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Clinical Observation on the Treatment of Postpartum Abdominal Pain of Qi Stagnation and Blood Stasis with Muzu Formula Combined with Auricular Point Seed-Pressing

Yinghui Song, Naiping Wang, Weidi Liu, Hui Zhang*

Dongguan Hospital of Chinese Medicine, Dongguan, 523000, China
**Corresponding author: mofans318@163.com*

Keywords: Traditional Chinese medicine; Postpartum abdominal pain; Muzu Formula; Auricular point seed-pressing

Abstract: Objective: To investigate the clinical efficacy and safety of Muzu formula combined with auricular point seed-pressing in treating postpartum abdominal pain. Methods: 100 patients with postpartum abdominal pain admitted to our hospital from January 2021 to December 2022 were selected and divided into a control and observation group, with 50 patients in each group according to a random number table. The control group was treated with auricular point seed-pressing, and the observation group was treated with traditional Chinese medicine (TCM) foot baths combined with auricular point seed-pressing. The pain questionnaire (SF-MPQ) scores and clinical efficacy of the two groups were compared. Results: Compared with the control group, the SF-MPQ score of the observation group was significantly decreased after treatment ($P<0.05$, $P<0.01$), and the effective clinical rate was significantly increased ($P<0.05$). Compared with before treatment, SF-MPQ scores in both groups were significantly decreased after treatment ($P<0.01$). Conclusion: The treatment of postpartum abdominal pain caused by qi stagnation and blood stasis with Muzu formula combined with auricular point seed-pressing can significantly improve the patient's clinical symptoms, and the curative effect is satisfactory and worthy of further promotion and application in the clinic.

1. Introduction

Postpartum abdominal pain, commonly known as 'postpartum wind', is mainly manifested as a disease in which the main clinical manifestations of maternal body joints are sour, painful, numb, heavy, fear of wind and cold, and poor activity during the puerperium, which can be accompanied by life. This disease often occurs 1-2 days after delivery, mainly manifested as paroxysmal lower abdominal pain and no accompanying symptoms such as aversion to cold and fever. Clinical attention should be paid to identifying dyspepsia abdominal pain and inflammatory bowel disease abdominal pain [1]. Its basic aetiology and pathogenesis should be distinguished from deficiency and excess, which can be summarised as blood deficiency and blood stasis. Postpartum women often have the pathogenesis characteristics of 'more deficiency and more stasis' [2]. Pregnancy and

childbirth consume qi and blood, the postpartum blood chamber is empty, the meridians are not nourished, and the abdomen is painful. Postpartum lochia or lochia is incomplete, blood stasis block and abdominal acupuncture pain or pain refused to press.

There are few studies on treating postpartum abdominal pain in western medicine, and the drug treatment is mainly opioid analgesics and non-steroidal anti-inflammatory drugs [3]. The safety of some drugs in the two types of drugs has not been determined, so clinicians have concerns about drug selection [4]. Although studies have confirmed that some drugs can be safely applied to postpartum uterine contraction pain, pregnant women still worry about the potential impact of drugs on lactating infants and refuse to use drugs. TCM has rich experience in the treatment of postpartum abdominal pain. As early as in *Essentials from the Golden Cabinet*, many articles and prescriptions are recorded in treating postpartum abdominal pain. The syndromes they treat differ in clinical manifestations and syndrome differentiation, and deficiency, excess, cold and heat are available [5]. In the treatment of postpartum abdominal pain by TCM in addition to oral administration of Chinese patent medicine and TCM decoction, there are more and more studies on the external treatment of postpartum abdominal pain. The external treatment of TCM has the advantages of rapid onset, good curative effect, simplicity and affordability, and ease of patient acceptance. It is a distinctive therapy for postpartum abdominal pain in TCM. The TCM foot baths method combined with auricular point pressing can promote blood circulation and activate the body's immune function through acupoint stimulation and absorption of TCM liquid skin pores and meridian transmission. This study is a clinical observation experiment. The main content is to observe the effect of TCM foot baths combined with auricular point seed-pressing on postpartum abdominal pain and to evaluate its efficacy. Postpartum abdominal pain is one of the common diseases in women's puerperium and has always been one of the problems of women's distress. Because it seriously affects learning, work, and daily life [6], patients are eager to eliminate postpartum abdominal pain symptoms as soon as possible. Therefore, developing a safe and effective treatment plan can bring the gospel to patients and provide new clinical experiences for treating postpartum abdominal pain.

