

# INTEGRATIVE STRATEGIES FOR POLYCYSTIC OVARY SYNDROME: EXPLORING THE COMBINATION OF DIANE-35 AND TRADITIONAL CHINESE MEDICINE

**Dr. Anna Chen and Dr. Michael Wang**

Shaanxi Provincial Hospital of Traditional Chinese Medicine, Shaanxi, China

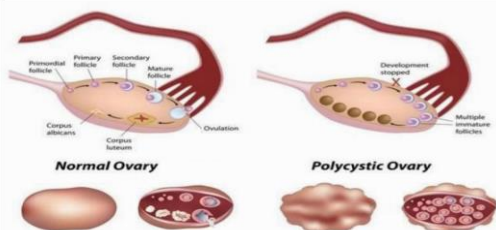
## **Abstract:**

Polycystic ovary syndrome (PCOS) is a prevalent gynecologic endocrine disorder affecting a significant percentage of women of childbearing age, particularly those with anovulatory infertility. Its clinical presentation is diverse, encompassing menstrual irregularities, infertility, polycystic ovaries, and various androgen-related manifestations. Western medicine primarily focuses on hormonal regulation, while traditional Chinese medicine (TCM) has shown promise in alleviating clinical symptoms. Integrating TCM with Western medicine offers a holistic approach by addressing the "kidney anemone Chong Ren uterus axis" and the "hypothalamus pituitary gonad axis." This comprehensive strategy enhances endocrine function, improves dominant follicle efficiency, and underscores the synergy between the two medical paradigms. This article provides a review of the progress in using Western medicine Diane-35 in conjunction with traditional Chinese medicine for the treatment of PCOS, highlighting the potential benefits of this combined approach.

**Keywords:** Polycystic ovary syndrome, PCOS, Diane-35, traditional Chinese medicine, integrated treatment.

## **1. Introduction**

Polycystic ovary syndrome (PCOS) is a common gynecologic endocrine disease, with an incidence of only 5% to 10% in women of childbearing age, while the incidence in patients with anovulatory infertility is as high as 30% to 60%. There are also individual differences in clinical manifestations, including menstrual disorders, infertility, polycystic ovarian changes, acanthosis nigricans, androgen excess, acne, obesity, hirsutism, etc. (Figure 1) [1] The key of Western medicine treatment is to adjust the hormone level in the human body, while traditional Chinese medicine treatment can effectively improve the clinical symptoms of patients. The treatment of integrated traditional Chinese and Western medicine can adjust the "kidney anemone Chong Ren uterus axis" and "hypothalamus pituitary gonad axis" at the overall level. By improving the symptoms of endocrine disorders, it can significantly improve the efficiency of dominant follicles, complement each other, and reflect the advantages of the combination of Chinese and Western medicine. This article will review the research progress of Western medicine Diane-35 combined with traditional Chinese medicine in the treatment of polycystic ovary syndrome.



*Figure 1: Polycystic ovary syndrome (PCOS)*

## 2. Understanding of polycystic ovary syndrome in Western Medicine

The pathogenesis of polycystic ovary syndrome is complex and variable. It is generally believed that genetic and environmental factors contribute to the occurrence of PCOS. It is closely related to polygenic inheritance, dysfunction of hypothalamus pituitary ovary axis, unhealthy lifestyle and emotional factors, as shown in Figure 2 and Figure 3. Studies have shown that genetic and intestinal microbiota imbalance is also an important reason for its pathogenesis, and long-term chronic inflammation will have many adverse effects on women's reproduction and endocrine [2]. Adverse intrauterine environment during the fetal period or environmental factors after delivery are also involved in its pathogenesis [3]. In terms of treatment, the principle of Western medicine treatment can be divided into basic treatment, complication treatment and pregnancy promotion treatment according to whether there is fertility demand and whether there are complications. Its purpose is to reduce the production of androgen levels in the body. At present, it is generally accepted that the first choice of western medicine is ethinylestradiol cyproterone tablets. Three menstrual cycles are a course of treatment, but it is also prone to adverse reactions such as low menstrual volume, migraine, menstrual breast pain. And long-term medication will also improve the incidence of breast disease, endometrial cancer, and the early recurrence rate is high, long-term hormone stimulation, adding unnecessary adverse reactions for patients.

