

Effect of Herbal Medicated Feed as Uterine Tonic for Infertility Women

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ABSTRACT

Infertility due to Polycystic ovary syndrome (PCOS) is a highly prevalent endocrine-metabolic disorder that implies various severe consequences to female health, including alarming rates of infertility is a worldwide problem that is increasing in day by day .It is characterized by chronic anovulation, polycystic ovaries, and hyperandrogenism leading to symptoms of irregular menstrual cycles, hirsutism, acne and infertility. Insulin resistance and elevated levels of male hormones (androgens) are associated with PCOS. The sedentary lifestyle, lack of exercise and dietary variations and stress etc., are also the contributory factors. Various plants like ginger, turmeric, fennel, cumin etc., proved active in the treatment of PCOS. In this review, attempts have been made to summarize the important medicinal plants which are used in treatment or prevention of PCOS.

Keywords: Ayurvedic; Herbal remedies; Infertility in females; PCOD; Fallopian tubes

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is a complex, common reproductive and endocrine disorder affecting up to 17.8% of reproductive aged women. Medical management places strong emphasis on a multidisciplinary approach as pharmaceutical treatments appear to be only moderately effective in treating individual symptoms. Conventional pharmaceutical management is limited by the prevalence of contraindications in women with PCOS, non-effectiveness in some circumstances, side effects and by preferences of women with PCOS for alternatives to pharmaceutical management . This review examines the mechanisms of effect for a potential alternative treatment, herbal medicine, and reveals six herbal medicines with both pre-clinical and clinical data explaining the reproductive endocrinological effects in PCOS and associated oligomenorrhea and hyperandrogenism. One of the popular types of CM is herbal medicine. Herbal medicines are known to contain pharmacologically active constituents with physiological effects on female endocrinology and have been positively associated with reduced incidences of breast cancer, osteoporosis and cardiovascular disease [1].

PCOS is a life-long condition and although the exact cause is yet to be identified, it is believed to have epigenetic origins, influenced by the uterine environment and behavioral factors.

Being overweight exacerbates all aspects of PCOS due to underlying metabolic disturbances. Signs and symptoms are mediated by hormonal disorder including elevated androgens and fasting insulin, and abnormal relative ratio of the gonadotropins Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH) Endocrine imbalances occur within the framework of disordered ovarian folliculogenesis, chronic anovulation, clinical signs of hyperandrogenism and metabolic syndrome. Pharmaceutical treatment for menstrual irregularity includes the Oral Contraceptive Pill (OCP) and ovulation induction with clomiphene citrate (clomiphene) depending on fertility needs [2].

LITERATURE REVIEW

Women with PCOS are however likely to exhibit contraindications for the OCP and whilst induction of ovulation with clomiphene has demonstrated success, pregnancy rates remain inexplicably low up to thirty 30% of women, particularly overweight women with PCOS, fail to respond to clomiphene therapy. Management for hyperandrogenism includes anti-androgens and hypoglycemic pharmaceuticals such as metformin. Metformin has demonstrated effectiveness for improving insulin sensitivity and hyperandrogenism, however use of metformin is associated with the high incidence of adverse effects including nausea, vomiting and gastro-intestinal

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Received: 04-Jul-2022, Manuscript No. EOED-22-002-PreQc-22; **Editor assigned:** 08-Jul-2022, Pre Qc No. EOED-22-002-PreQc-22 (PQ); **Reviewed:** 22-Jul-2022, Qc No. EOED-22-002-PreQc-22; **Revised:** 29-Jul-2022, Manuscript No. EOED-22-002-PreQc-22 (R); **Published:** 05-Aug-2022, DOI: 10.35248/2329-6631.22.11.176.

Citation: Ghule M (2022) Effect of Herbal Medicated Feed as Uterine Tonic for Infertility Women. J Develop Drugs 11:176.

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disturbances. Herbal medicines are complex interventions with the potential for synergistic and antagonistic interactions between compounds. Effects within the body may also exhibit complexity by simultaneous interactions with various body systems, both biochemically and by altering organ function. The focus of this review was studies investigating whole herbal medicine extracts with direct effects on reproductive endocrinology for the treatment of women with irregular menstruation, hyperandrogenism and PCOS [3].

