

The Efficacy of the Zi Wu Liu Zhu Method Combined with Constant Temperature Moxibustion in Treating Diarrhea-type Irritable Bowel Syndrome

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Abstract: To investigate the clinical efficacy of the Zi Wu Liu Zhu point-opening method combined with constant temperature moxibustion for patients with diarrhea-type irritable bowel syndrome (IBS-D). Methods: Sixty patients who met the Rome IV diagnostic criteria for IBS-D were randomly divided into two groups in a single-blind manner: a treatment group of 30 cases treated with Zi Wu Liu Zhu point-opening plus constant temperature moxibustion; and a drug group of 30 cases treated with Bacillus licheniformis plus Pinaverium Bromide, with both treatments lasting for 4 weeks. The severity of abdominal pain, stool characteristics, bowel movement frequency, and other clinical symptoms were observed and scored before and after treatment in both groups, followed by an efficacy analysis. Results: After treatment, the clinical symptom scores for both the Zi Wu Liu Zhu point-opening combined with constant temperature moxibustion group and the drug group were significantly lower than before treatment ($P=0.000$). The total effective rate in the treatment group was 87.67%, and the drug group was 76.67%, with no significant difference in therapeutic effect between the two groups. Conclusion: The treatment group can effectively improve the clinical symptoms of IBS-D patients, and its therapeutic effect is comparable to that of drug preparations.

Keywords: Diarrhea-type Irritable Bowel Syndrome (IBS-D); Zi Wu Liu Zhu Point-Opening Method; Constant Temperature Moxibustion.

1. Introduction

Irritable Bowel Syndrome (IBS) is a disorder characterized by persistent or intermittent symptoms such as abdominal pain, bloating, and changes in bowel habits (diarrhea and/or constipation), with no identifiable structural or biochemical abnormalities in the gastrointestinal tract. Diarrhea-type IBS (IBS-D) is the most common functional gastrointestinal disorder, affecting 7-18% of the global population [1], with a female incidence rate twice that of males [2], and an incidence rate in Asian countries ranging from 6.5% to 10.1% [3]. IBS severely impacts the quality of life of patients, particularly those with IBS-D, and imposes a significant economic burden on society and individuals. The etiology and pathogenesis of IBS are complex, with current treatments mainly based on the theory of brain-gut axis abnormalities [4]. The Zi Wu Liu Zhu acupuncture method originated from "Huangdi Neijing," and its simple and effective point selection has significant therapeutic effects when combined with constant temperature moxibustion therapy. Therefore, the treatment includes the selection of the Tian Shu point, the back-shu point Da Chang Shu of the large intestine, and the lower He point Shang Ju Xu to regulate the intestines and stop diarrhea. From July 2021 to June 2023, we used the Zi Wu Liu Zhu point-opening method combined with constant temperature moxibustion to treat IBS-D patients and compared it with Western medicine (Bacillus licheniformis + Pinaverium Bromide), achieving satisfactory result.

2. Materials and Methods

2.1. General Information

From July 2021 to June 2023, cases were selected from the outpatient department of our hospital's gastroenterology department according to the Rome IV criteria [5]. A total of 60 patients were included and divided into two groups (treatment group and drug group) using the random number table method, with 30 cases in each group. None of the included patients experienced adverse reactions, and there were no dropouts or excluded cases. This study complies with the ethical standards set by the Clinical Ethics Committee of Jiaxing No. 2 Hospital and has obtained the informed consent of the patients.

2.2. Inclusion Criteria and Exclusion Criteria

Inclusion Criteria:(1) Meet the Rome IV diagnostic criteria for diarrhea-type IBS and are in the symptomatic phase at the time of enrollment;(2) Age between 18-60 years old;(3) No evidence of organic diseases and biochemical abnormalities, such as thyroid function, erythrocyte sedimentation rate, tumor markers, routine stool tests, abdominal ultrasound, endoscopy, and other related examinations with no abnormal findings;(4) Good communication with doctors and signed informed consent.

