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CASE REPORT

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Ayurvedic Management of Poly Cystic Ovarian Syndrome with Clinical and Biochemical Androgen Excess and Oligo-ovulation – A Case Study

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Abstract

Polycystic Ovarian Syndrome (PCOS) is an endocrine disorder affecting 15-20% of women, often leading to irregular menstruation, hyperandrogenism, obesity, and infertility. Though not directly mentioning PCOS, Ayurveda describes conditions with similar clinical features, such as Nashtartava Ksheenarthavadushti, and Anapathya, and offers treatment focused on balancing Doshas, improving metabolism, and restoring hormonal balance. This study aims to explore the role of Ayurveda in managing PCOS with biochemical androgen excess and oligo-ovulation through a case study. A 24-year-old female presented with irregular menstruation (cycle interval >45 days), excessive hair growth on the face and chest, and hair fall for 1.5 years. Laboratory investigations confirmed elevated testosterone, luteinizing hormone (LH), and follicle-stimulating hormone (FSH). She had previously tried hormonal therapy with temporary relief and opted for Ayurvedic treatment. The patient underwent a two-phase Ayurvedic treatment plan over nine months on an OP basis, focusing on Agnimandya (digestive impairment) correction, metabolic stabilization, and hormonal balance. Medications were given based on menstrual phases, along with dietary and lifestyle modifications. By the end of the treatment, her menstrual cycle normalized, androgen levels reduced, excessive hair growth decreased, and hair fall stopped. This case highlights Ayurveda's potential in managing PCOS through individualized treatment, dietary guidance, and lifestyle changes. Early diagnosis and systematic Ayurvedic management can offer effective, natural, and safer alternatives for PCOS treatment.

Keywords: PCOS; Hyperandrogenism; Oligoovulation; Hirsutism; *Nashtarthva*

1 Introduction

PCOS is estimated to affect around 6–7% of the global population ¹. The World Health Organization estimates that PCOS affects 8–13% of women of reproductive age and that more than half of the cases are undiagnosed ². WHO Fact Sheet, June 2023. Available online: https://www.who.int/news-room/fact-sheets/detail/polycystic-ovary-syndrome (accessed on 1 June 2024)

PCOS (Polycystic Ovarian Syndrome) is an endocrine disorder characterized by amenorrhea, oligomenorrhoea, sometimes prolonged heavy bleeding, the presence of symptoms of hyperandrogenism like hirsutism, male pattern baldness and hair thinning, acne, oily skin, acanthosis nigricans, obesity, and infertility. It is a hyperandrogenic disorder with an approximate prevalence of 2% and 26%. The differences in diagnostic criteria, sample heterogeneity, socioeconomic level, medical care access, prevalence of influential risk factors, health, and education/awareness were among the possible causes of substantial disparities in the prevalence rate. People with PCOS are more likely to have other health conditions like type-2 diabetes, High blood pressure, high lipid profile, heart disease, and endometrial cancer.² PCOS can also cause anxiety, depression, and negative body image. Some symptoms like obesity, unwanted hair growth, and infertility can affect other life areas like family, relationships, work, and involvement in the community.³ Physical appearance, menstrual irregularity as well as infertility are considered as sole causes of mental distress affecting the healthrelated quality of life (HRQOL) of women.⁴

Ayurveda doesn't directly mention PCOS, but its symptoms align with Nashtartva, 5Ksheenarthavadushti, 6Puspa gnini, ⁷ Anapathya and Stoulya, Treatment focuses on balancing vitiated Dosha (functional unit of the body) and (structural unit of the body), normalizing Agni (digestive fire), and improving metabolism. In India, current PCOS treatments face limitations including low adherence to long-term regimens, a lack of awareness about PCOS and its management, side effects of the treatment, long duration of the therapy, no relief of symptoms, bland diet, and the need for personalized, multidisciplinary care due to the condition's complex and heterogeneous nature.⁸ So being a personalized medical science the study aims to assess the effectiveness of Ayurvedic treatment in regulating menstrual cycles, reducing hyperandrogenic symptoms, and restoring hormonal balance in a patient diagnosed with PCOS.

2 Case Report

A twenty-four-year-old female patient reported to the OPD on 20-07-21 with a complaint of irregular menstruation for the last two years. The patient's menstrual history showed cycles lasting four days and with intervals of more than 45 days. She also complains of excessive thick hair growth

on her face and chest, and hair fall for the past one and half years. The blood test report revealed that she had high levels of testosterone hormone and elevated luteinizing and follicle-stimulating hormone. She tried hormonal therapies for the same, but whenever she stopped the medication, the irregularity persisted. Then, she opted for ayurvedic treatment.

