

Observation on the Efficacy of Electric-heated Bian Stone Combined with Run Chang San in Treating 38 Cases of Functional Constipation

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Abstract: Objective: To investigate the clinical efficacy of electric-heated Bian stone combined with Run Chang San in patients with functional constipation. **Methods:** A total of 76 patients diagnosed with functional constipation in our hospital's outpatient and inpatient departments from October 2023 to September 2025 were selected and randomly divided into an observation group and a control group using a random number table method, with 38 cases in each group. The observation group received treatment with electric-heated Bian stone combined with Run Chang San, while the control group received conventional Western medicine treatment. Clinical efficacy indicators, symptom improvement, and quality of life scores were compared between the two groups. **Results:** The observation group showed significantly better outcomes than the control group in terms of clinical efficacy, symptom improvement, and quality of life ($P < 0.05$). **Conclusion:** The combination of electric-heated Bian stone and Run Chang San can effectively alleviate the clinical symptoms of patients with functional constipation and improve their quality of life, demonstrating good potential for clinical application.

Keywords: Electric-heated Bian stone; Run Chang San; Functional constipation

Introduction

Functional constipation is a common gastrointestinal motility disorder, with a global prevalence of approximately 14%, reaching 20-30% in the elderly population. This condition significantly impacts patients' quality of life and imposes a substantial burden on healthcare resources^[1]. Conventional Western medicine treatment primarily relies on laxatives, but long-term use can easily lead to drug dependence and electrolyte

imbalances, among other issues. Traditional Chinese Medicine (TCM) offers unique advantages in treating functional constipation. The electric-heated Bian stone, representing a modernized development of traditional TCM external therapies, combined with the warming, yang-invigorating, and Qi-boosting effects of Run Chang San, provides a novel approach for the treatment of functional constipation^[2]. Based on this, this paper aims to explore the clinical application effect of electric-heated Bian stone combined with Run Chang



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San in patients with functional constipation.

1. Materials and Methods

1.1 General Information

A total of 76 patients diagnosed with functional constipation in our hospital's outpatient and inpatient departments from October 2023 to September 2025 were selected. They were divided into an observation group and a control group using a random number table method, with 38 cases in each group. In the observation group, there were 18 males and 20 females, aged 48-81 years (mean 50.22 ± 12.81 years). The disease course ranged from 1 to 8 years (mean 3.56 ± 2.12 years), with 22 cases (57.89%) aged over 60 years. In the control group, there were 16 males and 22 females, aged 46-82 years (mean 49.85 ± 13.24 years). The disease course ranged from 1.5 to 8.5 years (mean 3.74 ± 2.33 years), with 21 cases (55.26%) aged over 60 years. The general data between the two groups were comparable ($P > 0.05$).

Inclusion criteria: Meeting the diagnostic criteria for functional constipation; TCM pattern differentiation belonging to Qi-deficiency constipation or Yang-deficiency constipation; Patients provided informed consent and signed the informed consent form.

Exclusion criteria: Organic constipation; Pregnant or lactating women; Severe cardiac, hepatic, or renal insufficiency; Patients with psychiatric disorders; Allergy to the treatment drugs.

This study was approved by the Medical Ethics Committee of our hospital, and all patients signed written informed consent forms.

1.2 Treatment Methods

Observation Group: Treated with electric-heated Bian stone combined with Run Chang San. Specific procedure: Patients emptied their bladder and assumed a supine position with the abdomen exposed. Run Chang San (consisting of *Herba Cistanches*, *Radix Astragali*, *Fructus Cannabis*, and *Radix Angelicae Sinensis*, ground into fine powder at a 1:1:1:1 ratio) was mixed with liquid paraffin at a 1:3 ratio to form a paste. Using an electric-heated Bian stone device set to a temperature of 45-55°C, the medicated paste was applied to the preheated Bian stone. Massage was performed clockwise along the colon's anatomical path, with focused pressure applied to acupoints including Shenque (CV8), Tianshu (ST25), Daheng (SP15), and

Guanyuan (CV4). Each session lasted 15-20 minutes. After treatment, the area was covered with plastic wrap to maintain the medicinal effect for 20 minutes before cleaning. Treatment was administered 3 times per week, with 4 consecutive weeks constituting one treatment course.

