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Observation on the Clinical Efficacy of Modified Danggui Shaoyao Powder Combined with Acupoint Embedding in the Treatment of "Phlegm-dampness Type" Ovulation Disorder Infertility in PCOS

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Abstract

Objective: To explore the clinical therapeutic effect of modified Danggui Shaoyao Powder combined with acupoint embedding thread in the treatment of infertility caused by phlegm-dampness type ovulation disorders. *Methods:* From January 2024 to May 2025, 98 patients with PCOS "phlegm-dampness type" ovulation disorders who met the research conditions were grouped in a 1:1 ratio. The control group (n = 48) was treated with modified Danggui Shaoyao Powder, Letrazole (LE), and metformin. Patients in the experimental group (n = 48) were treated with acupoint embedding on the basis of the above-mentioned medication, and the clinical efficacy of the two groups of patients was compared. *Results:* The pregnancy rate of patients in the experimental group after treatment was 69.39%, the ovulation rate was 93.88%, and the total effective rate was (93.88%), while that of the control group was only 59.18%, $P < 0.05$; The scores of blood lipid and insulin resistance in the experimental group after treatment were lower than those in the control group ($P < 0.05$). After treatment, the levels of acne, acanthosis nigricans, F-G hirsutism and BMI in the experimental group were lower than those in the control group ($P < 0.05$). After acupoint embedding therapy in the experimental group, the ovarian volume recovered significantly and the number of follicles decreased significantly. During the treatment period, the comparison result of the incidence of side effects between the experimental group and the control group was $P > 0.05$. *Conclusion:* In the treatment of PCOS patients with "phlegm-dampness type" ovulation disorders, the use of modified Danggui Shaoyao Powder combined with acupoint thread therapy can increase the pregnancy rate and ovulation rate of patients, improve the clinical symptoms of patients, regulate the volume of the ovary and the number of follicles at the same time, and does not increase the adverse reactions of patients with medication.

Keywords

Addition and subtraction of *Angelica Sinensis* and Peony Powder

PCOS

Phlegm-dampness type

Ovulation disorder

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1. Introduction

The incidence of PCOS in China is approximately 5–10% among women of childbearing age. Clinical studies have found that about two-thirds of patients are overweight or obese, and the diagnosis in traditional Chinese medicine conforms to the "phlegm-dampness type" of infertility. This group of patients not only has severe reproductive disorders such as anovulation of the ovaries and hyperandrogenism, but also has abnormal glucose and lipid metabolism, constituting common complex diseases in clinical treatment. This disease falls within the category of disorders such as late menstruation, oligomenorrhea, and amenorrhea in traditional Chinese medicine. It is a relatively difficult gynecological disease. However, the current understanding of PCOS syndrome types mostly stems from the summary of personal data, the description of simple cases, or small-scale and small-sample studies. This project involves the collection and analysis of clinical indicators and related factors such as fasting blood glucose, fasting insulin, hirsutism, acne, acanthus acansis, premature alopecia, and serum endocrine in patients with "phlegm-dampness type" polycystic ovary syndrome admitted to the Traditional Chinese Medicine Gynecology Outpatient Department of Yucheng District People's Hospital, Ya'an City, Sichuan Province. It is a clinical observation of infertile patients with PCOS (polycystic ovary syndrome). Before and after the treatment, the improvement of pregnancy rate, anovulation, hyperandrogenemia and abnormal glucose and lipid metabolism was compared. Relevant literature reports show that the application of progesterone in the treatment of anovulation menstrual disorders [1].

The dosage of the drug does not affect the therapeutic effect. However, as the dosage increases, the safety of the treatment decreases. Therefore, in the actual treatment, the efficacy evaluation of acupoint embedding thread combined with modified Danggui Shaoyao Powder and integrated traditional Chinese and Western medicine in the treatment of PCOS is carried out to optimize and form a comprehensive clinical plan for PCOS patients. Further observation of the combination of LE (letrozole) with traditional Chinese medicine compound prescriptions and the regularity and therapeutic effect of traditional Chinese medicine use. The report is as follows.

