Original Article

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Ayurveda Section

Evaluating the Efficacy of *Vamana Karma* with *Shatapushpa Churna* in Polycystic Ovarian Syndrome: A Quasi-experimental Study

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ABSTRACT

Introduction: Polycystic Ovarian Syndrome (PCOS) is clinically characterised by irregular menstruation, obesity, and the presence of ovarian cysts. In Ayurvedic literature, this condition is described as *Vyadhi Sankara*, denoting a complex disorder arising from the overlap of multiple disease entities. Contemporary management in modern medicine primarily relies on the use of oral contraceptive pills; however, these agents are frequently associated with adverse effects, underscoring the need for safer and more holistic therapeutic approaches.

Aim: To evaluate the therapeutic effectiveness of *Vamana Karma* with oral administration of *Shatapushpa Churna* in the management of PCOS.

Materials and Methods: The present quasi-experimental study was conducted at PD Patel Ayurveda Hospital, Kheda, Gujarat, India. between January 2023 and September 2024, enrolling 68 patients with PCOS. The diagnosis was established through a combination of clinical history, physical examination, laboratory investigations, and radiological imaging. The intervention comprised *Vamana Karma* (therapeutic emesis) with a 7-day preparatory and post-treatment regimen, followed by oral administration of *Shatapushpa Churna* (dill seed powder) at a dose of 3 g twice daily for 54 days. Treatment outcomes were evaluated using symptom relief, pelvic ultrasonography, and Body Mass Index (BMI), with statistical analysis performed using the Wilcoxon Signed-rank Test. A $p<0.05$ was considered statistically significant.

Results: A total of 68 patients were enrolled in the study, of whom 60 completed the treatment. Among the total participants, 49 (82%) participants were aged 20-30 years, predominantly urban 58 (97%), 55 (92%) Hindu, 42 (70%) unmarried, and 37 (62%) from the upper middle class. Post-intervention, significant improvements in menstrual cycle regularity ($p<0.001$) reduction in ovarian volume ($p<0.001$), and BMI ($p<0.001$). No Serious Adverse Events (SAE) were reported.

Conclusion: The combination of *Vamana Panchakarma* (Therapeutic emesis) therapy and the *vata-kapha* balancing properties of *Shatapushpa Churna* (dill seed powder) shows promising results in the management of PCOS. These findings highlight the potential role of Ayurvedic interventions in addressing this multifactorial condition. Larger, long-term studies are warranted to validate these outcomes and assess broader clinical applicability.

Keywords: Emesis therapy, Irregular menstruation, Multiple ovarian cysts, Obesity

INTRODUCTION

For women of reproductive age, PCOS is a multifaceted condition that significantly impacts reproductive health, metabolic stability, and psychological well-being. The clinical diagnosis of PCOS is primarily established through the Rotterdam criteria, which require the presence of at least two of the following three markers: oligo-ovulation or anovulation (irregular menstrual cycles), clinical or biochemical hyperandrogenism (elevated androgen levels), and the sonographic identification of polycystic ovaries [1]. Beyond its immediate reproductive impact, the syndrome is recognised as a significant metabolic disorder, predisposed to long-term sequelae including cardiovascular disease and systemic metabolic dysfunction [2]. PCOS is recognised as the most prevalent endocrine disorder among women of reproductive age globally. Current epidemiological data from the World Health Organisation (WHO) suggest that the syndrome affects an estimated 10 to 13% of women worldwide [3]. However, the reported prevalence can vary significantly, ranging from 7.1 to 21%, depending on the specific diagnostic criteria used (e.g., the Rotterdam or NIH criteria) and the ethnic background of the population studied [4]. Critically, a substantial "hidden burden" exists, with research indicating that up to 70% of women with the condition remain undiagnosed, underscoring the need for improved clinical awareness and standardised screening protocols [3]. A 21-59% of reproductive-age women show polycystic ovaries on ultrasound [5]. Low birthweight, along with precocious adrenarche/pubarche, increases the risk of progression to functional ovarian hyperandrogenism and PCOS in adolescents [6]. In accordance with the 2023 International Evidence-based Guideline for the Assessment and Management of PCOS, a diagnosis is established if a patient fulfils at least two of the following three criteria: ovulatory dysfunction (irregular cycles), hyperandrogenism (clinical or biochemical), and Polycystic Ovary Morphology (PCOM). In clinical practice, if a patient presents with both irregular cycles and clinical hyperandrogenism, an ultrasound is not strictly required for diagnosis. However, when only one of these features is present, morphological assessment via ultrasound is necessary. Following the updated 2023 standards, a finding of PCOM is defined by a Follicle Number Per Ovary (FNPO) of ≥20, a Follicle Number Per Section (FNPS) of ≥10, or an ovarian volume (OV) of ≥10 mL in at least one ovary, preferably using high-frequency ultrasound transducers [7]. In its early clinical manifestation, PCOS is primarily characterised by the presence of multiple ovarian cysts in conjunction with menstrual irregularities, specifically amenorrhoea (absence of menstruation) or oligomenorrhoea (infrequent menstruation) [8]. From an Ayurvedic perspective, the pathology of PCOS is conceptualised as a *Vyadhi sankara,* a complex clinical syndrome arising from the confluence of multiple interrelated conditions. This multifaceted disorder encompasses *Artavakshaya* or *Anartava* (menstrual

