

Explore the Recognition and Treatment of Thin Endometrium in Traditional Chinese Medicine

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Abstract: Thin endometrium is common in clinics, which is closely related to infertility and assisted reproductive technology. At present, traditional Chinese medicine (TCM) is effective in treating this disease, but the related causes of TCM are complex. It is generally believed that this disease is mainly caused by kidney deficiency and blood stasis. We systematically summarized the etiology and pathogenesis of thin endometrium in recent 20 years, and found that kidney essence deficiency, spleen and kidney deficiency, imbalance of heart and kidney, damaged uterine vessels, stagnation of liver qi and so on can also cause this disease. Syndrome types of this disease are not uniform, mainly including kidney deficiency and blood stasis syndrome, spleen and kidney deficiency syndrome, liver depression and qi stagnation syndrome, phlegm-dampness block syndrome, etc. There are various methods of treating this disease with traditional Chinese medicine, including internal treatment, external treatment, internal and external treatment, emotional guidance, etc. In the treatment of oral medication of this disease, the treatment method is adjusted according to the menstrual cycle time, and the emotional dredging therapy is unique. Altogether, the effect of traditional Chinese medicine in treating this disease is affirmative. The author summarizes the TCM cognition of the disease in order to provide a better treatment plan for the clinic.

Keywords: Thin Endometrium, Etiology and Pathogenesis, Syndrome Pattern Rule, Chinese Traditional Treatment

1. Introduction

At present, there is no uniform standard for the definition of thin endometrium (TE), which mostly refers to the thickness of endometrium < 7 mm 6-10 days after ovulation after the exclusion of organic uterine diseases [1]. Endometritis and intrauterine surgery may lead to the injury of the basal layer of endometrium, scarring or adhesion of endometrium, difficulty in endometrial regeneration, and finally thinning of endometrium [2]. Taking ovulation-stimulating drugs and long-term oral contraceptives can also cause this disease [2,3]. In addition, patients with thin endometrium excluded various pathological factors are called primary thin endometrium [4].

Studies have shown that the incidence of endometrial thinness is about 5% in women under 40 years old, and about 25% in women over 40 years old [5]. In recent years, the incidence of infertility has increased, and assisted reproductive technology has developed quickly. Endometrial thinness is closely related to assisted reproductive technology, which can not only be used to evaluate endometrial receptivity, but also to preliminarily predict pregnancy outcome [6]. With the development of assisted reproductive technology, many infertile families are full of expectations. However, thin endometrium not only affects the implantation of oosperm, but also the occurrence and outcome of pregnancy, making assisted reproductive technology still difficult, which has become one of the concerns of doctors and patients.

Western medicine treats thin endometrium with adhesion release, hormone therapy, stem cell regeneration technology, biofeedback therapy, granulocyte colony stimulating factor therapy, etc. [3]. However, they have limitations [7]. Traditional Chinese medicine is effective in treating this disease, and it is widely suitable for people. There is no name for this disease in ancient Chinese medicine books, and its clinical manifestations are similar to those of infertility, amenorrhea and hypomenorrhea. Fu Qing-

zhu nvke says it is easy to get pregnant if you have enough essence, and it is easy to raise a fetus if you have enough blood [8]. We summarize the understanding of thin endometrium in traditional Chinese medicine as follows.

