

# Clinical Study on the Treatment of Cold-Dampness Stagnation Type of Dysmenorrhea with Shaofu Zhuyu Decoction Combined with Thunder-Fire Moxibustion

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**Abstract:** *Objective:* To investigate the therapeutic effect of Shaofu Zhuyu Decoction combined with Thunder-Fire Moxibustion on patients with cold-dampness stagnation type of dysmenorrhea. *Methods:* A total of 40 patients with cold-dampness stagnation type of dysmenorrhea who visited the hospital from January 2023 to December 2024 were selected as samples and randomly divided into two groups using the lottery method. The observation group received Shaofu Zhuyu Decoction combined with Thunder-Fire Moxibustion, while the control group received Shaofu Zhuyu Decoction only. The efficacy, pain score, menstrual volume, menstrual duration, symptom score, and adverse reactions were compared between the two groups. *Results:* The efficacy of dysmenorrhea treatment in the observation group was higher than that in the control group ( $P < 0.05$ ). After treatment, the Visual Analog Scale (VAS) score in the observation group was lower than that in the control group, the menstrual volume was lower, and the menstrual duration was shorter ( $P < 0.05$ ). The scores for menstrual flow obstruction, menstrual volume reduction, abdominal distension and pain, and menstrual blood clots with purple and dark color were lower in the observation group compared to the control group ( $P < 0.05$ ). There was no significant difference in the adverse reaction rate between the observation group and the control group ( $P > 0.05$ ). *Conclusion:* The combination of Shaofu Zhuyu Decoction and Thunder-Fire Moxibustion is effective in reducing pain and improving related symptoms of cold-dampness stagnation type of dysmenorrhea, and it is safe and efficient.

**Keywords:** Dysmenorrhea; Cold-dampness stagnation type; Thunder-Fire Moxibustion; Shaofu Zhuyu Decoction; Efficacy

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## 1. Introduction

Dysmenorrhea patients often suffer from lumbosacral pain and abdominal pain, which can significantly affect

women's physical and mental health. Some women experience severe dysmenorrhea that requires active treatment to avoid disrupting their daily work and life. Based on etiology analysis, primary dysmenorrhea is associated with the release of prostaglandins stimulated by menstruation, while secondary dysmenorrhea is related to organic diseases such as endometriosis and adenomyosis. Although symptomatic intervention with Western medication can alleviate pain, it cannot achieve a complete cure. Traditional Chinese medicine scholars classify dysmenorrhea as "abdominal pain during menstruation" and believe that it is mostly caused by cold-dampness stagnation. Typical symptoms include internal cold, cold intolerance, and abdominal cold pain. Treatment principles include pain relief, Qi regulation, and blood nourishment, with Shaofu Zhuyu Decoction being a commonly used prescription <sup>[1]</sup>. However, single herbal therapy has a slow onset time, prolonged duration of symptoms, and limited pain relief in the initial stages of medication. Therefore, combination therapy with Thunder-Fire Moxibustion is necessary to achieve pain relief, cold dispersal, meridian activation, and menstrual regulation. This article explores the efficacy of Shaofu Zhuyu Decoction combined with Thunder-Fire Moxibustion in the treatment of 40 patients with cold-dampness stagnation type of dysmenorrhea.

## 2. Materials and methods

### 2.1. Materials

Forty patients with cold-dampness stagnation type dysmenorrhea who visited the clinic from January 2023 to December 2024 were selected as samples and grouped by drawing lottery. The observation group consisted of patients aged 17–36 ( $25.11 \pm 2.43$ ) years old, with a disease duration of 6 months to 10 ( $3.52 \pm 1.06$ ) years, and a menstrual cycle of 22–34 ( $26.81 \pm 2.43$ ) days. The control group consisted of patients aged 17–37 ( $25.09 \pm 2.41$ ) years old, with a disease duration of 6 months to 9 ( $3.48 \pm 1.02$ ) years, and a menstrual cycle of 21–34 ( $26.78 \pm 2.41$ ) days. The baseline data of the observation group were compared with those of the control group, with  $P > 0.05$ .