2. Data and methods

2.1. Clinical data

A total of 98 patients with ovulatory disorders of "phlegm-dampness type" PCOS treated in the Department of Traditional Chinese Medicine of the hospital from January 2024 to May 2025 were selected as the research subjects. Inclusion criteria: (1) Conforming to the 2003 Rotterdam PCOS International criteria, including ovarian ovulation disorders manifested as oligomenorrhea or amenorrhea; elevated levels of androgen in clinical or biochemical tests or clinical manifestations of hirsutism and acne; and the morphology of the ovaries shows polycystic changes. Two of the above three conditions are met: (2) Have a desire to have children; (3) Voluntarily participate in this experiment; (4) Those who have stopped taking the original medication for up to three months.

Exclusion criteria: (1) The individual's hysterosalpingography or other evidence shows bilateral fallopian tube obstruction or abnormal uterine morphology; (2) The husband's semen routine was abnormal, with a semen density of 20 million per milliliter. (3) Diseases of important organs such as the heart, lungs, liver and kidneys; (4) Discontinue the treatment plan for more than two weeks, develop complications in vital organs, or have drug allergic reactions; (5) During the medication period, the subject did not complete the entire clinical trial, and the researcher was unable to contact him/her personally.

2.2. Methods

Samples were selected based on the inclusion criteria and exclusion criteria. All included samples were subjected to different dialectical classifications by the same senior traditional Chinese medicine practitioner and were divided into the treatment group and the control group according to the procedures and standards. The treatment group was given conventional treatment with modified Danggui Shaoyao Powder combined with letrozole (LE) and metformin. The control group was treated with letrozole (LE) and metformin; Three months constitutes one course of treatment. This plan is for one course of treatment.

The ingredients of the modified Danggui and Peony Powder are as follows: Danggui 15 g, *Paeonia lactiflora*

20 g, *Ligusticum chuanxiong* 15 g, *Poria cocos* 20 g, Alisma 15 g, Atractylodes 15 g, Dried tangerine peel 15 g, Atractylodes 15 g, Pinellia 15 g, Dananxing 15 g, White mustard seed 5 g, Lotus leaf 15 g and *Cyperi rhizoma* 15 g. Take one dose daily, three times a day, half an hour after meals. Continue to take for three months, daily.

Acupoint embedding thread are as follows:

(1) Acupoints: Bilateral Sanyinjiao, Guanyuan, bilateral Uterus, bilateral Guai Gui, Zhongwan, bilateral Tianshu, bilateral Shuidao

(2) Key points of operation: Follow the operation specifications and treat once every 14 to 21 days. Use outside the menstrual period.

The specific administration method of letrozole:

(1) The previous month = 1 tablet (2.5 mg) per day, menstruation (natural or artificial progesterone withdrawal bleeding) 3 to 7 days

(2) In the following 2 months = 2 tablets (5.0 mg/ day), menstruation (natural or artificial progesterone withdrawal bleeding) 5 to 9 days

The specific dosage of metformin tablets is as follows: 0.5 mg each time, taken orally during meals twice a day, morning and evening. It is not related to the menstrual cycle. If pregnancy is positive, all medications should be discontinued

By comparing the improvement of pregnancy rate, anovulation, hyperandrogenemia and abnormal glucose and lipid metabolism before and after treatment, the efficacy of integrated traditional Chinese and Western medicine in the treatment of PCOS was evaluated. The clinical comprehensive plan for PCOS patients was optimized and formed. Moreover, the medication pattern and efficacy of modified Danggui Shaoyao Powder combined with LE (letrozole) were further observed. Find a better method for treating the phlegm-dampness type of infertility.

2.3. Observation indicators and judgment criteria

(1) The clinical efficacy of the two groups of patients was compared. The criterion for efficacy determination [2]: The pregnancy rate and ovulation rate of the patients after treatment were evaluated as significant effect. The improvement of blood lipid, insulin resistance and clinical symptoms of the patient after treatment was evaluated as effective. If the patient fails to meet the above standards after treatment, it is evaluated as invalid.

(2) Compare the recovery of the volume and quantity of the ovaries buried by acupoint thread in the two groups of patients.

(3) The occurrence of side effects in the two groups of patients was compared, including nausea, abdominal distension and abdominal pain, and breast tenderness.

