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Research Progress on the Syndrome Differentiation and Treatment of Phlegm-Damp Type Polycystic Ovary Syndrome in Traditional Chinese and Western Medicine

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Abstract: ***Polycystic Ovary Syndrome (PCOS) is the most common endocrine disorder in women of childbearing age, with complex etiology and classification of traditional Chinese medicine syndromes, among which the phlegm-damp syndrome is the most prevalent. This article provides an overview of the common types and symptomatic characteristics of kidney deficiency type PCOS, the correlation with physicochemical indicators such as glucose and lipid metabolism levels, sex hormone indicators, inflammatory factor levels, as well as syndrome differentiation treatment and integrated traditional and Western medicine approaches, providing a certain scientific basis for clinical diagnosis and treatment.***

Keywords: Polycystic Ovary Syndrome, Phlegm-Damp Type, Integrated Traditional and Western Medicine Treatment**.**

1. Introduction

Polycystic Ovary Syndrome (PCOS) is a common gynecological endocrine disorder characterized by polycystic changes in the ovaries and elevated androgen levels, which can affect reproductive function and lead to diseases such as diabetes and endometrial cancer. Traditionally, clinical treatment for PCOS has relied on Western medicine, but the long-term effects have been poor, with many adverse reactions [1]. In traditional Chinese medicine, there is no specific diagnosis for Polycystic Ovary Syndrome; based on clinical manifestations, it can be categorized under 'infertility, ' 'abnormal uterine bleeding, ' 'late menstruation, ' and 'tumors.' Depending on the type of traditional Chinese medicine syndrome, PCOS can be classified as blood stasis type, liver stagnation type, kidney deficiency type, and phlegm-damp type. Traditional Chinese medicine believes that the occurrence of PCOS is closely related to dysfunction of the liver, spleen, and kidneys, with the underlying pathology being deficiency with excess manifestations, where kidney deficiency serves as the foundation and phlegm-damp and blood stasis act as inducements [2]. Tang Peipei and others conducted a literature review, decomposing complex syndromes into basic syndromes, and found that the cumulative frequency of pathological syndrome elements reached 90%, with phlegm, dampness, stasis, heat, and yin deficiency identified in order, and the proportion of phlegm and dampness elements reached 45.10%, thus concluding that phlegm-damp type is the most common in clinical practice [3].

2. Common Types and Symptomatic Characteristics of Phlegm-Damp Type PCOS

Phlegm-damp type PCOS primarily manifests as irregular menstrual cycles, light menstrual flow or amenorrhea, prolonged infertility, dark or pale menstrual blood, obesity, and excessive vaginal discharge, which are symptoms of phlegm-damp. The main symptomatic presentations in clinical practice include spleen deficiency with phlegm-damp, kidney deficiency with phlegm-damp, and qi deficiency with phlegm-damp.

Detailed clinical symptoms for each type are presented in Table 1.

Table 1: Clinical symptoms of the phlegm-dampness type PCOS and its classification

Type of physical signs	Common symptoms	Key points of dialectical diff		
		Menstrual manifestations	Associated symptoms	Tongue and pulse
Spleen deficiency with phlegm-dampness [4]	Long-term infertility, body type Obesity, menstrual irregularities Irregular, even amenorrhea Menstruation, dark color	Decreased menstrual volume, increased Excess leucorrheaive volume	Head and body feeling heavy, reduced appetite Bloating, chest tightness and fullness	Thick and greasy tongue coating, deep and fluent veins
Kidney deficiency with phlegm- dampness [5]		Reduced menstrual volume, pale color Dark, sticky quality, leucorrhea Increased leucorrhea, white color	Lower back and knee soreness, abdominal distension Fullness, tinnitus and deafness. Low libido	Pale and swollen tongue, thick and greasy tongue coating, deep and fluent veins
Qi deficiency with phlegm- dampness [6]		Excessively low menstrual volume, Abundant increased leucorrhea quantity but sparse quality.	Dizziness, chest tightness, and fatigue. Weakness.	Pale and swollen tongue, thick and greasy tongue coating, deep and fluent veins