2. Study on etiology and pathogenesis of thin endometrium with traditional Chinese medicine

2.1. Deficiency of kidney and blood stasis type

The 14-year-old female's kidney qi gradually supplements, meridians are unobstructed, and menstruation is coming. Menstrual blood comes from kidney. Life gate is connected with the uterus. Due to the deficiency of kidney-qi, qi and blood can't be promoted to run, and blood stasis gradually appears. Ultimately, Chong-ren meridians are obstructed. Therefore, the kidney plays an important role in the menstruation. Professor You Zhaoling^[9] believed that the TCM pathogenesis of this disease is kidney deficiency and blood stasis, with kidney deficiency as the foundation. The kidney meridian is damaged, which will produce abnormal function of essence and blood, and will not nourish uterus, thus affecting the growth of endometrium. Coupled with the deficiency of kidney qi and the slow movement of qi and blood, blood stasis will gradually appear, staying in the uterus. The poor blood flow unable to combine with sperm, and thus the probability of pregnancy will be reduced [10]. Professor Tan Yong^[11] believed that the cause of this disease is mainly kidney deficiency and blood stasis. The interaction of kidney, liver, spleen and heart, and the persistent effects of qi stagnation, blood stasis and phlegm-dampness easily lead to uterine vessels blockage, and the local blood perfusion of uterus decreases. The uterus lacks of nourishment from the five internal organs and essence, so the endometrial growth is slow.

2.2. Deficiency of kidney essence

Essence is the root of life. Only when kidney essence is full, Tiangui can come. Kidney stores essence, and the endometrium grows and proliferates under the action of essence of kidney yin. Women's blood is the foundation, liver and kidney are homologous, mutually nourishing the uterus. Professor Du Huilan^[12] believes that the endometrium is transformed by essence and blood, and only when kidney essence is sufficient and uterus has sufficient qi and blood, uterus can grow normally and raise fetus. Deficiency of kidney essence and qi can not nourish the liver, which easily leads to deficiency of liver and kidney, Chong-ren, qi and blood, and shallow endometrium.

2.3. Deficiency of spleen and kidney

Women's Economy says: "A woman's menstruation and breast milk are transformed by the spleen and stomach". Sufficient kidney qi keeps normal function of storing essence, Chong-ren and uterus. Spleen qi is sufficient, and its nourishment lead to normal growth of endometrium and regular menstruation. Chong-ren can run normally only when both spleen and kidney Yang Qi are sufficient. Professor Xia Tian^[13] believes that the root of this disease lies in the deficiency of spleen and kidney, which is manifested by qi deficiency, cold, blood coagulation and stasis. "Chong -ren belongs to Yangming". When the spleen and kidney are full of qi, the physiological function of kidney-Tiangui-Chong-ren- uterus are normal. Deficiency of kidney qi and dysfunction of spleen transport and transformation, affects the uterus, gradually produces blood stasis, and menstruation can not come on time. In addition, deficiency of spleen and kidney yang, lead to cold in Chong-ren meridians, uterus loss of temperature and nourishment. Or spleen-yang deficiency, leading to stagnation of damp phlegm, obstruction of Chong-ren, uterus dystrophy, and obstruction of endometrial growth and proliferation.

2.4. Imbalance of heart and kidney function

The kidney is in charge of calming and storing, and it has the function of generating new life, while the heart can promote rhythmic movement. They maintain together the normal physiological function of the heart-kidney-uterus axis. Uterus has the functions of storing and discharging. When it stores, it is under the control of the kidney. Otherwise, it will be dominated by the heart, and the heart and kidney will act on the uterus together. Professor Xiao Chengzong^[14] thinks that the endometrium should belong to the category of " Bao-mai", and puts forward that "Bao-mai" and "Bao-luo" are closely related to thin endometrium, which is related to the heart and kidney. She thinks that the pathogenesis of this disease is kidney deficiency and blood stasis plus heart-blood deficiency, or congenital deficiency or acquired sexual life is too frequent, and repeated abortion damages the kidney, or excessive blood loss leads to insufficient

heart - blood. Both of them influence each other, which can lead to the thinning of endometrium due to insufficient nutrition of uterus.

2.5. Bao-mai damaged

Abortion can harm uterus and Bao-mai, Bao-mai injection to Chong -ren. Bao-mai and Bao-luo are the branches of the pulse in uterus, and surgical instruments may damage the basal layer of endometrium, resulting in Bao-mai and Bao Luo injury and abnormal function of these. Chong-ren pulse has the function of gathering the blood of Zang-fu, and Ren-mai governs the yin of essence and blood and body fluid. Chong-ren plays an important role in the periodic nourishment, proliferation and exfoliation of endometrium. If Chong-ren pulse is damaged, the endometrium can not be nourished on time, finally grows thinly, and the pregnancy is blocked.

