

Research Progress in the Treatment of Chronic Pelvic Pain with Traditional Chinese and Western Medicine

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Keywords: Chronic pelvic pain; Traditional Chinese medicine treatment; Advances in treatment

Abstract: Chronic pelvic pain (CPP) is a common gynecological disease with complex etiology, diverse modern medical treatment methods, poor clinical effect, and long course of disease, which brings great physical and mental pain to patients. There are many ways of traditional Chinese medicine to treat this disease, including Chinese medicine decoction, acupuncture and massage, Chinese medicine enema and other treatment methods, and the clinical effect is very good. Modern medicine has multi-dimensional treatment for chronic pelvic pain, but there are also some shortcomings. Integrated traditional Chinese and western medicine can give full play to the advantages of both sides, so that patients can get better treatment. This article reviews the research progress of the pathogenesis, etiology, pathogenesis and traditional Chinese medicine treatment of chronic pelvic pain. With the understanding of the etiology, pathology and pathogenesis of chronic pelvic pain in modern medicine, it is believed that chronic pelvic pain is related to many factors such as special pathogen infection, neuroendocrine abnormalities, immune abnormalities, pelvic diseases and genetics. Traditional Chinese medicine believes that the pathogenesis of chronic pelvic pain is caused by damp heat, blood stasis and qi stagnation, and the liver, spleen, kidney, lung, stomach and bladder are closely related to the disease. At present, the comprehensive treatment of traditional Chinese medicine, acupuncture and massage therapy and external treatment is adopted, and the clinical effect is significant. The purpose of this article is to provide reference for clinical and cognitive prevention and treatment of chronic pelvic pain, and provide beneficial enlightenment for related research.

1. Introduction

Chronic pelvic pain is a symptom of periodic or aperiodic pelvic pain lasting at least 6 months and may accompany complications such as dyspenorrhea, sexual discomfort, dysuria, and mental disorders. According to the involvement of different organ systems, the causes can be classified as follows: The gynecological causes include endometriosis-related pain, pelvic congestion syndrome, pelvic inflammatory diseases, adenomyosis, and hydrosalpingis.

Dyennorrhea, pain in intercourse, urination disorders and mental disorders are a series of

symptoms in patients with chronic pelvic pain. Up to 24 percent of women worldwide are suffering from chronic pelvic pain[1]. In most cases, chronic pelvic pain has a profound impact as a typical condition that severely interferes with women's daily activities. The pathogenic factors of chronic pelvic pain are extensive, and may involve many aspects of the gastrointestinal system, urinary system, gynecological diseases, oncology, musculoskeletal system, and psychosocial factors[2]. Traditional Chinese medicine believes that chronic pelvic pain is mainly blood stasis and blood obstruction, leading to "bad pain"; chronic disease deficiency, qi and blood deficiency, resulting in "bad pain". Pathological factors involve cold, dampness, heat and blood stasis, which belong to the virtual standard. At present, there are many treatment methods for chronic pelvic pain, but the curative effects are different. The author summarizes the progress of traditional Chinese and western medicine for gynecological chronic pelvic pain.

2. Modern medical etiology and pathogenesis

2.1 Uterine fibroids

Uterine leiomyoma (also known as fibroids), as the most common benign tumor type in the uterus, mainly originated from uterine tissue, especially in women at the reproductive age group, is a common disease in gynecological clinical practice. In terms of clinical manifestations, patients with uterine leiomyoma often report excessive menstrual volume, irregular menstrual cycle, and non-menstrual bleeding symptoms. Uterine leiomyomas may also adversely affect female reproductive function, including but not limited to decreased reproductive potential and increased risk of early pregnancy abortion.

2.2 Hydrosalpingus

Hydrosalpinx is the abnormal accumulation of fluid in the lumen of the fallopian tube, which leads to a significant expansion of the lumen. In most cases, patients with hydrosalpingi do not show significant clinical symptoms, making the early identification of the disease particularly difficult. Therefore, many patients are often first aware of the possible hydrosalping problem when faced with infertility. For some hydrosalping patients, they may experience a range of nonspecific symptoms, including but not limited to changes in the nature of vaginal secretions, and painful discomfort in the pelvic area and abdomen. It is important to note that these symptoms may show a trend of aggravation in women's menstrual cycle, further affecting the patients' quality of life.