### 2.2. Inclusion and exclusion criteria

- (1) Inclusion criteria: (1) Meet the criteria for menstrual pain in "Obstetrics and Gynecology" <sup>[2]</sup>; (2) Conform to the dampness-cold stagnation type in "Clinical Research on Gynecology of Traditional Chinese Medicine" <sup>[3]</sup>; (3) Provide informed consent; (4) Experience lower abdominal pain with regular menstrual cycles.
- (2) Exclusion criteria: (1) Have allergic constitution; (2) Have audio-visual impairments; (3) Have gynecological cancer; (4) Are lost to follow-up.

### 2.3. Treatment methods

- (1) Control group: Shaofu Zhuyu Decoction Treatment: 6 g each of red peony root, Sichuan lovage rhizome, myrrh, fennel, dried ginger, and Wulingzhi; 3 g each of *cinnamon cassia* bark and *corydalis rhizome*; 9 g each of typhae pollen and Chinese angelica. The medicines are made into granules and taken orally with 150 mL of boiling water 7 days before menstruation, 1 dose per day, taken warm in the morning and evening. The medication is suspended during menstruation. Each menstrual cycle counts as one course of treatment, and medication is administered for 3 courses.
- (2) Observation group: Combined with Thunder-Fire Moxibustion Treatment: Using a 2.5 cm × 10.0 cm moxibustion stick, apply moxibustion to points such as Diji, bilateral Zigong, Zhongji, Guanyuan,

and Shuidao. Then, ignite one end of the Thunder-Fire Moxibustion stick and place it in a special moxibustion tool, maintaining a distance of 3–5 cm between the moxa stick and the skin. Thunder-Fire Moxibustion is performed once a day, 7 days before menstruation, with each session lasting 20 minutes. Thunder-fire moxibustion is suspended during menstruation. Treatment is given for 3 menstrual cycles.

## 2.4. Observation indicators

- (1) Efficacy: Complete disappearance of menstrual pain symptoms with a symptom score reduction of  $\geq 70\%$  is considered markedly effective; relief of menstrual pain symptoms with a symptom score reduction of  $\geq 30\%$  is considered effective; failure to meet the above criteria is considered ineffective.
- (2) Menstrual indicators: VAS score is positively correlated with the degree of menstrual pain, ranging from 0–10; menstrual volume, menstrual duration, and menstrual cycle indicators are recorded.
- (3) Symptom score: The degree of menstrual discomfort, menstrual scarcity, lower abdominal pain, and menstrual blood clots with purple-dark color are evaluated based on the principles of none, mild, moderate, and severe, with scores ranging from 0–3. The score is positively correlated with the severity of the condition.
- (4) Adverse reactions: Skin allergies, gastrointestinal reactions, menstrual abnormalities, and other situations are recorded.

## 2.5. Statistical analysis

SPSS 23.0 is used to process the data. Count data is described using percentages (%) and analyzed using the chi-square test ( $\chi^2$  test). Measurement data is described using mean  $\pm$  standard deviation (SD) and analyzed using the *t*-test. Statistical significance is indicated by  $P < 0.05$ .

## 3. Results

### 3.1. Efficacy

The efficacy of menstrual pain treatment in the observation group is higher than that in the control group, with  $P < 0.05$ . See **Table 1**.

**Table 1.** Comparison of efficacy in patients with menstrual pain (*n*, %)

Group	Effective markedly	Effective somewhat	Ineffective	Effective rate
Observation group ( <i>n</i> = 20)	11 (55.00)	8 (40.00)	1 (5.00)	19 (95.00)
Control group ( <i>n</i> = 20)	4 (20.00)	10 (50.00)	6 (30.00)	14 (70.00)
$\chi^2$	-	-	-	4.3290
<i>P</i>	-	-	-	0.0375

### 3.2. Menstrual indicators

After treatment, the VAS score, menstrual volume, and duration of menstruation in the observation group were lower than those in the control group, with  $P < 0.05$ . See **Table 2**.