2.6. Stagnation of liver qi

A woman's liver is innate, and the liver regulates qi function normally, so that blood can flow smoothly. Liver blood flows into the Chong-mai and regulates menstruation. In addition, women's reproductive function depends on the "storage" function of the kidney, which is the result of the coordinated action of liver and kidney. Professor Zhao Ke^[15] believed that the root of this disease lies in kidney deficiency, and the core of it is liver depression, and it is manifested by the disharmony between Chong-ren and Qixue. If the liver stagnates for a long time, qi stagnation and blood circulation are blocked, blood stasis is stuck in the uterus, Chong-ren are not unobstructed, and the Chong-ren-uterus nourishing link is blocked, it will lead to less menstrual flow, late menstruation, amenorrhea, and abnormal kidney "storage" function, disruption of the normal periodic changes of endometrium, and slow growth and proliferation. In addition, liver inhibits spleen, spleen is weak, Qixue production is insufficient, so endometrium lacks nourishment. And if it affects kidney storage function, resulting in liver depression and blood stasis, dyskinesia of qi or Qixue can not nourish the endometrium, which eventually leads to the thinning of endometrium.

2.7. Other factors

Nowadays, the definition of "beauty" has changed, and some women who love beauty choose to go on a diet to lose weight. People are picky eaters or lack of food, which leads to insufficient biochemical sources of Qixue. Women's menstruation, pregnancy and breast milk are easy to consume blood. If Qixue are deficient, Chong-ren and uterus will lose their nutrition, the growth of endometrium will be slow. In addition, cold evil affects Chong-ren, the blood flow of uterus vessel are blocked, and it is also difficult to nourish the uterus.

Therefore, the occurrence of thin endometrium is mainly related to kidney, liver, spleen and heart, and all these etiology and pathogenesis are interactional. The etiology and pathogenesis of endometrial thinness are mainly divided into two types: excess and deficiency. The main deficiency is that the endometrium lacks nutrition and can not reach the normal thickness. In addition, liver qi stagnation, cold blood coagulation and blood stasis, and phlegm-dampness affect endometrial blood perfusion, uterine artery blood flow resistance index or pulsatility index, thus leading to the occurrence of endometrial thinness.

To sum up, the etiology and pathogenesis of this disease include kidney deficiency and blood stasis, spleen and kidney deficiency, imbalance of heart and kidney, Bao-mai damaged, liver depression and spleen deficiency. In addition, deficiency of both qi and blood, kidney deficiency and liver depression can also lead to this disease. These can also cause phlegm, blood stasis, dampness and other products, which together lead to the occurrence of this disease. Many scholars support the view that kidney deficiency and blood stasis are the main etiology and pathogenesis of endometrium.

3. Study on the distribution law of thin endometrium syndrome types in TCM

At present, the dialectical classification of thin endometrium has not been unified. Combined with relevant data, the etiology and pathogenesis of this disease can be divided into two categories: deficiency syndrome and excess syndrome. Deficiency syndrome mainly includes kidney deficiency, spleen deficiency and blood deficiency, while excess syndrome includes blood stasis, liver depression and phlegm stagnation. Clinical syndromes type of thin endometrium syndrome are often complicated, such as kidney deficiency and blood stasis syndrome, kidney deficiency and liver depression syndrome, spleen

