

Research Progress in the Treatment of Polycystic Ovary Syndrome by Chinese and Western Medicine

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Abstract: Polycystic ovary syndrome (PCOS) is a reproductive endocrine disorder with clinical manifestations such as scanty menstruation, amenorrhoea, infertility, obesity, hirsutism and acne. There are many clinical treatments for polycystic ovary syndrome. This article reviews the recent research progress in the treatment of PCOS in terms of lifestyle, pharmacological treatment, acupuncture treatment and surgical treatment.

1. Introduction

Polycystic ovary syndrome, also known as Stein-Leventhal syndrome, is a common reproductive endocrine disorder in adolescent and childbearing women. Its clinical manifestations are characterised by sporadic menstruation, amenorrhoea, infertility, obesity, hirsutism and acne, and are characterised by persistent anovulation or sporadic ovulation, hyperandrogenism, polycystic ovarian changes and insulin resistance. PCOS can increase the incidence of other diseases. PCOS patients have a higher risk of endometrial cancer, obstructive sleep apnoea syndrome, hypertension during pregnancy and gestational diabetes than healthy individuals. It is not known in Chinese medicine, but according to its clinical features and manifestations, it is classified under the categories of "menorrhagia", "late menstruation", "amenorrhea" and "infertility". It is also known as "gynecologic abdominal lumps". In recent years, with the rapid development of society, the pace of life is gradually accelerating, and the pressure of study and work is gradually increasing, the incidence of PCOS is increasing year by year, causing great distress to women and becoming one of the most common diseases in adolescents and women of childbearing age. Therefore, the clinical research on the Chinese and Western medicine treatment of PCOS is also increasing year by year.

2. Etiology of PCOS

The causes and mechanisms of PCOS are complex and varied, and are still unclear. They may be related to social, genetic, environmental, emotional, psychological and dietary factors.

Chinese medicine considers the pathogenesis of PCOS to be kidney deficiency and phlegm stasis, therefore, treatment is mainly directed at the kidney, supplemented by treatments related to resolving blood stasis and invigorating blood. With the use of tonifying kidney and spleen, relieving qi stagnancy in liver, promoting blood circulation and removing blood stasis and

removing the phlegm and periodic therapy, patients' manifestations such as hirsutism, acne, obesity and menstrual disorders can be effectively improved, and ovulation can be promoted by herbs thereby increasing pregnancy rates.

3. Treatment of PCOS

3.1 Changing Lifestyles

Obese patients with PCOS tend to consume too much, have abnormal feeding behaviour and do not exercise enough, so reducing body mass index is important for clinical management. Reducing body weight and body fat percentage through proper diet control and increased physical activity can facilitate the resumption of the menstrual cycle and improve ovulation rates in patients. A 5% weight loss in those who are overweight increases the likelihood of resuming the menstrual cycle.

3.2 Medicine Treatment

3.2.1 Western Medicine Treatment

Most western treatments for PCOS are divided into ovulation promotion, anti-androgen and insulin resistance treatments. Clomiphene is the first-line drug for ovulation promotion, and letrozole can also be used to induce ovulation in clomiphene-resistant patients. Zhou Yan et al[1] found that clomiphene had a positive effect on the improvement of serum sex hormone LH, FSH and serum VEGF levels, and was able to make the endometrium more tolerant, which was conducive to improving ovulation and pregnancy outcome. Wang Yan et al[2] found that letrozole tablets were clinically effective and could effectively improve ovarian endocrine function and increase the success rate of ovulation and pregnancy rate. Daing-35 is a short-acting oral contraceptive that can improve acne and hirsutism, and is the drug of choice for the treatment of PCOS. Metformin is the drug of choice for insulin resistance. In a study by Mo Bandei et al[3] and Zhao Si Si et al[4], it was found that Da-Ying-35 combined with metformin significantly improved serum sex hormone levels and glucose metabolism, increased ovulation and pregnancy rates, and ensured the efficacy and safety of treatment.

Due to the diverse symptoms of PCOS, the combination of drugs is mostly used clinically. Zhang Xuelan[5] used clomiphene in combination with metformin to treat PCOS, which could effectively regulate endocrine levels and blood glucose and reduce body mass index. Pan Yuan et al[6] used letrozole in combination with clomiphene for PCOS to promote single follicle ovulation with good endometrial tolerance. Qu Hailong et al [7] used metformin in combination with eusynthroid to treat PCOS, which could reduce the serum levels of inflammatory factors and improve the metabolic disorders associated with insulin resistance. Cai Chengyue et al [8] used pioglitazone and metformin in combination with ethinyl estradiol cyproterone tablets to treat PCOS, which could effectively improve serum sex hormone levels, alleviate insulin resistance, reduce oxidative stress, and improve pregnancy rate. Fan Zengke [9] et al. found that letrozole combined with daimyo-35 could improve ovarian function and promote normal ovulation with good safety and significant efficacy, which is worthy of clinical application.

