

## Impact of Diet and Lifestyle on Polycystic Ovarian Syndrome (PCOS) and the ways to overcome through Ayurveda - A Review


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Polycystic Ovarian Syndrome (PCOS) is one of the most commonly seen endocrine disorders affecting women of reproductive age, also known as Stein - Leventhal Syndrome[1]. It is characterised by hyperandrogenism, anovulation and polycystic ovaries seen on USG which clinically manifests in the complex form of amenorrhea or oligomenorrhea, hirsutism, acne, infertility etc. Its multifactorial aetiology includes genetic, hormonal, metabolic, and lifestyle influences. Evidence strongly supports the role of healthy diet and lifestyle modifications, including weight loss, low glycaemic index diets, and regular physical activity, in the management of PCOS. It is not directly explained in Ayurveda; we can correlate it with some of the conditions like Vandhya Yonivyapada, Arajaska Yonivyapada, Artava Kshaya, Nastartava, Pushpaghni Jataharini, etc. treatment can be planned by assessing the Dosha, Dushya, Agni, Ama and Prakruti of patient. We can plan ayurvedic treatment with the help of various Ayurvedic herbal and mineral preparations, Panchakarma, along with diet and lifestyle modifications. This review study aims to analyse the role of diet and lifestyle in the pathophysiology and management of PCOS and evaluate the efficacy of Ayurvedic principles and interventions.

**Keywords:** PCOS, Ayurveda, Diet, Lifestyle, Hormonal Imbalance, Menstrual Health

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## Introduction

Polycystic Ovarian Syndrome (PCOS) is a heterogeneous disorder characterized by hyperandrogenism, anovulation & polycystic ovaries seen on USG which clinically manifests in complex form of amenorrhea or oligomenorrhea, hirsutism, acne, infertility etc. It affects 6-20% of women in reproductive age worldwide, with increasing prevalence attributed to sedentary lifestyle, poor dietary habits, & stressful life. PCOS is associated with insulin resistance, obesity, infertility, & increased risk of metabolic syndrome, type 2 diabetes, & cardiovascular diseases. Despite numerous pharmacological treatments, many women seek alternative options due to side effects & chronic nature of disorder. Its Hetu can be understood by different *Yoniyapada Hetu*, *Artavavaha Rasavaha*, *Medovaha*, *Srotodusthi Hetu* etc. and treatment can be planned by assessing *Dosha*, *Dushya*, *Agni*, *Ama* & *Prakruti* of patient. We can plan ayurvedic treatment with help of various ayurvedic herbal & mineral preparations, *Panchakarma* along with diet & lifestyle modifications Which can be judiciously implemented to alleviate PCOS and all associated problems.

## Materials and Methods

All available References have been collected from literatures, Ayurvedic *Samhitas*, Ayurvedic textbooks and modern text books, different websites, published articles and critically analysed.

## Discussion

Exact cause of PCOS is still unclear. However, several factors may contribute to its development, including sedentary lifestyle, stress, poor diet, insulin resistance, increased androgen levels, genetics, & family history. Main underlying issues are linked to abnormalities in hypothalamic-pituitary-ovarian (HPO) axis, ovaries, adrenal glands, & peripheral tissues. Its *Hetu* can be understood by different *Yoniyapada Hetu*, [2] *Artavavaha Rasavaha*, *Medovaha*, *Srotodusthi Hetu* etc.

### Hetu

- **Mithyachara:**It includes *Mithyaahara* (faulty dietary habits) and *Mithyavihara* (faulty lifestyle) both. reproductive age women which are undergoing rapid nutritional transitions due to westernized diets and lifestyles has more prevalence rate of PCOS.

- **Pradushtartava:**Any hormonal imbalance or ovarian disorders, also Dysregulation of CYP 17, the androgen forming enzyme in both adrenals and ovaries.
- **Bijadosha:**Chromosomal and genetic abnormality comes under *Bijadosha*. During intrauterine life excessive exposure to androgens have a permanent effect on gene expression resulting in PCOS, prevalence of PCOS features among first degree relatives is suggestive of genetic influences.
- **Daiva:**Unknown or idiopathic causes comes under *Daiva*

### Samprampti

Mainly *Sanga* and *Vimargagamana* can be taken.

*Kaphamedakara Ahara Vihara* → *Agnimandhya* → *Amotpattii* → *Srotorodha* → *Dhatvagnimandhya* → *Apachita Rasadhatu* → *Uttorottara Dhatu Apachana* leading to *Medodusthi* and *Alpartava* like *Lakshanas* are seen.

### Clinical Manifestations[3]

- Menstrual abnormalities like oligomenorrhoea, hypomenorrhoea, amenorrhoea.
- Infertility due to chronic absence or low rate of ovulation.
- Hyperandrogenism - in fully developed form we can see Hirsutism over face, breast, chest, etc acne, alopecia, acanthosis nigricans are seen
- Metabolic Syndrome - here we can see the Insulin resistance, Obesity, Dyslipidaemia, Type 2 Diabetes, Increased risk of Cardiovascular disorders may seen.