2.4. Statistical methods

Establish a database for the data and input, correct, verify, analyze and process the information and data in a timely, true, accurate and complete manner. Conduct statistical analysis using statistical descriptive analysis of data frequency and mean, *t*-test, χ^2, etc. All statistical analyses of the data were carried out using SPSS 26.0 software, and conclusions were drawn from the analysis results.

3. Result

A total of 98 cases of polycystic ovary syndrome that met the criteria were included in the case criteria of the optimization study of the treatment plan for “phlegm-dampness type” PCOS infertility with modified Danggui Shaoyao Powder by the Sichuan Provincial Administration of Traditional Chinese Medicine. The distribution of these cases is shown in **Table 1**.

Table 1. Frequency and prevalence of syndromes in clinical collection of polycystic ovary syndrome cases (%)

Syndrome type	Frequency (example)	Percentage (%)
Speleen deficiency with phlegm-dampness type	53	53
Phlegm and blood stasis interwoven type	48	48
Total	98	98

Table 1 results show that among the TCM syndrome types of polycystic ovary syndrome collected clinically, the most common is the spleen deficiency

phlegm-dampness type, followed by the phlegm-stasis intermingled type. Among them, phlegm-dampness type PCOS includes spleen deficiency phlegm-dampness type and phlegm-stasis intermingled type. This topic mainly studies phlegm-dampness type PCOS.

The phlegm-dampness type was studied in terms of the menstrual cycle, the distribution of clinical symptoms, and the indicators of glucose and lipid metabolism.

3.2. Distribution of TCM syndromes of PCOS in BMI and WHR

Table 2 results show that among patients with polycystic ovary syndrome, 74 have a body mass index > 23, and the proportion of those with spleen deficiency and phlegm-dampness type is 77.96%. The proportion of the phlegm and blood stasis intermingled type was 58.33%. The spleen deficiency and phlegm-dampness type indicates that the body mass index is greater than that of the phlegm-stasis intermingled type. It is indicated that the body mass index of the spleen deficiency and phlegm-dampness type is more prone to obesity than that of the phlegm-stasis intermingled type.

Table 3 results show that among patients with polycystic ovary syndrome, there are 60 with a waist-hip ratio greater than 0.8, and the proportion of those with spleen deficiency and phlegm-dampness type is 69.81%. The proportion of phlegm and blood stasis intermingled type was 47.92%. It indicates that the waist-to-hip ratio of the spleen deficiency and phlegm-dampness type is greater than that of the phlegm-stasis interwoven type. It is indicated that people with spleen deficiency and phlegm-dampness type are more prone to abdominal fat accumulation in the waist and buttocks compared to those with phlegm-stasis interlacing type.

The research results from **Table 4** show that the most common menstrual change in PCOS is oligomenorrhea, followed by postmenstrual period, and in some cases, there is the phenomenon of early menstruation. Among the PCOS of spleen deficiency and phlegm-dampness type, the proportion of oligomenorrhea is the highest, followed by the postmenstrual period. Among the PCOS of phlegm and blood stasis intermingled type, the proportion of late menstruation is the highest, followed by oligomenorrhea. It further indicates that PCOS of the spleen deficiency and phlegm-dampness type is more prone to oligomenorrhea than that of the phlegm-stasis intermingled type.

Table 2. Frequency (%) of syndromes of polycystic ovary syndrome with BMI (> 23) collected clinically

Syndrome types in traditional Chinese medicine	*n*	BMI (> 23)	Number of cases (%)
Spleen deficiency and phlegm-dampness type	53	46	86.79
Phlegm and blood stasis interwoven type	48	28	58.33
Total	98	74	75.51

Table 3. Frequency (%) of syndromes with WHR (> 0.8) in the clinical collection of polycystic ovary syndrome

Syndrome types in traditional Chinese medicine	*n*	Obese type	Number of cases (%)
Spleen deficiency and phlegm-dampness type	53	37	69.81
Phlegm and blood stasis interwoven type	48	23	47.92
Total	98	60	61.22

Table 4. Analysis of menstrual cycles of spleen deficiency with phlegm-dampness type and phlegm-stasis interwoven type

Menstrual cycle	*n*	< 21 days	21–35 days	35–60 days	60–180 days
Spleen deficiency and phlegm-dampness type	3	2	17	14	20
Phlegm and blood stasis interwoven type	8	0	10	15	13

