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# Ayurvedic perspective of Polycystic Ovarian Syndrome

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## ABSTRACT

Women health remains a staggering challenge, particularly in the developing world. Around 5-15% of women in the reproductive age group suffer from hormonal imbalances that lead to menstrual irregularities.<sup>[1]</sup> A wide range of factors affect menstruation among all factors polycystic ovarian syndrome (PCOS) is the foremost factor. At least 70% of women with PCOS remain undiagnosed in primary care due to lack of knowledge and not giving attention to commonly occur menstrual irregularities. Incidence rate of PCOS is increasing day by day due to sedentary lifestyle and faulty daily routine, high consumption of unhealthy foods.

**Key words:** Polycystic Ovarian Syndrome, PCOS, Ayurveda, Women Health.

## INTRODUCTION

Polycystic ovary syndrome (PCOS) is a highly prevalent endocrinological disorder with a heterogeneous spectrum of ovulation dysfunction, polycystic ovary morphology, and hyperandrogenism. The global prevalence rate based on different diagnostic criteria used for PCOS diagnosis varies between 2 - 21 percent.<sup>[2]</sup> 85-90% of women with oligomenorrhoea have PCOS while 30-40% of women with amenorrhoea will have PCOS.<sup>[3]</sup> PCOS is the most common endocrinal as well as metabolic disorder in the female population among adolescence and reproductive age group. It is

the multifaceted disease with various etiologic factors characterised by chronic anovulation, hyperandrogenism, and polycystic ovaries with the existence of insulin resistance, hypertension, obesity, and dyslipidaemia are responsible for long term serious outcomes such as endometrial hyperplasia, type 2 DM, and coronary artery diseases.

### Clinical features<sup>[4]</sup>

- Obesity (abdominal-50%)
- Menstrual abnormalities (70%) in the form of oligomenorrhoea, amenorrhoea or dysfunctional uterine bleeding (DUB) and infertility, Classical symptom of anovulation - oligomenorrhoea with heavy bleeding,
- Presence of hirsutism and acne are the important features (70%). Virilism is rare,
- Acanthosis - nigricans is characterized by specific skin changes due to insulin resistance (thickened and pigmented (grey brown) skin) commonly affected sites are nape of the neck, inner thighs, groin and axilla.
- **HAIR-AN** syndrome in patients with PCOS is characterized by hyperandrogenism, insulin

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resistance and acanthosis nigricans, Ferriman – gallwey score for hirsutism score >8 considered as hirsutism.

#### Diagnosis<sup>[5]</sup>

**Rotterdam criteria (2003)** (based upon the presence of any two of the following three criteria (ASRM)

1. Oligo and/or anovulation
2. Hyperandrogenism (clinical and/or biochemical)
3. Polycystic ovaries in USG (antral follicle count  $\geq 12$  measuring about 2-9mm and /or ovarian volume >10 cm)

#### Ayurveda perspective of follicle development and ovulation

- The process of development and enlargement follicles is said to be due to *Kapha*, as one of the functions of *Kapha* is *Upachaya* which means development. Differentiation or separation and then expulsion are the functions of *Vata*. So, here *Vata* is responsible for the rupture of follicle and proper outcome of menstrual cycle and ovulation. These are the normal functioning of *Doshas*.
- In PCOS due to vitiation of *Kapha*, there is no proper development of follicles and due to vitiated *Vata* premature luteinisation of follicles occurs and thus causes anovulation. Here, the function of *Pitta* is somewhat suppressed by *Vata* and *Kapha*, so there is reduced rate of aromatization (*Pitta* being not enough to convert increased androgens into oestrogens causing androgen excess) and no maturation of follicles occurs. Hormonal imbalance first disturbs ovarian cycle which later on reflects by irregular menstrual cycle.

#### Hetu (Aetiology)<sup>[6]</sup>

##### Mithyachara

*Mithya Ahara* - it includes Unhealthy lifestyle, altered food habits excess use of *Madhur*, *Amla*, *Lavana Rasa Ahara*, *Snigdha*, *Guru*, *Abhishyandi*, *Sheeta*, *Snighdha Guna Ahara*, Eating habits like *Adhyasana* (Taking food before digesting previous food), *Vishmasana* (Taking food in irregular quantity and at irregular time),

*Atyashanam* (Taking excessive amount of diet without knowing their *Agni*), *Samasana* (wholesome and unwholesome diet together) causes the vitiation of *Dosha*, *Prमितabhojana* (Less quantity of food irrespective of need).

