

Analysis of the Prognostic Effect of Tonifying Kidney and Eliminating Phlegm in the Treatment of Patients with Polycystic Ovary Syndrome

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Abstract: Polycystic ovary syndrome (PCOS) is a kind of endocrine disorder syndrome with reproductive dysfunction and abnormal glucose metabolism. Clinically, it is mainly a syndrome of oligomenorrhea, amenorrhea, infertility, hirsutism, obesity, acne, alopecia and other manifestations. Traditional Chinese medicine believes that the kidney qi deficiency, phlegm dampness to stop the accumulation of water is its main pathogenesis. Western medicine considers hyperandrogenemia, insulin resistance and chronic inflammation as its pathological essence. Grasp the function characteristics of tonifying kidney and eliminating phlegm, aiming at reducing androgen, improving insulin resistance, anti-inflammatory and so on. Therefore, based on the recent treatment of polycystic ovary syndrome by traditional Chinese medicine and Western medicine, this article analyzes the prognostic effect of tonifying kidney and resolving phlegm in the treatment of polycystic ovary syndrome in recent years, and provides a new diagnosis and treatment idea for the clinical treatment of polycystic ovary syndrome.

Keywords: Polycystic ovary syndrome, Tonifying kidney and eliminating phlegm, Prognostic effect.

1. Introduction

Polycystic ovary syndrome (PCOS) is an endocrine disorder characterized by reproductive dysfunction and abnormal glucose metabolism. Clinically, it is mainly a syndrome of oligomenorrhea, amenorrhea, infertility, hirsutism, obesity, acne, alopecia and other manifestations. The main treatment of PCOS is symptomatic treatment, including lifestyle adjustment and oral medication. Diet is improved to reduce weight, prevent weight gain, maintain the patient's physical health and improve her quality of life. Medications may vary depending on the clinical manifestations of PCOS, including medications to regulate the menstrual cycle, medications to lower blood androgen levels, medications to improve insulin resistance, and medications to induce ovulation. In terms of traditional Chinese medicine, PCOS belongs to the category of "mass" and "infertility". It considers deficiency of qi in the kidney and accumulation of phlegm dampness and accumulation of fluid as the main causes of disease. Therefore, this article focuses on the relevant researches in recent years with "tonifying kidney and eliminating phlegm" as the main treatment method, which is a new idea [1] for the clinical diagnosis and treatment of PCOS. The summary is as follows.

2. The Traditional Chinese Medicine Understanding of Polycystic Ovary Syndrome

Traditional Chinese medicine believes that polycystic ovary syndrome is mainly based on the dysfunction of zang-fu organs, phlegm turbidum and congestion block as the standard, so the clinical manifestations are the syndrome of deficiency and deficiency. This disease is closely related to the kidney, spleen and liver, but mainly to the kidney deficiency, spleen deficiency, phlegm dampness, blood stasis and other pathological products act on the body, resulting in "kidney - Tiangui - Chongren - cell palace" reproductive axis dysfunction and disease.

(1) Kidney deficiency due to lack of endowments, weak body, or early marriage, kidney qi damage, Tiangui lack of source, the sea of blood emptiness, and resulting in scarce menstruation, and even amenorrhea is not easy to conceive.

(2) Spleen deficiency phlegm dampness is fatness, phlegm dampness inside, or diet fatigue, or excessive worry, damage temper, spleen loss of health, phlegm dampness endogenous, block chong Ren cell pulse, and cause scarce menstruation or amenorrhea, can not take essence into pregnancy.

(3) Qi stagnation blood stasis is manifested as mental depression, or anger hurts the liver, mood is not smooth, liver qi stagnation, Qi stagnation blood stasis; Or menstruation, postpartum adjustment imprudence, more than blood did not do a complex sense of evil, cold coagulation heat burning and blood stasis, stasis blocked chong Ren, blocked cell pulse, menstrual blood can not be issued, and amenorrhea or infertility.

(4) Liver depression fire factors depression, or seven feelings of internal injury, mood failure, Yu Yu fire, heat interference Chongren, Chongren is not adjusted, Qi and blood disharmony, and cause facial hair, acne, menstrual disorders, infertility.

Puberty focus on the regulation of menstruation, to regulate menstruation as the first, restore the cycle as the fundamental; Childbearing period to help pregnancy as medicine. The principles of treatment are tonifying kidney to treat its basic, invigorating spleen and eliminating phlegm, relieving liver-stagnation and purging fire, activating blood stasis and regulating channel to treat its standard.