3.5. Distribution of main clinical symptoms between the two groups of PCOS patients

The comparison between groups by t-test showed that $P > 0.05$. Through the t-test analysis of the means of two samples in a single factor, the comparisons of acne, acanthosis nigricans, hirsutism score, BMI, and WHR levels between groups showed that $P > 0.05$, and the difference was not significant. Among them, the body hair of the type with interlactation of phlegm and blood stasis was significantly denser than that of the type with spleen deficiency and phlegm-dampness. The average BMI of both groups exceeded 25, reaching the standard of obesity. The average WHR of the two groups was 0.86 > 0.8, indicating abdominal fat accumulation. Although the comparison results of acne, premature alopecia and acanthosis nigricans were not statistically significant, from the trend, the average values of acne and acanthosis nigricans in the type of spleen deficiency and phlegm-dampness were higher than those in the type of phlegm-stasis intercombination.

3.6. Analysis table of glucose and insulin metabolism indicators between the two groups of PCOS patients

Table 6 shows that although the comparison results of fasting blood glucose, fasting insulin levels and insulin resistance index have no statistical significance, from the trend, the mean values of the spleen deficiency phlegm-dampness type in the blood glucose, fasting insulin level and insulin resistance index groups are higher than those of the phlegm-stasis interlacing type.

Table 5. Main clinical symptoms (mean ± SD)

Symptom	Spleen deficiency and phlegm-dampness type	Phlegm and blood stasis interwoven type
Acne	0.458 ± 0.857	0.341 ± 0.575
Acanthosis	0.322 ± 0.840	0.195 ± 0.633
F-G Hirsutism	1.627 ± 1.904	2.220 ± 2.772
BMI	26.209 ± 4.740	25.073 ± 4.268
WHR	0.865 ± 0.080	0.863 ± 0.069
Early alopecia	0.00 ± 0.00	0.00 ± 0.00

Table 6. Fasting blood glucose, fasting insulin levels and insulin resistance index (± s) in patients with PCOS

Certificate type	FPG (mmol/L)	FINS (uU/mL)	HOMR-IR
Spleen deficiency and phlegm-dampness type	5.072 ± 0.493	58.95 ± 70.184	13.375 ± 16.637
Phlegm and blood stasis interwoven type	5.070 ± 0.802	39.24 ± 31.519	9.130 ± 8.436

Table 7. Analysis table of lipid indicators in patients with PCOS

Blood lipid	Spleen deficiency and phlegm-dampness type (n = 53)	Phlegm and blood stasis interwoven type (n = 45)
CHDL	4.983 ± 0.926	4.95 ± 0.839
TG	2.713 ± 3.042	1.725 ± 1.018
HDL	1.264 ± 0.353	1.095 ± 0.190
LDL	3.676 ± 1.818	3.509 ± 0.879
APOA	1.232 ± 0.147	1.178 ± 0.138
APOB	0.879 ± 0.150	0.905 ± 0.215

3.7. Analysis table of lipid metabolism indicators between the two groups of PCOS patients

The comparison between groups by t-test showed that $P < 0.05$. Through the *t*-test analysis of the means of two samples in a single factor, the levels of triglycerides and high-density lipoprotein were compared between groups with $P < 0.05$, and the difference was significant. This indicates that there are obvious abnormalities in lipid metabolism in patients with PCOS. The levels of total cholesterol, low-density lipoprotein, lipoprotein A and lipoprotein B were compared between groups with $P > 0.05$, and there was no significant difference in the comparison.

3.8. Comparison of clinical therapeutic effects between the two groups

The results of the two groups of comparative data show that among the 49 patients in the experimental group, a total of 34 patients had a treatment pregnancy rate of 69.39%, an ovulation rate of 93.88%, and a total effective rate of 93.88%. In the control group, only 29 cases ovulated, and the ovulation rate (59.88%) was effective in treatment. There was a significant difference between the two groups ($P < 0.05$), as shown in **Table 8**.

3.9. Comparison of blood lipid and insulin resistance scores between the two groups

Before treatment, there was no significant difference in the scores of blood lipid and insulin resistance between the two groups ($P > 0.05$). After the treatment, the above indicators in both groups changed, and the differences before and after the treatment in the same group were significant ($P < 0.05$). However, it can be seen from the comparison results of the data after treatment between groups that the degree of decline in the experimental group was more obvious and significantly lower than that in the control group ($P < 0.05$), as shown in **Table 9**.