deficiency and liver depression syndrome, spleen deficiency and dampness obstruction syndrome, spleen-qi deficiency syndrome, spleen-kidney deficiency syndrome, liver depression and blood stasis syndrome, etc. "kidney deficiency is the foundation, blood stasis is the standard" is the main syndrome type of thin endometrium is recognized fact in academic circles. Endometrial thickness is often used to assess endometrial receptivity because it is effective and convenient measurement. Huang Zhenle and others^[16] found that among the 90 infertility patients with poor endometrial receptivity, yang deficiency accounted for 20%, followed by blood stasis (18.9%), yin deficiency (16.7%), qi stagnation (14.4%), qi deficiency (13.3%) and phlegm dampness (8.9%). Ding Ning etc^[17] discuss thin endometrial infertility based on "women's blood as the foundation" and believed that it was related to the five internal organs and Chong-Ren meridians. According to the discussion, ancient physicians believed that there were four syndromes: blood stasis, blood deficiency, blood cold and blood heat. Modern doctors mainly treat this disease by tonifying kidney, which may be related to the estrogen-like effect of Chinese herbs for tonifying the kidney, so it can effectively promote the proliferation and repair of endometrium^[18]. In addition, Meng Tianqi^[19] counted the frequency of syndrome types of 361 patients. The first four cases were kidney yin deficiency (39.9%), followed by blood stasis (26%), kidney yang deficiency (14.4%) and spleen deficiency (12.4%). Dong Xiaoyun^[20] divided 141 eligible patients with endometrial thinness into the following four TCM syndrome types through syndrome cluster analysis and clinical practice, including kidney deficiency and blood stasis syndrome (36.2%), spleen and kidney deficiency syndrome (28.4%), liver depression and qi stagnation syndrome (22.7%) and phlegm-dampness stagnation syndrome (12.8%).

4. TCM treatment of thin endometrium

4.1. Internal treatment

4.1.1. Dialectical treatment

Syndrome differentiation refers to comprehensively analyzing the nature of diseases by various methods to make correct judgments. Treatment refers to the corresponding treatment according to the results of syndrome differentiation. Zhan Bingxin and others^[21] conducted clinical research on thin endometrium with kidney deficiency and blood stasis. One group was treated with estradiol valerate tablets, while the other group was treated with Chinese medicine Yangjing Decoction. This prescription was cut from Guishen Pill and Taohongsiwu Decoction, and contained 15 g of prepared rehmannia root and motherwort respectively, 10 g of dodder seed, wolfberry fruit, peach kernel, eucommia bark, placenta hominis, white peony root, angelica root and astragalus complanatus, 20 g of yam, 5g of safflower and 6 g of licorice. The prescription has the effects of tonifying kidney, activating blood circulation and dredging collaterals. The results show that this prescription can effectively improve the ovarian function, promote the blood circulation and increase the thickness of endometrium, and the therapeutic effect is better than that of the simple western medicine treatment group. Ma Baoman and others^[22] explored the clinical effect of Houmo decoction in treating kidney-yang deficiency type thin endometrial infertility. The control group was treated with electric stimulation, while the observation group was treated with Houmo decoction. The prescription consists of Radix Paeoniae Rubra, Rhizoma Cyperi, Achyranthis Radix, Fructus Lycii, Cornu Cervi degelatinatum, Radix Rehmanniae Preparata, Radix Angelicae Sinensis and Rhizoma Ligustici Chuanxiong, Radix Morindae Officinalis, Semen Cuscutae, Rhizoma Dioscoreae, Radix Dipsaci, Polygoni Multiflori Radix, Radix Astragali, Herba Epimedii each 10g, and Herba Lycopodii 24g, in which Semen Cuscutae is the monarch drug. The prescription has the effects of tonifying kidney, invigorating qi, nourishing blood and promoting blood circulation. The results showed that the contents of estradiol, progesterone and endometrial thickness in the observation group were higher than those in the control group, and the probability of adverse pregnancy was lower. Professor Du Huilan^[12] divided thin endometrium patients into four syndrome types: kidney yin deficiency syndrome, kidney yang deficiency syndrome, liver depression and qi stagnation syndrome, cold coagulation of uterus syndrome. If the syndrome of kidney yin deficiency is dialectical, Zuogui Pill is used to nourish yin, kidney and essence. If it is kidney yang deficiency syndrome, Yougui Pill is used as the basic formula for treatment, and so as to achieve the effects of tonifying kidney, strengthening yang and warming uterus. If the syndrome of liver depression and qi stagnation is dialectical, Xiaoyao powder is used to treat it, so as to achieve the effects of soothing the liver, regulating qi and regulating chong and ren. If the syndrome is cold coagulation of uterus, add and subtract Aifu Nuangong Pill to warm the uterus and dispel cold.

