



Herbal Treatment for the Management of Polycystic Ovary Syndrome (PCOS) Disease in Women

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Abstract

Herbal remedies for Polycystic Ovary Syndrome (PCOS) disease in women would be the best. Polycystic Ovary Syndromes (PCOS) a hormonal disorder common among women of reproductive age. The problem of polycystic ovary syndrome in women can be eliminated with herbal remedies. With herbal remedies we can control the imbalance of female hormones (estrogen and progesterone) there are some herbs in the environment like (*Paeonia lactiflora*, *Cinnamomum cassia*, green tea, turmeric) which can prove to be effective in controlling hormones. The current state of treatment for PCOS is dietary therapy, Oral Contraceptive Pills (OCPs), Laparoscopic Ovarian Drilling (LOD) and Assisted Reproductive Technology (ART). By taking more of her regular balancing exercises and sources of vitamin D, women can also prevent their hormones from being under control and imbalance, which can prevent dangerous diseases like PCOS.

Keywords: Polycystic Ovary Syndrome (PCOS); Sign and symptoms; Cause; Diagnosis; Herbal treatment

Introduction

Polycystic Ovary Syndrome (PCOS) a hormonal disorder common among women of reproductive age. Also known as Stein Leventhal syndrome. Usually beginning during puberty, PCOS triggers the onset of several symptoms associated with the hormonal disorder, which causes ovarian problems, and lead to underdevelopment of the egg, or hinder its release during ovulation. Polycystic Ovary Syndrome (PCOS) is a heterogeneous condition which is related to an endocrine reproductive disorder of females [1]. Polycystic Ovary Syndrome (PCOS) is a health problem that affects approximately 1 in 10 women. It is characterized by absent or infrequent menstruation, raised androgen levels and polycystic ovaries [2]. The mechanisms by which variants in the genes confer risk to PCOS and the nature of the physical and genetic interaction between the genetic elements underlying PCOS remain to be determined. Elucidation of genetic

players and cellular pathways underlying PCOS will certainly increase our understanding of the pathophysiology of this syndrome [3].

Literature Review

Polycystic Ovary Syndrome (PCOS)

- Polycystic Ovary Syndrome (PCOS) is a hormonal disorder common among women of reproductive age, causing them ovarian problems.
- While the exact cause of PCOS remains unknown, it is believed to be linked to hereditary and environmental factors.
- Irregular menstrual cycle, increased body hair and acne are the key symptoms associated with PCOS.
- Early diagnosis is of the essence; it allows management of the symptoms, and reduces the risk of developing enduring health issues.
- Diet, exercise and medications can help control the PCOS symptoms.

Cause

Normally, the ovaries secrete two sets of hormones (chemical substances through which the physiological functions are controlled): Estrogens (female hormones), and androgens (male hormones). In women with PCOS, these hormones become unbalanced: They usually have a higher level of androgen, or a lower level of estrogen, than normal. As a result, follicles (fluid-filled cysts) develop on the ovaries. While the exact cause of PCOS remains unknown, it is believed to be linked to hereditary and environmental factors.

Risk factors

- Obesity.
- Family history.
- Insulin resistance.
- Increased level of androgen.

Symptoms

- Menstrual cycle abnormalities.
- Acne.
- Oily skin.
- Increased body hair (on the face, chest and thighs).
- Dark spots and thick skin (especially in the neck and armpits).
- Hair loss.
- Weight gain.
- Infertility.

Complications

- Diabetes.
- Heart diseases.
- High blood pressure (hypertension).
- Endometrial hyperplasia (thickening of the lining of the uterus).

Diagnosis

- Clinical tests.
- **Laboratory tests:** Tests meant to detect any excess of male hormones.
- **Other tests:** Including pelvic ultrasound test, to measure the size of ovaries, and detect any cysts that may have developed.

Treatment

There is no constant treatment for PCOS. However, its symptoms can be controlled through various medications. Varying from a patient to another, the PCOS treatment options may include:

- **Lifestyle changes:** By losing weight, and maintaining moderate exercise.
- **Medication:** Including: Menstrual cycle regulation medicines (e.g. contraceptives or progestin). Production and stimulation of eggs. Medications to control growth of undesirable body hair, and head hair loss.
- **Surgery:** Through a simple surgical procedure (laparoscopy), to treat the infertility problems that may arise from PCOS.

Prevention

While there is no specific way to prevent PCOS, it is believed that a healthy diet and maintaining healthy weight can be of great help for patients with PCOS, to avoid developing complications (e.g. diabetes, and cardiovascular diseases).

Reduce risk PCOS patients

- Maintain a healthy weight.
- Limit the intake of high carb, low fat foods.
- Exercise regularly.
- Consult with your doctor regularly.
- Make sure to take the medicines as prescribed.
- Stop smoking.

Current state of treatment

Dietary therapy: Obesity has been reported in 30% of PCOS patients. The symptoms of PCOS are also considered to be recovered by dietary therapies including resistance to insulin, annulations, and irregular menstrual cycle. However, dieting habit and exercise does not show long term results; hence, bariatric surgery has been introduced to get more promising results [4,5].

