REVIEW ARTICLE

Role of Panchkarma in Polycystic Ovarian Syndrome Management - A Review

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ABSTRACT

One of the fastest-increasing endocrinological disorders in women of reproductive age is polycystic ovarian syndrome (PCOS). Hormonal imbalance in PCOS affects follicular development, causing afflicted follicles to stay in the ovary. According to estimates, PCOS affects 6–10% of women worldwide and 3.7–22.5% of Indian women, which is a rather high percentage. The clinical manifestations include complex forms of amenorrhea or oligomenorrhea, hirsutism, acne, infertility, etc., and are marked by hyperandrogenism, anovulation, and polycystic ovaries observed on USG. Because of poor eating habits, inactivity, a sedentary lifestyle, and other factors including a sole emphasis on one’s job while ignoring one’s health, the incidence of this disease is rising tremendously. Some of the characteristics of PCOS are strongly connected to those of Yonivyapada, while other characteristics almost put it into interaction with Artava dushti. Its Hetu can be comprehended by several Yonivyapada Hetus, such as Artavavaha Srotodushti Hetus, and treatment can be organized by looking at the patient’s Dosha, Dushya, Agni, Ama, and Prakruti. With the use of different Ayurvedic herbal and mineral formulations, Panchakarma, together with dietary and lifestyle changes, we can design Ayurvedic treatment which can be carefully applied to treat PCOS and any related issues.

1. INTRODUCTION

The clinical, endocrine, and metabolic aspects of polycystic ovarian syndrome (PCOS), a developing endocrinological complex illness, are present in modern society. Another name for it is Stein-Leventhal syndrome. Amenorrhea, hirsutism, obesity, and enlarged polycystic ovaries are symptoms. Infertility, type 2 diabetes, insulin resistance, obesity, hirsutism, alopecia, acne, anxiety, depression, sleep apnea, and coronary heart disease are some of the linked comorbidities. Due to the vast range of signs and symptoms and varied clinical presentations, the condition is either underdiagnosed or improperly diagnosed. It is more irritating for women because the disturbing element of the disease evolves over time, progressing from teenage hirsutism, acanthosis, and acne to adult infertility. The symptomatic approach used in modern medicine comprises clomiphene citrate, metformin, antiandrogens, and periodic removal of progesterone. However, they come with their own set of risks and long-term usage is linked to lactic acidosis, which can be deadly or non-fatal, weight gain, cardiovascular and thromboembolic events, and potentially fatal liver toxicity. Therefore, safe and affordable treatment requires time. Although PCOS is not specifically addressed in Ayurveda, it can be related to various other conditions such as Pushpaghni Jataharini, Artava Kshaya, Nastartava, and Vandhya Yonivyapada. Different Yonivyapada Hetu, Artavavaha Rasavaha, Medovaha, Srot dushti Hetu, etc. can be used to understand its Hetu, and treatment can be arranged by looking at the patient’s Dosha, Dushya, Agni, Ama, and Prakruti. With the use of different Ayurvedic herbal and mineral formulations, Panchakarma, as well as intelligently executed dietary and lifestyle changes, we can arrange ayurvedic treatment to alleviate PCOS and all associated difficulties.

2. MATERIAL AND METHODS

All of the references that are now available have been gathered from published works, Ayurvedic Samhitas, modern textbooks, websites, and published articles and have all received thorough review.
3. REVIEW OF LITERATURE

3.1. Contemporary View

3.1.1. PCOS
Polycystic ovary syndrome (PCOS) is a condition in which the ovaries produce an abnormal number of androgens, male sex hormones that are usually present in women in small amounts. The name polycystic ovary syndrome describes the numerous small cysts (fluid-filled sacs) that form in the ovaries.\cite{6}

3.1.2. Etiology
As an oligogenic disorder, PCOS is characterized by a diverse, clinical, and biochemical phenotype that is determined by the interaction of numerous genetic and environmental variables. A family history of PCOS is rather frequent, however, it is unclear whether this is related to the condition’s genetic cause, which is yet unknown. A formal segregation study cannot be performed since there is insufficient phenotypic data. However, according to the most recent research, PCOS tends to cluster in families in a manner similar to an autosomal dominant pattern. Poor food habits and inactivity can increase environmental factors linked to PCOS (such as obesity), and pollutants and infectious diseases may also have an impact. A change in lifestyle, such as losing weight and exercising more, can occasionally reverse the reproductive and metabolic symptoms of PCOS.\cite{7}