2. Data and Methods

2.1 General information

One hundred patients with postpartum abdominal pain differentiated as qi stagnation and blood stasis in our department from January 2021 to December 2022 were analysed retrospectively. They were divided into control and observation groups according to the random number table method, with 50 cases in each group. The two groups had no significant difference in age, gestational age, disease course, body mass index and other general data ($P > 0.05$). Table 1 for details.

Table 1: Comparison of general data of patients($\bar{x}$ ±SD)

Group	N	Primipara	Multipara	Age	Gestational weeks	Course	BMI
Control group	50	16	34	31.36±5.18	38.96±1.07	7.26±2.04	23.99±3.00
Observation group	50	20	30	31.16±4.74	39.29±1.07	8±2.26	24.41±3.33

Note: Compared with the control group, $^{*}P < 0.05$, $^{**}P < 0.01$.

2.2 Diagnostic criteria

The diagnostic criteria of postpartum abdominal pain were formulated regarding the *Gynaecology of Traditional Chinese Medicine* [7]. (1) Symptoms: More than one week after delivery, the abdominal pain did not disappear, or less than one week after delivery, but the

paroxysmal pain of the lower abdomen intensified, or there was abnormal lochia. (2) Signs: Abdominal examination showed incomplete uterine involution. (3) Different from abdominal pain caused by puerperal infection, infectious abdominal pain was accompanied by fever, lochia was sauce red, accompanied by a foul odour, and blood expected results showed increased white blood cells.

2.3 Dialectical criteria

The syndrome differentiation standard of qi stagnation and blood stasis syndrome is formulated with reference to the *Guidelines for the Diagnosis and Treatment of Common Diseases of Gynecology of Traditional Chinese Medicine* [8]. The symptoms are postpartum abdominal distension or tingling, and the pain is very painful after pressing. After bleeding, the abdominal pain is reduced, the amount of lochia is less, the colour is purple and dark, there is a blood clot, the lochia does not flow out, or the stagnation is not smooth; chest pain, breast pain, depression, irritability, frequent sighs, dark lips; tongue dark red or ecchymosis, thin moss white, pulse string astringent.

2.4 Inclusion and exclusion criteria

Inclusion criteria: (1) Meet the diagnostic criteria of postpartum abdominal pain, syndrome differentiation is qi stagnation and blood stasis syndrome, 20~45 years old; (2) Natural childbirth or cesarean section, no vaginal midwifery; (3) Informed and agreed with this study.

Exclusion criteria: (1) Abdominal pain caused by food injury, postpartum infection and postpartum dysentery; (2) Cardiovascular, cerebrovascular, liver and kidney and coagulation disorders and other serious primary diseases, mental patients; (3) Patients with severe pregnancy and childbirth complications; (4) Have a history of reproductive organ surgery; (5) The use of analgesics in recent days; (6) Can not cooperate with treatment and detection.

2.5 Treatment methods

2.5.1 Control group

For parturients, after natural childbirth and the second day of cesarean section, the patient can get up on his own, take a seat or supine position, explain the purpose of auricular point seed-pressing to the patient to obtain the patient's cooperation and instruct the parturient to keep the mood comfortable, pay attention to keep warm and avoid cold. Acupoints: internal genitalia, sympathetic, Shenmen, subcortical, kidney, the degree of compression to the patient's conscious acid swelling is appropriate, each point not less than 30 seconds, three times a day, seven days for a course of treatment.

2.5.2 Observation group

Based on the control group, a traditional Chinese medicine foot bath was given. The composition of the postpartum foot bath prescription was as follows: 15g of Tinospora sinensis, 15g of Notopterygium incisum, 10g of Saposhnikovia divaricata, 30g of Artemisia argyi, 3000ml of each decoction, poured into a wooden barrel. For parturients, after natural delivery and the second day of cesarean section, patients can get up on their own, take a seat, flood to the Sanyinjiao acupoint, expose their feet and calves, moderate water temperature (parturients can consciously adapt to temperature, generally at 40~50 ℃), 25~30 minutes each time, a red halo of feet, once a day, 7 days as a course of treatment. Pay attention to whether the patient has discomfort during treatment, and

stop if there is discomfort.