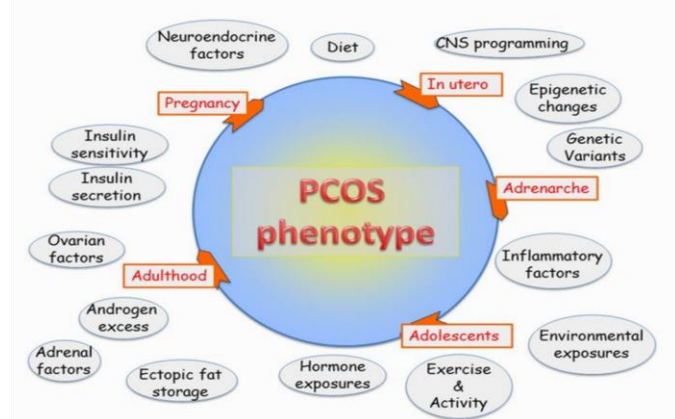
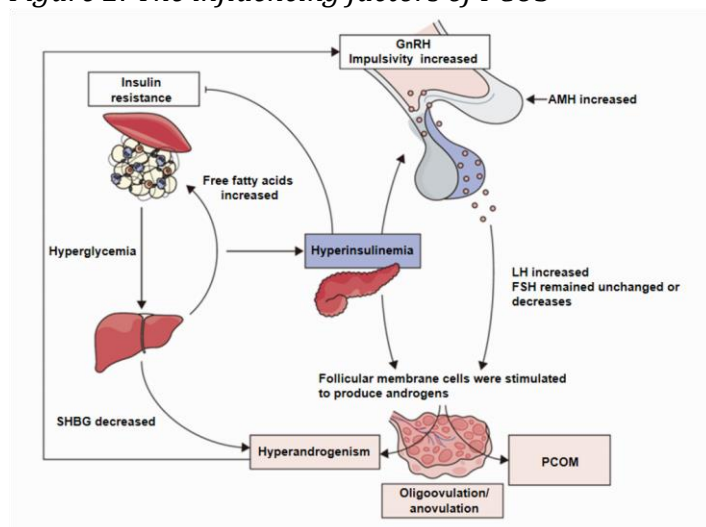


Figure 2: The influencing factors of PCOS



*Figure 3: Physiology of PCOS*

### **3. TCM understanding of polycystic ovary syndrome**

At present, there is no specific disease name of polycystic ovary syndrome in traditional Chinese medicine, but it is generally attributed to "infertility", "amenorrhea", "metrorrhagia" and so on according to its clinical manifestations. According to traditional Chinese medicine, PCOS is mainly due to the dysregulation of "kidney anemone Chong Ren cytosolic axis", and its pathogenesis is closely related to the dysfunctions of liver, spleen and kidney, as well as qi stagnation, phlegm dampness, blood stasis and other factors. The main treatment methods are tonifying kidney and regulating menstruation, soothing liver and clearing heat, resolving phlegm and unblocking collaterals, activating blood circulation and removing blood stasis [4]. According to the Yellow Emperor's Canon of internal medicine, "if you are fat and noble, you will get phlegm from the sorghum." It is also recorded in Fuqing dominating women's department that "women are obese, have a lot of phlegm and saliva, and can't conceive... Who knows it's because of dampness". It shows that obesity is mostly related to phlegm dampness, which often leads to infertility, irregular menstruation and even amenorrhea. Traditional Chinese medicine believes that the syndrome of phlegm dampness mostly belongs to the liver and spleen meridians, and the treatment mainly focuses on warming the kidney and strengthening the spleen, removing phlegm and dampness, activating blood circulation and removing blood stasis [5]. According to "Lingshu · Jueqi": "the middle energizer takes juice from Qi, changes, and red is called blood". It can be seen that if the spleen and stomach function is normal, the blood and blood are biochemically active, and the pulse is too strong, then the moon is now in full swing. On the contrary, if the spleen and stomach function is imbalanced, the blood sea is deficient, so the menstrual period and quantity are abnormal. According to Wan's family of women, "only those who are fat and full of cream cannot open the yuan family; those who carry phlegm will have stagnant phlegm and saliva, and the waves of blood will not flow". The spleen and stomach belong to the prefecture of Zhongzhou, regulating the balance of the Qi mechanism between the various viscera. The normal generation and metabolism of human Qi, blood and body fluid are inseparable from the regulation of the spleen and stomach qi mechanism. The spleen is also the "source of phlegm". Once the rise and fall of the spleen and stomach are abnormal, it will damage the existing balance of the Qi mechanism of the human body, accumulate moisture and generate phlegm [1]. Traditional Chinese medicine believes that "the kidney governs reproduction" and "the water flows out of the kidneys". Therefore, diseases related to reproduction and menstruation are usually treated from the kidney, and tonifying the kidney should be taken as the basic treatment for PCOS. Deficiency of kidney qi and weakness of promotion will cause blood stasis due to astringency and stagnation of pulse channels, or kidney deficiency and blood stasis syndrome will occur due to blood stasis caused by long-term illness.

