



## Review Article

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### A REVIEW ON KARMUKTA OF AYURVEDIC DRUGS USED FOR POLYCYSTIC OVARY SYNDROME (PCOS)

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#### ABSTRACT

Polycystic ovarian syndrome (PCOS) is a common gynaecological disorder characterized by hypergonadotropism, hirsutism, obesity, oligomenorrhea and commonly associated with infertility. According to Ayurveda PCOS can correlate with several conditions described in Ayurveda i.e. Granthi. Arttavakshayam, Nashtaarttavam, Pushpagani Jataharini and Raktagulamam. In all these conditions Kapha and Vata are aggravated doshas and medas, mamsam and rakta are the vitiated dushyas. Hence, in the initial stage, Ayurvedic drugs are given to specify Vata and Kapha. PCOS has a complex pathophysiology involving insulin resistance, androgen abnormality and excess oestrogen secretion. In this review, an attempt has been made to study the use and mode of action of Ayurveda drugs for the treatment of PCOS. Herbal products like Yastimadhu (*Glycyrrhiza glabra*), Kumari (*Aloe vera*), Tvaka (Cinnamomum Zeylanicum), Mostly the Ayurvedic drugs used for the PCOS, all are Vata-kapha shamaka. These can be used to treat various symptoms of PCOS with no or mild side effects.

**Keywords:** PCOS, Ayurveda, Ayurvedic drugs

#### INTRODUCTION

Polycystic ovary syndrome (PCOS) is a complex medical condition involving multiple body systems. The etiology of this condition is unknown. In addition, there is currently no consensus on the diagnostic criteria for PCOS. It is accepted that hyperandrogenism, insulin resistance, and menstrual abnormalities are commonly present. An estimated 6–10 percent of Reproductive-age women have PCOS, making it one of the most common endocrine reproductive disorders<sup>1</sup>. This is a type endocrine disorder which involves an ovulation, hirsutism, irregular and painful menstrual cycles, amenorrhea, having small cysts in the ovaries etc. This is a major cause of infertility in women, also known as stein-levities syndrome<sup>2</sup>. Clinically, PCOS is made up of three characteristics: hyper androgenic state, an ovulation and insulin resistance<sup>3,4</sup> the accompanying insulin resistance and hyperinsulinemia mark PCOS as a pre-diabetic state, with high incidence of impaired glucose tolerance, gestational diabetes, and overt diabetes. In patients with PCOS, other metabolic and biochemical changes, such as hypertension and dyslipidaemia, increase the risk of cardiovascular disease. According to Ayurvedic view, PCOS can correlate with several conditions i.e. Aarttavakshaya, Nashtaarttava, Granthi, Arajaska, Pushpaghani jataharini and Raktagulama. Ayurvedic interpretation of disease goes in line with Rasapradoshaja vyadhi, Santarpanotha vyadhi. Ahara and Vihar causing Vata-kapha dushti and Medo, Mamsa and Rakta dushti, will be the key factors causing the expression of the syndrome. Therefore Poly Cystic Ovarian Syndrome can also be described with same involvement of Dosha, Dhatu and Upadhatu Kapha predominance manifests as increased weight, subfertility, hirsutium, diabetic tendencies and coldness. Pitta predominance manifests as hair loss, acne,

painful menses, clots and heart problems. Vata predominance manifests with painful menses, scanty or less menstrual blood and severe menstrual irregularity<sup>5,6,7</sup>. Treatment for PCOS generally follows a multipronged, bio psychosocial approach depending upon the medical needs and desires of the patient. A single treatment modality, however, usually ameliorates more than one abnormality in PCOS.