3. A Study on the Correlation between Phlegm-damp Type PCOS and Physiological and Chemical Indicators.

3.1 Levels of Glucose and Lipid Metabolism.

Most PCOS patients may initially only present with menstrual irregularities, but as the condition progresses, abnormalities in glucose and lipid metabolism gradually appear. Clinical findings suggest that phlegm-damp can lead to abnormalities in insulin sensitivity and fasting blood glucose levels. Professor Qi Cong [7]. Believes that the condition of PCOS patients often recurs and is difficult to cure, with specific onset characteristics the pathogenic characteristics of phlegm-dampness have strong external manifestations. From the perspective of traditional Chinese medicine regarding phlegm-dampness in PCOS patients, the pathogenesis of phlegm-stasis in the uterus is localized insulin resistance in the ovaries, which belongs to abnormal glucose and lipid metabolism. Studies show that insulin metabolic abnormalities are closely related to decreased spleen and stomach function. In patients with phlegm-dampness constitution, the ability of the spleen and stomach to distribute nutrients declines, further affecting normal insulin metabolism. Moreover, disturbances in blood sugar often provoke abnormalities in lipid metabolism, leading to hyperlipidemia. Research indicates a close relationship between insulin metabolism disorders and decreased spleen and stomach function. In patients with phlegm-dampness constitution, the spleen and stomach's ability to absorb essence from food diminishes, further impacting normal insulin metabolism. Disruptions in blood sugar often lead to abnormalities in lipid metabolism, resulting in hyperlipidemia. Additionally, studies show that patients with phlegm-dampness constitution have higher body mass indices and rates of abdominal obesity compared to others, aligning with the Traditional Chinese Medicine view that "obese individuals tend to have phlegm-dampness." Obesity is a risk factor for metabolic disturbances, and it is a primary cause of metabolic irregularities in patients with PCOS [8]. Bao Yanjin [9] analyzed 935 outpatient PCOS cases, concluding that younger age at menarche and lower SHBG levels are often associated with phlegm-dampness syndrome in patients with dyslipidemia. Further research demonstrates [10] that the most common lipid metabolism disorders in PCOS patients are characterized by decreased HDL and increased LDL and TG, with significant correlations between lipid metabolism and factors such as insulin resistance. In summary, phlegm-dampness type PCOS is correlated with glucose and lipid metabolism, where both conditions influence and interact with each other.

3.2 Characteristics of Hormonal Changes

Wang Shuqin [11] Clinical observations found that in the phlegm-dampness group of PCOS patients, luteinizing hormone (LH) and the LH/FSH ratio are significantly lower than in the non-phlegm-dampness group. It is speculated that phlegm-dampness type PCOS patients may primarily interfere with ovulation through high levels of free androgens. The secretion of estrogen promotes follicular development, while phlegm-dampness type PCOS patients exhibit high androgen levels. Elevated androgen concentrations antagonize estrogen secretion, hinder follicle growth and development, and can lead to fibrous hyperplasia of the ovarian capsule, further exacerbating ovulatory dysfunction [12]. Zhang Hongyang et al. [13] Clinical observations have found that in phlegm-dampness type PCOS patients, LH and the LH/FSH ratio do not show significant increases. Modern medical research indicates that when there are high levels of androgens in PCOS patients, the expression level of sex hormone-binding globulin decreases. The increased free androgens bind to androgen receptors in adipose tissue, leading to fat cell proliferation and growth. Additionally, the accumulation of abdominal and visceral fat can further cause hyperandrogenemia, with both factors interacting and promoting each other, resulting in a vicious cycle [14].

Wang Weibin et al. [15] By subcutaneously injecting DHEA to create a PCOS model rat, it was found that Erchen Decoction can significantly reduce the hormone levels of T, LH, and FSH in PCOS model rats and improve ovarian morphology. Huang Weiyu et al. [16] Research found that the combination of ethinylestradiol and cyproterone acetate tablets, metformin tablets, and oral Cangfu Daotan Decoction with adjusted granules can improve the ovulation and pregnancy rates of PCOS patients, reduce luteinizing hormone, testosterone levels, and body mass index, while also lowering the risk of early miscarriage.

3.3 The Impact of Inflammatory Factor Levels in Phlegm-dampness Type PCOS Patients

Studies have confirmed that the onset of PCOS is related to inflammatory factors, which are closely related to insulin resistance. The obesity in phlegm-dampness type PCOS patients is essentially a chronic low-grade inflammatory response. Many inflammatory factors such as serum interleukin-6 (IL-6) and tumor necrosis factor (TNF-α) can interfere with insulin action through blood and paracrine effects, leading to insulin resistance and worsening obesity. Nie Fang [17] Clinical studies have found that the levels of inflammatory factors and TNF-α in phlegm-dampness type PCOS patients are significantly higher than in other types, and are positively correlated with BMI and insulin resistance index (HOMA-IR).