### **4. Current situation of clinical research on Diane-35 combined with traditional Chinese medicine in the treatment of polycystic ovary syndrome**

For polycystic ovary syndrome, many researchers have proposed different treatment methods, but generally speaking, it is still based on the principle of traditional Chinese medicine combined with Diane35 to improve the clinical symptoms of patients and prolong the curative effect. For non-obese PCOS patients, Li Xiao and others used the method of invigorating the spleen, removing dampness and tonifying the kidney combined with Diane-35 treatment, which confirmed that it can effectively improve the ovarian function of patients, thereby improving the ability of follicle development and increasing ovulation [7]. Zhang Hongmei et al. Used the "four five" formula (Angelica sinensis, Schisandra chinensis, Curculigo, Achyranthes bidentata, plantain, Paeonia alba, raspberry, epimedium, Ligusticum chuanxiong, Lycium

barbarum, rehmannia, Cuscuta chinensis) combined with Diane-35 for three consecutive menstrual cycles in patients with PCOS of kidney deficiency and blood stasis type, which can significantly improve the endometrial receptivity of patients [8]. Chencaiyang et al. randomly divided the patients with menstrual disorder caused by PCOS into two groups, who were treated with Diane-35 and Diane-35 combined with Danggui Shaoyao Powder. After 3 months of treatment, the statistical results showed that the effective rate in the combined medication group was higher than that in the simple medication group, which could effectively improve the patient's sex hormone level and adjust the menstrual cycle [9]. Hewenjie and others randomly divided 77 patients with infertility caused by PCOS into control group and treatment group. The control group was only given Diane-35 orally, while the treatment group was given Guizhi Fuling combined with Diane-35. The total effective rate, ovulation rate, pregnancy rate, sex hormone level of the two groups were compared, and the treatment group was better than the control group [10]. Xingxingting et al. Yili qiaotan decoction combined with Diane-35 in the treatment of patients with pcos-ha with phlegm and blood stasis, the total effective rate was 96.67%. It can not only effectively improve the menstrual condition of patients, but also has great advantages in improving the signs of patients, alleviating clinical symptoms and improving sex hormone levels [11]. Lulingyun et al selected patients with phlegm dampness block type PCOS and gave cangchaitiaozhong Decoction plus Diane-35. The total effective rate was as high as 92.5% [12]. Cailimei and others selected infertile patients with PCOS of kidney deficiency and blood stasis type, and gave Zixian Zhuyun Decoction (Amethyst, Poria cocos, Morinda officinalis, zedoary turmeric, roasted Astragalus, Xianlingpi, angelica, Mitsubishi, bupleurum, Achyranthes bidentata, Cyperus rotundus, Atractylodes macrocephala, Salvia miltiorrhiza, and Rehmannia glutinosa) combined with Diane-35, which can significantly improve the reproductive hormone level of patients [13]. Liu Min et al used Baogui capsule combined with Diane35 in the treatment of PCOS patients. The results showed that compared with Diane-35 alone, Baogui capsule was more effective in improving menstruation and reducing serum T and AMH levels [14]. Yang Fan et al. Gave Diane-35 treatment combined with cangfu Shenqu Decoction and salt partitioned moxibustion at Shenque point to infertile PCOS patients with spleen deficiency and phlegm dampness syndrome according to the traditional Chinese medicine syndrome. Three consecutive menstrual cycles were a course of treatment. The results showed that it could effectively alleviate the clinical manifestations of patients and increase the probability of pregnancy [15]. Yaixin used Diane-35 combined with Yishen Qutan Decoction to treat adolescent patients with PCOS. The results showed that it could effectively improve the levels of sex hormones and clinical symptoms of patients [16]. Chenxiaomei and others applied Diane-35 combined with traditional Chinese medicine (Shenqu, Cangzhu, chuanxiong, Pinellia ternata, Xiangfu) to treat PCOS patients. The research results suggested that it could improve the clinical manifestations of patients, improve hormone levels, and help patients ovulate and conceive [17]. Liuchunni and other patients with PCOS were treated with Diane-35 combined with four phase therapy of traditional Chinese medicine: guishaodihuang decoction was added and reduced to nourish yin and blood in the late menstrual period, Bushen zhuovulation decoction was added and reduced to nourish kidney and activate blood in the inter menstrual period, Xiaoyao Powder Combined with cangfu Daotan pill was added and reduced to help Yang and regulate qi in the premenstrual period, and Wuwei Tiaojing decoction was added and reduced to activate blood and regulate menstruation in the menstrual period. Results the total effective rate was significantly higher than that of Diane-35 alone [18]. Liyuchang et al took Diane-35 orally and Dingjing Decoction for three consecutive menstrual cycles in patients with PCOS of kidney deficiency type. The results showed that it could significantly improve the level of sex hormones, improve ovarian function, promote menstrual recovery and reduce the recurrence rate [19]. Huangximei used ovulation