3.1.3. Clinical manifestations\cite{9}
- Menstrual abnormalities such as oligomenorrhea, hypomenorrhea, and amenorrhea.
- Infertility due to chronic absence or low rate of ovulation.
- Hyperandrogenism - in fully developed form, hirsutism, acne.
- Basti - Since there is no Pradushtartava - likewise reduces as a Basti is carried out as necessary. In obese women with PCOS, upward and downward channels. Thus, both treatments can be applied, and hormonal imbalance.
- Virechana Karma should not be express out) because of Avrutamarga. Acharya Dalhana explains this by commenting on a line from Acharya Sushruta and explaining that Nātha signifies Na Tu Sarvatha Kshaya (not fully lost), merely diminished in quantity. It can be interpreted in terms of oligo/anovulation, oligomenorrhea, and shorter flow length because the word is used frequently in the Samhita Artava context of menstrual blood, ovum, and ovarian hormones.\cite{11}
- Vandhya - The term “Vandhya” is used to refer to a patient who is experiencing infertility problems as a result of anovulatory cycles and hormonal imbalance.
- Pushpagni Jataharini - Taking this into consideration, we can classify it as a female whose menstrual flow is regular but whose cycle lacks ovulation. It causes chubbby cheeks and other comorbidities of PCOS, such as hairy cheeks.

3.3. Management through Ayurveda

- Nidana Parivarjana - Avoid the disease-causing elements, such as processed foods, iced beverages, sedentary lifestyles, etc.
- Ahara - A nutritious diet and adherence to Aharavidhi Vidhanas (dietetic guidelines) are recommended. In the case of Ardha Kshaya such as Masha, Tila, Kalath, Masa, Udviisha, Dadi, and Sura, Acharya Sushruta has described the Agneya Dravya Prayoga, which will aid in boosting the Agneyastra of Artava.\cite{12}
- Vihara - By adhering to the following practices, one can achieve Dhatusamya (homeostasis) in the body: Dinacharya (daily regimen), Ritucharya (seasonal regimen), Rajaswala Paricharya (menstrual regimen), Swasthavritta (code of conduct), Achara Rasayana, etc. Surya Namaskar, Sarvangasana, Paschimottanasana, Ardhamatsayendrasana, and Masyasana are yoga poses that can aid with lowering cholesterol and glucose levels as well as insulin resistance.

3.3.1. Samshodhana

- Yamana - Virechana Karma - Virechana Karma should not be used for purification; only Yamana Karma should, according to Acharya Dalhana. Agneyastra of Artava likewise reduces as a result of Pitta being reduced by Virechana Karma, bringing about Artava Kshaya once more.\cite{13} The removal of Saumya (Kapha) substance by Yamana Karma causes a proportionate increase in the body’s Agneya component, which in turn raises Artava. According to Acharya Chakrapani, using Yamana Karma (emesis) and Virechana Karma (purgation) correspondingly clears the upward and downward channels. Thus, both treatments can be carried out as necessary. In obese women with PCOS, vibhrana increases ovulation, which improves the circulation of androgen, glucose levels, and the body’s metabolism. This increases the likelihood of conception.\cite{14}
- Basti - Since there is no Yonivyapada without Vatadosha, Basti is the primary method of treatment for Vatadosha (Ardha chikitsa). Basti aids in maintaining the function of Apana Vata, aggravating Kapha and Ama with vitiated Rasa Dhatu gravitate toward Medo Dhatu. They are drawn to one another as a result. Along with Rasa Dhatu, Medo Dhatu is one of the earliest Dhatus to exhibit an aggravation of Kapha. Medovriddhi (obesity) is a result of elevated Kapha and Ama having an impact on Medo dhatwagani. As a result, Granthi (cysts), Premheha (diabetes), and Medoroga are manifestations of the Medo vikaras.
which is necessary for Artava to operate normally. According to Kashyapa, Anuvasana Basti is the preferred method of treatment for oligomenorrhea and amenorrhea in Artavakshaya. The parasympathetic nerve supply may be stimulated by basti, which in turn aids in follicle development and ovum release from the ovary.

- Uttara Basti - Due to the fact that it calms vitiated Apana Vayu, promotes follicular maturity, and clears the Artavavahasrotasa, it is very helpful in gynecological diseases.
- Nasya - It may stimulate the limbic system and olfactory nerves, which in turn stimulates the hypothalamus, stimulating GnRH neurons, regulating GnRH pulsatile secretion, maintaining the HPO axis, and promoting a regular and healthy menstrual cycle.

