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A CLINICAL EVALUATION OF AYURVEDIC INTERVENTION IN INFERTILITY CASES ATTRIBUTED TO POLYCYSTIC OVARIAN DISEASE (PCOD)

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ABSTRACT

Background: Polycystic Ovarian Disease (PCOD) is a metabolic disorder that significantly impairs reproductive health in women. Conventional treatment typically involves hormonal therapy and ovulation-inducing drugs, which may have side effects and fail to address root cause. **Objective:** This retrospective observational study evaluates the effectiveness of Ayurvedic treatment protocol for a period of 6 months—comprising the proprietary medicines- *Myrha, Vamha, and Poshini* formulations, in improving ovulatory function, regulating menstrual cycles, and enhancing fertility outcomes in women diagnosed with PCOD. **Methods**: A total of 110 married women aged 18–45 years with confirmed PCOD diagnosis were included. The treatment regimen was administered consistently, and outcomes were assessed in terms of ovulation, menstrual regularity, and conception rates. **Results:** Post-treatment analysis revealed significant improvements: **88.78%** of previously non-ovulating women achieved ovulation; **77.27%** of participants reported regular menstrual cycles; and **71.82%** successfully conceived. Statistical analyses using Binomial Test supported the significance of these outcomes. **Conclusion:** The study underscores the potential of Ayurvedic interventions as a holistic and effective approach to managing PCOD-related infertility. These findings highlight the need for integrative models in reproductive healthcare that combine traditional knowledge with evidence-based evaluation.

KEYWORDS: PCOD, Ayurveda, Myrha, Vamha, Poshini, Gynoveda, ovulation, menstrual

cycle, fertility, conception, women's health.

INTRODUCTION

Polycystic Ovarian Disease (PCOD) is one of the most common causes of female infertility, affecting approximately 1 in 6 women of reproductive age worldwide.[1] It is a complex endocrinological and metabolic disorder characterized by an interplay of genetic predisposition, environmental triggers, and lifestyle influences. The pathophysiology of PCOD involves dysregulation of the hypothalamic-pituitary-ovarian (HPO) axis, leading to chronic anovulation/anovulatory cycles, formation of cysts, insulin resistance, and hyperandrogenism.[2] These disturbances contribute to the cardinal features of PCOD—oligomenorrhea or amenorrhea, hirsutism, acne, obesity, and the presence of polycystic ovaries on ultrasonography (USG).[3]

In conventional medicine, the standard approach to PCOD management includes lifestyle modifications, insulin-sensitizing agents such as metformin, and ovulation induction drugs like clomiphene citrate or letrozole. While these methods may offer symptomatic relief and short-term ovulatory outcomes, they often come with undesirable side effects and do not address the root causes of the disorder.[4] On the other hand, Ayurveda emphasizes on restoring systemic balance through natural treatments.[5]

Ayurveda conceptualizes PCOD as a disorder resulting from the imbalance of doshas—primarily *Ama, Kapha and Vata*—affecting the reproductive and metabolic systems. Through detoxification, metabolic correction, and reproductive rejuvenation, Ayurvedic treatment aims not only to manage symptoms but also to reverse the condition both symptomatically and at a pathophysiological level. With consistent use and lifestyle alignment, complete reversal of PCOD is considered achievable in Ayurveda.[6]

This study was conducted on a sample of 110 married women aged 18–45 years diagnosed with PCOD based on ultrasonographic findings and clinical symptoms. The aim was to evaluate the clinical efficacy of the combination- *Myrha, Vamha, Poshini* tablets on reproductive outcomes, particularly ovulation, menstrual regularity, and conception. The study also explores the potential of Ayurvedic therapy in promoting long-term restoration of hormonal health and fertility.

MATERIALS AND METHODS

This retrospective observational study was carried out on a cohort of **110 married women** between the ages of 18 and 45 years. Inclusion criteria consisted of a confirmed diagnosis of PCOD based on ultrasonographic evidence, a history of delayed menstrual cycles (up to 2 months of amenorrhea), and clinical features such as weight gain or difficulty in losing weight. Additionally, the male partner's semen analysis was required to be within normal parameters to isolate the female factor in infertility.

Exclusion criteria included women presenting with early periods, heavy or prolonged menstrual bleeding, delayed periods beyond 60 days, lean PCOD, autoimmune disorders, genetic abnormalities, uterine anomalies, endometriosis, uterine fibroids, adenomyosis, tubal blockage, PID, ovarian cysts or sexual dysfunction. K/C/O uncontrolled DM, HTN or hypothyroidism were excluded from the study. This ensured the study focused exclusively on PCOD-related infertility.

