

A Collection of Regional Treatment Features of Chinese Traditional Medicine for Polycystic Ovary Syndrome

Xiuling Wei^{1,2,5#}, Chunhong Pan^{1#}, Shibo Zhao³ & An Yan⁴

¹ Obstetrics and Gynecology, Southwest Hospital Affiliated to Youjiang Medical College for Nationalities

² Graduate School, Youjiang Medical University for Nationalities, Baise, Guangxi 533000

³ College of Clinical, Youjiang Medical University for Nationalities, Baise, Guangxi 533000

⁴ Department of Hepatobiliary Surgery, The Third Xiangya Hospital of Central South University, Changsha, Hunan 410013

⁵ People's Hospital of Baise, Baise, Guangxi 533000

Correspondence: Shibo Zhao, College of Clinical, Youjiang Medical University for Nationalities, Baise, Guangxi 533000.

These authors shared first authorships.

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Abstract

Polycystic ovary syndrome (PCOS) is one of the common female gynecological diseases that cause menstrual disorders, amenorrhea and infertility in women of childbearing age, polycystic ovary syndrome or PCOS is a disease that causes menstrual disorders, amenorrhea and infertility due to endocrine metabolic abnormalities. According to epidemiological research data in China, the incidence of PCOS in China is between 5% and 10%. The prevalence of PCOS in China is between 5% and 10%, which seriously affects female reproductive function. The disease is divided into Western medicine and Chinese medicine treatment two methods. However, due to the Western medicine treatment of this disease taking a long time and causing side effects, it is slowly not being used; Chinese medicine treatment of this disease, instead, uses evidence-based treatment and typology treatment. The effect is significant and gradually widely used in clinical. This paper summarizes the research and treatment of this disease in Chinese medicine in recent years and provides a reference value for the subsequent clinical treatment and research of this disease.

Keywords: polycystic ovary syndrome, TCM theory, herbal treatment, medicinal food prevention, regional characteristics, research progress

1. Introduction

Polycystic ovary syndrome is a serious reproductive, metabolic and psychological

disorder affecting women of reproductive age (Sima Panpan & Sun Liangge, 2018). It is characterized by menstrual disorders, ovulation

disorders, hirsutism, acne, obesity, hyperandrogenemia, and persistent bilateral ovarian enlargement with polycystic changes. (Li Yan, 2010) The incidence of PCOS is increasing yearly and is about 5%-10% in women of reproductive age. (He Xiaotong, Meng Xiangwen, Zhang Xuejiao, et al., 2017) It is a serious health risk for women, as high as 50%-70% in infertility patients. (Guo Ying, 2009) The pathogenesis of PCOS is not yet clear, either in Chinese medicine or in Western medicine, and most research scholars believe that PCOS may be related to the combined effects of individual physical constitution, living environment and life diet. With the requirement of female fertility, the treatment of PCOS has become a key concern for medical researchers and is highly regarded and valued by scholars at home and abroad.

2. Overview of Research on Polycystic Ovaries

2.1 Research on Chinese Traditional Medicine

In Chinese TCM research, polycystic ovary syndrome cannot be found to be an accurate disease in TCM. TCM classifies PCOS under the category of gynecological TCM diseases such as amenorrhea, menstrual disorders or infertility (Hong Shixiang, 2013). Many famous TCM practitioners believe that the pathogenesis of PCOS is mainly attributed to the imbalance of the functions of the kidney, liver, and spleen. It is believed that the dysfunction of the viscera and internal organs makes the body's Qi and Blood and fluids run impaired, resulting in internal blood stasis, which eventually accumulates in the body, causing fat accumulation in the body, leading to obesity, endocrine hormone imbalance, resulting in

irregular menstruation, amenorrhea, anovulation and infertility (Li Chunyao & Zhao Fanqin, 2020). The diagnosis of polycystic ovary syndrome in Chinese traditional medicine is based on the following criteria: firstly, irregular menstruation or amenorrhea and anovulation, and anovulation is a necessary condition for diagnosis. Secondly, the diagnosis is made in combination with the patient's severe and recurrent acne, rough skin, large pores, little sweating, obese figure, fear of cold, stiff neck, excessive drinking, body fatigue and other characteristics (Lai YL, Li WH, & Zhang YM, 2006).