3.2.2 Chinese Medicine Treatment

The results showed that Chinese medicine has obvious advantages in the treatment of PCOS. Liu Qiong et al [10] used Wu Jisan to treat phlegm-damp PCOS with remarkable efficacy, and was able to regulate glucolipid metabolism and reproductive hormone levels. Ye Liquan et al[11] used spleen-strengthening and phlegm-eliminating herbs combined with acupuncture points to treat

obese PCOS with remarkable efficacy, enhancing glucolipid metabolism and reducing body mass index. Li Junling et al[12] used the formula of tonifying the kidney, activating blood circulation and resolving phlegm to treat PCOS with kidney deficiency, phlegm and dampness with stasis, which could reduce symptoms, improve serum sex hormone levels and endocrine environment, and increase endometrial tolerance. Su Lin et al[13] found that Shao Abdominal Expelling Blood Stasis Tang combined with Da Tong Menstruation Tang was more effective in treating PCOS-induced infertility with fewer adverse effects. Zheng Jun et al[14] found that Cuscuta nourishing kidney formula could improve reproductive endocrine disorders, reduce BMI, shorten menstrual cycle, and thus improve obesity and menstruation in PCOS patients. Mao Xin et al[15] and Lu Yanqing et al[16] found that tonifying the kidney and resolving phlegm could improve patients' symptoms, regulate blood lipids and increase pregnancy rate. Xu Rongqian et al[17] concluded that nourishing the kidney and fetus pills could improve the symptoms, increase the pregnancy rate and reduce the miscarriage rate in patients with PCOS with kidney yang deficiency. Huang Weiyu et al[18] concluded that the formula of Cangfu Guifuwan with reduced granules could improve the ovulation rate and pregnancy rate and reduce the risk of early miscarriage.

3.2.3 Combined Chinese and Western Medicine Treatment

There are corresponding drawbacks to either Western or Chinese medicine treatment, and the combined use of Chinese and Western medicine in synergistic treatment of the disease can give full play to their respective advantages. Wang Jing et al[19] treated PCOS with the combination of Jia Wei Zhuan Yao San and Gui Zhi Fu Ling Wan with acupuncture (Zhong Ji, Qi Hai, Guan Yuan, Zi Gong, San Yin Jiao, Gui Lai and He Gu) can effectively improve hyperandrogenemia and cardiovascular system disorders and increase pregnancy rate. Jiang Wenwei et al[20] used the self-developed formula of tonifying the kidney and strengthening the spleen combined with Daying-35 to treat PCOS with spleen and kidney deficiency with remarkable efficacy, which could reduce serum endolipin and improve serum hormone levels and inflammatory status of the body with good safety. Zhang Yanli et al[21] used Da-Ying-35, clomiphene and urotropic hormone in combination with quartz yu-lin-tang for the adjuvant treatment of PCOS to reduce serum leptin levels and improve the efficacy. Li Xiuying et al[22] showed significant efficacy in the treatment of PCOS with the combination of western medicine using the formula of strengthening the spleen and kidney, which could reduce adverse effects. Chen Ligang et al[23] used Cangfu Guiding Phlegm Tang combined with clomiphene to treat PCOS with good efficacy, which is worthy of clinical promotion. Wang Lihong et al[24] used Shou Wu Stiff Qi Tang in combination with western medicine to treat PCOS with remarkable efficacy, which could improve the pregnancy rate and ovulation rate. Wu Jinlin et al[25] found that turmeric combined with metformin could significantly improve insulin sensitivity in PCOS patients. Zhou Tongyi et al[26] concluded that the combination of spleen-strengthening and phlegm-transforming formula with metformin was more effective in treating spleen-deficient phlegm-damp PCOS combined with insulin resistance. Wang Chao et al[27] found that the combination of liver-supplementing and kidney-supplementing soup with letrozole improved ovulation and clinical efficacy. Dong Yuqiong et al[28] found that combining kidney tonifying and spleen tonifying formula with letrozole improved infertility symptoms, increased endometrial thickness, and reduced serum sex hormone and cytokine levels. Guo Rui et al[29] found that Tongluo Huayu Tang combined with metformin was effective in the treatment of PCOS. Duan Zhaolan et al[30] showed that the combination of tonifying the kidney, invigorating blood and dispelling phlegm with Daying-35 could effectively improve serum sex hormone levels and blood lipid levels, with few adverse effects and significant efficacy, which is worthy of clinical promotion. Huang Huimin et al[31] showed that combining Drospirenone ethinyl estradiol with menstrual regulation and pregnancy promotion soup could restore blood flow in uterine arteries, improve

hormone levels, promote ovulation and effectively improve clinical symptoms, which is worth promoting. Wang Ruirui et al[32] showed that the combination of kidney tonics and menstruation formula with daing-35 and letrozole could promote normal ovulation and maintain the serum sex hormone level of the patients. An Cai-Ping et al[33] showed that Yu's combined Chinese and Western medicine treatment plan could improve the overall reproductive endocrine and glucose metabolism disorders, thus promoting the ovulation rate and pregnancy rate, with significant therapeutic effects.