2.6 Nursing methods

During the treatment of auricular point seed-pressing combined with TCM foot baths, the patients were instructed to maintain a moderate diet, smooth emotions, avoid eating cold, greasy products, avoid spicy products, and relieve abdominal pain. Appropriate ambulation, walking, etc. Pregnant women are advised to pay attention to strengthening digestible nutrition food, keeping the mood comfortable, rooming in, breastfeeding on demand, and keeping the breast unobstructed to prevent milk bloating. Keep the vulva clean.

2.7 Criteria for efficacy

In the different theoretical systems of Chinese and Western medicine, the degree of pain is an important difference. So far, pain can not be quantified under any auxiliary examination, so the pain grading method can be introduced to clarify and quantify the degree of pain. (1) Clinical efficacy classification: Refer to the guiding principles of clinical research of new drugs [9]: Recovery: Abdominal pain symptoms completely disappeared, other symptoms without discomfort, recorded as 3 points. Markedly effective: Abdominal pain symptoms and corresponding signs improved significantly, recorded as 2 points. Improvement: Abdominal pain symptoms improved, other symptoms alleviated, recorded as 1 point. Ineffective: Abdominal pain and other symptoms did not change significantly, recorded as 0 points. (2) Degree of pain [6]: The McGill Pain Questionnaire (SF-MPQ) was used, including three aspects. ①Visual Analogue Scale (VAS) score: A 10cm vernier calliper was used, marked with 11 scales, with '0' and '10' ends, respectively. Let the patient mark the corresponding position on the ruler to represent the pain degree. ②Pain rating index (PRI): There were 15 indexes, including jumping pain, tingling pain, knife cutting pain, soreness, etc. According to no, light, medium and heavy correspondence were 0,1,2 and 3 points, and the total score ranged from 0 to 45 points. ③Present pain status (PPI): 1, 2, 3, 4 and 5 points were scored according to mild pain, discomfort, pain, terrible and extreme pain. The patients were evaluated one day before treatment and five days after treatment.

2.8 Statistical analysis

The data were analysed by SPSS 26.0 software, and the measurement data results were expressed $\bar{x}$ ±SD. If the data conforms to the normal distribution and the variance is homogeneous, one-way ANOVA is used; Duunett 's T3 method was used when the variance was not uniform, and the rank sum test was used for rank data, $P < 0.05$.

3. Results

3.1 Clinical efficacy score

After one course of treatment, in the control group, 2 cases were cured, 17 cases were markedly effective, 18 cases were improved, 13 cases were ineffective, and the total effective rate was 74.00 %. In the observation group, 6 cases were cured, 20 cases were markedly effective, 18 cases were improved, and 6 cases were ineffective. The total effective rate was 88.00 %. The postpartum abdominal pain was relieved or disappeared in 5-7 days , as shown in Figure 1. The curative effect of the observation group was significantly better than that of the control group ($P < 0.05$) (Table 2).

Table 2 Comparison of efficacy scores of patients in each group($\bar{x}$ ±SD)

Group	N	Recovery	Effectual	Improvement	Null and void	Total effective rates(%)	Score($\bar{x}$ ±SD)
Control group	50	2	17	18	13	74	1.52±0.86
Observation group	50	6	20	18	6	88	1.16±0.87*

Note: Compared with the control group, *P<0.05, **P< 0.01.

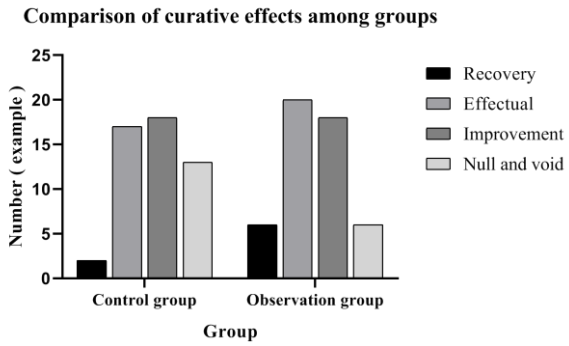

Figure 1 Comparison of curative effect among all groups

3.2 Comparison of SF-MPQ scores between the two groups before and after treatment

As shown in Table 3, there was no significant difference between the two groups before treatment (P>0.05). After one course of treatment, compared with the control group, the VAS score of the observation group was significantly different (P<0.05), and the PRI and PPI scores were significantly different (P<0.01). Compared with before treatment, the VAS, PRI, and PPI scores of the two groups were significantly different (P<0.01), as shown in Fig.2.