On general examination, the patient was moderately built with 66 kg and a BMI of 21.6. The patient was a software engineer who used to awake at night due to her work schedule. Her appetite is irregular and consumes a nonvegetarian diet. She passes stool every day, but sometimes she feels blotting of the abdomen. The patient has no previous history of diabetes mellitus, hypertension, thyroid dysfunction, and other vitals are within the normal limits.

• Diagnostic Assessment

A Blood test report on 28-7-21 showed her Serum Testosterone- 79.95ng/dL, Serum FSH—15.44 mlU/mL, and Serum LH-47.69 mlU/mL. On 29-07-21 she was diagnosed with PCOS with clinical and biochemical androgen excess and an oligo-ovulation phenotype. According to the Rotterdam consensus, PCOS is diagnosed if any two of the following are present, ovulatory abnormalities (oligo/anovulation), clinical or biochemical hyperandrogenism, or polycystic ovaries. ⁹The diagnosis was made clinically based on symptoms per Rotterdam criteria. Serum AMH, Estradiol, and Prolactin were within the limits, ruling out differential diagnoses like hyperprolactinemia and primary ovarian insufficiency. After obtaining informed consent, she began Ayurvedic oral medication for PCOS on 29/07/21. The Shamana (Palliative) line of treatment was administered in two phases, focusing on correcting Agnimandhya (Low digestive Capacity), stabilizing metabolism, and normalizing hormones like testosterone, luteinizing hormone, and follicle-stimulating hormone to regulate ovulation and menstrual cycle.

• Pathya and Apathya Advice

In PCOS management, diet and exercise are crucial alongside medication. Avoiding certain foods and including others helps to balance hormones and improve ovulation.

• Follow-up and outcome

The patient was treated and supervised for 9 months, and follow-ups were conducted every month. The patient noticed an improvement in symptoms within 2 months of treatments. After 4 months of treatment, the body weight of the patient reduced to 60 kg, and her menstrual period became regular with consistent cycle intervals and normal blood flow, following 9 months of treatments. The clinical symptoms, like excessive thick hair growth on the face and

chest, have decreased. No new hair growth was observed, and some existing hair became thinner. Hair fall from the scalp completely stopped. The patient was monitored for two months without medication, and a blood test conducted afterward showed normal results with no reoccurrence of symptoms. Tables 1 and 2 provide a timeline of therapeutic intervention, Table 3 provides details of *pratyahara vihara*, and Tables 4 and 5 give a timeline of blood tests reports and clinical symptoms relief respectively.

After the First schedule (5 months) of Ayurvedic treatment, a blood test conducted on 31-12-21 showed a significant improvement in hormone levels. Serum Testosterone decreased to 43.38 ng/dL, while Serum FSH remained at 15.44 ng/dL, and Serum LH reduced to 40.36 ng/dL indicating positive metabolic changes. Figures 4 and 5 show Blood test Reports after the first schedule of treatment.

Table 1. The timeline of therapeutic intervention in the first schedule of treatment (29-7-21 to 20-12-21)

schedule of treatment (29-7-21 to 20-12-21)				
Date 29-7- 21 to 20-11-	Medication on the Proliferative Phase of Menstruation	Medication on the Secretory Phase of Menstruation		
1	Sukumaramkashyam- Oral-15 ml with 60 ml Lukewarm water 45 minutes before morning and evening food- For 15 days	Guduchyadikashyam -Oral- 15 ml with 60 ml Lukewarm water 45 minutes before morning food- For 15 days Hinguvachadigulika- Oral- 1 tab with kashayam		
2	Hinguvachadigulika- Oral- 1 tab with Sukumaramkashyam -twice a day- For 15 days	SapthasaramKashayam- Oral-15 ml with 60 ml Lukewarm water 45 minutes before evening food- For 15 days Hinguvachadigulika- Oral- 1 tab with kashayam		
3	Arogyavardhinivati- Oral- 1 tab twice a day after food- For 15 days	Abhayarishtam+ Kumaryasavam-Oral-15 ml each Arishta twice daily after food- For 15 days		
4	Bringarajasavam -Oral- 30 ml Arishta twice a day after food- For 15 days	Rjapravarthinivati- Oral- 2 tabs twice a day after food - For 15 days		

The blood test conducted before the treatment revealed elevated hormone levels, with Serum Testosterone at 79.95 ng/dL, Serum FSH at 15.44 ng/dL, Serum LH at 47.69 ng/dL, and Serum AMH at 6.82 ng/dL. The fasting blood sugar (FBS) level was 96 mg/dL, while the lipid profile was within normal limits. Figures 1, 2 and 3 present the blood test reports before the treatment.