The rationale for using this methodology was to identify herbal medicines with current scientific evidence explaining specific reproductive endocrinological effects in PCOS, oligo/amenorrhoea and hyperandrogenism, to develop understanding for the direct effects of herbal medicines on reproductive endocrinology and to highlight herbal medicines for which there was current scientific evidence supporting herbal medicine selection.

The purpose of this review is to inform clinical decisions in integrative settings and meet clinicians and consumers preferences for pragmatic herbal management within a holistic, individualized treatment frame. A narrative synthesis of pre-clinical studies explaining reproductive endocrinology effects for herbal medicines with corroborative clinical evidence is presented. One of the most common therapies is the administration of clomiphene citrate with an injection of human chorionic gonadotropin. Clomiphene can be used to improve ovarian function, menstrual pattern, and glucose metabolism in women with PCOS. As clomiphene has structural similarity to estrogen compounds it could have negative effects on endometrial thickness. On the other hand, long-term administration of chemical drugs could cause various side effects on human body and today experts believe that we should direct the patient to use herbal medications with lower side effects [4].

DISCUSSION

Pathophysiology of PCOS

The Gonadotrophic releasing hormone is secreted or synthesized Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH). A less amount of intra ovarian androgen is use for normal follicular growth. The follicular development provides by FSH and stimulating aromatase enzyme it promotes granulose cell conversion of androgen to oestrogen. Luteinizing Hormone (LH) is initiate of oocyte maturation by inducing theca cell production. PCOS condition increases LH level and decreasing level of FSH causes to produce more androgen and reduced level of aromatase enzyme with immature follicle development. Excessive androgen in PCOS is related of abdominal fat that leading to hyperinsulinemia and dyslipidemia. Increase theca cell androgen production, hyperinsulinemia reduces Sex Hormone Binding Globulin (SHBG) to increases circulating testosterone levels [5].

Herbal remedies for PCOS

Zingiberaceae family known as turmeric is a water insoluble, low molecular weight, polyphenolic curcuminoid derivative found in rhizomes of Indian spice, *Curcuma longa* of the family Zingiberaceae (turmeric). Turmeric is extensively used as a food additive and coloring agent in Asian cuisine and also in Indian herbal medicine. Curcuma has been reported to possess a wide variety of biological effects like anti-inflammatory, antioxidant hypoglycemic anti-hyperlipidemic activities and estrogenic effects. A study was conducted in 30 female albino wistar rats, using letrozole-aromatase inhibitor, to induce polycystic ovarian syndrome. Its effect was comparable to that of clomiphene citrate, most widely used treatment for ovulation induction in PCOS condition. Serum levels of progesterone and estradiol were decreased in PCOS induced group. Curcumin restored the hormone and lipid profile, antioxidant and glycemic status as well as ovarian morphology in letrozole induced PCOS animals. Decreased progesterone levels are also indicative of anovulation and curcumin successfully restore the ovulation, estrogenic, antihyperlipidemic, antioxidant and hypoglycemic effects which could be useful in managing PCOS condition and prevent ovarian cell dysfunction, ovulation and thereby improving fertility (Figure 1).

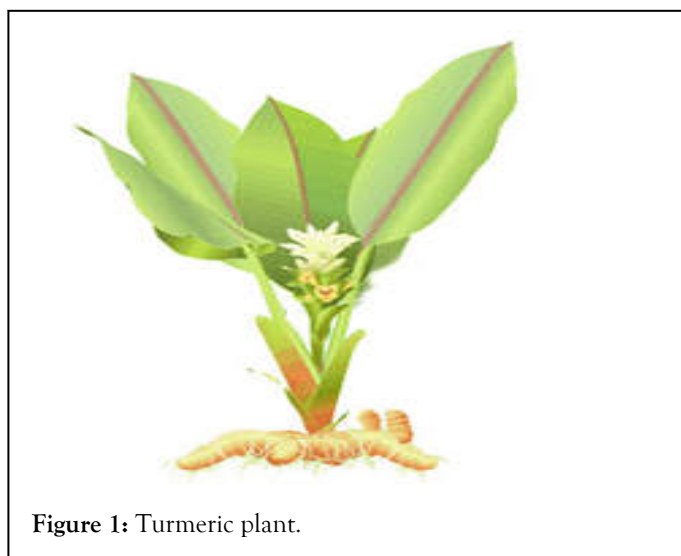


Figure 1: Turmeric plant.