*Mithya Vihara* (abnormal mode of living) - It includes faulty modes of *Dincharya*, *Ratricharya*, *Divaswapna*, *Ratrijagarana*, *Vegadharana*, *Avyayama*, *Shoka* (grief), *Chinta* (worry), *Bhaya* (fear).

- **Pradushtartava** - Hormonal imbalance, endometrium and ovarian pathology
- **Beejadosha** - X linked, autosomal genes, genetic tendency
- **Deva** - Idiopathic

**Rasavaha Strotas Dushti Hetu** - “Gurusheetam Atisnigdham Atimatram Samashnataam, Rasavahini Dushyanti Chintyanaamapi Chintanaat.” - excessive intake of heavy diet like cheese, fast food, Chinese, bakery products, excessive intake of cold food or products, eating too oily, unctuous food, taking wholesome and unwholesome diet together, *Chinta* (stress/worry).<sup>[7]</sup>

**Medovaha Strotas Dushti Hetu** - “Avayayama Diwaswapanama Medhyanacha Atibhakshanata Medovahani Dushyanti Varunyashchatisevanata” - lack of exercise, day sleeping, eating fatty foods, excess intake of alcohol.

#### Purvarupa and Rupa

- Menstrual irregularities have been described under *Artava Vyapads*<sup>[8]</sup> or *Yonirogas*<sup>[9]</sup> (uterine disorders).
- Anovulation is included under *Vandhya*<sup>[10]</sup> (infertility).
- Obesity is the condition described as *Sthoulya*,<sup>[11]</sup> a *Santanpanajanya Vikara*.
- Acne and Baldness have been described as *Mukhadooshika*<sup>[12]</sup> and *Khalitya*, the two independent pathogenesis.
- Hyperinsulinemia leads to type 2 Diabetes mellitus, and is described under *Prameha*. It is also manifested as a complication of *Sthoulya*.

**Different references in Ayurvedic Classics**

*Anartava* - amenorrhoea; *Yonivyapad* - physiological and anatomical disorder of the reproductive system; *Arjaska-Anartava* due to vitiation of *Pitta and Rakta Dosha*; *Lohitakshaya* - *Anartava* due to vitiation of *Vata-Pitta Dosha*; *Pushpaghni*<sup>[13]</sup> - anovulatory menstruation, hirsutism and obesity; *Vandhya* - Infertility; *Viphalumbeeja / Abeejata / Akarmya Artava*- anovulation; *Ashtartava Dushti*- menstrual disorder due to vitiation of *Dosha*; *Granthibhut Artava* - due to *Vata-Kapha* cystic accumulation at periphery of ovary; *Ashtanindniya*<sup>[14]</sup> - *Atiloma* (excessive hairs on body); *Atisthula* (obesity).

**Samprapti Ghataka of Pushpaghni**

- **Dosha:** *Kapha & Vata (Kapha-Vridhi, Vata-Vaigunya)*
- **Dushya:** *Rasa, Rakta, Mamsa, Meda*

Lakshan of *Dushya Dushti* - *Rasa* - *Aruchi, Gouravam, Tandraagninasa, Angamarda, Srotorodha, Klaibya; Rakta* - *Kushta, Pidaka, Asrigdar; Mamsa* - *Granthi; Meda* - *Prameha, Poorvaroopo; Asthi* - *Keshaloma; Majja* - *Gaurava; Shukra* - *Klaibya, Garbhasrava.*

- **Upadhatu:** *Artava (Rasa)*
- **Agni:** *Jatharangi, Dhatvagni*
- **Srotas:** *Rasavaha, Raktavaha, Mamsavaha, Medovaha, Swedvaha, Artavavaha.*

*Rasa & Meda* involvement as Insulin Resistance & Obesity, *Avarana* of *Vata* for Faulty Negative Feedback Mechanism of hormones or Improper functioning of HPO axis & Hyper Androgenism, *Artavadushti* as Irregular Cycles / Anovulatory Cycles, *Beeja-Upaghata* for Hereditary factor

- **Srotodushti:** *Sanga, Atipravarti, Granthi*
  - **Sanga** - Amenorrhoea, oligomenorrhoea, *Kaphaavaranam* to *Vata & Pitta Kashaya*
  - **Atipravarthi** - Abnormal uterine bleeding - *Pitta Vridhi*
  - **Granthi** - PCOD