3.3 Acupuncture Treatment

Acupuncture regulates the function of the hypothalamic-pituitary-ovarian reproductive axis, improves endometrial tolerance and ovulation disorders, regulates the menstrual cycle and induces ovulation. The combination of acupuncture and medicine has good efficacy in improving symptoms, regulating menstrual cycle and controlling weight. Xia Shuang et al [34] used acupuncture combined with herbs to tonify the kidneys and invigorate blood and clomiphene to treat PCOS infertility with remarkable efficacy and increase the ovulation rate and pregnancy rate. Yu Liqing et al[35] used electroacupuncture to treat insulin-resistant PCOS, which could regulate dyslipidemia, correct IR and improve endocrine disorders, and its effect was better than or similar to that of metformin. ZHAO Qingyi et al[36] used intermittent moxibustion with electroacupuncture to treat kidney deficiency and phlegm-damp PCOS, which could promote follicle development and improve hyperandrogenemia. WANG Cong et al[37] showed that acupuncture cycle therapy combined with Yu Ren Ren points was more effective than western medicine alone. Mao Xuewen et al[38] showed that the combination of acupuncture and medicine for abdominal obesity PCOS significantly reduced the hormone levels, BW, WC, BMI and IR status of patients. Song Hongyan et al[39] showed that the combination of acupuncture and thermosensitive moxibustion was effective and significantly improved the ovarian polycystic condition and endocrine index of patients. Guo Wenwen et al[40] showed that Dong's acupuncture was effective in improving sex hormone levels, insulin resistance and menstruation in patients. Quan Chunmei et al[41] showed that the clinical efficacy of acupuncture combined with metformin was better, which is worthy of further clinical promotion and application.

3.4 Surgical Treatment

For those who are desperate to have children and have not achieved significant results with ovulation medication, surgery can be performed if necessary. In recent years, with the development of technology and the continuous improvement of minimally invasive surgical instruments, laparoscopic surgical treatment has emerged, and laparoscopic ovarian perforation has become the mainstream surgical treatment for polycystic ovary syndrome. Du Lingling et al [42] performed laparoscopic surgery in 20 patients with clomiphene-resistant PCOS. 10-15 holes were punctured using a 1 mm diameter perforating needle at a depth of 4-6 mm on the non-vascular area of the bilateral ovarian surface to ensure release of follicular fluid and reduce the ovarian volume. The total ovulation rate was 80.00% and the total pregnancy rate was 35.00%, with no double or multiple pregnancies. It is evident that laparoscopic ovarian puncture in clomiphene-resistant PCOS patients can improve serum hormone levels, reduce ovarian volume, and promote ovulation and pregnancy. Zhong Yanping et al[43] divided 60 patients with PCOS into two groups, the surgical group was treated with vaginal ultrasound-guided follicular aspiration (IMFA) and the conventional group was treated with conventional drugs. The results showed that IMFA was effective in improving endocrine levels, restoring ovulatory function, facilitating follicular development, being safe, easy to perform and of great value[44]. The study demonstrated that laparoscopic ovarian

perforation could better improve ovarian function in PCOS patients with significant clinical efficacy.

4. Conclusions

PCOS, as a common and frequent disease in gynaecology, has received increasing attention from many medical practitioners. The author has reviewed the literature on PCOS in recent years and found the following shortcomings: there is a lack of research on long-term complications; PCOS can lead to long-term abnormalities in glucose and lipid metabolism, obesity and cardiovascular disease, but the literature rarely addresses long-term complications. There is a wide range of treatment options and a lack of systematic protocols. There are numerous clinical options for the treatment of PCOS in both Chinese and Western medicine, and a more systematic treatment plan should be developed. There is a lack of large randomised controlled trials with too small sample sizes.

The clinical treatment of PCOS with Chinese and Western medicine has both advantages and shortcomings. Western medicine is mostly fast-acting, precisely targeted, with a large experimental base and clinical efficacy observations; however, it can produce adverse reactions and treatment protocols are too patterned and fixed. Chinese medicine has brought into play its advantages of diversified treatment modalities, remarkable efficacy, green safety and no side effects; however, the treatment period is long and fails to achieve significant efficacy in a short period of time, thus patient compliance is poor and the mechanism of action is still unclear. Modern medical equipment should be combined with traditional medicine to further clarify the mechanism of action of Chinese medicine in treating diseases. In the treatment of gynaecological diseases, Chinese medicine has a high value of exploration, to strengthen the inheritance and excavation of traditional classics, to promote the culture of Chinese medicine to the world, in a deep understanding and grasp of the classical connotation of the premise, only then will there be a solid theoretical knowledge as the basis, otherwise the experimental research done will be "rootless wood without a source of water", can not withstand the discretion and test. Therefore, there is still a need for further exploration in the treatment of PCOS to provide a basis and reference for clinical practice.

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