4. Traditional Chinese Medicine Treatment of Phlegm-dampness Type PCOS

4.1 Traditional Chinese Medicine Differential Diagnosis and Treatment

4.1.1 Nourishing the Kidneys and Transforming Phlegm Method

Commonly used to treat kidney deficiency with phlegm-damp type PCOS, the main therapeutic methods are to nourish the kidney, strengthen the spleen, and resolve dampness. The classic formulation for phlegm-damp removal, Cangfu Daotan Decoction, is recorded in the "Ye's Gynecology". Modern pharmacological studies indicate that Cangfu Daotan Decoction can improve clinical symptoms of PCOS by inhibiting inflammation and regulating endocrine pathways, thereby demonstrating therapeutic effects [18]. Chen Ye [19] believes that the core pathogenesis of insulin resistance in

PCOS patients is due to spleen deficiency leading to obstruction caused by damp phlegm, which obstructs the uterine cavity. Clinically, using the experiential prescription Heqi San has achieved significant efficacy. Wu Yishi [20] has found that adding kidney tonifying herbs based on phlegm resolution can significantly improve estrogen levels, ovulation, and pregnancy outcomes, enhancing the treatment effects for PCOS. Other studies [21] results indicate that the method of nourishing the kidney and resolving phlegm can significantly reduce the levels of interleukin and vascular endothelial growth factor expression in the serum, uterus, and ovarian tissues of obese PCOS model rats.

4.1.2 Spleen-tonifying and Phlegm-resolving Method

Studies have shown that [22] the clinical efficacy of spleen-tonifying and phlegm-resolving prescriptions for treating spleen deficiency and phlegm-damp syndrome in PCOS-IR is relatively high. In the prescription, Angelica can regulate the contraction function of the uterine smooth muscle, while Atractylodes can eliminate hormones related to follicle-stimulating hormone production. This can increase the endometrial receptivity of patients, improve their glucose and lipid metabolism, and enhance their reproductive conditions. Liu Yuan [23] and others, through clinical trials, found that Fu's modified Buzhong Yiqi Decoction had a good regulatory effect on patients with spleen deficiency and phlegm-damp type PCOS. The number of small follicles in both ovaries significantly decreased, and the levels of LH and T in the serum were significantly reduced, with effects superior to those of oral metformin.

4.1.3 Phlegm-resolving and Lump-dissolving Method

Li Yuqing [24] and others treated patients with qi deficiency and phlegm-damp type obese PCOS through acupuncture point embedding combined with modifications of Cangfu Daotan Pills and personalized health management. The results indicated that this approach effectively reduced patients' sex hormone levels, blood lipid levels, and BMI, increased the dominant follicle diameter and endometrial thickness, and achieved good therapeutic effects.

4.2 Acupuncture Treatment

Acupuncture is a characteristic external treatment method in traditional Chinese medicine, and clinically, acupuncture or a combination of acupuncture and herbs is often used to differentiate and treat phlegm-damp type PCOS. Acupuncture at the ovaries can regulate ovarian function and promote harmony of qi and blood in the ovaries. Studies have shown that acupuncture at the ovarian acupoint can promote the secretion of estrogen in the ovaries and help restore normal levels of sex hormones [25]. The uterine acupuncture point can regulate uterine function, and acupuncture can increase the thickness of the endometrium and enhance its receptivity, providing conditions for fetal development [26]. Acupuncture at the uterine point and the central pole can regulate the hypothalamic-pituitary-ovarian axis, promote estrogen secretion, reduce androgen levels, and facilitate follicle development [27]. Liu Xiaozhu [28] found that electroacupuncture can reduce serum testosterone and androstenedione levels in patients with kidney deficiency and phlegm-dampness type PCOS, increase the dual-phase rate of basal body temperature, and improve hyperandrogenemia and clinical symptoms in patients. Acupuncture therapy has shown good results. Patients with phlegm-dampness type PCOS often present with obesity and insulin resistance. Wang Cong et al. [29] randomly divided obese PCOS patients into a treatment group and a control group. The control group received oral metformin hydrochloride and Diane-35, while the treatment group received acupuncture cycle therapy combined with treatment at the Shu point. After three treatment cycles, the total effective rate of the treatment group was better than that of the control group ($P < 0.05$).