Table 3 Comparison of SF-MPQ scores between the two groups before and after treatment($\bar{x}$ ±SD)

Group	Time	N	VAS(points)	PRI(points)	PPI(points)
Control group	Before treatment	50	6.42±1.11	25.56±7.01	2.74±1.01
	After treatment	50	3.32±1.78##	17.48±5.36##	1.54±0.61##
Observation group	Before treatment	50	6.28±1.36	25.44±6.95	2.72±1.11
	After treatment	50	2.50±1.94*##	10.98±6.78**##	1.10±0.30**##

Note: Compared with the control group, *P<0.05, **P<0.01; Compared with the group before treatment, #P<0.05, ##P<0.01.

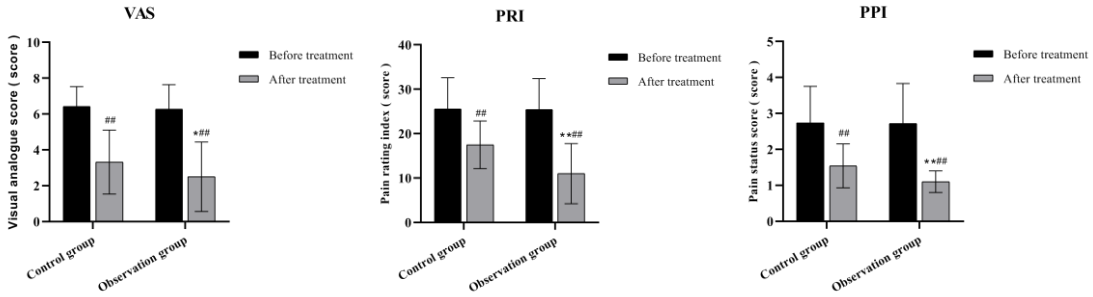

Figure 2 Comparison of SF-MPQ scores before and after treatment between the two groups

4. Discussions

Postpartum abdominal pain was first recorded in the three syndromes of *Essentials from the*

Golden Cabinet ·Treatment of Postpartum Diseases and Pulses, which was related to stagnation and blood stasis. The pathogenesis characteristics of 'more deficiency and more stasis' [7] formed by postpartum haemorrhage, damage of primordial qi and internal obstruction of blood stasis are the basis and internal cause of postpartum diseases. In the Sui Dynasty, *the theory of Various disease causes and symptoms in the women's postpartum abdominal pain* believed that the cause of postpartum abdominal pain was more than 'visceral deficiency', and blood stasis was not caused by wind coagulation, and there was a risk of becoming 'blood clots'. Physicians in the past dynasties have rich theories and experience discussing the aetiology and pathogenesis of postpartum abdominal pain and syndrome differentiation and treatment. However, for postpartum abdominal pain, there are deficiencies and stasis. Based on the principle of 'Pain is not through' and the treatment principle of the six hollow organs must keep its dredging function, the combination of traditional Chinese medicine foot baths and auricular point seed-pressing is based on through, in order to achieve the treatment goal of warming meridians and dredging collaterals and harmonising qi and blood.

Traditional Chinese medicine foot bath therapy is an important external treatment method of traditional Chinese medicine. It was first recorded in the earliest ancient medical book *Fifty-two Diseases Prescription*. *Suwen ·On the Correspondence of Yin and Yang* believes: 'Cold-syndrome treated with warm-natured drugs, expelling heat with cold herbs...massage and bath.' *Huangdi's Internal Classic* thinks: 'Yin vein gathers under the foot, and gathers in the foot heart, which is the meridian line; the three meridians are all from the foot.' This study showed that the total effective rate of traditional Chinese medicine foot baths combined with auricular point seed-pressing in the treatment of postpartum abdominal pain was significantly higher than that of simple auricular point seed-pressing, and the SF-MPQ score of the observation group after treatment was significantly lower than that of the control group. The scores of the two groups after treatment were significantly lower than those before treatment, indicating that traditional Chinese medicine foot baths and auricular point seed-pressing can treat postpartum abdominal pain and reduce the degree of pain in patients. The combination of the two is far more effective than the simple application of auricular point seed-pressing. It can be seen that Chinese medicine foot baths plays an important role in the treatment of postpartum abdominal pain. Its essence is a comprehensive treatment method of medicine and meridians. The Chinese medicine liquid is absorbed through the skin pores and transmitted through the meridians, which can make the body's qi and blood run smoothly. After the blood vessels are unobstructed, the medicinal properties go with the heat, absorb the heat, circulate the veins, and go straight to where the disease occurs. The foot is the body's foundation, and the three yin and three yang of the foot are gathered. The acupoints are rich, and the Zusanli is lower confluent point of the stomach [10], which have the functions of regulating qi and blood, strengthening the body resistance and strengthening the body resistance, expelling pathogens and preventing diseases; Sanyinjiao is the intersection point of the three meridians of liver, spleen and kidney [11], which has the effect of benefiting the qi of the three yin. Yongquan has the function of tonifying the kidney and replenishing qi. Taichong is the original point of the liver meridian of foot Jueyin, which nourishes blood and blood, regulates qi and removes blood stasis. The therapy first uses the warm stimulation of the drug to strengthen the local qi and blood circulation and uses the penetration of the drug through the skin to make its active ingredients enter the human circulation, and then through the conduction and coordination of the points and meridians, to achieve the superposition effect of transdermal drug absorption and acupoint stimulation [12]. In addition, the compatibility of undergraduate experience foot baths prescription has also undergone many years of clinical trials, and the drug efficacy is remarkable. Tinosporae sinensis (Lour.) Merr.is derived from the dry vines of T.sinensis (Lour.) Merr., a vine plant of the genus Tinosporae. It is slightly bitter in taste, cold in nature, and belongs to the liver meridian. Modern pharmacological studies have shown