deficiency or absence), *Sthoulya* (obesity/metabolic dysfunction), and the formation of *Granthi* (ovarian cysts or glandular swellings) [9]. Conventional management of PCOS often remains limited to symptomatic relief, frequently overlooking the systemic metabolic imbalances at the core of the disorder. In contrast, Ayurveda management of such a complex condition necessitates a dual therapeutic strategy: the integration of *Shodhana* (biopurificatory or detoxification procedures) and *Shamana* (palliative or pacifying treatments) is required to address root systemic imbalances and facilitate significant clinical recovery [9]. *Shatapushpa Bija Churna* (dill seed powder) is highly regarded in classical Ayurveda for its potent therapeutic attributes. According to the Bhavaprakash Nighantu (*Haritakyadi Varga,* Verse 91-92), the seeds possess *Tikshana* (sharp/penetrating) and *Ushna* (hot) properties, which contribute to their efficacy as a *Kapha-Vatahara* (alleviator of *Kapha* and *Vata doshas*) agent. These qualities enable the herb to penetrate deep tissues and clear blockages while balancing the cold and stagnant natures of the *Vata* and *Kapha* humours, respectively. Consequently, it is frequently utilised to stimulate *Agni* (digestive fire) and support various metabolic functions [10]. This study aimed to evaluate the therapeutic effectiveness of *Vamana Karma* with oral administration of *Shatapushpa Churna* in the management of PCOS.

MATERIALS AND METHODS

The present quasi-experimental study was conducted at PD Patel Ayurveda Hospital, Nadiad, Gujarat, India, from January 2023 to September 2024. The study received approval from the Institutional Ethics Committee, and the approval number is JSAM/IECR/149/04-2022 at the study site. Informed consent was obtained from all the participants.

Inclusion and Exclusion criteria: A total of 68 women (ages 18-35) with PCOS diagnosed according to the international guideline 2023 [7] diagnostic algorithm for PCOS, fit for *Vamana karma* (therapeutic emesis therapy), and with no concurrent hormonal therapy, and willing to participate were included in the study. Participants with systemic abnormalities such as diabetes, thyroid disorders, pregnancy, lactation, or contraindications to *Vamana karma* (therapeutic emesis therapy) were excluded from the study. The number of participants included in the study was determined by the volume of monthly OPD visits within the study duration and a precalculated statistical sample size was missing.

Study Procedure

The raw material for the drug was procured from a local licensed Ayurveda Pharmacy after thorough quality control procedures. *Shatapushpa beeja* (dill seed) were sourced from an authentic herbal medicine dealer, then standardised by the Materia Medica (*Dravyaguna*) department, and finally powdered at the Ayurveda Pharmacy under the supervision of the Ayurveda Pharmaceutics (*Rasa Shashtra* and *Bhaishajyakalpana*) department.

All the subjects first undergo preparatory *Deepana-Pachana* measures to prime digestion and metabolism, followed by the main emesis procedure using *Madanaphala* with *Yashtimadhu phanta*. Post-procedure, a graded dietary regimen (*Samsarjanakrama*) was prescribed, and supportive therapy with *Shatpushpa churna* was given for 54 days [Table/Fig-1].

Assessment criteria:

- **Subjective criteria:** The signs and symptoms of PCOS, such as reduced frequency and duration of menstruation (*~Aartavkshaya*), weight gain (*~Sthoulya*).

Objective criteria: Number of peripheral cysts present in both the ovaries per section, altered ovarian morphology in terms of cysts or fluid collection (*~granthi*) in both the ovaries [11], Body Mass Index (BMI) [12].