4.3 Other Treatments

Acupuncture point embedding: Embedding threads in the eight points around the navel for the treatment of infertility in obese PCOS patients undergoing IVF-ET can improve patients' hormone levels, regulate ovarian reserve function and stroma hemodynamics, enhance glucose and lipid metabolism and insulin sensitivity, suppress body inflammation, facilitate follicle retrieval, and improve pregnancy outcomes [30].

Methods such as acupoint plaster application, herbal dietary therapy, and emotional regulation can be used to treat kidney deficiency type and kidney deficiency with liver stagnation type PCOS, aiming to adjust ovarian function, hormone levels, improve clinical symptoms, and enhance patient compliance. In addition, routine care from psychological, pharmacological, exercise, and dietary aspects can enable PCOS patients undergoing ovulation induction to achieve a better quality of life and enhance clinical treatment outcomes.

5. Western Medical Treatment of Phlegm-damp Type PCOS

Clinical studies indicate that treating PCOS from the perspective of phlegm can significantly improve clinical symptoms. The use of phlegm-reducing treatments can improve blood lipids, blood sugar, insulin resistance, BMI, and sex hormones, particularly showing significant efficacy in reducing BMI and regulating lipid metabolism [31].

6. Integrated Chinese and Western Medicine Treatment for Phlegm-damp Type PCOS

Currently, there is no unified clinical treatment standard for PCOS, with a focus on drug therapy. Western medicine primarily uses methods to lower androgen levels, address insulin resistance, induce ovulation, and perform surgeries. Solely using Western medicine does not achieve the desired effects; clinical symptoms may improve, but it can lead to decreased pregnancy rates and a higher risk of miscarriage [32]. The combination of Chinese and Western medicine, leveraging strengths and avoiding weaknesses, has become a new research direction for PCOS treatment. Gao Jie et al [33]. It was found that on the basis of conventional Western medicine treatment, using the Damp Phlegm treatment from the 'Danxi Heart Method' combined with berberine to treat the phlegm-damp obstruction syndrome of PCOS can lower serum leptin and free fatty acid levels, significantly reduce the

size of the ovaries, increase the thickness of the endometrium, and improve clinical pregnancy rates. Fan Jiaxin et al [34]. Sixty patients with phlegm-damp type obesity-related PCOS were randomly divided into two groups. On the basis of ovulation induction treatment, one group received standalone progesterone treatment, while the other group received the modified Cangfu Dao Phlegm Decoction combined with progesterone. The results indicated that using the modified Cangfu Dao Phlegm Decoction combined with progesterone on the basis of ovulation induction treatment not only improves pregnancy rates but also shows significant advantages in increasing HCG daily follicle diameter and endometrial thickness.

7. Conclusion

In summary, various traditional Chinese medicine treatment methods can be used in the treatment of phlegm-damp type polycystic ovary syndrome, including herbal medicine, acupuncture, combined acupuncture and herbs, and integrated Chinese and Western medicine, all of which can achieve the effect of regulating constitution and improving symptoms.

References

[1] Ye Yongju, Huang Suying. Observation on the efficacy of Cai's Polycystic Formula combined with Letrozole in the treatment of infertility due to kidney deficiency and phlegm-stasis type polycystic ovary syndrome. [J]. Zhejiang Journal of Traditional Chinese Medicine, 2022, 57(2): 104-105.

[2] Tang Peipei, Tan Yong. Literature study on the distribution laws of syndrome types and elements of polycystic ovary syndrome [J]. Jiangsu Chinese Medicine Medicine, 2017, 49(1): 66-68.

[3] Wang Xin. The effect of vitamin D combined with calcium on blood lipids and sex hormone levels in patients with phlegm-damp type polycystic ovary syndrome [J]. Clinical Rational Drug Use, 2024, 17(04): 129-132.

[4] Li Lan, Yang Zhengwang, Yu Ximing. The effect of Jianpi Huatan Formula on Endometrial Receptivity and Anti Mullerian Hormone Resistance in Polycystic Ovary Syndrome Patients with Spleen Deficiency Phlegm Dampness Syndrome and Insulin Resistance [J]. Chinese Sexual Science, 2023, 32(04): 103-107.

[5] Wang Chunxia, Yang Bingyao, Liu Te et al. Clinical effects of warming kidney and resolving phlegm formula on infertility in patients withkidney deficiency and phlegm-damp type polycystic ovary syndrome [J]. Chinese Medicine, 2022, 17(09): 1400-1403.

