

Clinical Effect of Integrated Traditional Chinese and Western Medicine Treatment on Early Postoperative Inflammatory Small Bowel Obstruction

Sidian Xiao*

Zhenjiang Hospital of Traditional Chinese Medicine, Zhenjiang 212000, Jiangsu Province, China

*Corresponding author: Sidian Xiao, 13775371148@sina.cn

Copyright: © 2023 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: *Objective:* To observe the clinical effect of integrated traditional Chinese and Western medicine treatment on patients with early postoperative inflammatory small bowel obstruction (EPISBO). *Methods:* 86 EPISBO cases admitted from October 2021 to October 2023 were grouped based on the double-blind method. The control group received conventional comprehensive treatment with Western medicine, and the observation group received integrated treatment with traditional Chinese and Western medicine. The clinical treatment effectiveness, general observation indicators, inflammatory factors, and adverse reactions were compared between the two groups after treatment. *Results:* The total effective rate of clinical treatment of the observation group was higher than that of the control group. The post-operative bowel sound recovery time, anal exhaust time, first defecation time, and hospitalization time of the observation group were shorter than those of the control group. The post-treatment level of inflammatory factors of the observation group was lower than that of the control group. These results were statistically significant ($P < 0.05$). There were no serious adverse reactions in either group. *Conclusion:* Implementing integrated traditional Chinese and Western medicine therapy can help post-appendectomy patients with EPISBO improve clinical treatment effectiveness, accelerate symptom improvement, and reduce inflammation without causing serious adverse reactions. Therefore, it is worthy of promotion and clinical application.

Keywords: Integrated traditional Chinese and Western medicine; Appendicitis; Early postoperative inflammatory small bowel obstruction

Online publication: December 26, 2023

1. Introduction

Early postoperative inflammatory small bowel obstruction (EPISBO) is a relatively prominent type of early postoperative complication in patients with abdominal surgery. In the past, clinical treatment was often based on Western medicine, involving methods such as fasting, gastrointestinal decompression, and anti-infection. Comprehensive treatments such as nutritional support can speed up the relief of intestinal obstruction symptoms, but it is found that the actual application effect is unsatisfactory. This may be related to the patient's

physical weakness and poor gastrointestinal function recovery, making it challenging to effectively undertake the drug-related effects. Therefore, it is necessary to consider combining it with other treatments to improve the therapeutic efficacy ^[1]. In recent years, with the continuous improvement of the clinical application rate of traditional Chinese medicine, integrated traditional Chinese and Western medicine treatment has gradually become a popular trend. By complementing the advantages of the two dominant disciplines, the clinical treatment efficiency can be greatly improved, with the purpose of treating both the symptoms and root causes. From the perspective of traditional Chinese medicine, EPISBO can be classified into the categories of “abdominal pain,” “intestinal knots,” “Guange,” etc., which are mainly caused by deficiency of qi and blood, weak spleen and stomach, unfavorable intestinal qi movement, and blocked viscera qi. Therefore, the key to treatment is unblocking the fu organs and promoting qi, activating blood circulation, and relieving stagnation in the fu organs ^[2]. This study explored the clinical benefits of the combination of traditional Chinese and Western medicine therapy in 86 cases of EPISBO after appendectomy.

2. Materials and methods

2.1. Materials

86 EPISBO cases admitted to our institute from October 2021 to October 2023 were selected. Using the double-blind method, 86 cases were divided into two groups with 43 cases each. The control group included 20 males and 23 females, the age range was 24–85 years old, with an average of 54.52 ± 6.89 years; the time from surgery to the occurrence of EPISBO ranged from 5 to 14 days, with an average of 9.51 ± 2.64 days; the body mass index (BMI) was 15–29 kg/m², with an average of 22.51 ± 3.98 kg/m². There were 22 males and 21 females in the observation group, the age range was 26–85 years old, with an average of 55.01 ± 6.97 years; the time from surgery to the occurrence of EPISBO ranged from 5 to 15 days, with an average of 9.55 ± 2.68 days; BMI was 15–30kg/m², with an average of 22.59 ± 4.03 kg/m². The data between the groups were statistically processed and showed no differences ($P > 0.05$).