4.1.2. Chinese medicine regulating cycle method

In clinical treatment of thin endometrial infertility, the "Chinese medicine regulating cycle method"

is often used to treatment. There are four stages of menstrual cycle, namely menstrual period, post-menstrual period, inter-menstrual period and pre-menstrual period. Taking 28 days as a menstrual cycle, menstruation is about the 1st-5th day of the cycle. At this time, "saying goodbye to the old and welcoming the new" is characterized by "extreme yin turning to yang". The later period of menstruation is the 6th-13th day of menstrual cycle, and the blood gradually fills up, showing a "extremely negative" state. Intermenstrual period is the 14th-15th day of the cycle, which is the stage of "Yin-qi becomes abundant and Yang-qi becomes abundant and turns negative". The premenstrual period is about the 16th-30th day of the cycle, showing a state of flourishing yin and yang^[23].

Professor Zhao Ke treated this disease according to the "Chinese medicine regulating cycle method". Bushentiaozhou recipe comprises placenta Hominis, Colla Cornu Cervi, Bupleuri Radix, Herba Epimedii, Fructus Ligustri Lucidi, Radix Paeoniae Alba, Radix Codonopsis, Rhizoma Cyperi, Pericarpium Citri Tangerinae, Poria, Atractylodis Rhizoma, Radix Angelicae Sinensis, Rhizoma Ligustici Chuanxiong, Radix Paeoniae Rubra, and Radix Glycyrrhizae Preparata. In the later stage of menstruation, Yin is strong and Yang is weak, which is the key link to promote the growth of endometrium and follicles. On the basis of the Bushentiaozhou formula, traditional Chinese medicine for tonifying kidney, invigorating qi, activating blood circulation and removing blood stasis are added. In the later period of menstruation, yin is strong and yang is weak, which is the key link to promote the growth of endometrium and follicles. In this period, on the basis of Bushen Tiaozhou prescription, then Chinese herbs for tonifying the kidney were added to promote the change of qi activity. During intermenstrual, tonifying kidney-yang to promote follicular discharge is the main method, and a little Chinese medicine for promoting qi circulation and removing blood stasis are added. *Cuscuta chinensis* and other herbs are added in the early menstrual period to tonify kidney and yang. After menstrual period, Chinese medicine for promoting blood circulation and removing blood stasis can be used to promote the denudation of endometrium, and beneficial mother can be added as appropriate^[15]. When Professor Tan Yong treats thin endometrial infertility, if the patient is in the late menstrual period, the Dianjiprescription is the basic prescription. If it is Intermenstrual period, Pailuan decoction will be used for treatment. The premenstrual period was treated with Zhuhuang Decoction. Menstruation is treated with Wuwei Tiaojing Powder. He emphasized the traditional Chinese medicine of promoting blood circulation on the basis of overall treatment^[11]. When Xu Lixia treats thin endometrium, she takes promoting blood circulation, removing blood stasis and promoting tissue regeneration as the treatment method during menstrual period, and adds Jiajian Tongyu Decoction. After paying attention to nourishing yin in the later period of menstruation, Erjia Dihuang Decoction was added and subtracted. During intermenstruation, soothing the liver and dredging collaterals is the treatment method, then add and subtract Jiajian Cupailuan decoction. In the early stage of menstruation, we paid attention to nourishing yang, and selected Youguiyin to add and subtract^[24].