[6] Li Yuqing, Chen Shaojian, Chen Shuling et al. Comprehensive Traditional Chinese Medicine therapy combined with personalized healthmanagement for treating qi deficiency and phlegm-damp type obesity polycystic ovary syndrome in 30 cases [J]. Fujian Traditional Chinese Medicine, 2023, 54(04): 4-6. DOI: 10.13260/j.cnki.jfjtcm.2023.04002.

[7] Yang Hong, Hu Panwei, Hu Tianqi, et al. Professor Qi Cong’s application of 'cocoon theory' in the treatment of polycystic ovary syndrome [J]. Sichuan Traditional Medicine Medicine, 2019, 37(04): 79-81.

[8] Zeng Liwen, Chen Jing, Zhang Ye, et al. Analysis of the characteristics of glucose metabolism in patients with polycystic ovary syndrome [J]. Medical Information News, 2019, 32(2): 103-106.

[9] Bao Yanxin. Analysis of clinical biochemical characteristics in patients with phlegm-dampness syndrome of polycystic ovary syndrome at different lipid levels [D]. Heilongjiang University of Traditional Chinese Medicine University, 2023.

[10] Hao Suolan. Analysis of clinical manifestations and biochemical changes in patients with polycystic ovary syndrome [J]. Chinese Journal of Traditional Chinese Medicine and Science, 2014(z2): 200.

[11] Wang Shuqin. Characteristics and influencing factors of luteinizing hormone and luteinizing hormone/follitropin in phlegm-dampnesstype/non-phlegm-dampness type polycystic ovary syndrome in patients [J]. Chinese Clinical Research, 2021, 13(20): 21-25.

[12] Su Hua, Zhang Yuhong, Chen Chen, et al. Changes of serum neutral hormones and biochemical indicators in patients with polycysticovary syndrome and in granulosa cells Changes of FABP4 protein [J]. Guangdong Medical Journal, 2018, 39(16): 2468-2471.

[13] Zhang Hongyang, Hou Lihui, Xu Fang, et al. Logistic regression analysis of clinical and biochemical factors in patients withphlegm-dampness syndrome of polycystic ovary syndrome [J]. Modern Clinical Traditional Chinese Medicine, 2019, 26(1): 50-54.

[14] Shindo K, Sugiyama K, Huabao L, et al. Long-term effect of low-frequency repetitive transcranial magnetic stimulation over the unaffected posterior parietal cortex in patients with unilateral spatial neglect [J].J Rehabil Med, 2006, 38(1):65-67.

[15] Wang Weijin, Zhang Ping, Chen Jinming, et al. The effects of different doses of Erchen Decoction on sex hormone levels and ovarian morphology in PCOS model rats [J]. Journal of Fujian University of Traditional Chinese Medicine, 2020, 51(4): 39-42.

[16] Huang Weiyu, Zhou Yunhua, Li Fenfang. The clinical efficacy of modified Cangfu Daotan Pills combined with granules in treating phlegm-damp type polycystic ovary syndrome infertility [J]. Clinical Rational Drug Use Journal, 2021, 14(31): 91-93.

[17] Nie Fang, Zheng Haiyan, Ye Xiwen. The efficacy of modified Jiaoai Decoction combined with progesterone in treating early threatened abortion with subchorionic hematoma [J]. [J]. Chinese Journal of Family Planning, 2021, 29(06): 1132-1134+1140.

[18] Long Yongling, Yang Fang, Zhang Yao, et al. The network pharmacology mechanism of modified Cangfu Daotan Decoction in treating polycystic ovary syndrome [J]. Journal of Guangzhou University of Traditional Chinese Medicine, 2021, 38(7): 1432-1439.

[19] Chen Ye. Professor Zhao Hengxia's treatment of polycystic ovary syndrome from the perspective of spleen deficiency and phlegm-damp [J]. Modern Journal of Chinese and Western Medicine. Journal, 2019, 28(10): 1079-1081.

[20] Wu Yishi. Clinical study on the treatment of polycystic ovary syndrome with kidney-tonifying and phlegm-transforming method [D]. Guangzhou: Guangzhou University of Traditional Chinese Medicine, 2016.

[21] Yao Zhilin, Huang Yinghong, Xu Xiaojuan. The effect of kidney-tonifying and phlegm-transforming method on the expression levels of IL-1β and VEGF in obese polycystic ovary syndrome model rats. Chinese Journal of Traditional Chinese Medicine, 2020, 38(3): 202-205.