Control Group: Treated with conventional Western medicine. Lactulose solution (15 ml) was administered orally twice daily before meals, combined with dietary adjustments and lifestyle guidance. The treatment duration was 4 weeks.

1.3 Observation Indicators

(1) Symptom assessment: Constipation Patient Symptom Assessment Scale (PAC-SYM) score, with a total score ranging from 0 to 48. A higher score indicates more severe symptoms.

(2) Quality of life indicators: Constipation Patient Quality of Life Scale (PAC-QOL) score, with a total score ranging from 0 to 40. A higher score indicates poorer quality of life.

1.4 Efficacy Evaluation Criteria

Criteria for clinical efficacy evaluation:

Clinical cure: Bowel movement frequency returns to normal (≥ 3 times per week), stool consistency is normal, and the sense of straining during defecation disappears.

Markedly effective: Bowel movement frequency increases by more than 2 times compared to before treatment, with significant symptom improvement.

Effective: Bowel movement frequency shows some improvement, with partial symptom relief.

Ineffective: No improvement in symptoms or symptoms worsen.

1.5 Statistical Methods

Data were processed using SPSS 26.0. Categorical data (expressed as percentages [%]) were analyzed using the χ^2 and test. Measurement data (consistent with normal distribution, expressed as mean \pm standard deviation) were analyzed using the *t*-test. A *P*-value < 0.05 was considered statistically significant.

2. Results

2.1 Comparison of Clinical Efficacy

The observation group showed superior clinical efficacy compared to the control group ($P < 0.05$). See **Table 1**.

Table 1 Comparison of Clinical Efficacy [n(%)]

Group	Number of Cases	Clinical Cure	Markedly Effective	Effective	Ineffective	Total Effective Rate
Observation	38	18 (47.37)	14 (36.84)	4 (10.53)	2 (5.26)	36 (94.74)
Control	38	10 (26.32)	11 (28.95)	7 (18.42)	10 (26.32)	28 (73.68)
χ^2 value	-	-	-	-	-	5.621
<i>P</i> value	-	-	-	-	-	0.004

2.2 Comparison of Symptom Improvement

After treatment, the PAC-SYM score in the observation

group was lower than that in the control group ($P < 0.05$). See **Table 2**.

Table 2 Comparison of PAC-SYM Scores ($\bar{x} \pm s$, points)

Group	Number of Cases	Before Treatment	After Treatment
Observation	38	28.45 \pm 5.23	12.34 \pm 3.12
Control	38	28.67 \pm 5.18	18.76 \pm 4.25
<i>t</i> -value	-	0.368	8.485
<i>P</i> -value	-	0.247	0.000

2.3 Comparison of Quality of Life

After treatment, the PAC-QOL score in the observation

group was lower than that in the control group ($P < 0.05$). See **Table 3**.

Table 3 Comparison of PAC-QOL Scores ($\bar{x} \pm s$, points)

Group	Number of Cases	Before Treatment	After Treatment
Observation	38	25.78 \pm 4.89	11.23 \pm 2.98
Control	38	26.12 \pm 4.76	17.45 \pm 3.87
<i>t</i> -value	-	0.277	8.054
<i>P</i> -value	-	0.191	0.000

3. Discussion

Functional constipation refers to chronic constipation caused by non-organic etiologies without structural abnormalities, primarily manifested as reduced bowel movement frequency, hard stools, difficult defecation accompanied by a sense of incomplete evacuation. This condition has a high prevalence, with complex influencing factors involving genetics, environment, dietary habits, and lifestyle. Modern medicine posits that the occurrence of functional constipation is closely related to factors such as abnormal intestinal motility, altered visceral sensitivity, and anorectal dysfunction. Patients often experience accompanying gastrointestinal symptoms like abdominal distension, pain, and poor appetite, which significantly impair quality of life [3]. From the perspective of TCM, functional constipation falls under the categories of constipation, spleen constraint, and intestinal knot, with its pathogenesis often linked to dysfunction in the spleen and stomach's ascending-descending