#### CLINICAL PICTURE

PCOS is a medical condition associated with hyperandrogenism, ovulatory dysfunction and polycystic ovaries<sup>8</sup>. All the definitions of PCOS exclude patients with significantly elevated prolactin, significant thyroid dysfunction, adult onset congenital adrenal hyperplasia and androgen secreting neoplasms from being classified as PCOS

#### DIAGNOSIS

The National Institutes of Health (NIH) 1990 criteria included hyperandrogenism and oligomenorrhea or amenorrhea as required for PCOS diagnosis. The Rotterdam 2003 criteria required two of three of the following for PCOS diagnosis: hyperandrogenism, oligomenorrhea or amenorrhea, polycystic ovaries by ultrasound<sup>9</sup>. Although insulin resistance is noted among women with PCOS, it is not included in any of the diagnostic criteria. Obesity is common but 20% of women with PCOS are not obese. Women with PCOS are often sub fertile caused by infrequent or absent ovulation. PCOS can have other general health implications, including increased risk for endometrial hyperplasia and cancer, diabetes and possibly cardiovascular disease.

Even though PCOS usually causes irregular bleeding rather than amenorrhea, it remains one of the most common causes of amenorrhea. The aetiology of PCOS remains largely unknown<sup>10</sup>.

### AYURVEDIC APPROACH TO PCOS

Benefit of Ayurvedic drug therapy compared to conventional therapy is that Ayurvedic drug therapy is safe with lesser side effects and presence of multiple active compounds in medicinal herbs altogether provides a potentiating effect. In this review, the treatment of different aspects of PCOS is discussed, with a particular emphasis on the natural products. This paper reviews the Ayurvedic drugs used for the treatment of PCOS.

### IMPORTANT AYURVEDIC DRUGS FOR PCOS

#### Yastimadhu - *Glycyrrhiza glabra*

The effect of liquorice was investigated on androgen metabolism and it showed that Liquorice can reduce serum testosterone probably due to the block of 17-hydroxysteroid dehydrogenase and 17-20 lipase. Liquorice could be considered an adjuvant therapy of hirsutism and polycystic ovary syndrome<sup>11</sup>.

#### Twak - *Cinnamomum zeylanicum*

Cinnamon extract has been shown to reduce insulin resistance in in vitro and in vivo studies by increasing phosphatidyl inositol

3-kinase activity in the insulin signalling pathway and thus potentiating insulin action<sup>12</sup>.

#### Gokshur – *Tribulus terrestris*

The daily dose of Tribulus corresponds to extracts containing furostanol saponins as protodioscin at 300 mg to 400 mg per day. In PCOS it is best used on days 5 to 14 of the menstrual cycle to restore menstrual regularity<sup>13</sup>.

#### Karvellak - *Momordica charantia*

Its fruit, commonly known as bitter melon, has historically been used to improve blood-sugar control. A study demonstrated that supplementation with bitter melon improved glucose tolerance in 73 percent of patients with diabetes who were treated with the supplement<sup>14</sup>. Another study also showed that treatment with bitter melon improved both fasting and 2-hour postprandial glucose levels in 86 percent of individuals with type 2 diabetes<sup>15</sup>.

#### Meshshringi - *Gymnema sylvestre*

It is a tropical plant used medicinally to treat hyperglycaemia. Research has shown that gymnema supplementation decreases glucose levels in hyperglycaemic rats. Other studies have shown that using this herb as a supplement decreases glucose absorption in the intestines, stimulates pancreatic beta-cell growth, and stimulates insulin release from beta cells<sup>16, 17</sup>.