**Table 2.** Comparison of menstrual indicators in patients with dysmenorrhea (mean ± SD)

Group	VAS score before treatment (points)	VAS score after treatment (points)	Menstrual volume (mL)	Menstrual duration (days)	Menstrual cycle (days)
Observation group ( <i>n</i> = 20)	4.71 ± 1.25	2.39 ± 0.33	51.22 ± 2.29	4.31 ± 0.48	28.68 ± 1.84
Control group ( <i>n</i> = 20)	4.73 ± 1.28	3.71 ± 0.42	66.26 ± 3.14	5.92 ± 0.69	28.11 ± 1.62
<i>t</i>	0.0500	11.0519	17.3070	8.5661	1.0398
<i>P</i>	0.9604	0.0000	0.0000	0.0000	0.3050

### 3.3. Symptom scores

After treatment, the scores for menstrual discomfort, low menstrual volume, abdominal pain, and dark menstrual blood with clots in the observation group were lower than those in the control group, with  $P < 0.05$ . See **Table 3**.

**Table 3.** Analysis of symptom scores in patients with dysmenorrhea (mean ± SD)

Group	Menstrual flow obstruction (score)		Scanty menstruation (score)		Abdominal distension and pain (score)		Dark purple menstrual blood with clots (score)	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group ( <i>n</i> = 20)	2.41 ± 0.25	0.69 ± 0.14	2.36 ± 0.33	0.67 ± 0.18	2.42 ± 0.26	0.68 ± 0.14	2.45 ± 0.29	0.69 ± 0.15
Control group ( <i>n</i> = 20)	2.43 ± 0.27	1.35 ± 0.19	2.38 ± 0.35	1.39 ± 0.21	2.44 ± 0.28	1.42 ± 0.23	2.46 ± 0.31	1.44 ± 0.26
<i>t</i>	0.2431	12.5064	0.1859	11.6417	0.2341	12.2907	0.1054	11.1741
<i>P</i>	0.8093	0.0000	0.8535	0.0000	0.8162	0.0000	0.9167	0.0000

### 3.4. Adverse reactions

There was no difference in the rate of adverse reactions between the observation group and the control group, with  $P > 0.05$ . See **Table 4**.

**Table 4.** Analysis of adverse reactions (Score, mean ± SD)

Group	Skin allergy	Gastrointestinal reaction	Abnormal menstruation	Incidence rate
Observation group ( <i>n</i> = 20)	0 (0.00)	1 (5.00)	0 (0.00)	0 (0.00)
Control group ( <i>n</i> = 20)	1 (5.00)	1 (5.00)	1 (5.00)	3 (15.00)
$\chi^2$	-	-	-	3.2432
<i>P</i>	-	-	-	0.0717

## 4. Discussion

Dysmenorrhea is a highly prevalent disease among women, with individual differences in pain severity. Clinically, contraceptives, anti-inflammatory drugs, and analgesics are often used to treat dysmenorrhea. Although they can quickly relieve pain, they cannot cure the condition, and long-term use may cause gastrointestinal adverse reactions. Traditional Chinese medicine believes that female dysmenorrhea is related to various factors such as daily life habits, emotions, and congenital deficiencies. The disease is located in the