Exclusion Criteria:(1) Those who do not meet the inclusion criteria;(2) Pregnant or lactating women;(3) Those with abdominal pain and diarrhea due to organic diseases;(4) Those who have undergone abdominal surgery;(5) Patients with severe mental diseases and complications of heart, brain, liver, kidney, and other systemic diseases;(6) Those who do not agree to participate in the survey;(7) Those with eczema,

inflammation, ulcers, or large scar tissues in the abdomen.

Termination Conditions:(1) Subjects who cannot adhere to the treatment;(2) Research subjects who fail to implement the treatment plan;(3) Serious adverse events occur;(4) Disease worsens during the treatment process.

2.3. Methods

2.3.1. Treatment

Zi Wu Liu Zhu acupuncture combined with constant temperature moxibustion treatment, with a treatment course of 4 weeks. Referring to Mr. Zheng Kuishan's "Clinical Application of Zi Wu Liu Zhu and Ling Gui Ba Fa," the initial diagnosis of patients can be based on the time of the visit to calculate the opening points. For follow-up patients, according to the concept of the correspondence between heaven and man, the points of the large intestine meridian, liver meridian, and spleen meridian during the Mao, Chou, and Si times are selected, which can adjust the disordered meridian qi. The time is based on Beijing time. At the same time, the points are selected according to syndrome differentiation: the Shu point of the liver meridian of the foot Jueyin (Taichong), the stomach meridian of the foot Yangming (Zusanli, Tianshu), the spleen meridian of the foot Taiyin (Yinlingquan), and the bladder meridian of the foot Taiyang (Dachangshu point). 28 days is one treatment course. Sterile filiform needles produced by Suzhou Medical Supplies Factory, with a diameter of 0.35 mm×40mm, are used. After routine disinfection, acupuncture is performed, with the acupuncture technique mainly being lifting and thrusting, meeting and following the supplement and drainage, after the needle is obtained, the needle is operated for 3 minutes and then left in place, after 20 minutes of needle retention, combined with constant temperature moxibustion for 30 minutes. The points for constant temperature moxibustion: the main points are the Shu, Mu, and lower He points of the large intestine. The points for constant temperature moxibustion are Shenque, Tianshu, Dachangshu, Shangjuxu, and Sanyinjiao. The treatment is twice a week, and 28 days is one treatment course.

Control Group: 30 cases, taking Bacillus licheniformis (Northeast Pharmaceutical Group Co., Ltd., batch number: 2021.11.06) orally, 0.5g each time, three times a day; Pinaverium Bromide (French Mylan laboratories SAS Pharmaceutical Co., Ltd., batch number: 715254), 50mg each time, orally, three times a day, 28 days as one treatment course. Stop using other drugs 2 weeks before taking the medicine, and observe the efficacy after the treatment is completed.

2.3.2. Observation Index:

Clinical Symptom Score: The clinical symptoms of the two groups of patients were scored before and after treatment:(1) The degree of abdominal pain: scored using the visual analogue scale (VAS) scoring method. The VAS is 10cm long, from one end "no pain" to the other end "unbearable pain," corresponding to a score of 0-10. (2) Stool characteristics: scored using the Bristol score [6], types 1-7 correspond to 1-7 points respectively;(3) Defecation frequency: divided into 6 levels: >3 times/d, 3 times/d, 2 times/d, 1 time/d, 3 times/week, and ≤2 times/week.

Efficacy Judgment Criteria: The efficacy judgment criteria for each symptom: referring to the "Guiding Principles for Clinical Research of New Chinese Medicines" (trial) [7], the quantitative grading standard of traditional Chinese medicine syndrome is formulated: the different degrees of symptoms such as abdominal pain, diarrhea, stool

characteristics, etc., that is, normal or none, mild, moderate, and severe, are divided into grades 0, 1, 2, and 3, and scored as 0, 1, 2, and 3 points respectively. At the end of the treatment course, observe the improvement of the patient's symptoms, and judge the effect based on the difference in the grade of each observed item's symptoms before and after treatment.

Effective: Symptoms disappear, or the difference in symptom grade before and after treatment equals 2;

Effective: The difference in symptom grade before and after treatment equals 1;

Ineffective: The difference in symptom grade before and after treatment equals 0.