Table 2. The timeline of therapeutic intervention in the second schedule of treatment (01-01-22 to 30-04-22)

Date 01- 01-22 to 30-04-22	Medication on the Pro- liferative Phase of Men- struation	Medication on the Secretory Phase of Menstruation
1	Sukumaramkashyam- Oral-15 ml with 60 ml Lukewarm water 45 minutes before morning and evening food- For 15 days	Thikthakamkashyam Oral- 15 ml with 60 ml Luke- warm water 45 minutes before morning food- For 15 days Hingu- vachadigulika Oral- 1 tab with kashayam
2	Hinguvachadigulika- Oral- 1 tab with Suku- maramkashyam twice a day- For 15 days	SapthasaramKashayam Oral- 15 ml with 60 ml Lukewarm water 45 minutes before evening food- for 15 days Hinguvachadigu- lika Oral- 1 tab with kashayam
3	Arogyavardhinivati- Oral- 1 tab twice a day after food- For 15 days	Rjapravarthinivati Oral- 2 tabs twice a day after food - For 15 days
4	Bringarajasavam- Oral- 30 ml Arishta twice a day after food- For 15 days	Abhayarishtam + Kumaryasavam Oral- 15 ml each arishta twice daily after food - For 15 days

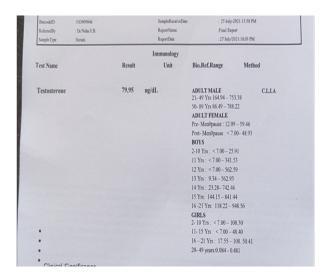


Fig 1.

Table 3. Pathya & Apathya advised during the treatment period

Table 3. Pathya & Apathya advised during the treatment period				
Sl No	Pathyahara	Apathyahara		
1	Green leafy vegetables should be used generously in the food.	Use of sugar, sweets, jaggery, chocolates, bakery items, sweet fruits Completely avoided		
2	Use Millets instead of carbohydrates. They contain large amounts of fibers, iron, calcium, and other micronutrients and a low glycemic index	Reduce carbohydrate- rich food articles like rice, wheat etc, Packed wheat powder is not good for use, instead, buy raw wheat process it, and use it.		
3	All the Pulses can be used	Avoid using black gram (black gram should be completely avoided, instead green gram can be used).		
4	Orange, lemon, goose- berry, and pomegranate should be used gener- ously; Fruits that are sweet in taste are to be used before they ripen completely.	Completely avoid the intake of foods prepared with Maida, oily foods, junk foods like pizza burgers, etc, and carbonated drinks like Pepsi. Cococola etc		
5	Tubers should avoid except carrots, beetroot, and radish.	Reduce the intake of red meat, egg, and fried fish (can have fish curry)		
6	Take food on time. Sleep and wake up on time, don't sleep in the daytime, and wake up at night.			
7	Practice brisk walking for about 30-45 minutes			

Table 4. Timeline of diagnostic test results before and after treatment

Date	Before treat- ment	After the first schedule of treatments	After the completion of treatments
28-7-21	Serum	Serum	Serum
	Testosterone-	Testosterone-	Testosterone-
	79.95ng/dL	43.38ng/dL	16.9ng/dL
31-12-21	Serum FSH-	Serum FSH-	Serum FSH-
	15.44 mlU/mL	16.23 mlU/mL	6.48 mlU/mL
24-6-22	Serum LH-	Serum LH-	Serum LH-
	47.69 mlU/mL	40.36 mlU/mL	3.15 mlU/mL

Table 5. Timeline of clinical symptoms improvement from the day of treatment initiated to the last follow-up period

Symptoms	Before treatment	After the first sched- ule of treatments	After the second schedule of treatments
Irregular men- strual period-	The interval of more than 45days	The interval between 30 to 35days	Normal cycle interval
Hair growth on the face and chest	Very thick hair growth on face and chest	No new hair growth is observed	The thickness of the hair on the face and chest was reduced. Some of the hairs become thinner and some of them fall out
Hair fall	++	+	Hair fall from the scalp completely stopped.