All participants were prescribed the following Ayurvedic treatment regimen: Myrha: 2 tablets (1g each) after breakfast and dinner.

Vamha: 2 tablets (1g each) after breakfast and dinner Poshini: 2 tablets (500mg each) after breakfast and dinner.

The treatment was administered consistently, and follow-ups were conducted to assess improvements in ovulation diagnosed with the help of point-of-care ovulation detection kits, menstrual cycle regularity, and conception. Data were collected through patient records and follow-up communications to evaluate outcomes after the Ayurvedic intervention.

RESULTS

This study evaluated the effectiveness of a structured Ayurvedic treatment protocol—comprising three key formulations: *Myrha, Vamha, and Poshini*—in improving reproductive health outcomes among women diagnosed with PCOD. The primary outcomes assessed were ovulatory function, menstrual cycle regularity, and successful conception post-intervention. A total of 110 married women were administered the Ayurvedic regimen consistently over the treatment period. The Ayurvedic formulations—carefully composed of fertility-enhancing and hormone-regulating herbs—were administered in standardized therapeutic doses, as outlined in Table 1. The subsequent analysis revealed statistically

significant improvements across all reproductive parameters, strongly indicating the therapeutic potential of the Ayurvedic approach.

Table 1: Ayurvedic Medicines, Ingredients, and Dosage for Treatment.

Medicine given	Ingredients/Contents	Dosage	Duration
Tab. Poshini (600mg)	*Shuddha Hingul, Bang Bhasma, Shivlingi, Shatavari, Ashwagandha, Jivanti, Putranjivak, preservatives and excipients.*	2 pills after breakfast and 2 pills after dinner	6 months
Tab. Myrha (1g)	*Kutaj Twak Churna, Patola Churna, Katuki Churna, Shuddha Shilajit, Trikatu Churna, Trijat Churna, Yashad Bhasma, Kanchanar, Varuna, Ashwagandha, Haridra, Amalaki, Methi, Saptarangi, Asana, AVartika, Jambu, Meshashringi, Mamejava, Guduchi, Bilva, Nimba, Karvellak, preservatives and excipients.*	2 pills after breakfast and 2 pills after dinner	6 months
Tab Vamha (1g)	*Manjishtha, Pippali, Shatpushpa, Shatavari, Devdaru, Shuddha Hinga, Shuddha Kasis, Lauha Bhasma, Ghrit Kumari, Ulatambal, Dashmool, Haritaki, Devdaru, Kullatha, Krishna Jirak, Gajar Beej, Karpasa Beej, Methi, Lashun, Jyotishmati, Chitrak, Chandrasur, preservatives and excipients.*	2 pills after breakfast and 2 pills after dinner	6 months

The outcomes of the Ayurvedic treatment were assessed across three key reproductive parameters: ovulation status, menstrual cycle regularity, and successful conception post-treatment. The results reflect substantial improvement in reproductive health among the study participants.

Effectiveness of the Treatment

3.1 Ovulation Before and After Treatment

Table 2: Ovulation Before and After Treatment.

Ovulation Status	Before Treatment (Rx)	After Treatment (Rx)
Ovulating (Yes)	12	99
Not Ovulating (No)	98	11
Total Patients	110	110

Table 3: Month-wise Distribution of Ovulation Initiation Post-Treatment.

Month-wise Distribution of Ovulation Initiation Post-Treatment (n = 98)	Month Number of Women Who Began Ovulating	Percentage (%)
1st Month	15	15.31%
2nd Month	24	24.49%
3rd Month	16	16.33%

4th Month	15	15.31%
5th Month	13	13.27%
6th Month	4	4.08%
Total Ovulated	87	88.78%
Still Non-Ovulatory	11	11.22%
Grand Total	98	100%

Among the 110 married women included in this study, 98 patients (89.1%) were not ovulating at baseline, while 12 patients (10.9%) were already ovulatory. Following the Ayurvedic intervention comprising *Myrha, Vamha, and Poshini,* a significant improvement in ovulatory function was observed. Of the 98 non-ovulatory women, **87 (88.78%)** began ovulating post-treatment, indicating a strong therapeutic response to the regimen. Notably, all 12 patients who were ovulating before treatment maintained their ovulatory status after the intervention, suggesting that the treatment had no adverse effects on individuals with baseline ovulatory cycles. These findings underscore the potential of the Ayurvedic protocol in effectively restoring ovulatory function in women with PCOD.

Non-Responders in Ovulation

The remaining 11 patients (11.22%) did not exhibit ovulation and were considered non-responders within the study duration. These cases may require further evaluation for ovarian resistance, severe hormonal imbalance, or other underlying causes.