4.1.3. Special drug treatment

Although TCM theory emphasizes syndrome differentiation and treatment, special drugs do not violate the theory of syndrome differentiation and treatment, and they complement each other^[25]. Pharmacological studies show that some traditional Chinese medicines have estrogen-like effects and can regulate female reproductive endocrine^[18]. Professor Tan Yong^[11] believes that Yam, Kudzu root and *Euryale ferox* can produce estrogen-like effects to promote endometrial growth based on clinical experience and pharmacological research of traditional Chinese medicine. The research of Zhu Dina and others^[26] suggested that tonic Chinese medicines such as *Cuscuta chinensis*, *Psoralea corylifolia*, *Epimedium*, Ginseng, *Curculigo curculiginis*, *Lycium barbarum*, *Angelica sinensis*, *Cordyceps sinensis*, *Salvia miltiorrhiza*, *Carthamus tinctorius*, *Achyranthes bidentata*, *Semen Vaccariae*, and drugs such as *Pueraria lobata*, *Belamcanda chinensis*, and *Rheum officinale* may play a role in promoting endometrial growth and proliferation by influencing the synthesis or metabolism of endogenous estrogen and progesterone.

4.1.4. Experience of famous doctors

In the treatment of this disease, famous doctors have accumulated extensive clinical experience, formed unique views and developed special prescriptions for treatment. Professor You Zhaoling^[9] believes that we should give priority to tonifying the kidney and strengthening the spleen, and promote blood circulation and removing blood stasis as a supplement in the treatment of this disease. Her self-made Huluan prescription is used to treat thin endometrium. The medicines have Mulberry, Raspberry, Dodder, *Codonopsis pilosula*, *Astragalus*, *Atractylodes macrocephala*, Chinese rose, Motherwort, Orange leaf, *Dendrobium*, Yam, Lotus flesh, *Psoralea* fruit and Licorice, all of which can achieve the therapeutic effect of tonifying kidney essence and regulating Chong-ren. Professor Xiao Chengzong^[14] believes that the core pathogenesis of this disease is kidney deficiency and blood stasis, and deficiency of heart blood. Her self-made Erbu Zhuyu prescription is used to treat low endometrial receptivity. This

recipe consists of Rhizoma Drynariae, Fructus Psoraleae, Morinda officinalis, Herba Taxilli, Radix Dipsaci, Radix Achyranthis Bidentatae, Radix Polygoni Multiflori Preparata, Caulis Spatholobi, and Radix Curcumae, etc. The whole formula has ingenious compatibility, and has the effects of tonifying kidney, promoting blood circulation, dredging collaterals and regulating heart. Professor Li Wei^[27] believes that congenital deficiency or acquired failure leads to kidney essence deficiency and blood stasis, which leads to the formation of this disease. She has formulated a prescription for tonifying kidney and activating blood to treat thin infertility of endometrium. This prescription is made up of Wuziyanzong Pill and Erxian Decoction, and contains Cuscuta chinensis, Lycium barbarum, prepared rhizome of rehmannia, yam, Curculigo curculiginis, Epimedium, Leonurus, Salvia miltiorrhiza, Spatholobus stem, etc. It can tonify yang and yin, and help women pregnant.