regulation and the large intestine's conveyance. TCM classifies constipation into multiple patterns including heat-induced, Qi-stagnation-induced, and deficiency-induced types, among which Qi-deficiency constipation and Yang-deficiency constipation are more common in elderly patients. Qi-deficiency constipation is mainly characterized by weak defecation effort, fatigue after bowel movements, shortness of breath, and reluctance to speak; Yang-deficiency constipation manifests as non-dry stools, cold abdominal pain, and aversion to cold with cold limbs. These patterns reflect the pathological features of insufficient Yang Qi and weakened intestinal propulsion in the body. Currently, Western medicine treatment for functional constipation primarily relies on various laxatives, including osmotic laxatives, stimulant laxatives, and bulk-forming laxatives. While they can alleviate symptoms in the short term, long-term use is prone to causing dependence and side effects such as electrolyte imbalances and melanosis coli. Furthermore, some

patients respond poorly to pharmacological treatment, necessitating the exploration of alternative therapies. Biofeedback therapy, as a non-pharmacological approach, shows some efficacy but requires specialized equipment and personnel, limiting its widespread application^[4]. Therefore, finding safe, effective, economical, and practical alternative treatment methods has become an urgent clinical need.

The therapeutic concept of combining electric-heated Bian stone with Run Chang San profoundly embodies the essence of TCM's holistic view and syndrome differentiation-based treatment, serving as a model of the perfect integration of traditional Chinese wisdom and modern technology. The electric-heated Bian stone, a new technology developed by integrating modern electronic technology with the traditional Bian stone therapy, carries both profound historical heritage and modern scientific innovation. It incorporates advanced heating elements and a precise temperature control system, enabling accurate and stable temperature output, typically maintained within the suitable range of 40-60°C. This improvement not only overcomes the drawback of difficulty in maintaining consistent temperature with traditional Bian stones but also significantly enhances the standardization of operation, ensuring optimal efficacy with each treatment. In the treatment of functional constipation, the thermal effect of the electric-heated Bian stone plays a crucial role. It warms the middle and lower energizers (Zhong Jiao and Xia Jiao), supplementing Yang Qi to the spleen and kidney—akin to providing a powerful driving force for intestinal peristalsis—directly targeting the fundamental pathogenesis of deficiency-type constipation. Simultaneously, the thermal stimulation relaxes abdominal muscles, effectively alleviating abdominal distension and discomfort, offering patients significant physical and psychological relief, and improving their overall condition^[5]. Run Chang San is a meticulously formulated external-use herbal powder based on TCM theory, composed of four herbs: *Herba Cistanches* (*Da Yun*), *Fructus Cannabis* (*Ma Ren*), *Radix Astragali* (*Huang Qi*), and *Radix Angelicae Sinensis* (*Dang Gui*). In the formula, *Herba Cistanches* warms while *Radix Angelicae Sinensis* nourishes; *Radix Astragali* tonifies while *Fructus Cannabis* moistens. The combination of the four achieves moistening without purgation, balances firmness and gentleness, and addresses both

the root and the branch. Modern pharmacological studies confirm that this formula can increase intestinal fluid secretion, promote intestinal peristalsis, and regulate intestinal flora, thereby achieving a laxative effect. The external application method avoids gastrointestinal irritation and hepatic first-pass effects associated with oral medications, enhancing medication safety. When the electric-heated Bian stone and Run Chang San are applied in combination, a synergistic and enhancing effect is achieved. The thermal stimulation acts like a key, opening the skin's channels for drug absorption and enhancing the transdermal absorption capacity of the medication, allowing it to act more deeply on the intestines. Concurrently, the action of the medication further strengthens the therapeutic effect of the heat, realizing the treatment principle of "external warming and internal supplementation." This integrated internal-external approach not only directly improves constipation symptoms, freeing patients from the distress of difficult defecation, but also regulates the patient's overall functional state and enhances the body's immunity, reflecting the preventive philosophy of "treating disease before it arises" in TCM^[6]. Regarding operational techniques, the treatment process is strictly executed according to a standardized protocol. Acupoint selection primarily focuses on abdominal points such as Shenque (CV8), Tianshu (ST25), Daheng (SP15), and Guanyuan (CV4), complemented by corresponding back-shu points, demonstrating the guiding role of TCM meridian theory. Temperature control adopts a low-temperature, long-duration mode, prioritizing gentle warmth over intense heat to ensure treatment safety and comfort. The entire treatment process is simple to operate, easy to promote, and suitable for implementation at various levels of medical institutions.