2.2 Modern Medical Research

The pathogenesis of PCOS remains unclear in Western medicine, and the diagnosis is made mainly based on the patient's hypothalamus-pituitary-ovary-uterus axis function or not. In Western medicine, the diagnostic criteria for PCOS in China include sporadic ovulation or anovulation, hyperandrogenemia, and the 2009 American College of Obstetricians and Gynecologists diagnostic guidelines urge that obesity and insulin resistance be examined as well (Endocrinology Group of the Obstetrics and Gynecology Branch of the Chinese Medical Association, 2008).

3. Studies on the Chinese Medical Theory of Polycystic Ovary Syndrome by Representative Chinese Gynecological Schools

The following table summarizes the Chinese medical theory of PCOS according to each school (Dong LIL., 2011; Liu Guirong, Li Chengwen, & Dai Ming, 2013):

Table 1.

Gynecology School	Pathogenesis	Chinese Medicine Treatment Theory
Haipai Gynecology (Zhang YN, Huang SY & Hu GH, 2011)	Kidney deficiency, spleen deficiency, phlegm-dampness, liver Qi stagnation, damp-heat in the liver meridian, and Qi stagnation and blood stasis.	It nourishes the kidneys, protects the liver, drains dampness and brings down liver fire, while slowly nourishing the spleen and stomach and promoting blood flow throughout the body.
Sanjin Wang's school of Traditional Chinese medicine and gynecology (Wang JQ, 2018)	Kidney deficiency, liver depression, blood stasis and evil disturb the flow of Qi and Blood in the uterus and the uterine vessels, resulting in difficulty in conception due to obstruction of the two sperms.	It activates the blood, moves the Qi and unblocks the meridians, so that the Qi and Blood can move, and the stagnation can be dispersed, so that the uterus and uterine veins can be opened and the sperm and eggs can pass and become pregnant.

Long Jiang Gynecology School (Han Yanhua, Wang Mingming, Liu Li, et al., 2013)	All gynecological disorders can be caused by liver and kidney imbalance.	The main method is to warm the kidneys and invigorate the Blood, supplemented by draining the liver and relieving the flow of blood to regulate menstruation to promote pregnancy.
Menghe Gynecology School (Gao Linyu, Xu Yijue, Cao Zhen, et al., 2016)	The liver and spleen and blood are not in harmony, and menstrual offenses occur, breast swelling and painful disease, and menstruation precedes, and the liver does not store blood, and the leakage occurs.	Focus on regulating the liver and taking into account the spleen and kidneys; de-stressing the liver and relieving depression. Clearing liver fire, warming the liver and dispersing cold, harmonizing the liver and spleen, and curing women's diseases.
Wuzhong Gynecology School (Xu N., 2018)	Qi stagnation and blood stasis, weakness of the spleen and stomach, Yin deficiency and fire, phlegm and dampness blockage.	Liver Qi flow, blood flow smoothly, can make the Qi and Blood and regulation, and the function of the viscera balance, there is no women's disease.
Xin'an Gynecology School (Wen Yinjun & Wang Jian, 2018)	Irregularities in the internal organs, disharmony of Qi and Blood, damage to the punching and ductus and the uterus, the uterine veins, the uterine loops, as well as a day of kidney decay a punching and uterine axis dysregulation.	Protects the spleen, stomach and kidney Qi, dredges the liver and regulates the Yin, strengthens the root and pacifies the mind, while the reproductive axis is balanced.
Midland Gynecology School (Zhang Zhuqing, Zhang Dawei & Pan Yang, 2020)	Abnormal emotions, depressed liver Qi, and irregularities in the two channels of the Ren and Zhan will result in low menstrual flow and even amenorrhea, making it difficult to have a baby due to ovulation.	It regulates Qi and eliminates stasis, treats the liver, spleen and kidneys together, and places special emphasis on harmonizing the spleen and stomach to correct the balance of Yin ang Yang in the body of pregnant women from the inside out.
Lingnan School of Gynecology (Zhu M, Geng H-L & Huang J-L., 2018)	It is the kidney day a day a rush either uterine axis of homeostasis is broken, resulting in dysfunction.	It focuses on regulating Qi and Blood, emphasizing the balance of Yin ang Yang in the body, emphasizing tonifying the kidneys and strengthening the spleen, without neglecting the draining of the meridians.
Qiangui Gynecology School (Ding Lixian, 2013)	"Kidney Yin and Liver Blood" are the important material basis for menstruation, belt, fetus, delivery and breast milk, and the derangement of the Liver is an important factor in women's morbidity.	Nourishing the spleen and kidneys and protecting Yin and Blood. Treatment focuses on the spleen and kidneys, with tonifying the kidneys and strengthening the spleen, combined with the woman's irritability, plus draining the liver and Qi.
Sichuan Gynecology School (Ye M & Zhu HQ., 2020)	Dampness is easily produced in Sichuan and Shu regions, and the internal invasion of dampness injures people and causes disease, forming external dampness, and the internal cause is dysfunction of	The main focus is on "treating the liver in actuality and nourishing the spleen and kidneys in deficiency", especially in deficiency, to nourish the kidneys and essence, nourish the spleen and blood, nourish the kidneys and liver, nourish the spleen and heart, etc.; in actuality, to