2.3 Pelvic inflammation

Pelvic inflammatory disease (PID) is a form of upper genital tract infection, which occurs most common in young women and sexually active people. *Neisseria gonorrhoeae* and *Chlamydia trachomatis* are the main pathogenic microorganisms of pelvic inflammatory disease. If pelvic inflammation is not treated promptly and effectively, it may lead to a series of serious complications, including intra-abdominal infection, infertility, ectopic pregnancy, and chronic pelvic pain[3].

2.4 Pelvic belt pain

The different degree of pain in the posterior sacral segment or hip is one of the typical symptoms of pelvic belt pain[4]. About 1 to 16 percent of women still experience such pain for a year or more after delivery[5]. For such patients, multimodal treatment options are usually used. Implementation of an exercise program designed to enhance pelvic stability is recommended.

Chronic pelvic pain constitutes a serious health challenge globally. Statistically, about one quarter of women in childbearing age reported chronic pelvic pain lasting for more than one year. Chronic pelvic pain is often seen as a general pathological concept that is not adequately distinguish from multiple typical symptoms associated with a specific etiology. In view of this, it is even more important to further investigate the clinical manifestations of various causes of chronic pelvic pain. At the same time, TCM syndrome differentiation and holistic approach can play a better role in the diagnosis and treatment of chronic pelvic pain; the diagnosis and treatment of different diseases are helpful to better understand the diseases with complex etiology.

3. Western medicine treatment

The clinical manifestation of chronic pelvic pain is the repeated pain in the pelvic area. Clinical treatment is to relieve pain and relieve physical and mental pain as the treatment goal. The treatment methods of modern medicine include drugs, surgery, physics and so on. In the long run, there are some problems in the treatment of modern medical drugs, such as for acute pelvic inflammation, antibiotics remove acute pathogens, but for the improvement of chronic clinical symptoms and the functional recovery of target organs; the removal of lesions has limited effect for severe pelvic adhesion.

3.1 Drug therapy

Without identifying the cause of chronic pelvic pain, analgesics can relieve the symptoms. Clinically, according to the specific symptoms of chronic pelvic pain, antibiotics, hormones and other drugs can be used. But the degree of symptoms is limited, and recurrence is a problem to face.

3.1.1 Analgesics

When the etiology of chronic pelvic pain is not clear, analgesics can be used to relieve patient pain. Because analgesic drugs usually start with peripheral active analgesics, oral NSAIDs can be used repeatedly, and the common side effects appear as gastrointestinal discomfort.

3.1.2 Antibiotic drugs

For patients with acute pelvic pain induced by pelvic inflammatory diseases, antibiotics are the preferred drugs for this clinical condition. In 2019, the Chinese medical association branch of obstetrics and gynecology infectious disease collaboration revision of the specification of diagnosis and treatment of pelvic inflammatory diseases recommended to use the following intravenous administration scheme: A scheme with β -lactam antibiotics, B scheme with quinolone antibacterial drugs as the core, C scheme combined with β -lactam and enzyme inhibitors combined antibacterial drugs. For non-intravenous administration, second-or third-generation cephalosporins and ofloxacin are recommended, and nitroimidazoles can be added to target anaerobic bacteria, or doxycycline or azithromycin to cover atypical pathogenic microorganisms[6]. The treatment cycle should be maintained for at least 14 days, with significant symptom relief in patients sensitive to antibiotics.

However, it is noteworthy that about 55% of female patients with CPP did not detect a clear potential pathogen[7], Presented as a chronic persistent sterile inflammatory state, in which case antibiotic treatment is usually ineffective.

3.1.3 Hormone drugs

Hormones have shown significant efficacy in the treatment of chronic pelvic pain in patients

with endometriosis, adenomyosis and pelvic congestion syndrome. Currently, the hormonal drugs widely used in clinical practice include oral contraceptives, progesterone, gonadotropin-releasing hormone and levonorgestrel intrauterine slow-release system.

Oral contraceptives or progesterone are often used as the preferred empirical treatment for cases of pelvic pain and patients with suspected endometriosis. However, long-term use of oral contraceptives may cause adverse consequences such as endometrial atrophy, decreased bone mineral density, increased risk of thrombosis, and increased incidence of breast cancer[8].