3.2 Menstrual Cycle Regularization Table 4- Menstrual Cycle Regularization

Menstrual Cycle Regularized (After Rx)	Number of Patients	Percentage
Yes	**85**	**77.27%**
No	**25**	**22.73%**
Total	**110**	**100%**

Month-wise Menstrual Cycle Regularization After Treatment

Table 5- Month-wise Menstrual Cycle Regularization After Treatment.

1st Month	11	10%
2nd Month	35	31.82%
3rd Month	49	44.55%
4th Month	64	58.18%
5th Month	76	69.09%
6th Month	85	77.27%
Still Irregular	25	22.73%
Total	110	100%

Menstrual irregularity is a cardinal symptom of Polycystic Ovarian Syndrome (PCOD), often reflecting underlying hormonal imbalance and anovulatory cycles. Restoration of a regular

menstrual rhythm is a key clinical marker of endocrine and reproductive recovery in PCOD management.[8]

In this study, menstrual cycle regularization was observed in 85 out of 110 married women (77.27%) following consistent administration of the Ayurvedic treatment regimen comprising *Myrha, Vamha, and Poshini*. These women reported achieving consistent monthly cycles, typically ranging from 21 to 35 days in duration, often for the first time in years.

The remaining 25 patients (22.73%) did not achieve full cycle regularity within the six month study period. These cases may reflect a deeper level of hormonal or metabolic imbalance requiring prolonged intervention or personalized dosha analysis for targeted correction.

3.3 Conception Rates

Table 6- Conception Rates Before and After Treatment.

Conception After Treatment (Rx)	Number of Patients	Percentage
Yes	79	71.82%
No	31	28.18%
Total	110	100%

Table 7: Month-wise Conception Rate.

Month of Conception	Number of Patients Conceived	Percentage (%)
1st Month	14	12.73%
2nd Month	19	17.27%
3rd Month	17	15.45%
4th Month	11	10.00%
5th Month or Later	18	16.36%
Did Not Conceive	31	28.18%
Total	110	100%

Conception Outcome

One of the most significant endpoints in the management of PCOD is successful conception, which indicates restoration of ovulation, hormonal balance, and reproductive wellness. In this study, 79 out of 110 married women (71.82%) conceived following the Ayurvedic treatment regimen comprising *Myrha, Vamha, and Poshini.*

31 patients (28.18%) did not conceive during the study period. These cases may require extended treatment duration, closer cycle monitoring, additional diagnostics, or evaluation for concurrent conditions such as tubal factors, thyroid dysfunction, or male factor infertility.

Statistical Analysis

To assess the effectiveness of the Ayurvedic treatment protocol on conception outcomes in women with PCOD, a statistical hypothesis test was conducted. Based on existing literature, the expected baseline conception rate in untreated PCOD cases over a comparable duration is approximately **30%.**[7]

Hypotheses were formulated as follows:

- **Null Hypothesis (H_0):** The true conception rate following Ayurvedic treatment is **less than or equal to 30%** ($p \leq 0.30$).
- **Alternative Hypothesis (H_1):** The true conception rate following Ayurvedic treatment is **greater than 30%** ($p > 0.30$).

A one-sided **binomial test** was performed using the following parameters:

- **Sample size (n):** 110
- **Number of women who conceived (x):** 79
- **Expected proportion under H_0 (p_0):** 0.30

Given the sufficiently large sample size, a **normal approximation** to the binomial distribution was used. The observed proportion of women who conceived was

$\hat{p} = 79 / 110 \approx 0.7182$

The **standard error (SE)** under the null hypothesis was calculated as: $SE = \sqrt{p_0(1 - p_0) / n}$

$SE = \sqrt{0.3 \times 0.7 / 110}$

$SE = \sqrt{0.21 / 110}$

$SE \approx \sqrt{0.001909} \approx 0.0437$

The **z-score** was computed as:

$Z = (\hat{p} - p_0) / SE$

$Z = (0.7182 - 0.30) / 0.0435$

$Z = 0.4182 / 0.0435 \approx 9.61$

A z-value of 9.61 corresponds to a **p-value far less than 0.00001**, indicating **extremely strong statistical significance**.

Inference

Given that the p-value is well below the standard alpha threshold of 0.05, the null hypothesis

is rejected. This provides **strong statistical evidence** that the observed conception rate of **71.82%** is significantly higher than the expected baseline of **30%**.