Overall Efficacy Assessment Criteria: Comprehensive efficacy index (%) = (Pre-treatment score - Post-treatment score) / Pre-treatment score × 100%.

Significantly Effective: After medication, symptoms and signs are significantly improved, and the score value is reduced by ≥ 70%;

Effective: After medication, symptoms and signs are improved, and the score value is reduced by ≥ 30%;

Ineffective: After medication, symptoms and signs are not significantly improved, or the score value is reduced by < 30%.

Statistical Processing:

SPSS 29.0 statistical software was used for statistical analysis. T-tests were performed on normally distributed measurement data, and non-normally distributed variables and count data were subjected to Wilcoxon tests or chi-square tests. A difference was considered statistically significant at P<0.05.

3. Results

3.1. Basic Information

There were no statistically significant differences in age and gender among the groups (P >0.05), making them comparable. Results are shown in Table 1.

Clinical Symptom Scores: Before treatment, there was no statistically significant difference in Bristol scores, bowel movement frequency scores, and VAS scores between the treatment group and the drug group (P >0.05). After treatment, both the treatment group and the drug group showed a decrease in Bristol scores, bowel movement frequency scores, and VAS scores compared to before treatment, which was statistically significant (P = 0.000). After treatment, there was no statistically significant difference in Bristol scores, bowel movement frequency scores, and VAS scores between the treatment group and the drug group (P >0.05). Results are shown in Table 2. The total effective rate in the treatment group was 87.67%, and in the drug group was 76.67%. The difference was not statistically significant as determined by the Wilcoxon rank-sum test, P >0.05.

4. Discussion

Irritable Bowel Syndrome (IBS) has a complex pathogenesis, and psychosocial factors are considered one of the causes of IBS, with a higher incidence rate in patients with psychiatric disorders [8]. The etiology and pathogenesis of IBS are complex, mainly based on the theory of the brain-gut axis abnormalities, which is also a hot topic in recent research [4]. The activity of the brain-gut axis requires the involvement of brain-gut peptides, which are widely distributed in both the gastrointestinal tract and the nervous system, extensively regulating gastrointestinal activity through peripheral and

central nerves. Studies have confirmed that abnormal secretion of brain-gut peptides is closely related to the development of IBS, which can lead to increased visceral sensitivity and disordered intestinal motility, resulting in clinical manifestations such as diarrhea, bloating, and abdominal pain [6]. Brain-gut peptides involved in the regulation of intestinal function mainly include serotonin (5-hydroxytryptamine, 5-HT), calcitonin gene-related peptide (CGRP), substance P (SP), nitric oxide (NO), vasoactive

intestinal peptide (VIP), and dysfunction of 5-HT plays an important role in IBS [9]. Li Zhaoshen et al. found that the content of VIP, CGRP, and SP in the colonic mucosa of IBS patients was significantly higher than that in the normal control group [10], suggesting their involvement in the pathophysiological process of IBS. Studies have also found abnormalities in serum and colonic mucosa NO in IBS patients [11, 12].



Figure 1. Clinical Symptom Scores of Patients in Treatment Group and Drug Group Before and After Treatment