4.1.5. Chinese patent medicine treatment

Chinese patent medicine has the advantages of being easy to carry and take, and is widely used in the adjuvant treatment of this disease. Wu Weigang and others^[28] studied the therapeutic effect and safety of Yubiao Bushen Pill on 100 cases of thin endometrial infertility through clinical observation, and randomly divided them into two groups. The control group was treated with Estradiol tablets, estradiol and progesterone tablets and clomiphene citrate, and the observation group was treated with Yubiao Bushen Pill on the basis of the control group. The main ingredients of Yubiao Bushen Pill were Jcthyocolla and Cistanche deserticola, etc. Which had the effect of tonifying kidney and replenishing essence. It was concluded that the observation group could improve the level of estrogen and progesterone. Zhang Min and others^[29] randomly divided 130 patients with kidney-yang deficiency type thin endometrial infertility into two groups. The conventional group was treated with estradiol valerate tablets and ovulation-promoting drugs, and the observation group was treated with compound Xuanju capsule. The research showed that the total effective rate of the treatment group with Chinese patent medicine was significantly higher than that of the conventional treatment group. The result showed that Xuanju capsule could effectively relieve the contraction of vascular smooth muscle and increase the endometrial blood flow. After treatment, the estrogen and progesterone content was higher than that of the conventional group, but the follicle stimulating hormone was lower. The results showed that compound Xuanju capsule was effective in the treatment group. Jin Fengyu and others^[30] explored the clinical therapeutic effect of Dingkundan on thin endometrial infertility, and divided 187 patients into groups by random number method. The control group was given sequential estrogen and progesterone therapy, and the observation group was given Dingkundan therapy on the basis of the control group. By observing various indicators, it was found that the endometrial thickness, progesterone value and clinical pregnancy rate of the observation group were significantly higher than those of the control group, indicating that Dingkundan had therapeutic effects of increasing endometrial thickness, improving corpus luteum function and increasing pregnancy rate.

4.1.6. Treatment of integrated traditional Chinese and western medicine

The combination of traditional Chinese and western medicine is effective and widely used in treating this disease. Sometimes traditional Chinese medicine decoction plus acupuncture and western medicine can be used to treat endometrial thinness. Tang Limei and others^[31] concluded that the total effective rate of single medicine estradiol valerate tablet treatment group was 56.7%, and the total effective rate of traditional Chinese medicine treatment group was 83.3%. The total effective rate in the treatment group of integrated traditional Chinese and western medicine was high, the pulsatility index and resistance index of uterine artery blood flow decreased more obviously, and the thickness of endometrium increased significantly. The results showed that the therapeutic effect of TCM intervention on this disease was more remarkable. Zhao Xiaoli and others^[32] randomly divided 80 cases of thin endometrial infertility due to kidney deficiency and blood stasis into two groups, namely western medicine group (oral estradiol valerate tablets) and integrated Chinese and western medicine group (integrated Chinese and western medicine tablets plus Ligong Yulin decoction). Ligong Yulin decoction consists of Radix Rehmanniae Preparata, Rhizoma Dioscoreae, Fructus Ligustri Lucidi, Fructus Lycii, Radix Angelicae Sinensis, etc., which have the effects of tonifying kidney, promoting blood circulation, and regulating Chong-ren meridians. After three menstrual cycles, it is found that the estradiol and progesterone values and endometrial morphology and thickness in the treatment group of integrated traditional Chinese and western medicine are improved more significantly, and the clinical pregnancy rate (21%) is higher than that of the other group (13%).

4.2. External treatment

The most widely used external treatments for thin endometrium are moxibustion and acupuncture.

Pan Yanzhen and others^[33] randomly divided endometrial patients into groups, and found that the degree of endometrial thickening and natural pregnancy rate of the group treated with thunder moxibustion were higher than those of the other group. He Ying and others^[34] divided 80 qualified thin endometrial infertility patients into two groups, with 40 cases in each group. The control group was treated with estradiol valerate alone, while the observation group was treated with electroacupuncture at Tianshu, Uterine, Zusanli and Sanyinjiao points on both sides. The result shows that electroacupuncture can improve the morphology of endometrium and increase its thickness. Xue Hongmei and others^[31] randomly divided qualified patients with repeated implantation failure of thin endometrium into two groups, in which 37 patients were treated with "Tong Yuan acupuncture" on the basis of estradiol valerate. The results showed that endometrial thickness, endometrial receptivity and pregnancy rate increased more significantly in this group.