Table 1: Ayurvedic Drugs Used in Poly Cystic Ovarian Syndrome<sup>18-29</sup>

No.	Drug name	Latin name	Part used	Dosh-dhatu karma as per ayurveda	Mode of action on PCOS
1.	Yastimadhu	<i>Glycyrriza glabra</i> Linn.	root	Vata-pittashamak Raktashodhak (Blood purifier)	Reduces serum testosterone and an adjuvant therapy for hirsutism and PCOS
2.	Pudina	<i>Mentha spicata</i> Linn.	leaf	Kapha-vata-shamak raktashodhak (Blood purifier)	Antiandrogen property
3.	Atasi	<i>Linum usitatissimum</i> Linn.	seed	Vata-shamak	Decrease in androgen level and reduction in hirsutism
4.	Ghritkumari	<i>Aloe vera</i> tourn.exLinn.	leaf	Pittavirecana Raktashodhak (Blood purifier)	Restores glucose sensitivity and steroidogenic activity
5.	Twak	<i>Cinnamomum zeylanicum</i> Breyn.	Bark, oil, leaf	Kapha-vata shamak raktashodhak (Blood purifier)	Reduces insulin resistance
6.	Methika	<i>Trigonella foenum graceam</i> Linn.	Seed	Vata shamak	Lowers cholesterol and fasting glucose level
7.	Gokshura	<i>Tribulus terrestris</i> Linn.	Fruit ,root	Vata-pitta shamak	Female fertility tonic Ovarian
8.	Shatavari	<i>Asparagus racemosus</i> Willd	root	Vata-pitta shamak	Correct the hormonal influence and enhance follicular maturity
9.	Guduchi	<i>Tinospora cordifolia</i> Willd miers ex Linn.	stem	Tridoshamak rakta vardhak (Hematinic) Prameh-har (Anti-diabetic)	Increase the immunity of patient
10.	Shatpushpa	<i>Peucedanum graveolens</i>	flower	Vata-kapha shamak prajashthapan	Enhance Follicular maturity, correct menstrual irregularity
11.	Atibala	<i>Abutilon indicum</i> Linn.	stem	Vata-pitta shamak prajashthapan	Correct hormonal disturbances and facilitates to avoid miscarriage
12.	Sahchara	<i>Barleria prionitis</i> Linn.	leaf	Kapha-vata shamak raktashodhak (Blood purifier)	Removes unwanted follicles
13.	Vijaysara	<i>Pterocarpus marsupium</i> Roxb.	niryas	Kapha-pitta shamak madhume-har (Anti-diabetic) yonidosh-har	Insulin sensitizer increase the effectiveness of insulin in metabolizing glucose
14.	Amla	<i>Emblica officinalis</i> Gaertn.	fruit	Pitta shamak garbhasthapan	Cardioprotective antioxidant
15.	Haldi	<i>Curcuma longa</i> Linn.	root	Kapha –vata shamak raktaprasadan raktavardhak prameh-har	Hypolipidemic antiobesity Antioxidant
16.	Nimba	<i>Azadirachta indica</i> A.juss	leaf	Kapha-pitta shamak rakta shodhak	Antidiabetic
17.	Meshshringi	<i>Gymnema Sylvestre</i> R.Br.	stem	Kapha-vata shamak	Antidiabetic
18.	Manjistha	<i>Rubia cordifolia</i>	root	Vata-pitta shamak rakta shodhak	Correct menstrual irregularities

## CONCLUSION

PCOS is a complex condition for which the symptoms are variable, and the cause is unknown. This makes both diagnosis and treatment of this condition challenging. Herbal products like Yastimadhu (*Glycyrrhiza glabra*), Kumari (*Aloe vera*), Tvaka (*Cinnamomum Zeylanicum*), Mostly the Ayurvedic drugs used for the PCOS, all are Vata-kapha shamaka. These can be used to treat various symptoms of PCOS with no or mild side effects. Although additional research on these Ayurvedic drugs interventions is necessary, studies have provided evidence that such supplements are effective for treating PCOS.