3. Status of Tonifying Kidney and Eliminating Phlegm in the Treatment of Polycystic Ovary Syndrome

3.1 Decrease Androgen Level

The incidence of HA in PCOS patients is as high as 60% to 80%, and excess androgens act on different metabolic tissues, which is closely associated with ovulation disorders, obesity, hirsute, acne and androgenic alopecia. Excessive androgen is not only an important clinical feature of PCOS, but also plays a key role in the development of PCOS. The main source of excess androgens is the ovaries, but 20% to 30% of androgens also come from the adrenal [2] renal glands. Tonifying kidney and eliminating phlegm in the treatment of polycystic ovary syndrome can better regulate androgen. Li Wanjing et al [3] analyzed the regulation ability of Wuziyanzong Pills, Cangfu Daotan Decoction and rosiglitazone on sex hormone levels in obese patients with PCOS with insulin resistance, and found that both of them could lower luteinizing hormone (LH)/follicle stimulating hormone (FSH) levels, but the former could lower androgen levels more. Yin Qian et al [4] studied Bushen Huatan prescription, which is a combination of Astragalus, Herba medium, poria coabilis, atrade and salviorrhiza, and compared with Daying35, which has more prominent efficacy in reducing serum testosterone, improving LH level and shrinking ovarian volume.

3.2 Improving Insulin Resistance

Insulin resistance is one of the most typical features of PCOS. Studies have found that 65 to 95 percent of women with PCOS have IR and compensatory hyperinsulinemia (CHI) [5]. Too much insulin can overstimulate the ovarian tissue, resulting in increased androgen synthesis in the endometrial cells of the follicle, indirectly damaging the regulation of the hypothalamic-pituitary-ovarian axis, and causing endocrine dysfunction [6].

Clinical studies have proved that Chinese herbal medicine for tonifying kidney and eliminating phlegm can ameliorate PCOS-IR glucose and lipid metabolism disorder. Liu Zhiqin et al [7] conducted intervention of Bushen-Huatan prescription combined with Western medicine and Western medicine alone in PCOS-IR patients. Fasting blood glucose (FBG) and HOMA-IR were improved more significantly in the combined Chinese and Western medicine group. This proves that the combination of bushen Huatan TCM on the basis of standard Western medicine has more advantages in improving the glucose metabolism of PCOS-IR. Animal experiments [8] also confirmed the findings, Bushen Huatan formula can reduce the levels of FBG, fasting insulin, and body fat in PCOS-IR rats, and the higher dosage is better.

3.3 Improve the Intestinal Flora Environment

As the correlation between intestinal flora and diseases has gradually become a research focus, the relationship between intestinal flora imbalance and PCOS has also attracted the attention of researchers. Studies have shown that the composition of intestinal microbiota in PCOS patients has changed, and intestinal microbiota may participate in and affect the development [9] of PCOS. Li Tianhe et al [10] summarized the literature in recent years and found that intestinal flora has an impact on sex hormones, immunity and metabolism, and changes in the diversity and abundance of

intestinal flora play an important role in the occurrence and development of PCOS. The detection of intestinal flora may have certain guiding significance for the prediction and long-term complications of PCOS. At present, improving intestinal flora metabolism is a new focus direction in the treatment of PCOS, in which kidney-tonifying and phlegm-resolving Chinese medicines play an important role. Chang Zhenzhen et al [11], based on the treatment of basic western medicine combined with Wang's Yijing Decoction of Yijing Decoction to tonify kidney and spleen, dry dampness and remove phlegm, to help kidney deficiency phlegm-dampness type Polycystic ovary syndrome patients to alleviate hyperandrogen, regulate the gut-brain axis, correct reproductive endocrine hormone, intestinal flora disorder in mice after the treatment of Bushen Huatan formula has been improved to a certain extent. It is suggested that the combination of Bushen Huatan and basic treatment in Western medicine has the advantage of improving intestinal flora disorder of PCOS.

In this [12] study, 16S rRNA high-throughput sequencing was used to analyze the structural characteristics of intestinal flora in PCOS mice, aiming to reveal the role of intestinal bacteria, short-chain fatty acids, intestinal barrier function, and PPAR γ signals in the treatment of PCOS by Bushen-huatan prescription and its potential mechanism.

Bushenhuatan decoction may enhance the activation of intestinal PPAR γ signal by improving the intestinal flora structure of PCOS and increasing short-chain fatty acids, thus down-regulating the expression of iNOS in intestinal epithelial cells, reducing its low intestinal permeability, improving intestinal barrier function, and finally slowing down the progression of PCOS.

3.4 Regulation of Sex Hormones

IR can lead to increased levels of compensatory insulin in PCOS patients. Elevated insulin acts on the pituitary gland to enhance the secretion of luteotropic hormone (LH), promote the synthesis and release of androgens, and reduce the synthesis of sex hormone-binding globulin. And increase free testosterone (T) [13]. Studies [14] have shown that after treating PCOS patients with kidney tonifying phlegm Chinese medicine combined with Western medicine, LH value is significantly lower than that of western medicine group. A meta-analysis showed [15] that TCM for tonifying kidney and eliminating sputum was similar to metformin in improving LH, FSH, and LH/FSH in PCOS-IR patients, as shown in the table below. It can be seen that TCM for tonifying kidney and resolving phlegm alone or in combination with Western medicine has definite efficacy in regulating PCOS-IR reproductive hormone. Lou Dongmei et al [16] found that bushen Huoxue recipe in the treatment of ovulation disorder infertility caused by PCOS could regulate the reproductive endocrine function of patients, improve ovarian function, and increase the pregnancy rate, which was basically consistent with the results of this study. It is suggested that the application of Bushen Huatan Huoxue formula is more conducive to correcting the hormone secretion disorder of PCOS patients, which is also included in the treatment of PCOS.