Inclusion criteria included patients with a recent history of appendectomy; patients with onset of disease about 1–2 weeks after surgery and EPISBO confirmed by clinical physical examination, X-ray, and other examinations; patients with no missing information in medical records; patients with no unconscious disorder, and can communicate normally; patients with no previous history of mental, cognitive or psychological diseases; patients who are informed with documents to prove the patient’s independent wishes. Exclusion criteria were patients with other types of intestinal obstruction; patients with severe dysfunction of important organs such as heart and lungs; patients with coagulation disorders and immune system diseases; patients who are intolerant to study drugs or exhibit allergic reactions; patients with extremely low medical compliance behavior; patients who leave the group before the completion of the study.

2.2. Methods

For patients in the control group, comprehensive treatment of conventional Western medicine was carried out in an orderly manner based on their actual conditions, including fasting and gastrointestinal decompression treatment, rational use of drugs such as antibiotics, proton pump inhibitors, H₂-receptor antagonists, growth hormone, statin, adrenal glucocorticoid, etc., prompt nutritional support and attention to the correction of water and electrolyte disorders, acid-base balance disorders, etc. The treatment was continued for 5–7 days. The observation group received the combination of the above treatments with relevant traditional Chinese medicine treatments and acupuncture.

(1) Traditional Chinese medicine treatment: Tongfu Chengqi Decoction was prepared for modified retention

enema treatment. The basic prescription is 30g fried radish seeds, 12g *Magnolia officinalis*, 12g *Fructus aurantii*, 12g peach kernel, 10g *Astragalus*, 10g raw rhubarb (added later), 9g Natrii sulfas, 9g red peony root, 9g *Costus*, 9g *Codonopsis pilosula*, 6g licorice. Adjustments can be made according to the syndrome. For those with obvious nausea and vomiting, 12g *Pinellia*, 12g *Inula*, and 9g ginger were added; for those with abdominal distension and pain, 20g of black root and 20g greenbark were added; for those with fever, 10g *Forsythia suspensa* and 10g honeysuckle were added. The decoction was prepared with 500ml of water until approximately 250ml of juice remained, 1 dose was administered daily. Retention enema treatment was performed twice in the morning and evening for 5–7 days.

- (2) Acupuncture: Patients were instructed to take the supine position. The surgical incision was avoided, and based on the Zhongwan point, acupoints such as Tianshu point, Shangjuxu point, Zusanli point, etc., were acupunctured. Additionally, the lifting, inserting, twisting, and relieving techniques were adopted. At the same time, moxibustion therapy was performed. 2–3 acupoints were selected for treatment in each rotation, and the needles were retained for 20–30 minutes. This treatment was carried out 1–2 times a day, for 7 days. During the process, the distance between the moxa roll and the skin should be focused on and the patient's tolerance considered.

2.3. Observation indicators

- (1) Clinical treatment effectiveness

Markedly effective: Observed symptoms of abdominal distension, abdominal pain, nausea and vomiting, and others were resolved. The abdomen felt soft and non-tender when palpated. X-ray, CT (computed tomography), and other examinations showed no signs of intestinal obstruction, and there was no recurrence of the disease 2–3 days after eating. Effective: Relevant symptoms and signs showed significant improvement, X-ray, CT, and other examinations indicated significant improvement in intestinal obstruction signs, and a small amount of liquid food can be taken without discomfort. Ineffective: The relevant content does not meet the above standards^[3].

- (2) General observation indicators

The postoperative bowel sound recovery time, anal exhaust time, first defecation time, and hospitalization time of the two groups of patients were carefully recorded, and the observed values were compared.

- (3) Inflammatory factor levels

Before and after treatment, 4ml of early morning fasting blood was drawn from two groups of patients to accurately measure the specific concentrations of C-reactive protein (CRP) and interleukin-6 (IL-6), and the measurement results were compared.

- (4) Adverse reactions in the two groups were observed.

2.4. Statistical analysis

Using SPSS25.0 software for Windows as the statistical basis, all the obtained data were divided by nature. Measurement data were displayed as mean \pm standard deviation (SD) and a parallel *t* test was performed. Count data were displayed as %. At the same time, the chi-square test was performed. $P < 0.05$ indicated that there was statistically significant difference.

3. Results

3.1. Comparison of clinical treatment effectiveness between the two groups

Based on **Table 1**, the total effective rate of clinical treatment in the control and observation groups was 67.44%

and 93.02%, respectively, with significantly higher total effective rate in the observation group ($P < 0.05$).

Table 1. Comparison of total effective rates of clinical treatment [n (%)]

Group	Number of cases	Markedly effective	Effective	Ineffective	Total effective rate
Control group	43	9 (20.93)	20 (46.51)	14 (32.56)	29 (67.44)
Observation group	43	15 (34.88)	25 (58.14)	3 (6.98)	40 (93.02)
χ^2	-	-	-	-	8.871
P	-	-	-	-	0.003

3.2. Comparison of general observation indicators between the two groups

In **Table 2**, the observed values of relevant indicators in the observation group were lower than those in the control group ($P < 0.05$).

