the rupture of follicles. Pitta aids in the maturation of the Graafian follicle through its Paka Karma function. Kapha provides nutrition for cell growth. The ovulatory process is influenced by the aggravation of all three Doshas, particularly Vata Dosha.

Nasya is considered a gateway to the Shira (head).^[3] Nasya Karma, the practice of administering medicines such as Kwatha, Swarasa, Kalka, and Sneha through the nasal route, is mentioned in Ayurveda for the treatment of infertility, especially due to Abeejotsarga. Nasya stimulates the olfactory nerves and the limbic system, which in turn activates the hypothalamus, stimulating GnRH neurons. This can help regulate GnRH pulsatile secretion, triggering proper gonadotropin secretion and facilitating ovulation.^[4]

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Ayurveda offers various drugs and formulations for treating artavavaha strotodushti, bijshuddhi, artavshuddhi, vandhyatva, and symptoms of PCOS. Garlic is one such remedy. It is considered a Bijshudhikar in the Rasayanavidhi Adhyaya of Ashtang Sangraha Uttarsthana.^[5]

Known for its polyphenolic and organosulfur properties, garlic has been used as a nutraceutical spice since ancient times. Garlic is rich in selenium, allicin, vitamin C, vitamin B6, and manganese. Allicin in garlic enhances blood circulation to the sexual organs in both men and women. Additionally, magnesium helps regulate FSH levels, and vitamin B6 is highly beneficial for enhancing ovulation.^[6,7]

So nasya can be appropriate shodhana procedure to deal with the endocrine disorders where Hypothalamus or Pituitary glands are involved. Hence Nasulate Garlic Nasya is considered for the present study.

CASE STUDY

A 30-year-old female patient sought consultation at the Gynaecology Outpatient Department (OPD) due to her inability to achieve pregnancy for the past 4-5 years and frequent pain in abdomen since from last 4-6 months with H/O recurrent haemorrhagic cysts. Her menstrual cycles were regular, and she had provided her ultrasound (USG) report and several blood test results during her visit. Upon examination, she was diagnosed with the presence of multiple small follicles in ovaries i.e Polycystic pattern ovaries with haemorrhagic cyst of size 2.8cm x 3.5cm. Prior to seeking Ayurvedic treatment at our hospital, she had already pursued medical advice from an allopathic (conventional) hospital and had undergone two months course of Tab. letrozole 2.5 mg OD for 5 Days induction therapy to stimulate ovulation for Temp. -97.6°F

Per abdomen - no tenderness and no organomegaly was detected.

Physical examination

Ashtavidha Pariksha: Table No.1

Nadi	Vata -Kaphaj
Shabda	Samyak
Mala	Sama
Sparsha	Sheetal
Mutra	Samyak
Mutra	Pravariti
Drika	Samanya
Jihwa	Sama
Aakriti	Madhyam

many times. However, she was not satisfied with the results of that treatment. Consequently, she turned to our hospital in search of Ayurvedic management for her fertility concerns.

Marital status: Married since 8 years

Menstrual History:

Duration of menstrual cycle was of 4 days with regular interval of 28-32 days with hypomenorrhea.

Obstetric History: G₂P₁A₁L₀D₁

G₁: She had IUD in 8th month and delivered through induction of labour in 2018.

G₂: She had spontaneous abortion at one and half month gestation in 2020.

Family History: No relevant family history

Past surgical history: There was no significant history.

Personal history: Appetite-normal, sleep -8 hours, micturition-normal, bowel were clear.

Investigation:

Hb- 10.3gm%,

Urine R/M - Normal

Thyroid Profile – T3 - 80 ng/dL

T4 - 5.5 mcg/dL

TSH- 3.8 mIU/L

Prolactin – 18ng/ml

USG scan - multiple small follicles in both ovaries i.e Polycystic pattern with haemorrhagic cyst of size 2.8cm x 3.5cm.

HSG – Normal

Husband semen analysis - Normal

LH - 8.73MIU/ml

FSH - 4.04MIU/ml

Clinical findings

General examinations

Built – Normal

Weight - 56kg

Height - 150cm

Pulse rate -

80/min

B.P. - 120 /80mm of hg

Respiration rate

- 20/min

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Dashvidha Pariksha : Table No. 2

Prakriti (nature)	Vata-kaphaj
Sara (Purest body tissue)	Madhyama (medium)
Samhanana (Body compact)	Madhyama (medium)
Pramana (Body proportion)	Madhyama (medium)
Satmya (homologation)	Madhyama (medium)
Satva (mental strength)	Madhyama (medium)
Vaya (age)	Yuvati
Vyayamshakti (to carry on physical activities)	Madhyama (least capability)
Abhyavarana Shakti	Madhyama (least capability)
Jarana shakti	Madhyama (least capability)

Systemic Examination

CVS: Heart sounds (S1, S2): normal
 Respiratory system: normal bilateral air entry, no added sounds.
 No abnormality found on other system

Per-vaginal examination

Anteverted freely mobile normal size uterus.

Per-speculum examination

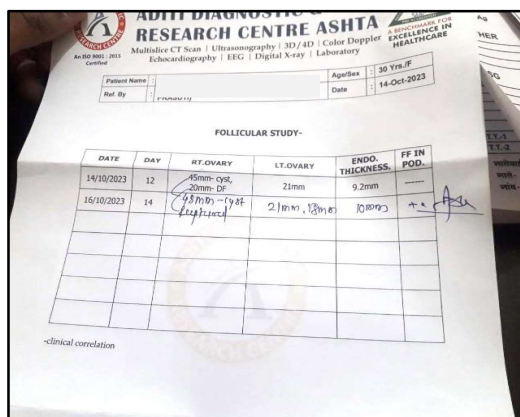
No e/o cervical erosion or Nabothian cysts or any cervical growth

TREATMENT SCHEDULE

The treatment protocol consisted of administration of *Nasya* using “Nasulate Garlic Nasya,” with a dosage of 2 drops twice daily, administered 15 minutes prior to morning and evening meals, for two consecutive cycles. The therapy was given from the cessation of menstruation until ovulation, approximately from day 14 up to a maximum of 21 days of the cycle.