uterus and Chong and Ren meridians, and the common syndrome type is cold-dampness stagnation. Treatment should follow the principles of pain relief, removing blood stasis, and promoting blood circulation. Shaofu Zhuyu Decoction originates from “Corrections in Medical Classics.” It can warm the meridians, relieve pain, and promote blood circulation. In the prescription, *Radix paeoniae rubra* can relieve pain, remove blood stasis, cool the blood, and clear heat; *Rhizoma chuanxiong* can relieve pain, promote Qi circulation, remove blood stasis, and promote blood circulation; Myrrha can relieve pain and disperse blood stasis; *Fructus foeniculi* can warm and disperse cold, warm the middle jiao, promote pulse circulation, restore Yang, and also warm and tonify the liver and kidney; *Rhizoma zingiberis* can warm and disperse cold, and warm the middle jiao; *Trogopterus dung* can relieve pain and remove blood stasis; *Cortex cinnamomi* can promote menstruation, activate blood circulation, relieve pain, and warm and disperse cold; *Rhizoma corydalis* can relieve pain and promote qi circulation; *Pollen typhae* can remove blood stasis and stop bleeding; *Radix angelicae sinensis* can regulate menstruation and promote blood circulation. These herbs work together to remove blood stasis, promote blood circulation, eliminate dampness, and warm and disperse cold. Thunder-Fire Moxibustion treatment follows the principles of meridian theory in traditional Chinese medicine to select acupoints. The heat generated during the burning of moxa sticks promotes the penetration of medicinal factors into the acupoints, which can regulate Qi, relieve pain, remove blood stasis, and promote blood circulation. It is suitable for the treatment of deficiency and cold syndromes [4]. Additionally, the infrared rays generated during thunder-fire moxibustion create a high-concentration medicinal area at specific acupoints, which can penetrate deep into the acupoints under the influence of heat, regulating body functions.

Based on the data analysis in this article, the efficacy of dysmenorrhea treatment in the observation group was higher than that in the control group, with  $P < 0.05$ . The reason for this is that most patients with dysmenorrhea have the cold-dampness stagnation type, which is related to the obstruction of Qi and blood circulation caused by cold pathogens entering the body. The selection of Shaofu Zhuyu Decoction can harmonize the Qi and blood of the uterus and Chong and Ren meridians, achieving the effects of pain relief, removing blood stasis, warming and dispersing cold, and warming the meridians, thereby improving patients’ physical signs and relieving pain. Thunder-Fire Moxibustion is an external treatment method that places burning moxa sticks at specific acupoints to stimulate the acupoints with warming effects, enhancing the efficacy of traditional Chinese medicine decoctions in removing blood stasis, promoting blood circulation, relieving pain, and promoting Qi circulation [5]. Another set of data shows that after treatment, the VAS score, menstrual volume, and duration of menstruation in the observation group were lower than those in the control group, with  $P < 0.05$ . Based on modern pharmacological analysis, tetrahydropalmatine in *Rhizoma corydalis* from Shaofu Zhuyu Decoction can effectively relieve pain; total flavonoids of *Pollen typhae* can dredge Qi and blood and promote blood circulation in the affected area [6]. Combined with thunder-fire moxibustion, the thermal stimulation on the local skin can improve uterine artery blood flow and promote pelvic blood circulation, thereby improving menstrual indicators and relieving pain [7]. Another set of data indicates that the symptom scores in the observation group were lower than those in the control group, with  $P < 0.05$ . The reason for this is that although Shaofu Zhuyu Decoction monotherapy can remove blood stasis, promote blood circulation, and relieve symptoms, its onset is slow. Combining it with Thunder-Fire Moxibustion stimulates the penetration of medicinal factors into the acupoints, rapidly reducing pain and improving physical signs [8]. The final set of data shows no difference in the rate of adverse reactions between the observation group and the control group, with  $P > 0.05$ . This is because traditional Chinese medicine is administered based on syndrome differentiation, with

scientific adjustment of dosages to ensure high safety. Additionally, thunder-fire moxibustion is performed by professional physicians with standardized operations, avoiding damage to patients' skin and ensuring treatment safety.

## 5. Conclusion

In summary, the combination of Shaofu Zhuyu Decoction and thunder-fire moxibustion for the treatment of dysmenorrhea can reduce related symptoms, enhance the efficacy of dysmenorrhea management, and reduce adverse reactions related to dysmenorrhea. This treatment approach can be widely promoted.

## Disclosure statement

The author declares no conflict of interest.

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