Table 2. Comparison of general indicator observation results (mean \pm SD, days)

Group	Number of cases	Bowel sound recovery time	Anal exhaust time	First defecation time	Length of hospital stay
Control group	43	4.93 \pm 1.87	5.74 \pm 2.65	8.45 \pm 3.65	14.12 \pm 6.29
Observation group	43	3.12 \pm 1.12	4.21 \pm 1.87	5.81 \pm 2.69	10.21 \pm 5.02
t	-	5.445	3.093	3.818	10.519
P	-	0.001	0.003	0.001	0.001

3.3. Comparison of inflammatory factor levels between the two groups

As shown in **Table 3**, before the treatment, the levels of inflammatory factors in the two groups showed no difference ($P > 0.05$); after the treatment, the CRP and IL-6 levels of the two groups decreased, with greater decline in the observation group ($P < 0.05$).

Table 3. Comparison of observed values of inflammatory factors (mean \pm SD)

Group	Number of cases	CRP (mg/L)		IL-6 (μ g/L)	
		Before treatment	After treatment	Before treatment	After treatment
Control group	43	43.12 \pm 8.87	23.25 \pm 4.57	55.54 \pm 9.40	27.65 \pm 5.44
Observation group	43	42.98 \pm 8.57	12.99 \pm 2.65	55.49 \pm 9.37	15.04 \pm 3.12
t	-	0.074	12.736	0.025	13.186
P	-	0.941	0.001	0.980	0.001

3.4. Comparison of adverse reactions between the two groups

After observation, no serious adverse reactions occurred in either group. Only one case (2.23%) of dizziness and one case (2.23%) of rash occurred in the control group. However, the symptoms were relatively mild and did not require special treatment. They subsided spontaneously after discontinuing the drug for some time.

4. Discussion

Appendectomy is a common clinical surgical procedure. It is mainly performed to relieve the inflammatory

reaction of the appendix. The operation is not complex, but there may be complications in the early postoperative period (usually 1–2 weeks after the operation). Intestinal obstruction refers to the edema and exudation of the intestinal wall caused by surgical trauma or intra-abdominal inflammation, resulting in a mechanical and dynamic intestinal obstruction^[4]. Although EPISBO exhibits clinical manifestations such as abdominal distension, abdominal pain, vomiting, cessation of flatus, and defecation that are common to other types of intestinal obstruction, most of the symptoms manifest themselves one after another in the early postoperative period with a small amount of flatulence and defecation after eating, and the symptoms of abdominal distension and abdominal pain are relatively mild. The manifestation of symptoms must be taken seriously and resolved promptly and effectively, otherwise it will hinder the recovery of gastrointestinal function and induce abdominal infection, and even lead to severe outcomes such as intestinal fistula, short bowel syndrome, and even death. Considering the complex surgical operation of EPISBO and that the patient suffered a major surgical trauma not long ago and is relatively weak, it is unfeasible to perform a second surgery in a short period. Therefore, conservative treatment is often recommended for EPISBO in clinical practice^[5].