RESULT

Within a short duration of three months, the Ayurvedic therapeutic interventions resulted in successful ovulation and subsequent conception.



DISCUSSION

Ovulation is a critical event in the female reproductive cycle, and its impairment can markedly influence fertility. Identifying the etiological factors underlying ovulatory dysfunction is essential for understanding barriers

to conception. Common contributors include hormonal imbalances, psychological stress, obesity, and disorders such as polycystic ovary syndrome (PCOS). Timely management of these factors is important to improve the chances of successful conception. In Ayurveda, the female ovum is termed *Stree beeja*, and ovulation is described as

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Beejotsarga. Various Ayurvedic interventions, including *Nasya*, are advocated in the management of infertility associated with anovulation.

MODE OF ACTION OF NASYA

In the practice of *Nasya Karma*, the way drugs work can be understood as follows:

The drug enters the vital 'Sringaataka Marma' (a critical point) and from there, they disperse into various channels known as 'Srotasas.' It's noteworthy that Vriddha Vagbhata was the pioneer in explaining how *Nasya Karma* functions.

The action of *Nasya Karma* can be described in the following ways^[8]:

- Absorption into General Blood Circulation: The drugs are absorbed and enter the bloodstream, distributing throughout the body.
- Direct Infiltration into Brain's Venous Sinuses: Some drugs directly pool into the venous sinuses of the brain through the inferior ophthalmic vein.
- Direct Absorption into Cerebrospinal Fluid: In certain cases, drugs are absorbed directly into the cerebrospinal fluid, which surrounds the brain and spinal cord.

The peripheral olfactory nerves are connected to the limbic system, including the hypothalamus, which plays a vital role in regulating human behaviour and hormone secretion. Stimulating these olfactory nerves can activate specific cells in the hypothalamus and amygdala. During *Nasya*

Introduction of *Lasuna*^[12]: Table No. 3

English name	Garlic
Latin name	Allium sativum
Family	Liliaceae
Prayojyanga	Rhizome
Guna	Snigdha, Tikshna, Picchila, Guru
Rasa	Katu
Vipak	Katu
Veerya	Ushna
Paryaya	Lasuna, Rasona, Yavanesta, Ugragandha.
Karma	Kaphaghna, Vatshamak, Raktapittavardhaka, Shukrajanana
Chemical composition	Volatile oil containing Allyl disulphide and Diallyl disulphide, Allin, Allicin, Mucilage, Albumin

Review from a modern perspective:

Garlic is a polyphenolic and organosulfer enrich nutraceutical spice consumed since ancient times. It is rich in selenium, allicin, vit C, vit B6, and manganese. It also contains considerable amount of calcium, phosphorous, iron, and vit B complex. Selenium, vit C and vit B6 found in garlic eliminate chromosomal defects. Allicin in Garlic boosts the blood flow to the sexual organs in both men and female. Magnesium controls the FHS. Garlic is rich in Vit B6 which aids in ovulation. All together are highly beneficial to enhance ovulation.

LASUN TAILA^[13]

Karma, it is beneficial to position the head lower and retain the medicine in the nasopharynx to allow for optimal drug absorption. This position provides sufficient time for the drug to be absorbed locally. Substances that are soluble in liquids are more likely to passively absorb through the cell lining membranes. Additionally, applying massage or local heat (fomentation) can further enhance drug absorption.

This entire process is believed to stimulate the Hypothalamus-Pituitary-Ovarian (H-PO) axis, which activates the hypothalamus and triggers the release of GnRH neurons. This can help regulate the pulsatile secretion of GnRH, leading to proper gonadotropin secretion and eventual ovulation. When the HPO axis is dysfunctional, it can prevent the release of mature eggs from the ovaries, resulting in anovulation.

GARLIC

Lasuna have *snigdha*, *ushna*, *tiksna*, *katu*, *picchila*, *guru* *gunas* hence it act as a *shukrajanana*, *vrushya*, *balya* and *swara-varmakara*. It also helps in faster healing of bone fracture.^[9] It is also explained as *Bijashuddhikara* in *Rasayana vidhi adhyaya* of *Ashtang Sangraha uttarstana*.^[10] In *Kashyapa samhita* it is stated that, the person who use to consumed *Lasuna* will not get affected with any pelvic disease and never faces *Vandyatva*.^[11]

- *Lasuna taila* was prepared according to the reference of *Sharangdhara Samhitha* (*Madhyam Khanda Chapter 9*)
- Ingredients:
 1. *Lasuna Kalka* - 1 part
 2. *Tila taila* as a base oil - 4 parts
 3. Water - 16 parts
- Mixture was heated on low flame till *taila siddhi lakshana* appears.
- *Taila* filled in a suitable container without any propellant.

CONCLUSION

Ayurveda offers a potential remedy for anovulatory infertility that has not responded to allopathic treatments like ovulation induction. Ayurvedic approaches aim to rebalance the body's natural rhythms and address underlying issues. While anecdotal successes exist, substantiating the effectiveness of Ayurvedic methods requires extensive group studies. Furthermore, therapies like Nasya, which involve the nasal delivery of herbal treatments, are thought to aid in restoring hormonal equilibrium.

SUMMARY

Ayurveda offers a promising approach to treating anovulatory infertility, warranting further research to confirm its effectiveness in conjunction with conventional medical methods.

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