4.3. Internal and external treatment

The combination of internal and external treatment of traditional Chinese medicine can combine dialectical treatment with local treatment, give full play to their respective advantages, and the curative effect is remarkable. Liang Shaorong and others^[35] observed the therapeutic effect of umbilical moxibustion combined with Bushen Huoxue recipe on thin endometrium, and found that the curative effect of Bushen Huoxue recipe group was significantly better than that of estradiol valerate group alone. The results showed that the combination of internal and external treatment of traditional Chinese medicine could improve the thickness of endometrium by reducing the blood flow pulsation and resistance index of endometrium. Li Lingyun and others^[36] observed that acupuncture combined with tonifying kidney and replenishing essence can effectively improve the endometrial thickness of thin endometrium, and the curative effect is more obvious than that of simple western medicine (estradiol valerate tablets). The results show that the addition of traditional Chinese medicine can adjust the reproductive axis, promote the smooth local blood flow of endometrium, improve the endometrial thickness and increase the pregnancy rate. Wang Wei and others^[37] studied the effect of Bubao Decoction combined with acupuncture intervention on the clinical application results of patients with thin endometrium, which proved that the endometrial blood flow resistance index, peak systolic velocity/end diastolic velocity of the intervention group were significantly lower than those of the other group, and the endometrial thickness and pregnancy rate were significantly increased.

4.4. Emotional guidance method

Emotional guidance often runs through the treatment of gynecological diseases, and it is often used in combination with other therapies. It is rare to use it alone in clinic, and it plays an important role in the treatment. "Reading Medical Essays Volume IV" contains: "All the gasification of the twelve meridians of the zang-fu organs must be encouraged by the gasification of the liver and gallbladder, so that they can be smooth without getting sick" ^[38]. When doctors treat diseases, they should pay attention to soothing the liver and regulating qi, so as to achieve the therapeutic effect of harmonizing qi and blood, soothing meridians, and restoring normal endometrial hyperplasia. Xiaoyao powder is selected as the basic prescription, especially used in the dredging treatment in the early menstrual period^[12]. The core points of Professor Shan Qiuhua's method of soothing the liver and regulating the mind are Baihui, Neiguan and Taichong. The formula has the effect of soothing the liver and regulating the mind^[39]. In addition, Xuan Xiaoyu^[40] explored Zhang Congzheng's emotional therapy, among which has the method of overcoming emotions, for example, using anger to restrain thinking and understand its likes and dislikes, and treat it dialectically, so as to achieve the purpose of treating diseases.

5. Summary and prospect

It can be seen that traditional Chinese medicine is effective in treating thin endometrium, but there is no unified dialectical standard for its etiology, pathogenesis and syndrome types. In short, kidney deficiency is the main factor, blood stasis is the standard, and it is closely related to the Chong-ren meridians and five internal organs, among which is most closely related to liver, spleen and heart. In addition, phlegm-dampness and cold coagulation are also important influencing factors. Many doctors support the viewpoint that kidney deficiency is the foundation, blood stasis is the standard. Syndrome types mainly include kidney deficiency and blood stasis syndrome, spleen deficiency and kidney deficiency syndrome, liver depression and qi stagnation syndrome, phlegm and dampness stagnation syndrome, in addition to kidney deficiency and liver depression syndrome, spleen deficiency syndrome,

qi and blood deficiency syndrome, liver depression and blood stasis syndrome, etc. Oral administration of traditional Chinese medicine, combination of traditional Chinese and western medicine, combination of internal and external Chinese medicine, emotional counseling and other treatment methods are all effective methods for treating this disease.

At present, it is suggested that the treatment of thin endometrium should be prevented from the disease-free stage. Patients should avoid intrauterine surgery and drug abuse, actively treat gynecological inflammation, and adjust their mood and routine to prevent the occurrence of this disease. In addition, maintaining adequate nutrition is also one of the important influencing factors. For the treatment of this disease, there are still the following problems in TCM treatment: There is no unified dialectical standard for dialectical classification; Treatment and medication: Traditional Chinese medicine and combination of traditional Chinese and western medicine have good curative effect, but the number of samples is still small; There is little research on the mechanism of traditional Chinese medicine in the treatment of thin endometrium, and there is little research on long-term adverse reactions of traditional Chinese medicine.

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