3.2 Surgical treatment

Surgical therapy is based on the presence of gross anatomical changes such as endometriosis, pelvic adhesions, or intractable pain that cannot be relieved by drugs. In clinical use, the indications need to be strictly restricted.

In 2004, the American College of Obstetrics and Gynecology issued guidelines for clinical management of gynecology, indicating that chronic pelvic pain cases are caused by about 33%, and some reports are even higher in the literature. Laparoscopic resection of visible EMs and reconstruction of pelvic structure has been proved as an effective means to alleviate CPP.

However, numerous studies have revealed that patients often face the challenge of symptom recurrence after undergoing surgery. Specifically, the recurrence rate of EMs related surgery is about 5% within 1 year and increased to 5% to 14% in 2 years, and 20% to 50% within 5 years[9]. However, this treatment regimen constitutes a strict contraindication for patients with chronic pelvic pain with fertility needs.

3.3 Physical therapy

Given the positive role of physical therapies such as electrical stimulation, pelvic floor muscle training and biofeedback therapy in raising the pain threshold, promoting pelvic blood flow and functional recovery, these therapies are gradually becoming a new trend in clinical treatment. Among them, electrical stimulation therapy promotes muscle contraction and regulates nerve conduction by applying a local current, which potentially activates pelvic floor muscles, optimizes pelvic blood circulation, or activates inhibitory pathways to regulate afferent nerve feedback, thus raising the pain threshold and effectively relieving pelvic pain.

The study reported that dorsal root ganglion stimulation in seven patients with refractory chronic pelvic pain that failed to receive traditional intervention showed a significant reduction in pain and opioid use[10]. Pelvic floor muscle training involves repeated active contraction exercises of different intensity and duration to enhance the function and strength of the pelvic floor muscles.

4. TCM etiology and pathogenesis

Chronic pelvic pain can be attributed to "female abdominal pain", "dysmenorrhea" and "hot into the blood room" and other symptoms. The ancient book "Medical Case" points out that "frequent diseases in a long time will damage the collaterals, and the collaterals are the blood sea gathering, and long disease is easy to cause blood stasis and closure", revealing that the core of its pathogenesis lies in "evil invasion, body deficiency, blood stasis and qi stagnation". "Tanxi heart method" also said: "qi and blood harmony, all diseases will not occur; a little stagnation, all diseases, so human diseases, mostly from stagnation." And "Ji Yin Outline adjustment meridian door" clearly pointed out: "whether menstrual abdominal pain or non-menstrual abdominal pain, are caused by poor bleeding." This symptom is mostly due to blood stasis blocking the palace vein, two pulse dysfunction, follow the "general pain" principle, mainly involves the disease of the liver, and

accompanied by the spleen and kidney Yang deficiency, internal cold, and then affect the cell palace and vein blood circulation, causing pain. Therefore, in the treatment of chronic pelvic pain, the method of promoting blood circulation and removing blood stasis should be throughout the whole process, while balancing the healthy and removing evil, so as to comprehensively regulate the body and promote rehabilitation.

In recent years, many medical experts have deeply discussed the pathogenesis of the Sequelae of chronic pelvic inflammatory disease(SPID), and it is generally believed that its essence belongs to the pathological state of this deficiency. Professor Wang Peijuan believes that the pathogenesis is characterized by deficiency and deficiency, taking the imbalance of Yin and Yang in the kidney as the pathological basis, and blood stasis as the key pathological link, emphasizing the balance of the kidney Yin and Yang, while combining blood circulation and removing blood stasis and cyclical therapy[11].

In clinical practice, the combination therapy of Angelica peony powder and coix seed and soy paste powder is used[12]. This combination shows the remarkable effect of promoting blood circulation, invigorating qi, invigorating the spleen and reducing dampness, and has a significant improvement effect on alleviating the typical symptoms of sequelae of chronic pelvic inflammatory disease.

It revealed that Erdan Red rattan soup showed a significant improvement of clinical symptoms in patients with chronic pelvic inflammation sequelae of dampness and heat stasis[13]. This efficacy may be attributed to the ability of the prescription to enhance the function of T lymphocyte subsets and to effectively antagonize the inflammatory response within the antibody.