	the liver, spleen and kidneys.	dredge the liver, clear the liver, activate the blood and open the channels.
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4. Characteristics of PCOS Treatment in Various Regions of China

4.1 Northeast Region

Due to the interaction of certain factors such as geographic location, land and sea distribution, and atmospheric circulation in the northeast, the winter is quite long and cold. The cold causes the circulation of Qi and Blood in the body to slow, the fire transport in the external environment is insufficient, cold and dampness are prevalent, and body ulcers sprout. Long Jiang School of Gynecology believes that external environmental evil or internal body deficiency can easily trigger the contraction of blood vessels in the pelvic cavity, leading to irregular menstruation due to poor blood flow in the uterus and adnexa. Moreover, obese women have more dampness and lipid film embolism, blood stagnation and menstruation, and menstrual irregularities due to lack of blood and Qi. Treatment is based on local characteristics, mostly warming the kidney and invigorating the blood, supplemented by dispelling dampness and transforming it to follow its momentum, smooth the blood flow, regulate menstruation and promote it pregnancy.

4.2 Southeast Region

The tropical, subtropical monsoon climate in the southeast is dominant, with high temperatures and rain in all seasons, warm and humid. The coastal areas are hot near the water, so the Yang energy often leaks, while the thin land near the sea and the Yin and wet energy are always strong. Hence, women living there for a long time are prone to wetness, spleen deficiency, and gastrointestinal disorders. The Lingnan Luo's school of gynecology attaches importance to regulating spleen and kidney Qi and Blood and protecting spleen and stomach functions. In regulating menstruation, assisting pregnancy, and ensuring the fetus, it is required to emphasize the balance of human Yin ang Yang, highlight the tonification of the kidney and spleen, dispel dampness and protect the stomach. According to the characteristics of women's physique in this area, which is on the soft side, Yin deficiency, Qi deficiency, Qi-yin deficiency, and Qi-yin deficiency, more use of flat tonic and warm tonic products, but not big

attack or big tonic, making good use of medicinal food to slowly regulate the treatment, integrating the treatment with Lingnan. The treatment is integrated with Lingnan food culture, highlighting the characteristics.