decoction combined with Diane-35 in the treatment of PCOS. The results showed that the total effective rate was 89.71%, which could significantly improve the clinical treatment effect and improve the level of sex hormones in patients [20]. Tengjing et al used Bushen Huoluo formula combined with Diane-35 to treat PCOS patients with kidney deficiency and blood stasis syndrome. The results showed that compared with oral Diane-35 alone, the curative effect was more prominent and lasting [21]. Hua Zhongshou and others gave Diane-35 combined with Tiaojingcuyun pill to treat obese PCOS infertility patients. The research results showed that it could effectively reduce FSH, LH, T levels, promote endometrial hyperplasia, improve ovarian morphology and function, and improve ovulation rate and pregnancy rate [22]. chenyixia et al. Treated PCOS with self-made Yishen Huatan Tiaojing formula combined with Diane-35, decocted to 200ml, and warmed in the morning and evening. According to the result statistics, the total effective rate, sex hormone level and insulin index improvement were significantly better than those of Diane-35 alone [23]. caolianghua used Diane-35 combined with Yougui pills to treat PCOS, and made a statistical analysis of the levels of T, LH, FSH, insulin and blood lipids before and after treatment. The results showed that the levels of serum hormones, insulin and blood lipids were improved after treatment, and the effect of the combination was better than that of Diane-35 alone [24]. Xin Jun et al. Used Diane-35 combined with cangfu Daotan Decoction in the treatment of PCOS patients with phlegm dampness syndrome in traditional Chinese medicine, took it warm in the morning and evening, and stopped it during menstruation. The results showed that its clinical efficacy was significantly higher than that of patients who only took Diane-35 orally, and the improvement of hormone levels was also obvious [25]. yuanhuifang et al selected 80 patients with PCOS and randomly divided them into the control group and the treatment group. The control group was given Diane-35 oral treatment alone, while the treatment group was added Qilin Pill on the basis of the control group. The levels of LH, FSH, t, E2 and other levels before and after treatment in the two groups were observed. The results showed that the clinical efficacy of the treatment group was significantly better than that of the control group [26]. Zhang Meiling et al. Used self-made prescription for ovulation induction (Rhizoma Cyperi, Poria cocos, Cuscuta chinensis, parasitic mulberry, Paeonia alba, raspberry, Salvia miltiorrhiza, Cistanche deserticola, Dipsacus, epimedium, Purple River cart, Angelica sinensis) and Diane-35 in combination for 3 consecutive cycles in PCOS patients. The results showed that the total effective rate was as high as 90% [27]. Wu Mingzhu randomly selected 74 patients with PCOS. The reference group was treated with Diane-35 alone, while the observation group was treated with Kunling pill after menstruation was completely clean. The results showed that the luteinizing hormone, testosterone and ovarian size of the observation group were lower than those of the reference group, while the follicle stimulating hormone was higher than that of the reference group, and the total effective rate of clinical efficacy was higher than that of the reference group [28]. Wang Chunhuan randomly divided 87 patients with PCOS of liver and kidney yin deficiency type into two groups. The control group was given Diane35, and the observation group was treated with Zigui Decoction on the basis of the control group. The statistical results showed that the total effective rate of the observation group was higher than that of the control group [29]. Qian Zujuan selected 60 patients with PCOS and enrolled them. The control group was given Diane-35 orally, while the treatment group was given Diane-35 combined with Kuntai capsules. According to the research results and comparison, the successful ovulation rate, normal menstrual period rate and pregnancy rate of the treatment group were significantly higher than those of the control group.

## **5. Conclusion and Outlook**

Oral ethinylestradiol and cyproterone tablets are currently the first choice drugs for the treatment of polycystic ovary syndrome, but due to its long-term use will cause certain adverse reactions, and the

recurrence rate is relatively high after drug withdrawal, which will bring greater psychological pressure to patients. In recent years, the research on the combined application of traditional Chinese medicine and Diane-35 has observed the role of traditional Chinese medicine in improving the clinical symptoms and prolonging the curative effect of patients with polycystic ovary syndrome. At the same time, it has its unique effect in improving the quality of life of patients and relieving mental stress, and has less toxic and side effects. The traditional Chinese medicine treatment has a long history, is simple and convenient, and is based on the principle of "seeking the root cause of disease" from the concept of diagnosis and treatment, so Chinese medicine plays an irreplaceable role in the treatment of polycystic ovary syndrome. At present, most doctors still use Diane-35 alone or combined with metformin in the treatment of PCOS. There is still a lack of unified treatment norms in the treatment of PCOS by traditional Chinese medicine, and the sample size of most studies is small. It is expected that in the future, the treatment of polycystic ovary syndrome can be combined with the basic theory of traditional Chinese medicine while giving the patient Diane-35 treatment, and the appropriate dialectical treatment can be carried out to give the patient the whole course of traditional Chinese medicine treatment.

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