5. Traditional Chinese medicine treatment

5.1 Internal administration of traditional Chinese medicine

The prescription compatibility is rigorous, the main medicine is prominent, the prescription is clear, the decoction has characteristics, is an important treatment of chronic pelvic inflammation in traditional Chinese medicine.

In the treatment of pelvic inflammatory sequelae, Professor Zhu Zongyuan used the effects of coix seed sauce, cold and heat, warm Yang, invigorating heat and spleen, clearing dampness and removing blood stasis to treat lower diseases, which has achieved good effect in clinical practice. It shows that the effect of coix seed may reduce the level of pro-inflammatory factors, improve the level of anti-inflammatory factors, improve the balance of antioxidant system, and achieve the suppression of the expression of JNK / p38 signaling pathway that mediate the inflammatory response[14].

When treating patients with cold coagulation and blood stasis type EMs with formula, compared with the western medicine group, it was found that the TCM groups total response rate was higher, and the incidence of abnormal menstrual cycle, abnormal menstrual days and the incidence of dysmenorrhea were lower[15].

5.2 Acupuncture treatment

Compared with traditional treatment methods, acupuncture and moxibustion therapy holds the overall concept and realizes comprehensive regulation through multiple targets and links, showing the characteristics of lasting efficacy, safety and reliability. In the treatment of chronic pelvic pain, acupuncture and moxibustion therapy mainly adopts special acupuncture methods such as ordinary acupuncture, electric acupuncture and press acupuncture, and is combined with moxibustion for comprehensive treatment.

In recent years, many studies have revealed various physiological effects of acupuncture, including regulating the body's immune function, enhancing the ability to resist oxidative stress, promoting pelvic floor muscle contraction and improving blood circulation. These effects jointly promote the relief of clinical symptoms and improve the quality of life in patients with chronic pelvic pain.

"The essence of acupuncture and moxibustion is to reconcile the spirit of the human body."

Acupuncture therapy can effectively stimulate the healthy qi of the human body, enhance the individual's disease resistance and self-repair mechanism, and promote the body to tend to the physiological balance state. Acupuncture shows a unique advantage in providing pain relief. Related studies have revealed that acupuncture can relieve the local smooth muscle spasm, optimize the blood circulation in the pelvic cavity, accelerate the absorption process of inflammation, and promote tissue repair and regeneration.

The randomized and parallel controlled studies showed that acupuncture can significantly improve the clinical symptoms and signs of patients with chronic pelvic pain, specifically reducing pain in the lower abdomen and lumbosacral region, reducing the amount of leucorrhea secreted, and reducing the score of visual analog scoring (VAS)[16]. The results of a multicenter randomized controlled study showed that acupuncture therapy and ibuprofen capsules showed more significant efficacy in improving pain symptoms than oral ibuprofen capsules alone[17].

"Medical Introduction · Acupuncture" mentioned that "medicine is inferior, the needle is inferior, must moxibustion", which emphasizes the important position of moxibustion in clinical treatment, it is often used with acupuncture, complement each other, and play a therapeutic role together. "Materia Medica from new" further elaborated the medicinal properties of mugwort leaves: "mugwort leaves taste bitter, warm, ripe hot, pure Yang, can restore the vertical Yang, pass the twelve meridians, go through the three Yin meridian, regulate qi and blood, expel cold and dampness, warm the uterus... with moxibustion, can go deep into the meridians and collaterals, dispel all diseases."

It is pointed out that thunder-fire moxibustion has the effect of warming meridians, promoting blood circulation and removing blood stasis[18]. Thunder-fire moxibustion can significantly improve the symptoms of chronic pelvic pain, promote the absorption of pelvic effusion and inflammatory mass, reduce the level of inflammatory factors, and regulate the level of serum cysteine protease-3 and soluble apoptosis related factors, so as to play a therapeutic role.