**Samprapti**

*Kapha Vriddhikara Nidana Sevan* causes:

**1. Jatharagni Mandhya**

- It increases *Snehansha* of body which affect *Agneya* property of *Pitta*. Diminish *Pitta* causes *Prabha and Varna Nasha Karshyam (acanthosis nigricans)*
- Due to this *Dhatu* diminishes and *Mala* increases. It results in *Kesha (Asthi Mala)* overproduction (hirsutism), *Sweda (Majja Mala)*, increased sebum production and *Mukha Dushika* (acne)
- *Jatharagni Mandhya* causes accumulation of *Ama Dosha*. It does *Vata-Vaigunya*. Vitiated *Vata-Kapha Avruta Artavaha-Srotas* Causes *Artava Nasha* (oligo-amenorrhoea)

**2. Sthula**

- *Medovaha Sroto Moola (Kati) Dushti* and *Sthan Samshrya at Kati Pradesh* causing *Apana Vaigunya*. It impairs *Artava Nirgaman*.

**3. Vitiated Kapha**

- Affect *Medodhatu* and cause *Santarpana Janya Vyadhi Prameha* (hyperinsulinemia)

**Chikitsa Sidhanta of PCOS****1. Nidana Parivarjana (Eradication of causative factor)**

- *Swasthayarakshana* principle - *Dincharya* (daily regimen), *Ritucharya* (seasonal regimen), *Sadvritta, Achara-Rasayana, Hit-Ahara, Samyakanidra* (proper sleep of 6-8 hours in night), *Vyayama* (physical activity) for prevention of disease, Avoidance of high calorie diet like junk food, bakery items, cold drinks, etc., Results in greater weight loss; low glycemic diets decreased insulin resistance, fibrinogen, total and high lipoprotein density, improved menstrual irregularities.

**2. Shodhana (Purification of the Body)**

- **Vamana Karma (emesis)** - Intended mainly for the expulsion of vitiated '*Kapha*', Purifies internal toxins, Balances hormonal system, stimulates pancreas to secrete insulin in normal level, helps to

increase metabolism of body therefore reduce weight and specifically act on liver metabolism which is the main site of hormone formation. For *Vamana Madhanphala Ikshwaku*, *Jimutak* can be used.

- **Virechana (Purgation)** - it removes *Aavarana*, *Vata Anulomana* and catering the normal functioning of dosha, increases the bio availability of drugs by opening channels & improve the assimilation of drug. For *Virechana Danti Avaleha*, *Abhyadi Modaka* can be used.
  - **Basti (Anuvasana Basti, Niruha Basti)** - it releases obstructions in the way of *Vata Dosha* and thus regulates the normal phenomenon of “*Vata*” (*Apana vata*). *Apana Vayu* which controls on the *Shukra Dhatu* (Semen) in males & *Aartava* (Ovum) in females. As per *Kashyapa*, *Anuvasana Basti* is the choice of treatment in oligomenorrhoea, amenorrhoea. *Matrabasti* of *Shatpushpa Taila*, *Sahachara Taila*, *Niruha Basti* of *Dashmoola Kwatha*, *Sahachara Kwatha* can be used.
  - **Nasya** - It stimulate olfactory nerves and limbic system, hypothalamus, GnRh neurons, regularizing GnRh pulsatile secretion and regularize normal menstrual cycle. For *Nasya Narayana Taila*, *Shatpushpa*, *Shatavari Taila* can be used.
  - **Uttar-Basti** - it Purify and clears the *Aartava Vaha Srotas*, pacifies vitiated *Apana Vayu* and Improve follicular maturity. For *Uttar Basti Dhanvantara Taila*, *Bala Taila*, *Phala Ghrita* can be used
- 3. Shamana** (Use of *Artavajanana*, *Vatakaphashamaka*, *Agneya Dravyas*)
- *Agnimandya* & *Aampachana* drugs - *Trikatu Churna*, *Shadushana Churna*, *Haritaki Churna*, *Hingwashtaka Churna*, *Chitrakadi Gutika*
  - *Medonashaka* drugs - *Madhu* like *Lekhana Dravyas* (scrapping agents), *Takrarishtha*, along with *Yava*, *Yavaka*, *Kulattha* etc. as *Aahara* (diet) is mentioned by *Acharya Charaka* in *Chikitsa* of *Atistula*.
  - *Nashtartava/Alappushpa* (*Artavajanana*) - *Shatpushpa* and *Shatavari Churna*