Conservative treatment of EPISBO can be divided into Western medicine treatment and traditional Chinese medicine treatment, each with their own advantages. The former can reduce the inflammatory response of the patient's intestinal wall through comprehensive intervention such as fasting, continuous gastrointestinal decompression, anti-infection, and nutritional support. It can provide a certain degree of relief and can also help improve systemic nutritional levels, but the effect of a single application is relatively limited^[6]. Traditional Chinese medicine, as China's characteristic medicine, adheres to the principle of "syndrome differentiation and treatment," asserting that the occurrence of diseases is closely related to the body's organs and meridians. For example, the primary disease location in EPISBO is within the intestines, which are one of the six internal organs and are responsible for transmitting and transforming waste. Once healthy qi is damaged, with stagnant blood and qi, it will lead to transmission loss. Therefore, treatment must consider unblocking the fu organs and dispersing stagnation, strengthening vital qi and lowering adverse qi, removing blood stasis, and promoting blood circulation^[7]. The self-prepared Tongfu Chengqi Decoction contains radish seeds, which can relieve qi and stagnation. Rhubarb and Natrii sulfas can help relieve heat in the fu organs, relieve constipation, and moisturize the intestines. *Magnolia officinalis* and *Citrus aurantium* can relax the spleen and stomach and regulate qi, eliminate pimples, and resolve phlegm, peach kernel and red peony root can clear away heat and toxins, *Codonopsis pilosula*, *Astragalus*, and *Costus* can strengthen the spleen, replenish qi, and relieve pain, and licorice coordinating drug actions of various medicines. All medicines can strengthen the body, dispel evil, and relieve blood stasis when used together. Decocting the above medicinal materials into warm medicinal liquid and performing an enema treatment can directly treat the focus of the disease, help relieve the spasm of intestinal smooth muscle, and speed up blood circulation in the intestinal wall. Moreover, the enema treatment can retain the medicinal liquid longer, which is more conducive to promoting the healing process^[8]. In addition, acupuncture and moxibustion at Zhongwan, Tianshu, Zusanli, and other acupuncture points can further stimulate qi in the spleen and stomach, help dredge the meridians, and improve the intestinal transmission and transformation capacity. The above treatments are green therapies that are easy to administer without financial burden. Combination of the mentioned traditional Chinese medicine treatments with conventional Western medicine can achieve complementary benefits, helping patients achieve more satisfactory rehabilitation outcomes^[9,10]. The results of this study have also showed that the total clinical treatment effectiveness of the observation group was 93.02%. Compared with the control group, the observation group has a shorter postoperative recovery time, lower levels of inflammatory factors, and no adverse reactions.

5. Conclusion

In summary, the integrated traditional Chinese and Western medicine treatment for patients with early postoperative inflammatory small bowel obstruction can significantly improve the patient's clinical symptoms, enhance the treatment efficiency, and ensure greater treatment safety. It is worth widespread application and promotion.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Zhang Y, Xia C, 2022, Meta-Analysis of the Efficacy and Safety of Integrated Traditional Chinese and Western Medicine in Treating Early Postoperative Inflammatory Intestinal Obstruction. *Clinical Research in Traditional Chinese Medicine*, 14(6): 81–85.
- [2] Du X, 2022, Analysis of the Effect of Integrated Traditional Chinese and Western Medicine on Non-Surgical Treatment of Early Postoperative Inflammatory Intestinal Obstruction in the Elderly. *Henan Journal of Surgery*, 28(3): 133–135.
- [3] Ou H, Ou X, Li L, 2021, Effects of Integrated Traditional Chinese and Western Medicine Treatment on Serum Inflammatory Factor Levels in Patients with Adhesive Intestinal Obstruction. *Smart Health*, 7(1): 87–89.
- [4] Gao X, Zhou X, Liu J, 2020, Research on the Therapeutic Effect of Integrated Traditional Chinese and Western Medicine on Early Postoperative Inflammatory Intestinal Obstruction. *Chinese Community Physician*, 36(5): 105–106.
- [5] Liang R, 2020, Effect of Integrated Traditional Chinese and Western Medicine Treatment on Patients with Early Inflammatory Intestinal Obstruction After Appendectomy. *Contemporary Medical Discussions*, 18(10): 231–232.
- [6] Zeng X, 2018, Clinical Study on Treating Acute Pancreatitis Complicated with Paralytic Intestinal Obstruction Using Integrated Traditional Chinese and Western Medicine. *Sichuan Medicine*, 39(3): 338–340.
- [7] Wang Y, Sun J, Xie S, et al., 2020, The Efficacy of Tongfu Huoxue Recipe on Patients with Early Postoperative Inflammatory Intestinal Obstruction and its Effect on Serum Inflammatory Indicators. *Guangxi Medicine*, 42(4): 444–447.
- [8] Zhang L, Sun N, 2021, Effect of Tongfu Chengqi Decoction on Serum Inflammatory Factors and Gastrointestinal Function Recovery in Patients with Early Postoperative Inflammatory Intestinal Obstruction. *Chinese Journal of Integrated Traditional Chinese and Western Medicine Surgery*, 27(1): 20–24.
- [9] Wang Y, Liao Q, Ren Y, et al., 2019, Acupuncture Combined with Dachengqi Decoction Traditional Chinese Medicine Application in Treating Metastatic Malignant Intestinal Obstruction. *Journal of Traditional Chinese Medicine*, 60(8): 711–713.
- [10] Ding M, Feng D, 2023, Effects of Modified Dachengqi Decoction on Gastrointestinal Function Recovery and Prognosis in Patients with Early Inflammatory Intestinal Obstruction After Abdominal Surgery. *Liaoning Journal of Traditional Chinese Medicine*, 50(3): 85–88.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.