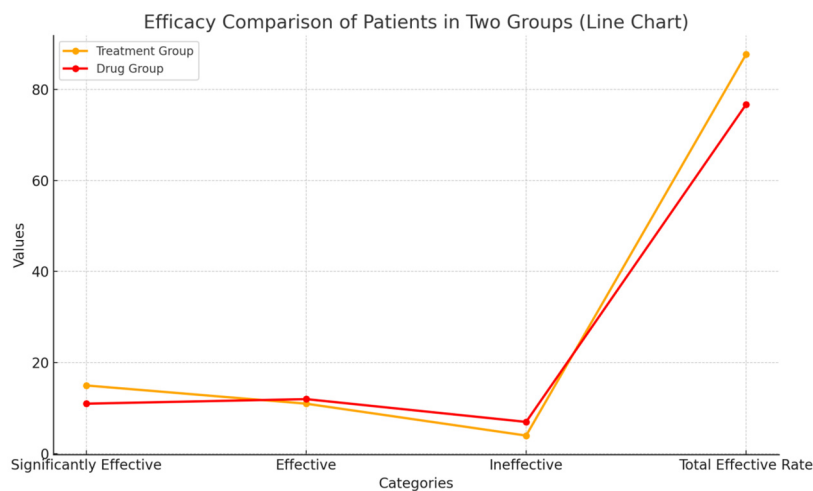


Figure 2. Overall Efficacy Comparison of Patients in Two Groups

IBS falls under the categories of "diarrhea," "constipation," "abdominal pain," and "intestinal depression" in traditional Chinese medicine. Zhang Zhenzhong believes that liver depression and spleen deficiency, as well as qi stagnation and dampness obstruction, are the main pathogenic mechanisms of IBS. The disease has a long course and is prone to relapse, which can easily lead to spleen deficiency and dampness; the onset is also related to emotions, with the liver being responsible for the discharge and smooth flow of qi. Therefore, IBS is mostly a syndrome of liver depression and spleen deficiency. The occurrence of IBS is related to the disorder of the brain-gut axis. Warm moxibustion on the abdominal points has the effect of relieving spasms and treating diarrhea. The qi and blood in the human body flow like water in nature, circulating in the twelve meridians from child to noon, and from noon to child. With different times, the meridian qi and blood can show periodic changes. As stated in "Great Compendium of Acupuncture and Moxibustion": "The Zi Wu Liu Zhu method refers to the matching of rigid and soft, the combination of yin and yang, the circulation of qi and blood, and the opening and closing of points at specific times." Gao Wu's "Essential Collection of Acupuncture and Moxibustion" states, "It allows people to know which disease should be treated with acupuncture and moxibustion on which meridian and point, and which day and time to use, so that the point can be needled when it is open." Moxibustion has the effects of warming yang, promoting circulation to remove blood stasis, and soothing the meridians and collaterals. The disease is located in the intestines, so the treatment includes the selection of the Tian Shu point, the back-shu point Da Chang Shu of the large intestine, and the lower He point Shang Ju Xu to regulate the intestines and stop diarrhea. "Secret Essentials from the Tai Hospital" states: "Shang Ju Xu is located three inches below San Li, and moxibustion with three sticks is the main treatment for diarrhea and pain in the large intestine." The Shen Que point is located in the middle abdomen, internally connected to the intestines and stomach, and is suitable for both acute and chronic diarrhea; San Yin Jiao strengthens the spleen to eliminate dampness and also regulates the liver and kidneys, and can be used for various types of diarrhea. The combined use of these five points treats both the root and the symptoms, and diarrhea will naturally stop. Therefore, moxibustion on points such as Shang Ju Xu can regulate qi and blood, dredge meridians, treat gastrointestinal diseases, and can also raise the pain threshold, inhibit the transmission of pain in the central and peripheral nerves, and has a significant analgesic effect [13]. This provides a theoretical basis for the intervention of moxibustion in the brain-gut axis process of IBS-D.

The Zi Wu Liu Zhu acupuncture method is a unique acupuncture method that takes time as a condition, based on the order of qi and blood flow in the meridians and collaterals, combined with the theories of yin and yang, the five elements, heavenly stems, and earthly branches. Its theory originates from the "Huangdi Neijing," which embodies the concepts of the correspondence between heaven and man, the timely flow of qi and blood, and the appropriateness of treatment according to the time, reflecting the specific application of the stem and branch theory in traditional Chinese acupuncture. It uses simple and effective points and has significant therapeutic effects, which are widely used in acupuncture clinical practice.

In this experiment, after treatment with Zi Wu Liu Zhu point-opening plus constant temperature moxibustion, the symptoms of abdominal pain and diarrhea in patients improved. Zi Wu Liu Zhu point-opening plus constant temperature moxibustion treatment for IBS-D has significant therapeutic effects, and the overall treatment effect is comparable to that of the drug group preparation. However, due to the short duration of this study and the small sample size, future multicenter, large sample, long-term follow-up clinical trials are needed for further research.

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