Table 1: Comparison of serum sex hormone and AMH levels between the two groups before and after treatment ($\bar{X} \pm \bar{S}$)

Groups	E2(pmol/L)		T(mg/mL)		LH(U/L)		FSH(U/L)		LH/FSH		AMH(ng/mL)	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group (n=62)	76.95 ± 7.14	106.03 ± 11.25* #	1.95 ± 0.49	0.86 ± 0.25* #	15.68 ± 2.68	7.22 ± 1.03* #	5.92 ± 0.43	6.42 ± 0.59 *	2.65 ± 0.39	1.12 ± 0.25* #	10.59 ± 1.92	7.48 ± 1.35* #
Control group (n=62)	76.95 ± 7.14	95.33 ± 9.47*	1.89 ± 0.45	1.22 ± 0.31*	15.68 ± 2.68	8.84 ± 1.16*	5.95 ± 0.49	6.28 ± 0.54	2.59 ± 0.35	1.41 ± 0.26	10.59 ± 1.92	8.64 ± 1.62 *
t	1.474	5.729	0.710	7.118	0.536	8.223	0.362	1.378	0.902	6.331	0.473	4.331
P	0.143	<0.001	0.479	<0.001	0.593	<0.001	0.718	0.171	0.370	<0.001	0.637	<0.001

3.5 Regulate Phlegm-dampness Constitution

The most common endocrine disease with reproductive dysfunction in gynecology is PCOS, for women of childbearing age, it will seriously affect their physical health at the same time will also reduce the quality of life, and the disease will be prolonged for a long time will also have a great impact on psychology. Physique is mainly affected by congenital endowments, and then by the acquired influence, is a special physiological performance of different individuals. Traditional Chinese medicine says that evil is caused by the body, and physique can affect the expression and syndrome of diseases, and through the intervention and regulation of physique, evil spirits can be gradually eliminated. The theory of physical disease correlation advocated by Wang Qi [17] points out that physical characteristics play a decisive role in whether or not a disease occurs and the tendency to develop a disease. At the same time, physical constitution can also affect the pathogenesis of a disease and the nature of clinical syndromes, and is considered to be one of the important bases for predicting the prognosis of a disease. Physical constitution is acquired and adjustable, so early intervention of various types of physical constitution and syndromes is an effective method and way [18] to prevent and treat PCOS. In clinical application, it can be found that tonifying kidney and eliminating phlegm can effectively improve the physique and taste of PCOS patients with phlegm-dampness.

4. Conclusion

Traditional Chinese medicine does not have the disease name of polycystic ovary syndrome, for phlegm-dampness syndrome is considered to be the product of excessive eating fat sweet and thick taste, or the deficiency of spleen, difficult to transport, the accumulation of phlegm and fat stagnation of body fluid distribution disorder, a class of Yin and Yang disorders caused by water and wet internal stop. Its clinical manifestations are obesity, hairy, acne and so on. TCM takes the whole concept as the clinical guiding ideology, and achieves the effect of harmony between nature and man through syndrome differentiation and treatment. There are complicated etiology and pathogenesis in the occurrence and development of polycystic ovary syndrome. PCOS is a common reproductive disorder and endocrine and metabolic disorder in women of childbearing age, and IR is one of the important pathological characteristics of PCOS. The pathogenesis of PCOS-IR is complicated and mutual transformation during the occurrence and development of PCOS, so the specific etiology and mechanism are still unclear in Western medicine. Traced back to the origin of traditional Chinese medicine, kidney deficiency, insufficient decyl water, prolonged disturbance, internal phlegm and dampness may be the cause; Understand modern medicine, insulin resistance, hyperandrogenemia, chronic inflammation

or its pathological nature. This article fully combines the thought of traditional Chinese and western medicine to clarify that the method of tonifying kidney and eliminating phlegm is the prospect of treating PCOS.

Tonifying kidney and eliminating phlegm for the treatment of phlegm-dampness syndrome of polycystic ovary syndrome is a multi-angle, multi-target comprehensive regulation. For the study of the mechanism of phlegm-dampness syndrome of PCOS, the method of tonifying kidney and phlegm can improve the metabolic disorder by affecting the level of sex hormone and endometrial receptivity, so as to treat infertility. No matter using Chinese medicine alone, combined with Western medicine, or combined with traditional Chinese medicine, it has a clear effect on improving insulin resistance, reducing androgen, regulating intestinal flora and other aspects. Current clinical studies on tonifying kidney and resolving phlegm in the treatment of PCOS are still lacking, and in-depth studies on many different mechanisms are lacking. Therefore, in order to further improve the effectiveness and diversification of Chinese medicine in the treatment of this disease, large sample studies under the guidance of traditional medical thinking are worth exploring. It is expected that through clinical treatment of traditional Chinese medicine, rational use of tonifying kidney and resolving phlegm is needed. To fully and effectively treat the troubles of patients with PCOS.

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