3.10. Comparison of improvement in clinical symptoms

There was no significant difference in the comparison of acne, acanthosis nigricans, F-G hirsutism and BMI levels between the two groups, $P > 0.05$. After the treatment, the above levels in both groups changed. The comparison result before and after the treatment in the same group was $P < 0.05$. The comparison results between groups showed that the level of the experimental group after

Table 8. Comparison results of therapeutic effects between the two groups [*n* (%)]

Group	Pregnancy rate, *n* (%)	Ovulation rate, *n* (%)	Inefficiency, *n* (%)	Total effective rate, *n* (%)
Experimental group ($n = 49$)	34 (69.39)	46 (93.88)	3 (6.12)	46 (93.88)
Control group ($n = 49$)	11 (22.45)	29 (59.18)	20 (40.82)	29 (59.18)
χ^2 value	-	-	-	4.5714
P value	-	-	-	0.0325

Table 9. Comparison of changes in blood lipid and insulin resistance scores before and after treatment between the two groups ($n = 49$)

Group	Blood lipid (score)		Insulin resistance (points)	
	Before treatment	After treatment	Before treatment	After treatment
Experimental group	9.83 ± 0.46	2.16 ± 0.14*	86.22 ± 5.66	35.35 ± 1.11*
Control group	9.79 ± 0.50	5.32 ± 0.32*	86.36 ± 5.58	49.87 ± 2.36*
t value	0.637	16.821	0.475	12.354
P value	0.103	0.000	0.143	0.000

Note: Compared with that before treatment in the same group, *$P < 0.05$

treatment was lower than that of the control group, $P < 0.05$. For details, please refer to **Table 10**.

2.11. Improvement of ovarian volume and quantity by ultrasound after acupoint embedding

There were significant changes in the ultrasound comparison between the two groups after treatment. The comparison results between the groups showed that the level of the experimental group after treatment was lower than that of the control group, $P < 0.05$. For details, please refer to **Table 11**.

3.12. Comparison of side effects between the two groups

Among the patients in the experimental group, the rate of side effects during treatment was 7.00%, including 2 cases of nausea, 1 case of abdominal distension and abdominal pain, and 1 case of breast tenderness, which was slightly higher than that in the control group (5.00%). In the control group, there was 1 case of nausea, 1 case of abdominal distension and abdominal pain, and 1 case of breast tenderness. $P > 0.05$, as shown in **Table 12**.

Table 10. Comparison of changes in the levels of indicators for the improvement of clinical symptoms in the two groups before and after treatment ($n = 49$)

Group	Acne (%)		Acanthosis nigricans(%)		F-G hirsutism (%)		BMI (%)	
	Before	After	Before	After	Before	After	Before	After
Experimental group	48.24 ± 8.17	35.56 ± 6.25*	58.30 ± 7.77	29.23 ± 8.15*	37.47 ± 6.18	22.92 ± 4.63*	4.32 ± 3.23	1.24 ± 0.67*
Control group	41.90 ± 5.77	35.61 ± 6.33*	51.25 ± 7.56	30.24 ± 7.68*	37.39 ± 6.14	28.41 ± 5.24*	2.19 ± 0.35	1.96 ± 0.23*
t value	0.368	10.297	0.891	22.124	0.893	14.599	0.697	12.561
P value	0.148	0.000	0.308	0.000	0.308	0.000	0.215	0.000

Note: Compared with that before treatment in the same group, *$P < 0.05$.

Table 11. Comparison of changes in ultrasound improvement index levels of the two groups of patients before and after treatment ($n = 49$)

Group	Ovarian volume	
	Before treatment	After treatment
Experimental group	41.66 ± 3.63	20.89 ± 2.57*
Control group	41.61 ± 3.64	29.23 ± 3.59*
t value	0.0674	13.0872
P value	0.9464	0.0000

Note: Compared with that before treatment in the same group, *$P < 0.05$.