Oral Contraceptive Pills (OCPs): Combined Oral Contraceptive Pills (OCPs) are considered the choice of treatment in treating PCOS. These drugs regulate multiple endocrine abnormalities including hirsutism and acne [6]. OCPs are safer compared to other therapies because of the low risk of endometrial cancer [7]. The OCPs include an amalgamation of progestogen and estrogen, which increases SHBG which decreases LH and FSH, which in turn decreases free T and ovarian androgen production [8]. Hence, a low dose of progestogen is recommended in OCPs. Some adverse effects have also been reported with OCPs, *i.e.*, hyperglycemia, impaired glucose metabolism, insulin resistance, and diabetes mellitus [9].

Laparoscopic Ovarian Drilling (LOD): When clomiphene citrate therapy fails to produce ovulation, other methods of ovulation are used. LOD was used for ovulation in 1984 when ovarian wedge resection surgery failed. LOD is successful in 84% of patients and improves ovarian androgen production insulin resistance and increases the SHBG levels [10-11]. Lower rates of miscarriages have been reported with LOD [12]. Serum Anti-Mullerian Hormone (AMH) level is used as an assessment tool for women treated with LOD [13]. However, more studies are required to assess further the efficacy of LOD.

Assisted Reproductive Technology (ART): Several methods are used for the treatment of fertility in PCOS patients. ART is the most frequently used. In this method, the ovaries are stimulated with

exogenous gonadotropin which produces multiple follicles. However, exogenous gonadotropin causes Ovarian HyperStimulation Syndrome (OHSS) in these patients [14]. Due to the use of this treatment modality, *In Vitro* Maturation (IVM) is used. Many studies have been conducted to assess the efficacy of ART compared to traditional IVF techniques. Results are comparable in both traditional IVF and IVM-IVF [15].

Herbal treatment: Preclinical and clinical studies provide evidence that six herbal medicines may have beneficial effects for women with oligo/amenorrhea, hyperandrogenism and PCOS [16].

Some spices and herbs for PCOS show most promise in reducing PCOS symptoms:

- *Vitex agnus-castus*.
- *Cimicifuga racemose*.
- *Tribulus terrestris*.
- *Glycyrrhiza* spp.
- *Paeonia lactiflora*.
- *Cinnamomum cassia*.
- Green tea.
- Turmeric.

Best natural remedies for PCOD

Consuming whole foods: Whole foods do not contain artificial sugars and are free from preservatives. Some of the whole foods that can be added to women's diet with PCOD are fruits, vegetables, whole grains and legumes. These may help to maintain the insulin levels, and thus PCOD can be kept in control.

Watching out for carbohydrate intake: Carbohydrates can impact the blood sugar level resulting in high insulin levels. It is important to consume only less carbohydrate and have more high protein and high fiber foods.

Adding anti-inflammatory foods: PCOS can be considered as a chronic inflammatory condition. Hence, eating foods that are anti-inflammatory in nature helps to reduce the symptoms accompanied by PCOS. Foods like tomatoes, leafy veggies and greens, fatty fish like mackerel and tuna, tree nuts and olive oil possess anti-inflammatory properties.

Keeping the iron intake high: Due to excess bleeding than usual during menstrual cycles in women with PCOS, there are more likely chances to have iron deficiency. This may make the woman suffering from PCOS become anemic. Adding iron rich foods in the diet can help avoid this problem. Foods such as spinach, eggs, liver and broccoli are the best iron rich foods to be included. It is also equally important to consult the doctor on iron supplements and consumption of iron rich foods [17].

Increasing the intake of magnesium: Magnesium rich foods such as cashews, almonds, bananas, and spinach can be added to the diet to fight PCOS symptoms. Magnesium helps to maintain the insulin levels and helps in restful sleep.

In-take of fiber: Adding fiber to the diet helps with digestion. Foods like lentils, lima beans, broccoli, brussels sprouts, pears, and avocados are rich in fiber and help to improve digestion for women with PCOS, as they may suffer from bloating and constipation during their menstrual cycles.

Avoiding coffee: Caffeine in coffee stimulates the body by increasing estrogen levels. As a result, a hormonal imbalance may

happen. It is advisable to avoid coffee. Instead, the individual can consume herbal tea for refreshment. Green tea also helps maintain insulin levels and acts as an agent for weight reduction, which is crucial for women with PCOS.

Consuming soy products: Including soy protein or soy products in the diet helps in balancing the estrogen in the body, and hence, the normal secretion of hormones can be maintained. Foods like soy milk, tofu, miso, and tempeh can be considered. However, people with any estrogen related problems like breast cancer are advised not to consume soy products. Hence, it is necessary to check with the doctor before including soy in the diet.

Avoiding junk and oily/fatty foods: Oily foods add to weight gain and abnormal functioning of the digestive system. This can cause severe symptoms of PCOS. Hence, it is essential to avoid junk and oily foods completely, although olive oil is an exception.