4.3 Northwest Region

The temperature difference between the four seasons in the northwest region is large. Hence, women who have lived in the northwest region for a long time are prone to severe cold injury to Yang Qi and consumption and hot injury to fluid and dryness. In Chinese medicine, the spleen is the main stomach to move its fluids. Fluids in the body constantly circulate and metabolism, conducive to the production and operation of Qi. Running can lead to fluid transport obstacles and cause the body to dry from within. The Northwest School of Traditional Chinese Medicine believes that the cause of PCOS is related to climate and diet. Because of the hot and cold climate, the body does not produce enough fluid, so fluid depletion results in a lack of fluid circulating throughout the body. Lack of fluid is a spleen deficiency, leading to internal fire and dryness. In addition, the lack of fluid in the body will lead to blood loss or moistening. In treating the disease, focus on regulating the balance of the body's Yin ang Yang. In terms of medicine, pay attention to the use of warm Yang without hurting the Yin and fluid, but also depressed heat.

4.4 Southwest Region

The climate of Yunnan, for example, is known for its mildness, with the saying "all seasons are spring", and its climate is as mild as spring all year round, with no spring, summer, fall or winter. People's bodies are always in extreme comfort, which can lead to inertia, dullness, depression, and liver damage. Ding's gynecology believes that women in the southwest are in a comfortable environment that often leads to a lack of Yin ang Yang. Combined with women's depressed and irritable character, the lack of exercise leads to dullness in the body, depression and injury to the liver; thus, Ding suggests that the treatment of women with PCOS should nourish the spleen and kidneys to protect the Yin and blood. The treatment focuses on the balance of spleen and kidney function to

nourish the kidneys and strengthen the spleen, following the characteristics of women's irritability. Besides, the point of view of the treatment is to de-stress the liver and regulate the Qi.

4.5 Midland Region

The Central Plains region has four distinct seasons: windy and dry in spring, hot and rainy in summer, cool and comfortable in autumn, and cold with little snow in winter. People in the Central Plains region like to eat fried, stir-fried, deep-fried, baked, oily, sweet and fine foods, which often cause an internal fire in the stomach and fetal heat. According to the climate and dietary characteristics of the Central Plains region, Pang's gynecology department first

regulates the Qi and Blood, especially to smooth the Qi and eliminate stasis, and makes good use of the method of clearing heat and dispelling dampness. Use Chinese herbs to clear heat and calm the fetus as the treatment while nourishing the kidneys, strengthening the spleen and regulating Qi to correct the balance of Yin and Yang in the pregnant woman's body from the inside out.

5. Herbal Prescription Therapy and Its Pharmacological Effects

The etiological mechanisms and treatment theories of the above gynecological schools were compiled, and each of their representative remedies was analyzed (Zhang W, Li N & Xu Zhaoxia, 2018; Wang R. X. & Lai H. H., 2006).

Table 2.

Common remedies for PCOS	Main representative drugs in the prescription
Activating blood circulation to dissipate blood stasis	Peach kernel, Safflower, Ligusticum wallichii, Pberetima, Salvia miltiorrhiza, Angelica, Motherwort, Genu, Cyathnla capitata Moq, herba lycopi, chicken blood vine
Tonifying the kidney and benefiting the liver	Chinese yam, fructus corni, Poria cocos, Codonopsis pilosula, Angelica sinensis, teasel root, Eucommia ulmoides, Herba epimedii, Herba cistanches, The seed of Chinese dodder, Matrimony vine
Nourishing the Yin and nourishing the Blood	Prepared rehmannia root, Chinese yam, Angelica sinensis, Fructus corni, Matrimony vine, Radices paeoniae alba, Fructus ligustri lucidi, Fleece-flower root
Benefit the kidneys and strengthen the spleen	radix pseudostellariae, Angelica sinensis, the seed of Chinese dodder, parasitic loranthus, Radix dipsaci from Sichuan of China, The root of red-rooted salvia, Chinese yam, Bighead atractylodes rhizome, Radices paeoniae alba, Divine tune, Dried tangerine or orange peel, Prepared Radix glycyrrhizae
Warming the meridians and dispersing cold	cassia twig, Poria cocos, the root of red-rooted salvia, peach kernel, Radix paeoniae rubra
Warmly invigorating kidney Yang	The seed of Chinese dodder, Curculigo orchioides Gaertn, Herbaepimedii, Radix morindaeofficinalis, Cornua cervi degelatinatum, Herba cistanches, Radix dipsaci from Sichuan of China
Tonifies and enhances Qi	Rhizoma cyperi, fructus aurantii, Astragalus mongholicus, Bighead atractylodes rhizome, peach kernel, Ligusticum wallichii, the root of red-rooted salvia, Radix paeoniae rubra, Carthamus tinctorious, Lignum millettiae
Tonifying the kidneys to promote ovulation	The seed of Chinese dodder, Fructus ligustri lucidi, Matrimony vine, Parasitic loranthus, Radix dipsaci from Sichuan of China, Cyathnla capitata Moq, Angelica sinensis, Radix paeoniae rubra, Herba lycopi, Rhizoma cyperi, Cattail pollen, Motherwort, The root of red-rooted salvia