Procedure	Dose	Duration	Time
Deepana-Pachana Pre-procedures to improve Body metabolism: *Tablet Chitrakadi* (*Plumbago zeylanica*)	Tablet *Chitrakadi* (*Plumbago zeylanica*) 250 milligrams, two tablets,	3 days	Twice a day with warm water.
Oral *Shatpushpa* (Indian dill/*Anatum sowa* seed) Oil	Oral *Shatpushpa* (Indian dill/*Anatum sowa* seed) Oil: Minimum 40 millilitres, adjusted according to the Patient's digestion capacity [11]	3 days	Twice a day
Abhyanga (body massage): *Shatapushpa taila* (*sesame oil processed with* seeds of Indian dill/*Anatum sowa*) & *Swedana (*full body steam*)* wepers made from *Nirgundi patra* (vitex nirgundo leaves)	QS	1 day	One time
Main *Panchakarma* procedure - *Vamana karma* (therapeutic emesis therapy) with *Madanphal* (*Randia dumetorum*) powder and honey quantity sufficient.	*Madanaphala*(*Randia dumetorum*) (5 grams powder of seeds of Randia dumatorum) and *Yashtimadhu* (Liquorice) *Phanta* (100 mL)	1 day	One time, morning
Samsarjanakrama (Post emesis therapy diet)	Patients were initially given rice gruel for three meals, followed by kheechari for the next three meals, and then transitioned to a normal routine diet.	3 days	---
Shatpushpa churna (dill seed powder (Orally)	3 grams before food	54 days	Twice a day

[Table/Fig-1]: Drug posology.

STATISTICAL ANALYSIS

Statistical analyses were performed using Statistical Package for Social Sciences (SPSS) version 20. The Wilcoxon signed-rank test was employed to evaluate differences between pre and post-treatment scores. For BMI and weight gain, however, pre and post-treatment comparisons were conducted using the paired t-test, given the assumption of normally distributed data. A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 68 patients were enrolled in the study, with 60 completing the treatment. Five patients dropped out due to inadequate follow-up, and three others withdrew for unknown reasons. 49 (82%) participants were aged 18-35 years, predominantly urban 58 (97%), 55 (92%) Hindu, 42 (70%) unmarried, and 37 (62%) from the upper middle class [Table/Fig-2].

Demographic data	Criteria	Percentage
Age (Years)	18-20	3 (05%)
	21-30	49 (82%)
	31-35	8 (13%)
Occupation	Housewife	15 (25%)
	Job	33 (55%)
	Students	12 (20%)
Locality	Urban	58 (97%)
	Rural	2 (03%)
Religion	Hindu	55 (92%)
	Muslim	5 (08%)
Marital status	Married	18 (30%)
	Unmarried	42 (70%)
Socioeconomic status	Middle class	23 (38%)
	Upper middle class	37 (62%)

Symptoms of diseases	Oligomenorrhoea	60 (100%)
	Multiple cyst in the ovary	60 (100%)
	Weight gain	60 (100%)

[Table/Fig-2]: Demographic characteristics of the participants.

Post-treatment evaluations revealed significant improvements in menstrual and ovarian parameters. Duration of menstruation increased (p<0.001), cycle intervals shortened toward regularity (p<0.001), and bleeding quantity improved (p<0.001). Pain scores showed a modest but significant reduction (p=0.023). Ultrasound findings demonstrated significant decreases in right ovary volume (p<0.001), left ovary volume (p<0.001), and cyst counts in both ovaries (Right: p<0.001; Left: p<0.001) [Table/Fig-3].

Parameters	Time	Mean	Std. Dev	Min	Max	Z-value	p-value
Duration of menstruation in days	Before treatment	1.917	0.9074	1.0	3.0	-4.696	<0.001
	After treatment	2.833	0.7357	1.0	3.0		
Interval between cycles in days	Before treatment	2.333	0.4754	2.0	3.0	-6.105	<0.001
	After treatment	1.650	0.7324	1.0	3.0		
Quantity of bleeding number of pads used	Before treatment	1.917	0.9793	1.0	3.0	-5.924	<0.001
	After treatment	2.017	0.7812	1.0	3.0		
Pain during menstruation	Before treatment	1.167	0.4929	1.0	3.0	-2.271	0.023
	After treatment	1.033	0.2682	1.0	3.0		
USG right ovary volume in cc	Before treatment	14.333	5.3805	3.0	30.0	-5.976	<0.001
	After treatment	10.650	5.6566	2.5	24.0		
Right no. of cysts	Before treatment	2.350	0.4810	2.0	3.0	-3.760	<0.001
	After treatment	1.817	0.6024	1.0	3.0		
Left ovary volume in cc	Before treatment	12.575	6.0013	2.5	26.0	-5.518	<0.001
	After treatment	11.767	5.8624	1.0	23.0		
Left no. of cysts	Before treatment	2.467	0.5001	2.0	3.0	-3.313	<0.001
	After treatment	2.033	0.8431	1.0	3.0		

[Table/Fig-3]: Descriptive statistics interpretation before treatment and after treatment.
Wilcoxon Signed-rank Test , p-value <0.05 significant

Following treatment, patients demonstrated a significant reduction in both body weight and BMI. The Wilcoxon signed-rank test confirmed that these changes were statistically significant (Z=-6.589 for weight, Z=6.569 for BMI; both p<0.001) [Table/Fig-4].