5.3 Traditional Chinese medicine enema

Traditional Chinese medicine-preserving enema therapy has been widely used in the treatment of sequelae of chronic pelvic inflammation with its convenient operation and remarkable clinical effect. This therapy effectively avoids the gastrointestinal irritation that may be caused by oral TCM decoction, thus enhancing patient treatment compliance. In view of the efficient absorption capacity of the intestinal wall of the large intestine, TCM enema can significantly increase the drug concentration of the local mucosa of the rectum. In addition, the rectal administration route bypassed the first pass effect of the liver, reduces the metabolic burden of the liver and kidney, and avoids the potential destruction of the drug by the gastrointestinal digestive juice, thus improving the bioutilization efficiency of the drug.

In recent years, the research and practice of TCM preserving enema in the treatment of sequelae of chronic pelvic inflammation are increasing. The study pointed out that traditional Chinese medicine retained enema combined with steaming fever therapy has a higher safety profile than antibiotics in the treatment of chronic pelvic inflammatory disease sequelae[19].

The study showed that compared with western medicine treatment, TCM preservation enema

showed better efficacy in the treatment of 134 patients with dampness and humid stasis SPID, especially in relieving chronic pelvic pain and reducing the recurrence of inflammation^[20].

6. Summary and outlook

To sum up, TCM shows significant advantages and characteristics in the treatment of chronic pelvic pain, covering Chinese medicine decoction, proprietary Chinese patent medicine, acupuncture, moxibustion, and enema preservation and other treatment methods. These therapies can effectively improve the clinical symptoms and signs of patients, and reduce the occurrence of tubal inflammatory infertility and ectopic pregnancy and other adverse consequences.

In view of the definite curative effect of chronic pelvic pain, mild adverse reactions and no obvious contraindications, TCM has been widely used in clinical practice. Nevertheless, there are still many deficiencies in the research in this field, especially in the mechanism research of TCM treatment of chronic pelvic inflammation, which needs to be further explored and improved. In view of this situation, we suggest to carry out large sample and multi-center experimental research, in order to provide a more solid evidence-based medical theoretical basis for the clinical treatment of chronic pelvic inflammation, and carry out corresponding basic research to provide a more practical mechanism basis for the treatment of pelvic inflammatory diseases.

Acknowledgement

This work was supported by Fund Project: Scientific Research Project of Inner Mongolia Collaborative Innovation Center of Inner Mongolia Medicine (MYYXTPY202301); Young Talent Science and Technology Program of Inner Mongolia Education Department (NJYT22022); Health Commission of Inner Mongolia Autonomous Region (202201224), Innovation Team of Professor Zhu Zongyuan (20220922); Health Department of Inner Mongolia Autonomous Region (2020LH08017); Education Evaluation and Reform Research Project of Education Department of Inner Mongolia Autonomous Region.

References

- [1] Latthe P, Latthe M, Say L, Gülmezoglu M, Khan KS. WHO systematic review of prevalence of chronic pelvic pain: a neglected reproductive health morbidity. *BMC Public Health*. 2006;6:177. Published 2006 Jul 6. doi:10.1186/1471-2458-6-177.
- [2] Reiter RC. Evidence-based management of chronic pelvic pain. *Clin Obstet Gynecol*. 1998;41(2):422-435. doi:10.1097/00003081-199806000-00023.
- [3] Curry A, Williams T, Penny ML. Pelvic Inflammatory Disease: Diagnosis, Management, and Prevention. *Am Fam Physician*. 2019; 100(6):357-364.
- [4] Nilsson-Wikmar L, Holm K, Oijerstedt R, Harms-Ringdahl K. Effect of three different physical therapy treatments on pain and activity in pregnant women with pelvic girdle pain: a randomized clinical trial with 3, 6, and 12 months follow-up postpartum. *Spine (Phila Pa 1976)*. 2005; 30(8):850-856. doi:10.1097/01.brs.0000158870.68159.d9.
- [5] Ferreira CW, Albuquerque-Sendi N F. Effectiveness of physical therapy for pregnancy-related low back and/or pelvic pain after delivery: a systematic review. *Physiother Theory Pract*. 2013;29(6):419-431. doi:10.3109/09593985.2012.748114.
- [6] Liu Zhaohui, An Ruifang, Di Wen, et al. Code for diagnosis and treatment of pelvic inflammatory diseases (2019 revision) [J]. *Chinese Journal of Obstetrics and Gynecology*, 2019, 54 (7): 433-437.
- [7] Chong OT, Crichtley HO, Horne AW, Fallon M, Haraldsdottir E. Chronic pelvic pain in women: an embedded qualitative study to evaluate the perceived benefits of the meridian balance method electro-acupuncture treatment, health consultation and National Health Service standard care. *Br J Pain*. 2019;13(4):244-255. doi:10.1177/2049463718814870.
- [8] Casper RF. Progestin-only pills may be a better first-line treatment for endometriosis than combined estrogen-progestin contraceptive pills. *Fertil Steril*. 2017;107(3):533-536. doi:10.1016/j.fertnstert.2017.01.003.
- [9] Hung YC, Westfal ML, Chang DC, Kelleher CM. Lack of Data-driven Treatment Guidelines and Wide Variation in