Apiaceae family known as cumin widely used as the spice for their distinctive aroma, they are also commonly used in traditional medicine to treat a variety of diseases, including chronic diarrhea and dyspepsia, acute gastritis, diabetes, and cancer. The literature presents ample evidence for the biological and biomedical activities of cumin, which have generally been ascribed to its bioactive constituents such as terpene, phenols, and flavonoids [6]. Those health effects of cumin seeds that are experimentally it is natural relaxant, it reduce muscle swelling on uterus and regulate the menstrual cycle Indian spice contain antioxidant and certain chemical which manage blood glucose level in the body moreover its powerful antioxidant properties help flushing out harmful toxin and help maintain regulatory process in the body (Figure 2).



Figure 2: Cumin seeds.

Zingiberaceae known as ginger family is consumed worldwide as a flavoring agent and medicine for thousands of years. In Ayurveda, ginger has been used as a carminative, sweat-inducing, anti-seizure, and blood circulation stimulator for the treatment of inflammation and rheumatoid arthritis. The main medicinal value of ginger is due to gingerol and shogaol which have potent antioxidant activity. In addition, it contains zingerone and some oily resin called gingerin. It has been shown that ginger could have a good effect in menstrual irregularities treatment and can inhibit ovarian cancer cells. Furthermore, some studies showed that ginger could enhance fertility index, serum testosterone level, testis and seminal vesicle weight, sperm motility, count, and quality and enhance male fertility in rats (Figure 3).



Figure 3: Rhizome of ginger.

Umbelliferae family seeds known as fennel are used as a good supplement for management of PCOS. They are rich source of phytoestrogens. The anti-fertility effect of *foeniculum vulgare* seed extract was studied. The compound anetholes the major active compound of fennel oil, is considered to be an active estrogenic agent due to its structural resemblance to diethylstilbesterol, a synthetic estrogen. The extract was found to increase nucleic acids and protein concentration as well as the organ weights in both tissues. Phytoestrogens content in fennel helps in reducing insulin resistance and in bringing down the inflammation in PCOS. It also believed that helps in reduce the cellular imbalance which leads to metabolic disturbances in PCOS. The estrogenic effects of oral fennel extract for 10 days on the weight of female genital organs (the mammary glands, oviduct, endometrium, myometrium, cervix, and vagina) have been shown. Fennel due to phytoestrogen compounds and according to traditional believes has the potential for management of Polycystic Ovary (PCO) treatment. Fennel extract reduced the serum estrogen level and thickness of uterine epithelial cells and

increased the serum progesterone level and endometrial thickness of PCOS (Figure 4).



Figure 4: Fennel seeds.

CONCLUSION

Women may find themselves increasingly despairing at the thought of never becoming pregnant. Social events loom as infertile begin to dread social occasions. They may also get isolated from family members and work colleagues. Thus, the understanding of bio-psycho-social aspects of infertile women and their treatments seeking behavior can help nurses to design successful interventions to reduce stress, promote healthy adaptation and prevent them moving towards avoidance and denial. Infertility causes women to face personal and psycho social problems. The stress reduction strategies can be implemented to the couples together and their families and its effectiveness in reducing the stress levels in infertile women can be researched. The impact of psychological interventions upon the hormonal levels and follicular growth and improving pregnancy rate can be studied. In this summarize some important medicinal plants for the treatment of PCOS. It is medicinal plant help for improving and managing PCOD condition. These plants are improving hyperandrogenism, insulin sensitivity, improving fertility and improving menstrual cycle.

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