Table 12. Comparison results of therapeutic side effects between the two groups [*n* (%)]

Group	Side effects (*n*)			Total, *n*(%)
	Disgusting	Abdominal distension and pain	Breast tenderness	
Experimental group ($n = 30$)	2	1	1	4 (13.33)
Control group ($n = 30$)	1	1	1	3 (10.00)
χ^2 value	-	-	-	0.058
P value	-	-	-	0.667

4. Discussion

There is no name for “polycystic ovary syndrome” in ancient Chinese medical books. It is discussed in the sections of “amenorrhea”, “postmenstrual period” and “infertility” based on its main clinical manifestations. But ancient medical practitioners had similar records in the early days. For instance, in the Qing Dynasty, Fu Shan’s “Fu Qing Zhu Nu Ke” [3] states: “The woman has obesity, excessive phlegm and saliva, and is unable to conceive,...” However, the dampness that causes obesity is not an external pathogen but an internal disease of the spleen. This is extremely similar to the “phlegm-dampness type” polycystic ovary syndrome in modern medicine. The Qing Dynasty’s “Secret Records of Famous Chambers” also described a similar condition of PCOS: “Those with excessive phlegm and qi are bound to be fat women and have difficulty fertilizing.” [4-5] This indicates that similar reports had already existed among ancient medical practitioners. The clinical manifestations of PCOS vary in severity and mostly occur in women of childbearing age aged 20 to 40. It is more common in cases of anovulatory infertility, delayed menstruation or amenorrhea, acne, hirsutism, acanthosis, obesity, and enlarged ovaries. It falls within the category of delayed menstruation, infertility, and masses [6–10].

Tan [11] believes that patients with PCOS often present with phlegm and blood stasis obstruction and excessive fire in the heart and liver as the symptoms of this disease, which are the syndromes, and kidney deficiency is the root cause. Lu Hua et al. [12] pointed out that phlegm obstruction caused by kidney deficiency is the basic pathogenesis of PCOS. The reason why kidney deficiency leads to phlegm-dampness is that kidney deficiency is prone to kidney Yang deficiency. When Yang is deficient, qi transformation is unfavorable, and water metabolism is abnormal. Not only does it transform qi and flow water, but it can also dissolve phlegm and turbidity. Phlegm and turbidity block the meridians of the Chong and Ren meridians. Predecessors believed that “external drinking treats the spleen, internal drinking treats the kidney.” Therefore, the spleen and kidneys are important organs for transforming and transporting water, food, and body fluids. As a result, when phlegm and turbidity do not transform and body fluids condense into phlegm and turbidity fat, Therefore, the kidney deficiency of this disease syndrome mainly refers to the insufficiency of kidney Yang.

Tian *et al.* [13] believe that the occurrence of this disease is mainly due to phlegm, dampness and blood stasis blocking the uterine and uterine meridians, which affects women for a long time and leads to infertility. Ni *et al.* [14] classified 36 cases of polycystic ovary syndrome into phlegm-dampness type, kidney deficiency type, and kidney deficiency with phlegm-dampness type, and believed that deficiency of spleen and kidney Yang was the root cause and phlegm-dampness was the symptom. Xia [15] proposed that phlegm-dampness and lipid membranes obstruct the uterus and that qi and blood in the Chong and Ren meridians are blocked. Deficiency of spleen and kidney Yang leads to the failure of transformation and transportation, resulting in phlegm-dampness. The symptoms include infrequent menstruation, amenorrhea, obesity and excessive leucorrhea. Another study [15] holds that when the spleen qi is insufficient and its transformation and transportation fail, it accumulates and generates phlegm and fluid retention. This is a Yin pathogen that is most likely to impede the transportation of qi in the human body, damage the body’s Yang Qi, and lead to the imbalance of the Chong and Ren meridians. Menstrual disorders prevent conception.

