

Use of Herbal Remedies In Polycystic Ovarian Syndrome (PCOS) And Hirsutism

Abstract:

A common, complex endocrine condition called polycystic ovarian syndrome (PCOS) causes polycystic ovaries, persistent an ovulation, and hyperandrogenism, which manifest as irregular menstrual periods, hirsutism, acne, and infertility. Evidence-based medical management for PCOS emphasizes a multidisciplinary approach because standard pharmacological treatment only treats a single symptom, may not be appropriate, frequently has adverse effects, and is occasionally ineffective. Women with PCOS have moreover shown a significant interest for alternative therapies. This study was designed to investigate the impact of herbal medicine as an alternative treatment for PCOS. The aim of this study was to look at the benefits of natural herbs on those with polycystic ovarian syndrome with hirsutism, such as spearmint leaves and green tea leaves.

1. Introduction:

Polycystic ovary syndrome (PCOS) is a common hormonal disorder in reproductive-aged women. PCOS is characterized by abnormal androgen production by the ovaries, which is a male sex hormone. Furthermore, it should be present in small amounts, but when this presents in abnormally large amounts, it's called hyperandrogenism. This condition affects 5–20% of reproductive-age women globally. The distinguishing features of PCOs are irregular, very light, or missed periods, presence of ovarian cysts, Excess body hair, particularly in the chest, stomach, and back (hirsutism), Weight gain (around the belly), acne, Baldness, androgenic alopecia, or hair thinning, Skin tags, and darkening or thickening of the skin on the back of the neck, armpits, and under the breasts (Azziz R et al 2016). Hirsutism is one of the leading clinical presentations of hyperandrogenism. However, hirsutism varies in different populations, mostly ~10% in these population groups, African Americans and Caucasians. Caucasian patients have ~65–75% occurrence of hirsutism. (Escobar-Morreale HF, et al. 2012, Azziz R et al 2016). The occurrence

of hirsutism also depends upon which evaluation criteria are used. According to the European Society for Human Reproduction and Embryology/American Society for Reproductive Medicine. 15%–20% of PCOS cases reported hirsutism presentation (Sirmans S, et al. 2014).

1. Objective:

This independent study by Embrace You Health (embraceyouhealth.com) aimed to investigate the effects of natural herbs like spearmint leaves and green tea leaves on those affected with the polycystic ovarian syndrome with hirsutism. The evaluation included the reduction of hirsutism over a 3-month period.

2. Literature Review;

2.1.Measurement of Hirsutism:

The presentation of hirsutism ranges from mild to severe. Ferriman-Gallwey scale (mFG) is a qualitative process used for evaluation and visual hirsutism measurement introduced in 1961. This scoring method incorporates 11 androgen presentation sites, including lips, chin, chest, upper and lower abdomen, upper arm, forearm, thigh, lower leg, and upper and lower back (Lumezi BG et al. 2018). According to the modified mFG measurement, zero is the minimum score with no visibility of terminal hairs, and 36 is the maximum mFG score; ≥ 6 mFG score represents hirsutism in the 95% of the studied population, while some studies indicate hirsutism in black and white women with ≥ 3 mFG score. A score of >15 indicates moderate to severe hirsutism. However, this measurement system has limitations due to its subjective nature and inability to give valid results in the case of cosmetic hair removals (Lumezi BG et al. 2018, Sachdeva S. 2010, Azziz R et al 2016).

2.2.PCOS Diet:

Management of Polycystic ovary syndrome varies because of disease heterogeneity and clinical presentation. Improved and healthy lifestyle patterns, including exercise and a nutritious diet, plays a crucial role in PCOS management. These lifestyle modifications reduce associated risks such as; obesity and insulin resistance reduction and minimize type 2 diabetic incidence. These lifestyle modifications also improve the patient's fertility status by decreasing LH/FSH levels, lower down hyperandrogenism, improved lipid profile levels, including decreased blood

cholesterol levels, triglycerides, and LDL. Improving overall patient health is also seen by decreased hair loss, acne complaints, and regular menstruation. Ovaries presentation improved with fewer follicles and reduced size (Xenou M et al. 2021).

A PCOS diet that helps in clinical symptoms includes nonstarchy low glycemic fruits and vegetables such as; cruciferous vegetables, onion, tomato, rutabaga, turnips, zucchini, melons, berries, and citrus fruits. Foods low in fat, omega 3-rich products (fish, flax seeds), short-chain fatty acids, almonds, pumpkin, poppy, sesame, sunflower seeds, whole grains, and legumes. A minimum amount of alcohol, poultry, and beef are also allowed. Following a healthy diet and moderate exercise and hydration leads to improved PCOS management (Xenou M et al. 2021). The PCOS diet also improves gut microbial flora, as a high sugar diet leads to increased inflammation, negatively affecting PCOS and can worsen this condition. (Xenou M et al. 2021).