5.1 Activate Blood Circulation and Remove Blood Stasis

In the formula for activating blood circulation and removing blood stasis, peach kernel, safflower and Chuanxiong invigorate blood circulation and remove blood stasis, unblocking the meridians, which are often used to relieve dysmenorrhea and regulate menstrual cycles and menstrual flow; Salvia miltiorrhiza and angelica have the function of invigorating blood circulation and nourishing blood; motherwort, Chuan Niu Knee, Ze Lan and chicken blood vine can invigorate blood circulation and regulate menstruation, and Niuxi can nourish the liver and kidney (Zhang Qiaoping & Xu Xiaoyu, 2010). These remedies are used to invigorate blood and regulate menstruation, and are commonly used for women with dark menstruation with blood clots, irregular menstruation, and menorrhagia or dysmenorrhea.

5.2 Tonifying the Kidney and Benefiting the Liver

In the formula for nourishing the kidney and liver, Shu Di and Zao Zi nourish the liver and kidney; Du Zhong, Xian Ling Spleen, Cistanches, Cuscuta and Fructus Lycii nourish the kidney energy; Angelica Sinensis and Radix et Rhizoma Ginseng nourish both blood and Qi, regulate the circulation of blood in the body and improve the blockage; while Yam and Poria strengthen the spleen and nourish the middle. The formula can consider the deficiencies of the successive heavenly bodies and can fill up the flushes so that the menstrual blood comes as scheduled, smoothly and without blockage. (Xiao L., 2010).

5.3 Nourishing Yin and Nourishing Blood

In the formula for nourishing Yin and nourishing Blood, Shu Di can nourish the liver and kidneys; Angelica, Yam and Cornu Cervi Pantotrichum are effective in nourishing the kidneys, stopping banding and collapse, and generating fluid to quench thirst, and are often used in cases of leaking banding, women's physical weakness and excessive menstruation; Radix et Rhizoma Ligustrum, Yam and Di Huang can nourish Yin and lower fire (Zhou Yun, 2010).

5.4 Benefit the Kidneys and Strengthen the Spleen

Dodder seeds, mulberry, Chuanjian and wolfberry can tonify the kidney and benefit the essence, among which dodder seeds, mulberry and Chuanjian also have the effect of calming

the fetus in the formula for tonifying the kidney and spleen, prunus codonopsis, angelica, Danshen, and fried white atractylodes regulate Qi and tonify blood. Roasted licorice has the effect of tonifying both Qi and Blood and regulating Yin ang Yang. Shen Qu and Chen Pi can regulate the intestines and stomach, promote gastrointestinal motility, improve loss of appetite and repair spleen and stomach deficiencies (Wu D., 2012).

5.5 Warming the Meridians and Dispersing Cold

In the formula for warming menstruation and dispersing cold, Gui Zhi is used in conjunction with liver and kidney tonics, or in combination with Qi and Blood tonics to treat the symptoms of kidney Yang deficiency, cold extremities and weak pulse; Fu Ling can benefit the heart and spleen by inducing diuresis; Dan Pi and Tao Ren can eliminate blood stasis and resolve phlegm; Paeonia lactiflora can disperse stasis, activate blood, relieve pain and relieve liver fire by tonifying blood and regulating menstruation. The combination of these herbs can work together to warm the meridians and eliminate the obstruction (Chen Qing Yue, 2019).