### Roopa

- **Rajakshianata** - *Kala Adarshana* (irregular menses), *Alapata* (Scanty menses) are seen.
- **Nastharatava[4]** - *Artava Nasha* due to *Avarana*, here *Acharya Dalhana* commenting on *Acharya Sushruta* verse, explains that *Nastha* means not completely lost it is just reduced in quantity so it is unable to express out. In *Samhita*, *Artava* word extensively used in context of menstrual blood, ovum and ovarian hormones so, it can be taken in terms of oligo/anovulation, oligomenorrhoea, reduced duration of flow.

- **Vandhya** - *Vandhya* is considered as *Nasthartava*, as already explained under *Nastharthava* it can be taken as the patient facing the issues of infertility due to anovulatory cycles and hormonal imbalance.
- **Pushpghani Jatharini** - Keeping this in view, we can consider it as female whose menstrual flow is regular, but cycle is without ovulation. It results in corpulent and hairy cheeks which are associated comorbidities with PCOS. This condition is seen in PCOS as 30% of women with PCOS have normal menses.

### Diagnosis

- Rotterdam's Criteria[5] - Presence of any two factors among oligomenorrhoea/ Anovulation, Hyperandrogenism and Polycystic ovaries on USG (>12 small peripheral cysts or ovary >10cc in volume)
- All the Signs and Symptoms like Oligomenorrhoea, amenorrhoea, irregular menses, infertility, hirsutism, metabolic syndrome.

### Treatment

The objective of treatment includes Reduce ovarian volume, Regularization of menses, treating infertility by improving ovulation, reducing androgens, managing insulin resistance. Surgical methods like drilling or puncture of cysts. Despite numerous pharmacological treatments, many women seek alternative options due to side effects and chronic nature of the disorder. *Ayurveda*, with its holistic understanding of reproductive and metabolic health, offers valuable insights and therapeutic options for PCOS

**Chikitsa:** Ayurvedic approach

### Dinacharya (Daily Regimen)

*Ayurveda* emphasizes regular daily habits to align bodily functions with natural circadian rhythms, which is especially important in regulating the hypothalamic-pituitary-ovarian axis responsible for hormonal balance. The following practices help stabilize neuroendocrine function and prevent aggravation of doshas.

- **Brahmamuhurta Uttishthati** (Waking up early): Between 4:30–5:30 AM, this aligns with the *Vata Dosha* and is conducive for clarity and hormonal regulation.

- **Abhyanga** (Oil Massage): Daily oil massage with warm sesame or medicated oils balances *Vata* and improves lymphatic drainage, promoting reproductive health.
- **Vyayama** (Exercise): Moderate physical activity, such as yoga or brisk walking, is advised in the morning to enhance metabolism (*Agni*) and reduce *Medo Dhatu* (fat tissue), which is often vitiated in PCOS.
- **Snana** (Bath): Improves circulation and promotes freshness.
- **Ahara Vidhi** (Mindful Eating): Eating warm, freshly prepared meals at regular intervals enhances digestion and assimilation, preventing *Ama* formation (toxic metabolic waste).
- **Nidra** (Sleep hygiene): Early bedtime and avoiding screen exposure before sleep are critical for hormonal reset and stress reduction.

### Ritucharya (Seasonal Regimen)

Seasonal variations affect *Dosha* predominance in the body, and following a *Ritucharya* helps in preventing seasonal aggravation that may disrupt hormonal and metabolic functions. This is especially relevant in PCOS, where *Kapha* and *Vata* vitiation dominate.

- **Shishira and Vasanta Ritu** (Late winter and spring): These seasons promote *Kapha* Detoxifying measures like *Langhana* (light fasting), *Udvartana* (dry powder massage) help reduce *Kapha* and *Meda dhatu*.
- **Grishma** (Summer): *Pitta* begins to accumulate. Cooling, hydrating foods and *Sheetal Dravyas* (e.g., coriander, fennel, and *Amalaki*) are emphasized.
- **Varsha Ritu** (Monsoon): *Vata* aggravation is common. Warm, regular oil massage, and gentle exercise stabilize *Vata* and help prevent menstrual irregularities.
- **Sharad Ritu** (Autumn): *Pitta* vitiation peaks. Herbs like *Guduchi*, *Shatavari*, and *Amalaki* are useful for pacifying *Pitta* and supporting reproductive tissues.
- **Hemanta Ritu** (Early winter): Digestion is strong; nutrient-rich food including ghee and milk is advised to nourish *Shukra* and *Artava Dhatu*.