2.3. Herbal remedies used for PCOS:

Several studies postulated the use of herbal medicine in reproductive and PCOS management. Recent scientific evidence supports using herbal medicine extracts in hyperandrogenism, fertility improvement, menstruation regulation, and PCOS with promising outcomes (Arentz S et al. 2011). Herbal medicines and extracts which scientifically tested for PCOS management include *Vitex agnus-castus* (Ethanol extracts), *Cimicifuga racemosa* (Ethanol extracts), Cinnamon cassia (Ethanol extracts), *Tribulus terrestris* (Ethanol extracts), *Glycyrrhiza glabra*-European liquorice (Ethanol extracts), *Glycyrrhiza uralensis* (Chinese liquorice) (Ethanol extracts and aqueous extract), *Paeonia lactiflora* in combination with *Glycyrrhiza* spp. (Aqueous extract), *Paeonia lactiflora* in combination with *Cinnamomum cassia* (Aqueous extract), *Camellia sinensis* (green tea), *Mentha spicata* (spearmint tea), *Ginkgo Biloba* (ginkgo), *Grifola frondosa* (maitake mushroom), *Linum usitatissimum* (flax seed), *Pygeum africanum* (pygeum). *Serenoa repens* (saw palmetto), *Silybum marianum* (St Mary's thistle), *Stachys lavandulifolia* (wood betony), *Urtica dioica* (nettle root), *Curcuma longa* (turmeric), *Matricaria chamomilla* (Chamomile), *Mentha piperita* (peppermint), *Silybum marianum* (St Marys thistle), etc (Arentz S et al. 2011).

2.4. Herbal remedies for hirsutism :

Scientific studies prove the beneficial effects of herbal medicine, including *Vitex agnus-castus*, *Cimicifuga racemosa*, *Paeonia lactiflora*, *Tribulus terrestris*, *Glycyrrhiza* spp., *Mentha spicata*,

Grifola frondosa, Origanum majorana, Trigonella foenumgraceum, Phoenix dactylifera, Spearmint (*Mentha spicata* L.), Green Tea (*Camellia sinensis*) flaxseed (*Linum usitatissimum* L.), and Cinnamomum cassia. The duration of herbal treatment varies from 1 – 4 months in different clinical trials (Arentz S et al. 2011, Abasian Z, et al. 2018).

Medicinal plants contain active compounds and have no significant adverse effects. They have attracted much attention in recent years.

UNDER PEER REVIEW

3. Methodology:

This independent study included female test subjects, ages 25-42 years old. Identity-protected photos were submitted to the study conductor at the start of this trial, photos were of the test subjects' arms, lower face, and back. All test subjects had a diagnosis of polycystic ovarian syndrome with moderate to severe hirsutism (>15 on the Ferriman-Gallwey scoring system. Test subjects had no known allergy to spearmint leaves and green tea leaves. Eight test subjects were selected to participate in this blind independent study conducted by Embrace You Health. Four test subjects received spearmint and green tea capsules, while the others received the placebo. Test subjects were randomly assigned to consume one opaque gel capsule of 50 mg of dried spearmint leaves, one 50 mg capsule of dried green tea leaves, or two opaque empty capsules. The placebo group was given two empty opaque gel capsules. Test subjects were instructed to take their gel capsules once daily after a meal, in this blind independent study, within this 3-month period.

3.1. Contraindications:

Herbal leaves are active components, and no severe side effects were reported in this independent trial. Two test subjects reported some nausea early on in the trial. Some clinical trials have reported nausea and vomiting (Arentz S et al. 2011, Abasian Z, et al. 2018).

4. Results and Discussion:

A reduction in hirsutism on the face and body were observed in 3 out of 4 test subjects that ingested the capsules. A 25-50% reduction in hirsutism was observed compared to the placebo group. Treatment effects were evident of a 25-50% decrease in the body and facial hair as evaluated by test subject's resubmitted end-of-study photos in conjunction with the Ferriman-Gallwey scoring system at the end of this 90-day trial.

4.1. Medicinal Effect

Herbal holistic options have promising outcomes in PCOS by binding with α estrogen receptors, increasing luteal progesterone levels, improving the endometrial thickness of uterus, and

FSH:LH ratio, lower down LH levels (Arentz S et al. 2011, Abasian Z, et al. 2018). Some studies also reported decreased polycystic ovaries on ultrasound testing (Bashtian MH, et al. 2013).

5. Future Perspective

Recent scientific literature and this clinical trial support the use of herbal holistic options in PCOS management, which leads to decreased hirsutism in affected women.

Conclusion:

These results suggest that the ingestion of spearmint and green tea leaves may be a beneficial herbal holistic intervention in the reduction of hirsutism in those suffering from PCOS-induced hirsutism in women ages 25-42 years old.

Large-scale studies with control measurement of all required parameters of PCOS and hirsutism are required to define the conclusive outcomes of beneficial impacts of these herbal holistic remedies.

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