[22] Li Lan, Yang Zhengwang, Yu Ximing. The Jianpi Huatan prescription for treating spleen deficiency with phlegm-damp syndrome in patients with polycystic ovary syndrome and insulin resistance. The effects of membrane receptivity and anti-Müllerian hormone [J]. Chinese Journal of Sexual Science, 2023, 32(04): 103-107.

[23] Liu Yuan, Zhao Hengxia, ChenYe, et al. Clinical efficacy of Fu's modified Buzhong Yiqi Decoction in treating spleen deficiency with phlegm-damp type polycystic ovary syndrome. Observation [J]. Liaoning Journal of Traditional Chinese Medicine, 2022, 49(07): 86-89. DOI: 10.13192/j.issn.1000-1719.2022.07.025.

[24] Li Yuqing, Chen Shaojian, Chen Shuling, et al. Integrated Traditional Chinese Medicine Therapy Combined with Personalized Health Management for Treating 30 Cases of Qi Deficiency with Phlegm-Damp Obesity-Type Polycystic Ovary Syndrome. Fujian Journal of Traditional Chinese Medicine, 2023, 54(04): 4-6. DOI: 10.13260/j.cnki.jfjtcm.2023.04002.

[25] Deng Chunyan. Analyzing the Clinical Efficacy of Traditional Chinese Medicine Combined with Acupuncture Therapy for Treating Polycystic Ovary Syndrome Complicated with Infertility. Journal of Clinical Traditional Chinese Medicine, 2018, 10(13): 28-29. DOI: 10.3969/j.issn.1674-7860.2018.13.012.

[26] Shi Yin, Feng Huijun, Liu Huirong, et al. Observation of Therapeutic Effect of Acupuncture and Medicine Combined Treatment on Kidney Deficiency-Phlegm-Stasis Type Polycystic Ovary Syndrome. Chinese Acupuncture, 2016, 29(2): 99-102. DOI: 10.13703/j. 0255-2930.2009.02.006.

[27] Lai Maohua, Ma Hongxia, Yao Hong, et al. Effects of Abdominal Acupuncture on Endocrine and Glucose-Lipid Metabolism in Patients with Obesity-Type Polycystic Ovary Syndrome. Acupuncture Research, 2017, 35(4): 298-302. DOI: 10. 13702/j.1000-0607.2010.04.013.

[28] Liu Xiaozhu, Wang Di, Zhou Jing, et al. Clinical Observations on Electroacupuncture for Treating High Testosterone Levels in Kidney Deficiency - Phlegm - Damp Type Polycystic Ovary Syndrome. Journal of Jiangsu University (Medical Edition): 1-7 [2024-03-05]. https://doi.org/10.13312/j. issn.1671-7783.y220266.

[29] Wang Cong, Wu Zhouliang, Chen Shumin, et al. Retrospective Analysis of Acupuncture Cycle Therapy Combined with Specific Acupoint Treatment for Obesity-Type Polycystic Ovary Syndrome. Journal of Guangzhou University of Traditional Chinese Medicine, 2021, 38(11): 2428-2433.

[30] Fu Hongyi, Du Haisheng, Song Xinggui, et al. Effects of Umbilical Area Acupuncture on IVF-ET Treatment Outcomes in Infertile Patients with Obesity-Type Polycystic Ovary Syndrome. Shandong Journal of Traditional Chinese Medicine, 2024, 43(01): 53-58. DOI: 10.16295/j.cnki.0257-358x.2024.01.011.

[31] Lu Yanqing, Wang Xuefang. Effects of Kidney-Replenishing Phlegm-Transforming Recipe on Treatment of Obesity-Type Polycystic Ovary Syndrome. Chinese Journal of Family Planning, 2021, 29(3): 495-497 + 502.

[32] Wang, Rui, Ben Willem J Mol. The Rotterdam Criteria for Polycystic Ovary Syndrome: Evidence-Based Criteria. Human Reproduction (Oxford, England), 2017, 32(2): 261–264.

[33] Gao Jie, Zheng Feiyun. Clinical Study on Combined Traditional and Western Medicine for Treating Phlegm-Damp Obstruction in Infertility Due to Polycystic Ovary Syndrome. New Traditional Chinese Medicine, 2016, 48(1): 144-147.

[34] Fan Jiaxin, Ling Na. Clinical Observations on Treatment of Ovulatory Dysfunction Infertility in PCOS with Modified Cangfu Daotan Decoction. Journal of Liaoning University of Traditional Chinese Medicine, 2021, 23(3): 131-135.