## REFERENCES

1. Knochenhauer ES, Key TJ, Kahsar-Miller M, et al. Prevalence of the polycystic ovary syndrome in unselected black and white women of the southeastern United States: A prospective study. *J Clin Endocrinol Metab* 1998;83:3078–3082.
2. Fallon LF. Polycystic Ovary Syndrome. *Gale encyclopaedia of medicine, Gale group*, 2006.
3. Miller LG, Murray WJ. Herbal medicinals, *a clinicians guide Routledge*, 1998, 326.
4. Tilburt JC, Kaptchuk TJ. Bulletin of the World Health Organization, 86th ed, 2008, 594-99.
5. Tewari P.V. Ayurveda Prasuti Tantra Evam Stri Roga, Stri Roga, Chaukambha Orientale. Varanasi: 1996. p. 169. (192). Part-II.
6. Sharma P.V. Charaka Samhita (English Translation) Chaukambha Orientalia. Varanasi: 1981.
7. Srikantha Mruthi K.R. Sushruta Samhita (English Translation) Chaukambha Orientale. Varanasi: 2001. pp. 170–173.
8. ACOG Committee on practical bulletins- Gynaecology bulletin No. 108: polycystic ovary syndrome. *Obstet Gynecol* 2009;114:936-949
9. The Rotterdam ESHRE/ASRM Sponsored consensus workshop Group. Revised 2003 consensus on diagnostic criteria and long term health risk related to poly cystic ovary syndrome fertile Steril 2004;81:19-23
10. Berek & Novak's Gynaecology, Wolters Kluwer India, Fifteenth Edition pg. no. 1050
11. Decio A et al. Licorice reduces serum testosterone in healthy women, *Steroids*, 2004; 69(11-12): 763-66.
12. Grant P. Spearmint herbal tea has significant anti-androgen effects in polycystic ovarian syndrome, a randomized controlled trial, *Phytother Res*, 24(2), 2010, 186-88.
13. Bone K: *A Clinical Guide to Blending Liquid Herbs: Herbal Formulations for the Individual Patient*. 1st ed, St. Louis, 2003, Ctiurchitl Livingstone.
14. Welihinda J, Karunanayake EH, Sheriff MH, Jayasinghe KS. Effect of *Momordica charantia* on the glucose tolerance in maturity onset diabetes. *J Ethnopharmacol* 1986;17:277–282.
15. Ahmad N, Hassan MR, Halder H, Bennoor KS. Effect of *Momordica charantia* (Karolla) extracts on fasting and postprandial serum glucose levels in NIDDM patients. *Bangladesh Med Res Counc Bull* 1999; 25:11–13.
16. Persaud SJ, Al-Majed H, Raman A, Jones PM. *Gymnema sylvestre* stimulates insulin release in vitro by increased membrane permeability. *J Endocrinol* 1999;163:207–212.
17. Yeh GY, Eisenberg DM, Kaptchuk TJ, Phillips RS. Systematic review of herbs and dietary supplements for glycemic control in diabetes. *Diabetes Care* 2003;26:1277–1294.
18. Hudson T, Northrup C. Women's encyclopedia of natural medicine: alternative therapies and integrative medicine. McGraw-Hill Professional; 1999.
19. Anonymous. Quick access patient information on conditions, herbs and supplements; Integrative Medicine Communications. Thieme; 2000.
20. Blumenthal M, Brinckmann JA, Wollschlaeger B. The ABC clinical guide to herbs. Routledge; 2003.
21. Singh KP, Tierra M. The Way of Ayurvedic Herbs: The Most Complete Guide to Natural Healing and Health with Traditional Ayurvedic Herbalism. Lotus press; 2009.
22. Hoffmann D. Medical herbalism: the science and practice of herbal medicine. Inner Traditions / Bear and Co; 2003.
23. Raman S, Palep HS. Alternative therapies in polycystic ovarian syndrome. *Bombay Hosp J* 2010. 52(3): 345-351.
24. Siriwardini SAD, Karunathilaka LPA et al. Clinical efficacy of Ayurveda treatment regimen on Subfertility with Poly Cystic Ovarian Syndrome (PCOS). *Ayu* 2010;31(1): 24-27.
25. Grant P, Ramasamy S. An Update on Plant Derived Anti-Androgens. *Int J Endocrinol Metab* 2012; 10(2): 497-502.
26. Mueller M, Jungbauer A. Red clover extract: a putative source for simultaneous treatment of menopausal disorders and the metabolic syndrome. *Menopause* 2008; 15(6):1120-1131.
27. Kishore B, Hazra DK et al. Effects of an Indigenous Drug Formulation (Geriforte) on Hormonal Status. *Asian Med J* 1983; 11:770.
28. Sharma HK, Sharma RK. Evaluation of Efficacy and Safety of Evicare® Syrup in Infertility due to Polycystic Ovarian Syndrome. *Indian J Clin Pract* 2010; 21(2): 129-32.
29. Sharma PV, Dravyagua Vijnana Vol.II, Chaukhamba Bharati Academy, Varanasi, 16<sup>th</sup> edn., 1995.

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