### 3.3.2. Drugs used

- Formulation medicines - Kanchanara Guggula, Kuberaksha Vati, Latakaranja Ghana Vati, Pushpadhanva Rasa, Nashtapushpantak Rasa, Rajahpravartani Vati, Lashunadi Vati, Chandraprabha Vati, Rasapachak Kashaya, Medopachak Kashaya, Dashamoollarishta, Ashokarishta, Daryarishta, Saraswatarishta, Phala Ghrita, Shatavari Ghrita, Dadimadi Ghrita, Rasona Ghrita, etc.
- Single drugs - Meshashringi - (Gynemna sylvestre, Family- Asclepiadaceae) - According to studies, it inhibits the absorption of glucose in the intestines, promotes the proliferation of beta cells in the pancreas, and causes beta cells to secrete insulin.
- Shatavari - (Asparagus racemosus, Family- Liliaceae) - Numerous studies show that it helps infertile couples because it promotes ovulation, folliculogenesis, gets the uterus ready for conception, and stops miscarriages. Its alcohol extract dramatically increases the release of insulin.[15]
- Methika - (Trigonella foenum graceum, Family- Fabaceae) - Studies on seed extract have revealed a significant decrease in ovarian volume and cyst size. In addition, the amount of LH and FSH increased.
- Kumari - (Aloe vera, Family- Liliaceae) - Through raising progesterone and estradiol levels, lowering steroid receptor transcription levels, and increasing aromatase expression, which turns testosterone into estradiol and androstenedione into estrogen, experimental studies have demonstrated that aloe vera lowers testosterone and insulin levels. In addition, aids in controlling steroidogenesis and controlling hyperglycemia. Jatamansi – (Nardostachys jatamansi, Family- Valerianaceae) - Its antiandrogenic action is said to be helpful in the management of PCOS.[16]
- Lodhira - (Syplocos racemose, Family- Symplocaceae) - Its bark is prescribed for menorrhagia and other female reproductive disorders because it significantly lowers elevated testosterone levels, restores estrogen, progesterone, and cholesterol levels, maintains normal weight, and has effects that are similar to those of clomiphene citrate.

### 4. DISCUSSION

The main causes of PCOS, a developing complex endocrinological illness, are sedentary lifestyle changes, poor eating habits, and failure to adhere to the regimen recommended by Desha, Kala, and Rutu, lack of exercise, improper menstrual hygiene (Rajaswala Paricharya), etc. When using modern medicine, such as hormonal tablets, clomiphene citrate, antiandrogens, etc., patients must deal with side effects such as weight gain, drug reactions, headaches, and thrombosis risk, among others. With the use of all these holistic Ayurvedic strategies, the patient will be able to properly treat their PCOS and any associated metabolic irregularities in the body with little to no negative effects. The main goals of treatment are to eliminate pelvic blockage, restore normal metabolism, and control menstrual cycle (Artava Dhatu).

### 4.1. Probable Mode of Action of Different Treatment Modalities on PCOS

**Vamana Karma** is the best therapy for the elimination of Kapha Dosha. According to Ayurveda, PCOS can be classified as Rasagni (metabolism at the Rasa Dhatu level) and Medo Dhatwagni (metabolism at the Meda Dhatu level), as well as Agni Vaishamya Janya Vikara (illness induced by vitiation of metabolism) in general. As PCOS is a metabolic illness, Vamana primarily targets the liver metabolism, which is the primary location of hormone synthesis, to help the body’s metabolism boost and consequently reduce weight.[17]

Virechana normalizes the functions of Pita and Agni. Sodhana assists in removing the Srotodushti that existed at the level of Rasa, Rakta, Mamsa, Medas, and Artavavahasrotas as well as the vitiated Doshas. This aids in removing the Sanga, correcting the Agni, and maintaining the normal function of Vata, particularly Apana, which in turn aids in the proper creation and excretion of Artava (regularization of the menstrual cycle and ovulatory cycle).[18]

Basti administered through the rectal method travels through the G.I. tract, which is referred to as the enteric nervous system. The endogenous opioids that are typically present in the GI tract are stimulated by the Virya of Basti Dravya. Endogenous opioids are a class of peptides that have a significant impact on the ovarian cycle by inhibiting GnRH secretion.[16] Opioids also affect other pituitary hormones. The most well-known opioid in relation to the reproductive system’s regulation of various pituitary hormones, including gonadotropins, is endorphin. It controls how the ovarian cycle behaves normally. Parasymapthetic activity is mainly responsible for the Apana Vayu activity. Basti stimulates the parasympathetic nerve supply which in turn helps for the maintenance of normal cycle.

Nasya: The drug enters the body through the nose and travels through the ear, eye, tongue, and Shringutaka Marma (Siro Antarmadhyam) to eradicate morbid Doshas and finally promote regular physiological function. Nasya may activate the limbic system and olfactory nerves, which in turn stimulates the hypothalamus. This, in turn, stimulates the neurons that produce the gonadotropin-releasing hormone (GnRH), which in turn regulates its pulsatile production and results in a regular and normal monthly cycle.[19]

### 5. CONCLUSION

This understanding of PCOS in the context of Ayurveda is an excellent way to conclude the paper. Any condition can be treated more effectively by a doctor if they have a better grasp of it. The Yoniyayapa that most closely resembles PCOS is Bandhya Yoniyaypad. Expanded definitions of Artava, such as menstrual blood, ovum, and hormones, aid in the development of PCOS symptomatology in an Ayurvedic framework and the formulation of a therapeutic strategy.

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Nil.

11. DATA AVAILABILITY
This is an original manuscript and all data are available for only review purposes from principal investigators.

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