Balancing exercises: To maintain a healthy lifestyle, it is necessary to exercise and keep the body healthy and fit. Exercising at least 150 minutes per week helps to reduce stress and balances the weight. Also, the calories are constantly burnt and hence, insulin levels can be kept under control [18].

Vitamin D: Vitamin D insufficiency or inadequacy affects 45%-90% of reproductive age women. According to research, vitamin D insufficiency was associated with a substantial reduction in ovulation rate, pregnancy rate, and the chance of a live delivery in PCOS women receiving ovarian stimulation for infertility [19-20].

Suggested home remedies for PCOS

The remedies recommended for PCOS mainly include lifestyle changes and a few herbal remedies as well to manage the symptoms. Some of the remedies are as follows:

- **Mulethi:** Mulethi is also known as liquorice. In studies it was found that it may be beneficial for managing PCOS. It may act against androgens and also stimulates the production of an enzyme which converts androgen into estrogen (female hormone) [21]. You can take a cup of hot water, mix mulethi root powder in it and use it for two months. This brew can be used for even longer to have prolonged effects.
- **Flax seeds:** It was found in studies that flaxseeds contain a compound which might help in decreasing the level of androgen in the body. They may be caused by a reduction of symptoms of PCOS that occur due to increased androgen levels, like abnormal growth of body hair. It may help in weight reduction [22]. The consumption of flaxseeds, by adding them into your daily diet in the form of milkshakes and smoothies or by directly consuming them, can be beneficial for your health.
- **Cinnamon:** Cinnamon might have some effect to improve the function of insulin receptors, which might provide a beneficial effect for women with PCOS. It was also found by researchers that supplementation of cinnamon in diet can correct menstrual irregularities [23]. It can be consumed by adding it to the water while preparing tea and taking it daily. It can also be consumed in tablet forms, which are more concentrated, but you should consult your doctor before doing so.
- **Omega 3 supplements or fish oil:** Studies have shown that by taking omega 3 fatty acids supplements, the regularity of the menstrual cycle can be restored. However, there is no change in weight, bleeding, size of the ovary or number of ovarian follicles seen. Fish oil supplementation showed a decrease in the waist-hip ratio additionally [24].

- **Chamomile tea:** Chamomile tea was found to reduce the symptoms of PCOS in animal studies. In the same study, when the tissues of the ovary were observed under a microscope after treating with chamomile extract, the signs of PCOS were decreased [25]. However, more research on humans is required to ascertain it. We can consume it by using a bag of chamomile tea or a spoon of it in warm water and brewing it.
- **Aloe vera gel:** Aloe vera might be used along with certain other compounds to make formulations to manage PCOS, as they may help in restoring the levels of a hormone in the ovaries. These were the findings of an animal study [26]. The exact use of aloe vera gel is not known and requires further investigation.
- **Nirgundi or chasteberry:** Nirgundi is an herb that has many medicinal properties. It can act against insulin resistance of the body, might decrease androgen levels, and can have similar activity to estrogen. Therefore, it may have beneficial effects on women with PCOS [27].

Materials and Methods

We conducted this research paper by observing the different types of reviews, as well as conducting and evaluating literature review papers.

Results and Discussion

In our research, we found that herbal remedies would prove to be a great use for Polycystic Ovary Syndrome (PCOS) disease in women. The problem of polycystic ovary syndrome in women can be eliminated with herbal remedies. With herbal remedies we can control the imbalance of female hormones (estrogen and progesterone), there are some herbs in the environment like (*Paeonia lactiflora*, *Cinnamomum cassia*, green tea, turmeric, mulethi, flaxseeds, omega 3 supplements or fish oil, aloe vera gel, nirgundi or chasteberry) which can prove to be effective in controlling hormones. The best natural remedies we can also get control over PCOS like (consumption of whole foods, intake of carbohydrates, adding anti-inflammatory foods, iron, magnesium, fiber, soy products and sources of vitamin D should be included in our diet, avoiding coffee, consuming, avoiding junk and oily/fatty foods, balancing exercise we can bring PCOS under control. Current status of PCOS treatment diet therapy, Oral Contraceptive Pills (OCP), Laparoscopic Ovarian Drilling (LOD) and assisted reproductive techniques. With their regular balanced exercise and consuming more sources of vitamin D, and women can also regulate and balance their hormones, thereby preventing dangerous diseases like PCOS.

Conclusion

Herbal remedies would prove to be a great use for Polycystic Ovary Syndrome (PCOS) disease in women. The problem of polycystic ovary syndrome in women can be eliminated with herbal remedies. We can control the imbalance of female hormones (estrogen and progesterone) there are some herbs in the environment. Herbal remedies for Polycystic Ovary Syndrome (PCOS) disease in women would be the best. By taking more of her regular balancing exercises and sources of vitamin D, women can also prevent their hormones from being under control and imbalance, which can prevent dangerous diseases like PCOS.

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Declaration of Competing Interest

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