**Yoga**

- *Asana* regular practice of *Suryanamaskara*, *Sarvangasana*, *Paschimottanasana*, *Ardhamatsyendrasana*, *Matsyasana* will help improving lipid, glucose including insulin resistance values.
- *Pranayama* - *Nadishodhana Pranayama*, *Kapalbhati* and *Bhramari* are known to be beneficial in brain-pancreas endocrine pathway and also helps in managing insulin resistance and dyslipidaemia.

**Panchakarma**

- *Vamana -Virechana Karma*-Acharya *Sushruta* explained *shodhana* in *Artava Kshaya* followed by use of *Aagneya Dravya*. [6] Acharya *Dalhana* commented and stated only *Vamana Karma* should be used, not the *Virechana Karma*. Because *Virechana Karma* reduces *Pitta* which results in reduction in *Agneyatwa* of *Artava* which again leads to *Artava Kshaya*. [7] *Vamana Karma* expels *Saumaya (Kapha)* substance results in relative increase of *Aagneya* constituent of body, consequently, increases *Artava*. Acharya *Chakrapani* states that use of both *Vamana Karma* (emesis) and *Virechana Karma* (purgation) clears the upward and downward channels respectively. So, both procedures can be done accordingly. *Vamana* helps to increase metabolism of body therefore reduce weight which can therefore improve the circulation of androgen, glucose level and help ovulation and thus enhances pregnancy rate in obese women with PCOS. [8]
- *Basti* - As there is not any *Yonivyapada* without *Vata Dosha*, *Basti* is main treatment for *Vatadosha (Ardhachikitsa)* helps to maintain function of *Apana Vata* which is required for the normal functioning of *Artava*. *Basti* may stimulate the parasympathetic nerve supply which in turn helps for development of follicles and release of ovum from ovary.
- *Uttara Basti* - It is highly beneficial in gynaecological disorders as it clears the *Artavavaha Srotasa* and pacifies vitiated *Apana Vayu* and promotes follicular maturity.
- *Nasya* - It may stimulate olfactory nerves and limbic system, which in turn stimulates hypothalamus leading to stimulation of Gonadotropin Releasing Hormone (GnRH) neurons,

- regularizing GnRH pulsatile secretion and maintaining the HPO axis, helps in regular and normal menstrual cycle.

**Formulations**

Depending upon the *Prakruti*, *Vikruti*, *Dosha*, *Dushya*, *Agni*, *Ama* etc. of the patient we can choose some of the Ayurvedic formulations like *Kanchanara Guggulu*, *Kuberaksha Vati*, *Latakarana Ghana Vati*, *Pushpadhanva Rasa*, *Nasthapushpantak Rasa*, *Rajapravartani Vati*, *Lashunadi Vati*, *Chandraprabha Vati*, *Rasapachak Kashaya*, *Medopachaka Kashaya*, *Dashamoolarista*, *Ashokarista*, *Daryarista*, *Saraswatarista*, *Phalaghrita*, *Shatavari Ghrita*, *Dadimadi Ghrita*, *Rasona Ghrita* etc.

**Single drugs**

- *Meshshringi* - (*Gymnena sylvestre*, Family - *Asclepiadaceae*) Studies reported that it reduces the absorption of glucose in intestines, stimulates beta cell pancreatic growth and insulin release from beta cells.
- *Shatavari* - (*Asparagus racemosus*, Family - *Liliaceae*) Many research prove that it is beneficial in infertility as it stimulates folliculogenesis, ovulation, prepares the uterus for conception and prevents miscarriages. Its alcohol extract significantly enhances insulin release. [9]
- *Methika* - (*Trigonella foenumgraceum*, Family - *Fabaceae*) Studies on seed extract shown significant reduction in ovarian volume and size of cyst. It also showed increase in LH and FSH level.
- *Kumari* - (*Aloe vera*, Family - *Liliaceae*) - Experimental studies shown that *Aloe Vera* decrease the levels of testosterone and insulin through improving the levels of progesterone and estradiol, decreasing the transcription levels of steroidal receptors; increasing aromatase expression which converts testosterone into estradiol and androstenedione into estrogen. Also helps in regulating hyperglycaemia and modulating steroidogenesis.
- *Jatamamshi* - (*Nardostachys jatamansi*, Family - *Valerianaceae*) - It is reported to be beneficial in management in PCOS by its antiandrogenic effect. [10]

- *Lodhra* - (*Symplocos racemose*, Family - Symplocaceae) - Its bark is prescribed in menorrhagia and other female reproductive dysfunctions it significantly decreases the elevated levels of testosterone and restored the levels of estrogen, progesterone and cholesterol levels, maintain the normal weight and histology of ovarian tissue.

## Conclusion

PCOS is a complex disorder with metabolic, hormonal, and psychological dimensions.[11] Integrative approaches combining modern and Ayurvedic systems can provide a sustainable and individualized management plan. Lifestyle and diet play a crucial role and should be the cornerstone of any treatment strategy. Future research must focus on standardized Ayurvedic clinical trials, long-term follow-up, and interdisciplinary collaboration.

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