- *Anya Yoga* - *Lasona Kalpa*, *Pushpadhanva Rasa*, *Kumaryasava*, *Varunadi Kasaya*, *Kulatthadi Kasaya*, *Saptasara Kashaya*, *Tila Kwath*, *Kanchnara Guggul*, *Dashmoola Haritaki*, *Kuberaksha Vati*, *Shadadharan Churna*, *Sukumara Kashaya*, *Nasta-Pushpantaka Rasa*

- 4. Yoga and Pranayam** - *Uttanapadasana*, *Sarvangasana*, *Paschimottanasana*, *Halasana*, *Surya- Namaskara*, *Sarvangasana*, *Shirshasana*, *Halasana*, *Bhastrika* and *Ujjayi Pranayama*.

#### Previous researches on PCOS

In earlier research *Shatapushpadi Ghan Vati*(250mg BD),<sup>[15]</sup> *Krishna Tila Kalka*(5gm BD),<sup>[16]</sup> *Rajahpravritini Vati* (250mg BD), *Varunadi Kashaya* (20ml BD), *Kanchnar Guggulu* (1Gm BD),<sup>[17]</sup> *Lasuna Rasayan*, *Palashkshara* & *Palashkashaya*,<sup>[18]</sup> *Asanabilwadidi Kwatha* (20ml BD),<sup>[19]</sup> *Sowbhagya Shunthi*,<sup>[20]</sup> *Sharavni Ghritkumari* ,*Pathadi Kwath*(20ml),<sup>[21]</sup> *Chandraprabha Vati*<sup>[21]</sup> were given.

Alternative therapy was also used in which for *Shodhan Chikitsa* like *Vamana* by *Ikshwaku Beeja* (5-7gm),<sup>[22]</sup> *Virechana* by *Dantiavleha* (10gm),<sup>[23]</sup> *Basti* (*Madhutailik Basti*, *Shatpushpa Taila Matra Basti*,<sup>[24]</sup> *Yogabasti*), *Uttar Basti* (*Panchagavya Ghrit*)<sup>[25]</sup> given.

All max. used drug for the treatment having *Ushna Virya*, *Vata-Kaphahara*, *Medonashan*, *Gulmahara*, *Vidradhinasha*, *Pittavardhaka*, *Bhedana*, *Granthiharaguna* property which regulates menstrual cycle & decrease cyst size.

*Shodhan Chikitsa* by *Vamana*, *Virechana* or *Basti* showing highly significant (p<0.0001) result on regularizing menstruation, reduction in body weight & BMI, lowering FBS level.<sup>[2,8]</sup> & also showing highly significant (p<0.0001) result on reduction in cyst no. and cyst size, significant reduction in LH level, significant reduction in FSH:LH ratio.<sup>[8]</sup> *Virechana* by *Kashaya* (*Trivrit*, *Aragwadha Phalamajja*, *Eranda*) has shown significant decrease in SBP & DBP along with FBS & PPBS, Cholestrol, Triglycerides & increase in HDL level<sup>[26]</sup> and provided better relief in pt. of *Madhumeha*<sup>[27]</sup> means it works on insulin resistance

which are root cause of PCOS. No adverse effect seen in trial all mentioned drugs are safe & effective.

## DISCUSSION

PCOS is a condition involving disorder of ovary associated with deranged metabolism of lipids and carbohydrates and multiple hormonal involvement. Changing lifestyle and eating habits of the modern era along with genetic factors contribute significantly to the development of PCOS in obese women. PCOS now regarded as a metabolic syndrome can be managed to a large extent by following proper *Ahara* and *Vihara*. Equilibrium of doshas is attained by indulging in *Hitakar-Aahara* and *Vihara* This, in turn, results in the proper functioning of *Agni*. Which is essential for the adequate formation of *Rasadhatu*, *Artava* being the *Upadhatu* of *Rasa* will be then formed unvitiated and does *Samprapti Vighatana* of PCOS.

## CONCLUSION

Various researches and reviews have been done on PCOS despite this, some controversies are still there related to its diagnosis, pathophysiology, treatment. Researches are required for understanding the correct pathophysiology of PCOS in *Ayurveda*. There is a great need to analyses the previously researched drugs on the basis of Ayurvedic pharmacological principles to find the promising remedy for PCOS.

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