	N	Mean	Std. Deviation	Minimum	Maximum	Z-value	p-value
Weight BT	60	70.600	6.5489	60.0	88.0	-6.589[b]	<0.001
Weight AT	60	66.583	7.2165	58.0	88.0		
BMI BT	60	27.7872	2.33468	22.34	33.84	-6.569[b]	<0.001
BMI AT	60	26. 15477	2.592712	21.270	33.840		

[Table/Fig-4]: Comparison of pretreatment (BT) and post-treatment (AT) values for weight and BMI.

DISCUSSION

The present study demonstrates notable improvements in key symptoms of PCOS in women aged 20-35, including more regular menstrual cycles, reduced ovarian volume, fewer ovarian cysts, and lower BMI. These results are encouraging and indicate that the treatment examined could effectively address the complex issues of PCOS. Compared with traditional treatments such as oral contraceptives or insulin sensitisers, in this study, findings align with those of Legro RS et al., (2013), who observed that while medications can alleviate symptoms, they often do not provide a comprehensive metabolic reset [13]. While lifestyle modifications are universally recognised as first-line treatments, as emphasised by Moran LJ et al., (2011), these findings suggest that Ayurvedic *Shodhana* (purification) provides an accelerated pathway to these outcomes [14]. Previous Ayurvedic studies, such as those by Wagh S and Deshmukh J have demonstrated that *Shodhana* therapy effectively reduces follicular size, but the unique combination used in this study further optimises the metabolic rate. In Ayurveda, PCOS is a classic example of *Vyadhi Sankara*- a complex collision of multiple disease processes [15]. The interpretation of PCOS as a form of *Vyadhi Sankara* is further supported by Palla S et al., (2025), who elucidated that the condition involves multiple interacting pathogenetic pathways, predominantly *Kapha-Vrita Vata*, which closely parallel insulin resistance. Simultaneously, Vata imbalance disrupts the *Artava Vaha Srotas* (reproductive channels), leading to the irregular HPO (Hypothalamic-Pituitary-Ovarian) axis signalling characteristic of Hyperandrogenism [16]. The efficacy of *Shodhana* followed by *Shamana* in the present study mirrors the findings of Bhingardive KB et al., (2017), who demonstrated that *Vamana Karma* combined with *Shatapushpa*-based formulations effectively manages *Artava Kshaya* and ovarian morphology in PCOS patients [17]. The novelty of this research lies in the specific sequential combination of *Vamana Karma* (therapeutic emesis) followed by the administration of *Shatapushpa Churna* (*Anethum sowa*). While Vamana cleanses the system of *Aama* (toxic metabolic waste), *Shatapushpa* acts as a potent phytoestrogenic modulator. The use of *Shatapushpa Churna* in the present study is supported by the findings of Ghose A and Panda PK (2010), who reported a 90.47% improvement in menstrual regularity and 100% relief from dysmenorrhea among women in a similar age bracket (15-35 years). This reinforces the role of *Anethum sowa* as a reliable *Artavajanana* agent in the management of PCOS-related oligomenorrhea [18]. As noted by Ganie MA et al., (2019), the prevalence of PCOS in urban settings is rising sharply due to sedentary habits; addressing it through this specific Ayurvedic protocol offers a sustainable solution for long-term reproductive health. Crucially, throughout the intervention, no SAEs were reported [19]. This mirrors the safety profile observed in the *Shodhana* studies. The incidence of PCOS varies based on clinical characteristics between women living in urban and rural areas. Urban women show a higher prevalence of obesity, hyperandrogenism, and metabolic conditions [20].

Limitation(s)

Several methodological limitations should be considered when interpreting the results of this research. First, the study utilised an open-label design in which both the investigators and the

participants were aware of the treatment being administered; this lack of blinding introduces a potential for observer bias that could influence the recording or reporting of outcomes. Additionally, the research faced sample size constraints, as the number of participants was determined by the volume of monthly Outpatient Department (OPD) visits within a fixed timeframe rather than a pre-calculated statistical sample size.

CONCLUSION(S)

The combination of *Vamana Panchakarma* (Therapeutic emesis) therapy and the *vata-kapha* balancing properties of *Shatapushpa Churna* (dill seed powder) shows promising results in the management of PCOS. Integrative approaches, such as lifestyle modifications and Ayurvedic treatments, appear promising for managing PCOS. Early intervention is crucial; further research with larger groups is necessary to verify these results.

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