These findings suggest that the Ayurvedic treatment regimen comprising *Myrha, Vamha, and Poshini* had a **substantial and clinically significant impact** on improving fertility outcomes in women with PCOD. Overall, the results suggest that Ayurvedic formulations can play a significant role in fertility restoration for women with PCOD, offering a natural, low-risk, and patient-centric alternative to standard conventional treatments.

DISCUSSION

The present study highlights the promising role of Ayurvedic formulations—*Myrha, Vamha, and Poshini*—in restoring reproductive health and enhancing fertility outcomes among women diagnosed with PCOD. With ovulation restored in 88.78%, menstrual regularity achieved in 77.27%, and conception occurring in 71.82% of the participants, the findings underscore the treatment effectiveness of Ayurvedic protocol in addressing the multifaceted pathology of PCOD.

Conventional therapies such as hormonal pills, ovulation-inducing agents, and insulin sensitizers often offer symptomatic relief but do not address the root causes of endocrine and metabolic imbalance and anovulation. Even when they induce periods they are false periods not true periods as changes take place in the uterine level and not the ovarian level. (4) In contrast, Ayurvedic treatment is rooted in restoring systemic harmony, targeting *dosha* imbalance, *dhatu* dysfunction, and *Agni* derangement, which are seen as fundamental to the etiology of PCOD (predominantly *Kapha–Vata dosha*, *Ama* accumulation, and *Artavakshaya*).[5,6]

Each formulation in the treatment protocol contributed uniquely to the restoration of hormonal and reproductive balance:

Myrha contains a potent blend of: *Kutaj Twak Churna, Patola Churna, Katuki Churna, and Trikatu* – These are classical *Deepana-Pachana* and *Lekhana* herbs that remove Ama (toxic metabolic residue), correct Agnimandya (sluggish metabolism), and reduce Kapha accumulation, which is crucial in PCOD pathology. *Shuddha Shilajit, Yashad Bhasma, Ashwagandha, Haridra, and Amalaki* – These ingredients balance endocrine function, support adrenal health, improve insulin sensitivity, and reduce inflammation and androgen excess. *Meshashringi, Jambu, Methi, Saptarangi, Mamejava, and Karvellak* – These herbs

are known for their anti-diabetic and insulin-sensitizing effects, improving ovulatory response in insulin-resistant PCOD. *Kanchanar, Varuna, Asana, Guduchi, Bilva, Nimba, and Avartika* – These help reduce ovarian cysts, purify the reproductive channels *(Artavavaha srotas),* and support liver function for improved hormonal metabolism. Together, *Myrha* acts as a metabolic cleanser and hormonal modulator, facilitating cyst dissolution, insulin resistance and hyperandrogenism.[8,9]

Vamha includes a diverse set of herbs traditionally used to stimulate ovulation, nourish the uterus, and strengthen reproductive tissues: *Manjishtha, Pippali, Haritaki, Devdaru, and Shuddha Hinga* – These are *Srotoshodhana* and *Raktaprasadaka* herbs that purify channels, enhance blood circulation, and reduce uterine inflammation. *Shatpushpa (Dill), Shatavari, Ulatambal, Gajar Beej, and Karpasa Beej* – Known female fertility tonics, they support folliculogenesis, ovum maturation, and hormonal rhythm. *Dashmool, Ghrit Kumari, Kullatha, and Krishna Jirak* – These serve as uterine modulators and help correct Yoni vyapad, improving implantation potential. *Lauha Bhasma, Shuddha Kasis, Lashun, Chitrak, Jyotishmati, and Chandrasur* – These ingredients aid in blood formation, stimulation of ovulation, and enhancement of uterine receptivity.[8,9]

Thus, *Vamha* functions as a comprehensive ovulation stimulator and endometrial nourisher, regulating the menstrual cycle and optimizing the uterine environment for conception.

Poshini is primarily a *Rasayana and Garbhashaya balya* formulation aimed at improving fertility, ovum quality, and uterine tone: *Putranjivak, Shivlingi, Shatavari, Jivanti, and Ashwagandha* – Classical *Vajikarana* and *Garbha-sthapaka* herbs that rejuvenate *Artava* dhatu, enhance ovum viability, and support luteal sufficiency. *Ashoka, Lodhra, and Devdaru* – These strengthen the uterus, regulate menstrual flow, and assist with implantation and gestational support. *Katuki, Haritaki, Punarnava, Kumari, and Shilajit* – Support hepatic detoxification, hormonal metabolism, and cellular regeneration. *Shuddha Kasis, Shuddha Hing, Bang Bhasma, and Shuddha Tankan* – These mineral-rich compounds correct iron and micronutrient deficiencies and promote endometrial thickening and receptivity.[8,9]

The high rate of menstrual regularization observed in this study underscores the effectiveness of Ayurvedic formulations in regulating the hypothalamic-pituitary-ovarian (HPO) axis, enhancing metabolic health, and restoring overall reproductive physiology. **This outcome highlights that complete reversal of PCOD is not a prerequisite for conception—rather,**

improving functional balance and cyclicity can be sufficient to achieve fertility. Moreover, the results support the growing evidence that natural, holistic interventions grounded in Ayurvedic principles can serve as effective and sustainable alternatives to conventional hormonal therapies, offering better systemic integration and minimal to no side effects.