- Management of Chronic Pelvic Pain in Adolescents and Young Adults. *J Pediatr Adolesc Gynecol*. 2020; 33(4):349-353.e1. doi:10.1016/j.jpap.2020.03.009.
- [10] Hunter CW, Yang A. Dorsal Root Ganglion Stimulation for Chronic Pelvic Pain: A Case Series and Technical Report on a Novel Lead Configuration. *Neuromodulation*. 2019; 22(1):87-95. doi:10.1111/ner.12801.
- [11] Lu Jialin, Chu Yizhong, Wang Peijuan. Professor Peijuan Wang experience in chronic pelvic pain with sequelae of pelvic inflammatory disease [J]. *Shaanxi Traditional Chinese Medicine*, 2022, 43 (04): 508-510 + 522.
- [12] Liu Weiping, Teng Xiuxiang. Clinical study on the combination of Angelica peony powder in the treatment of sequelae of pelvic inflammatory diseases [J]. *Chinese Journal of Clinicians*, 2020, 48 (01): 118-121.
- [13] Cui Li, Li Lanlan, Wu Haiyan, et al. Observation on the curative effect of the treatment combined with western medicine on the sequelae of pelvic inflammatory disease [J]. *Hebei Traditional Chinese Medicine*, 2022, 44 (03): 430-434 + 440.
- [14] Zhang Suo, Jia Ruilin, Chen Jing. Effect of coix seed on JNK / p38 signaling pathway in rat model of pelvic inflammatory disease [J]. *Chinese Journal of Traditional Chinese Medicine*, 2022, 37 (06): 3584-3589.
- [15] Yuan Jingxue, Liu Zhishun. Literature analysis of the characteristics of acupuncture treatment of chronic pelvic pain in pelvic inflammatory diseases [J]. *Chinese Journal of Traditional Chinese Medicine*, 2019, 34 (03): 1236-1240.
- [16] Ding Ning, Wang Xin, Xia Xiaojie. A randomized parallel controlled study of acupuncture for the treatment of chronic pelvic pain [J]. *Clinical Journal of Acupuncture*, 2019, 35 (11): 17-20.
- [17] Liu Yinghua, Wang Xin, Liang Zhuo, et al. Acupuncture combined with western medicine for chronic pelvic pain with sequelae of pelvic inflammatory disease: a multi-center randomized controlled study [J]. *Chinese acupuncture*, 2021, 41(01):31-35.DOI:10.13703/j.0255-2930.20191218-k0002.
- [18] Wang Biyun, Qin Qin. Efficacy of thunderfire moxibustion on treating the sequelae of pelvic inflammatory diseases and its effects on serum Caspase-3 and sFas [J]. *Journal of Tianjin University of Traditional Chinese Medicine*, 2021, 40 (05): 587-590.
- [19] Zhang Yanxue, Sun Junhua, Li Hongyan, et al. Effect of TCM-sparing enema combined with steaming heat therapy on Th 17 / Treg immune balance in patients with chronic pelvic inflammatory sequelae [J]. *Western Traditional Chinese Medicine*, 2021, 34 (10): 130-134.
- [20] Li Changhui, Cui Guanghao, Wang Yanping. Clinical study on the treatment of pelvic inflammatory disease sequelae with chronic pelvic pain (heat stasis) [J]. *The Chinese Medical Guide*, 2018, 16(30):177-178. DOI:10. 15912/j.cnki. gocm. 2018.30.143.