5.6 Warming the Kidney Yang

In the formula for warming kidney Yang, Cuscuta sinensis has the effect of tonifying the liver and kidney, calming the fetus and pacifying Yin ang Yang; Bacopa monniera has the effect of tonifying the kidney and helping Yang, dispelling wind and removing dampness. Cornu Cervi Pantotrichum tonifies kidney Yang; Xian Mao tonifies kidney and warms Yang, dispels wind and dampness; Xian Ling Spleen helps Yang, moistens kidney and benefits Qi; Deer horn cream tonifies kidney and helps Yang, astringent and stops bleeding, strengthens marrow and replenishes deficiency; Chuan Bu tones liver and kidney, calms fetus and other effects (Chen Yanhua, 2019).

5.7 Tonifying Qi and Benefiting Qi

In the formula for tonifying Qi and benefiting Qi, Salvia miltiorrhiza is effective in invigorating blood stasis, nourishing blood and calming the mind, and is used for irregular menstruation, amenorrhea or dysmenorrhea; Radix Aromaticae Sinensis can regulate liver Qi, and is used for irregular menstruation, menorrhagia and dysmenorrhea caused by liver Qi stagnation. Radix Angelicae Sinensis tonifies the Blood and invigorates the Blood, so that the Qi and Blood flow smoothly; Rhizoma Atractylodis

Macrocephalae tonifies the Qi and builds up the Spleen, and has the effect of calming the fetus; Radix Astragali and Salviae Miltiorrhizae tonify both Qi and Blood, consolidate the Kidney and regulate menstruation, and are often used in menstrual disorders with Qi and Blood deficiency and Kidney deficiency; Citrus Aurantium has the effects of regulating Qi, neutralizing, moving stagnation and eliminating swelling in the formula (Qi Fenghua, 2019).

5.8 Kidney Tonic for Egg Promotion

In the formula for tonifying the kidney and promoting ovulation, Semen Cuscutae and Chuan Jian are used to tonify the kidney and benefit the essence, warm the kidney and help the Yang, and calm the fetus, treating fetal movement and fetal leakage of blood; Fructus Lycii nourish the liver and kidney, benefit the Qi and Blood, and clear the liver and eyes; Radix et Rhizoma Mulberry nourishes the liver and kidney and benefits the menstrual blood; Radix Aconiti, Radix Angelicae Sinensis, Radix Paeoniae Alba, Radix et Rhizoma Icariaensis, Salviae Miltiorrhizae, Radix Zeleniae Sinensis and Radix Phellodendron can invigorate the blood and regulate menstruation, and Radix Aconiti can draw blood downward. The whole formula can tonify the kidneys, fill the essence, invigorate the blood and regulate the menstruation, calm the fetus, and avoid fetal leakage of blood (Yuan Bochao, 2019).

6. Summary and Outlook

PCOS, a common and frequent disease in gynecological clinics, has been paid attention to and valued by the world, with the number of cases rising yearly. Neither Western nor Chinese medicine treatment has yet to find the most suitable treatment. Several studies have shown that Chinese medicine can regulate the level of various hormones in women's bodies and improve endocrine disorders. No obvious drug side effects have been found in Chinese medicine treatment, so more and more scholars are turning to TCM for treatment. The principles of the Chinese gynecology school of treatment for PCOS are the same, mostly using tonifying the kidney and liver, draining the liver and Qi, strengthening the spleen and stomach, drying dampness and resolving phlegm, and activating blood stasis. However, there are some disadvantages of Chinese medicine treatment for PCOS, such as long treatment cycle times and poor patient compliance. The proportion of

Chinese medicine treatment in efficacy still needs to be fully elucidated. In the future, we should focus on using evidence-based medical theory to systematically evaluate the safety and efficacy of TCM theory and TCM treatment for this disease and continue to conduct in-depth research to better utilize the advantages and characteristics of TCM in China for the benefit of more PCOS patients.

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