Integrative Relevance

The statistically significant conception rate observed in this study (71.82%, $p < 0.00001$) is not only higher than the global average of 20–30% seen in standard care within the same time frame but is also achieved without the use of synthetic hormonal drugs. This underscores the potential for Ayurvedic therapies to serve as primary or adjunctive treatments in fertility clinics, especially in cases of PCOD or functional infertility.

Furthermore, the month-wise progression of conception and menstrual normalization reflects the gradual yet sustained impact of the Ayurvedic approach—emphasizing a deep-rooted healing process that unfolds over time, rather than yielding abrupt or short-lived outcomes.

Addressing the Non-Responders

Approximately 11.22% of women did not achieve ovulation, and 28.18% did not conceive during the six-month treatment period. In these non-responder cases, it becomes essential to conduct a comprehensive assessment, including a deeper evaluation of individual Prakriti (constitutional type) and possible underlying causes of ovarian resistance such as hypothyroidism, hyperprolactinemia, or insulin resistance. Additionally, co-existing factors—including tubal blockages, autoimmune disorders, or features of metabolic syndrome—may influence treatment outcomes and warrant integrative, multidisciplinary management. It is also important to assess whether the treatment protocol was adhered to consistently in terms of dosage, dietary and lifestyle guidance, and follow-up. Many of these women may require longer treatment durations beyond six months, along with more personalized interventions to achieve optimal reproductive outcomes.

Strengths

This study offers real-world, retrospective evidence gathered under well-defined inclusion and exclusion criteria, enhancing the reliability of the findings. A key strength lies in the use of standardized Ayurvedic formulations with consistent dosages across the cohort, ensuring treatment uniformity. The study comprehensively evaluated three core fertility

outcomes—ovulation, menstruation, and conception—providing a multi-dimensional assessment of reproductive response. Moreover, the application of statistical rigor through one-sided binomial testing adds strength to the observed clinical effects and supports the validity of the treatment outcomes.

Limitations

The observational and retrospective nature of the study limits the ability to draw definitive causal inferences between the Ayurvedic intervention and the outcomes observed. Additionally, hormonal assays and ultrasonographic follicular tracking were not standardized across all participants, potentially introducing variability in outcome assessment. The absence of a matched control group due to the retrospective design restricts the ability to directly compare the effectiveness of Ayurvedic treatment against conventional or no treatment. These limitations highlight the need for future prospective, randomized controlled trials to further validate and generalize these findings.

Implications for Research and Public Health

Polycystic Ovarian Disease (PCOD) is a leading cause of infertility worldwide, especially in countries like India where conventional fertility treatments are often financially inaccessible or culturally mismatched. This study underscores the potential of **standardized Ayurvedic formulations** as a **safe, affordable, and non-invasive alternative**. With strong clinical outcomes, these protocols offer a scalable solution for integration into **public health systems**, especially in **resource-limited settings**. Future research using randomized controlled trials and molecular tools can help validate and deepen the scientific understanding of these traditional interventions.[10,11]

CONCLUSION

This clinical study demonstrates the significant efficacy of the Ayurvedic protocol comprising *Myrha, Vamha,* and *Poshini* in women diagnosed with PCOD, particularly those experiencing delayed periods and associated infertility. The treatment led to marked improvements in ovulation and other key fertility parameters, with a high rate of natural conception observed over a few months of therapy.

Beyond conception, participants also experienced relief from hallmark PCOD symptoms such as irregular cycles—indicating hormonal balance restoration.

The protocol was found to be extremely safe, with no adverse reactions reported and high patient compliance.

Importantly, even in select cases where patients had previously undergone ART or hormonal interventions without success, this Ayurvedic approach resulted in natural conception—highlighting its potential as a viable, non-invasive, and holistic fertility solution. These findings underscore the role of Ayurveda as a powerful, evidence-based system of reproductive care—capable of delivering consistent and clinically meaningful outcomes at scale.

CONFLICT OF INTEREST

The authors declare no conflicts of interest relevant to this article.

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