that T.sinensis has anti-inflammatory, analgesic, antioxidant, hepatoprotective, immune regulation and other effects [13-15]. Notopterygium is acrid and bitter in taste, warm in nature, and belongs to the bladder and kidney meridians. It relieves the exterior and disperses cold, dispels wind and dampness, and relieves pain. Moreover, it is good at doing good deeds, directly insidious pathogens, eliminating blood stasis, and promoting qi and blood circulation to achieve the effect of qi blood circulation. *Compendium of Materia Medica*: 'Notopterygium incisum functional strips reach the limbs, dredge the blood vessels, attack the evil qi, and disperse wind, cold and wind dampness.' Notopterygium Pungent warming and dissipating cold, evacuation of striae rheumatism and published, dredge blood vessels, especially good to remove the upper body of the cold wind dampness evil [16]. Saposhnikoviae Radix was first recorded in *Shennong Herbal Classic*: 'It is sweet and warm, non-toxic. The main wind, dizzy pain, wind, blind see nothing, popular all over the body, bone pain.' Saposhnikoviae Radix qi thin, spicy and sweet taste, warm, belonging to the bladder, spleen, and liver meridian, with dispelling wind and relieving exterior, dampness and pain, antispasmodic effect. Pharmacological studies have shown that Saposhnikoviae Radix has enhanced immune system function and anti-inflammatory effects [17-20]. Artemisia argyi is bitter, spicy and warm. It belongs to the liver, spleen and kidney meridians, *Compendium of Materia Medica* has been recorded: 'Artemisia argyi smell bitter, slightly warm, non-toxic, cure all diseases, antiemetic blood, women's blood leakage, smooth yin qi, removal wind cold. Make people have children.' Artemisia argyi has the function of warming the meridians and dispersing cold, removing blood stasis and hemostasis. It has been recorded as 'hemostatic medicine' in ancient medical books and is a commonly used in gynaecology. The combination of the four drugs plays a role in relaxing tendons and activating collaterals, dispelling wind and relieving pain, warming meridians and dispelling cold, and removing blood stasis and hemostasis. It directly acts on the important points of lower limbs, improves the operation of qi and blood of meridians and collaterals after delivery, and makes abdominal pain recover early.

Under the guidance of the basic theory of traditional Chinese medicine, a variety of traditional Chinese medicine external treatments for postpartum abdominal pain have been formed clinically, and the curative effect is definite, which provides new treatment methods and ideas for some patients who are inconvenient to use oral drugs. The external treatment directly acts on the local area, which can make the drug directly reach the disease site or regulate the endocrine as a whole by dredging the meridians and stimulating the acupoints of the human body. It is avoided the toxic and side effects of oral administration, has high safety and noticeable curative effects, and is simple and affordable, which is also the clinical advantage of the external treatment of traditional Chinese medicine. However, there are still some problems: The research is mainly based on clinical efficacy observation, the basic theoretical research and discussion are relatively few, and the prospective experimental research and mechanism of action are less. Although there are a few reports on the mechanism of postpartum abdominal pain treated by external traditional Chinese medicine treatment, most have no definite research basis. They cannot further clarify the pathogenesis of this disease in detail, which points out the direction for further in-depth study of this disease in the future.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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