General data shows that approximately 60% of people with polycystic ovary syndrome are obese. Although obesity is not entirely dependent on an individual’s weight standard under the regulation of the central nervous system, it is more closely related to insulin concentration. Without the constraint of obesity, the existing insulin activity will expand the luteinizing hormone-stimulating androgen secretion in cells, which holds. The key root cause of glucose tolerance deficiency seems to be insulin resistance [16]. It has been reported that more than 20% of women over 30 years old with polycystic ovary syndrome and obesity have been found to have impaired glucose tolerance [17,18]. Broader data show that the probability of women with type 2 diabetes being diagnosed with polycystic ovary syndrome is more than seven times that of those with controlled type (each ranging from 15% to 2%) [19]. Among the numerous patients with polycystic ovary syndrome, insulin resistance and abdominal obesity

are considered to be more than seven times the factors causing type 2 diabetes [19]. However, among those with polycystic ovary syndrome who are not obese, the risk of developing type 2 diabetes is also relatively increased [20–21]. Therefore, among middle-aged women with type 2 diabetes, polycystic ovary syndrome is regarded as an independent risk factor [22]. Many women under the age of 45 with type 2 diabetes have also been diagnosed with polycystic ovary syndrome. So, among these women, it is not surprising that they all suffer from gestational diabetes at the same time. Among obese patients with polycystic ovary syndrome, women who need to undergo ovulation induction surgery to promote pregnancy are considered a high-risk group [21]. Meanwhile, postpartum women who developed diabetes during pregnancy were also found to have a higher risk of developing polycystic ovary syndrome [22].

The formula "Jia Jian Dang GUI Shao Yao SAN" is derived from "Jin Kui Yao Lue: Pulse Syndrome and Treatment of Miscellaneous Diseases in Women, Vol. 20and Vol. 22". White peony root nourishes blood, cools blood and harmonizes blood. *Angelica sinensis* and *Ligusticum chuanxiong* regulate blood and soothe the liver. *Poria cocos* is mild and diuretic. Alisma orientale is used to tonify the spleen and remove dampness. Atractylodes has a fragrant smell and is pungent, bitter and warm. It has the functions of strengthening the spleen, drying dampness, dispelling wind and cold. *Cyperi rhizoma* has a bitter taste and can relieve the stagnation of liver Qi. It mainly enters the Qi division of the liver meridian. With its fragrant and pungent nature, it is good at dispelling the stagnation of liver Qi and resolving the six types of depression. It also enters the blood division and unblocks the meridians. It is also known as the "Qi medicine for blood" and was called the "key medicine for female diseases" by the past. *Pinellia ternata* dries dampness and expels phlegm, dried tangerine peel awakens the spleen and eliminates dampness, white mustard seed is good at treating "phlegm inside and outside the skin", lotus leaf promotes diuresis, and *Jujube fructosus* descends and purifies the gallbladder and stomach, to make phlegm descend along with Qi. *Licorice harmonizes* the middle and relieves urgency. The combined use of various herbs not only eliminates existing phlegm but also restores the spleen's transportation and prevents the recurrence of phlegm turbidity.

The main purpose of acupoint embedding thread therapy for this disease is to promote ovulation by regulating the function of the hypothalamic-pituitary-ovarian axis. Acupoint embedding thread has a certain benign regulatory effect on the endocrine of the hypothalamic-pituitary-gonadal axis. Through local stimulation, it can promote changes in the surface capsule of mature follicles or the microenvironment around the follicles, thereby promoting ovulation.

The effect of acupoint embedding thread on the nervous and endocrine systems is limited to a certain extent. The patient's endocrine foundation is one of the keys to the effectiveness of acupoint embedding thread. Minimally invasive thread embedding is a long-lasting acupuncture therapy that has gained considerable popularity in recent years. Its principle is based on traditional acupuncture theory and it is a way to treat diseases by stimulating specific acupoints instead of acupuncture. At present, the hospital is applying the modern absorbable high-molecular polymer material PDO quantum thread, which has been improved compared to the previous thread embedding method, eliminating the need for patients to make multiple trips to the hospital. The method of embedding threads at acupoints involves first purging and then tonifying. It combines short-term strong stimulation as purgation with long-term "retained needle" effect as tonification. This study aims to regulate deficiency and excess through a combination of traditional Chinese and Western medicine, and to coordinate the excess or deficiency of Yin and Yang in the internal organs as a whole. By taking advantage of the situation and combining hardness with softness, it promotes the body to restore a state of "Yin balance and Yang secrecy", thereby improving ovulation disorders in PCOS. Acupoint embedding thread combined with modified Danggui Shaoyao Powder and the combination of Western medicine for the treatment of ovulation disorders in PCOS has a remarkable therapeutic effect and is worthy of further clinical promotion.

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Disclosure statement

The author declares no conflict of interest.

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