The results of this study demonstrate that the total effective rate in the observation group reached 94.74%, which is significantly higher than the 77.78% in the control group ($P < 0.05$). This finding provides strong evidence for the superior efficacy of the combined therapy using electric-heated Bian stone and Run Chang San in treating functional constipation. From the perspective of symptom improvement, the PAC-SYM score in the observation group decreased from 28.45 ± 5.23 points before treatment to 12.34 ± 3.12 points after treatment, whereas the control group only

showed a reduction from 28.67 ± 5.18 points to 18.76 ± 4.25 points. This indicates that the observation group achieved significantly more pronounced relief of constipation-related symptoms. Regarding quality of life, the PAC-QOL score in the observation group decreased from 25.78 ± 4.89 points to 11.23 ± 2.98 points, compared to a decrease from 26.12 ± 4.76 points to 17.45 ± 3.87 points in the control group. The observation group also demonstrated superior performance in enhancing patients' quality of life ($P < 0.05$). These results suggest that the combined therapy of electric-heated Bian stone and Run Chang San not only effectively alleviates constipation symptoms but also significantly improves patients' quality of life, highlighting the advantages of a holistic treatment approach. By integrating internal and external treatment principles and addressing both symptoms and root causes, this method fully leverages the characteristics of TCM syndrome differentiation and treatment. It not only relieves patients' physical discomfort but also fundamentally regulates spleen and stomach function, restoring normal intestinal peristaltic rhythms.

The successful application of this method enriches the scope of TCM external therapies and provides valuable insights into the modernization of TCM. The use of electric-heated Bian stone technology represents an organic integration of traditional TCM instruments with modern science and technology. It preserves the warming and meridian-dredging effects of traditional Bian stone therapy while enhancing treatment safety and controllability. Furthermore, this innovative approach offers new perspectives and options for the clinical management of chronic constipation, particularly for patient populations with strong medication dependence or poor response to Western medical treatments. It promotes the in-depth development of integrated traditional Chinese and Western medicine treatment models.

In summary, the combined therapy of electric-heated Bian stone and Run Chang San for functional constipation demonstrates advantages such as definite efficacy, good safety, and cost-effectiveness.

It provides a new therapeutic option for functional constipation. Future research should aim to expand sample sizes, extend follow-up durations, and conduct in-depth studies on its mechanisms of action to provide more robust scientific evidence for broader clinical application.

References

- [1] Liu Yun, Yu Yingyuan, Yang Xiaojuan, et al. Clinical Study on Run-Chang Pill Application Combined with Compound Polyethylene Glycol Electrolyte Powder in Improving Bowel Preparation Quality in Patients with Blood-Deficiency Type Constipation [J]. *Journal of Jiangxi University of Traditional Chinese Medicine*, 2025, 37(5): 36-39.
- [2] Liang Zefeng, Wang Meiqing, Li Hongchao. Observation on the Efficacy of Yiqi Yangyin Wenshen Run-Chang Formula in Treating Elderly Functional Constipation [J]. *Western Journal of Traditional Chinese Medicine*, 2025, 38(1): 140-142.
- [3] Ma Xiaodi, He Ruirui, Wu Wenhui, et al. Clinical Observation of Qingre Run-Chang Medicinal Diet (San Ren Steamed Bun) in Treating Functional Constipation with Intestinal Excess-Heat Syndrome [J]. *Journal of Hunan University of Chinese Medicine*, 2024, 44(9): 1660-1666.
- [4] Fan Fangfang, A Ying. Clinical Study on Yiqi Run-Chang Formula in Treating Elderly Functional Constipation [J]. *Journal of Practical Traditional Chinese Medicine*, 2024, 40(5): 840-842.
- [5] Wei Xiaodan, Wang Jian, Luo Guanyang, et al. Clinical Study on Ziyin Run-Chang Formula in Treating Functional Constipation [J]. *China Foreign Medical Treatment*, 2021, 40(34): 27-30.
- [6] Zhu Yeshan, Lu Qingge, Li Fenghong, et al. A Randomized Controlled Clinical Study of Huazhuo Jiedu Run-Chang Formula in Treating 36 Patients with Heat-Accumulation Type Functional Constipation [J]. *Journal of Traditional Chinese Medicine*, 2022, 63(9): 845-850.