Fig 2.

3 Discussion

Due to lack of exercise, untimely food intake, eating more junk food, and awakening at night, the patient was affected with *Agnimandya* and metabolic dysfunction. This *Agnimandya* causes vitiation of *Rasa dhatu*, (circulatory fluid) thereby leading to improper formation of subsequent *Dhatus* and their *Upadhatus* (derivatives of the *Dhatus* and resemble *Dhatus* in terms of structure, functions, and nature). Due to *Agnimandhya*, there was vitiation of *Kapha* and *Vatha dosha* and this vitiated *Kapha dosha* causes *Avarana* (obstruction) in respective channels, and vitiated *Vatha dosha* affects the func-



Fig 3.



Fig 4.



Fig 5.



Fig 6.



Fig 7.

tion of *Arthavanishkramana*, (evacuation of menstrual blood) both leading to *Ksheenarthava* and *Nashtarthva*.

The primary aim of treatment was to correct Agnimandya, and Rasadathudushti (vitiation of circulatory fluid), stabilize metabolism, and simultaneously address hormonal imbalance. For that, the patient was given orally Amrthotharamkashayam for Amapachana, (enhancing digestion of accumulated metabolic waste) and Arogyavardhinivati, Hinguvachadigutika for Agnideepana (enhancing digestive activity). Once the Agni started functioning properly, normal Rasa dhatu was produced, leading to proper Utharotharadhatuparinama. (subsequent transformation of tissues) As a result, the menstrual cycle interval became regular because Arthava is an Upadhatu of Rasa dhatu. During the proliferative phase of menstruation, the patient was given medicines like Sukumaramkashyam and Bringarajavam to mature the ovum properly. For healthy and timely ovulation, the ovum needs to mature properly. During the secretory phase of Menstruation, the patient was given medicines like Sapthsaramkashyam, Hinguvachadigulika, Abhyarishta, and Kumaryasavam to bring Apanavathanulomana, because

Arthavaniskramana (evacuation of menstrual blood) is one of the functions of *Apanavatha* (sub type of *Vata dosha*).

To correct Androgen excess, the patient was given medicines containing *Thiktha* and *Katu rasadravya* (a substance with a bitter & acrid taste). Based on the principle of *Acharya Vagbhata* all the *Thiktha* and *Katu rasadravya* reduce *Sukra dhatu*. ¹⁰ Hence during the proliferative phase of menstruation, the patient was given medicines like *Guduchyadikashyam*, and *hinguvachadigulika*, and during the secretory phase of menstruation, the patient was given medicines like *Thikthakamkashyam*, *Sapthsaramkashyam*, *Hinguvachadigulika*, *Abhyarishta*, *Kumaryasavam*, and *Rajapravarthinivati*.

When the hormone levels normalized, the clinical symptoms like excessive thick hair growth on the face and chest decreased. No new hair growth was observed, and some existing hair became thinner. Hair loss from the scalp completely stopped.

Ayurvedic treatment for PCOS focuses on balancing *Dosha & Agni* through herbal medicines lifestyle modifications and adherence to *Pthyahara*, whereas conventional medicine primarily manages symptoms using hormonal pills, insulin sensitizers, and ovulation-inducing drugs. Ayurveda emphasizes long-term healing by improving metabolism, digestion, and mental well-being with yoga and meditation. While conventional treatment provides faster relief, it may cause side effects such as weight gain, nausea, mood swings, and increased risk of blood clots or insulin resistance.

4 Conclusion

The present study revealed that early diagnosis, systematic Ayurvedic treatment, and adherence to *Pathyahara vihara* (wholesome diet & regimen) can provide the complete cure for PCOS, a significant concern for women of reproductive age. Based on the above case study it can be concluded that Ayurvedic treatments are effective in managing PCOS with less expensive and safer natural medicine. However, this is a case report, further studies with more patients with proper research design are necessary for validation.

Limitations of Study

Single Case Report – The study is based on a single patient, limiting its generalizability. Larger clinical trials like RCT are needed to validate the effectiveness of Ayurvedic treatment for PCOS.

Absence of Imaging Evidence – A pelvic ultrasound (USG) was performed before initiating Ayurvedic treatment. Unfortunately, the patient misplaced the report, which is a key diagnostic criterion. However, the scan did not show any signs of enlarged ovary.

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