

The effect of Shenghuangsan powder applied to umbilicus for the treatment of the postoperative gastrointestinal dysfunction.

Yonghe Wang^{1*}, Naibing Feng², Yingxin Ye³, Jing Shan¹, Xiongying Zhang¹

¹Pharmacy Department, Jinan Zhangqiu District Hospital of TCM, No. 1463, Xiushui Street, Mingshui Town, Jinan City, Shandong Province, PR China

²General Surgery Department, Jinan Zhangqiu District Hospital of TCM, No. 1463, Xiushui Street, Mingshui Town, Jinan City, Shandong Province, PR China

³Neurology Department, Jinan Zhangqiu District Hospital of TCM, No. 1463, Xiushui Street, Mingshui Town, Jinan City, Shandong Province, PR China

Abstract

Objective: To evaluate the effectiveness and safety of applying Shenghuangsan powder to umbilicus in the treatment of postoperative gastrointestinal dysfunction.

Method: 136 patients with postoperative gastrointestinal tumors who received treatment from department of general surgery of our hospital from June 2014 to June 2016. Inclusion criteria were randomly and double blindly divided into treatment group (Shenghuangsan powder was applied to umbilicus) and control group (placebo was applied to umbilicus). The differences were evaluated between the two groups on postoperative recovery, TCM symptom score and serum motilin.

Result: The final indexed including postoperative exhaust and defecation time, feed recovery time of treatment group were all earlier than those of control group, and the differences are of statistical significance ($p < 0.05$); the total effective rate of TCM syndrome curative effect of treatment group is 87.6%, compared with 65.7% of control group, and the difference is of statistical significance ($p < 0.01$).

Conclusion: Applying Shenghuangsan powder to umbilicus is a kind of safe and effective treatment which can promote the recovery of postoperative gastrointestinal dysfunction and improve the degree of comfort for patients.

Keywords: Shenghuangsan powder, Applied to umbilicus, Gastroenteric tumor, Gastrointestinal dysfunction, Serum motilin.

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Introduction

Operations of surgeries, especially many abdominal operations, changed the original anatomic structure of alimentary canal, blocked its innervation and influence the movement and function of digestive absorption of alimentary canal temporarily or long termly [1-3]. Therefore, postoperative gastrointestinal dysfunction is common complication of surgery, and the light showed mild abdominal distension and disappearance of bowel sounds, while the heavy ones showed nausea, vomiting and abdominal pain [4-6]. Postoperative gastrointestinal dysfunction will influence postoperative recovery of patient directly and raise complication rates [7]. It is vitally important for quick recovery perioperative period to promote the recover gastrointestinal functions and shorten the anal exhaust defecation time [8-10]. It is showed that rehabilitation of gastrointestinal dysfunction after radical resection of tumor could be improved by applying Shenghuangsan powder to umbilicus.

Materials and Methods

General materials

136 patients with postoperative gastrointestinal tumors were received and cured in the department of general surgery of our hospital from June 2014 to June 2016. All of these patients were randomly double blindly grouped including 68 patients and the same numbers of control group, which were all included into general clinic material of gastrointestinal tumors (Table 1).

Table 1. General characteristics of the enrolled patients in this research.

Group	Treatment group	Control group	
Number of cases	Male	32	35
	Female	36	33

Age		60.2 ± 8.5	60.4 ± 10.3
TNM staging	I	6	5
	II	24	23
	III	35	34
	IV	14	15
Operation method	Neoplasm recurrence	17	18
	Colorectal surgery	19	16
	Gastrectomy of stomach neoplasms	32	34
	Laparoscopic participation	27/68 (39.7%)	26/68 (38.2%)

Inclusion criteria

(1) Patients included were those with postoperative gastrointestinal tumors and all of them had received in the department of general surgery in our hospital from June 2014 to June 2016; (2) anyone who was discriminated as stagnation of vital energy and blood stasis by TCM; (3) older than 30 and younger than 70; (4) passed the hospital ethics committee; (5) informed consent were signed; (6) radical resection of gastrointestinal tumor; (7) narcosis method is general narcosis [11,12].

Exclusion criteria

(1) The operation time was uncertain and it was difficult to arrange for the planners; (2) patients with operation time over 4 h; (3) not general-narcosis operation; (4) patients and their families are highly sensitive to this study and are difficult to explain and communicate; (5) the disabled prescribed by the law; (6) patients who take medicines like metoclopramide and erythromycin which will influence gastrointestinal motility; (7) patients who are suspended or diagnosed with alcohol abuse history; (8) allergic constitution, for example, patients who has allergic history on over two medicines or food, or are known to be allergic to this drug; (9) patients who have participated in other drug clinic research [13,14].

Therapeutic method

General perioperative period treatments were provided for both groups, including preoperative fasting, preoperative bowel preparation, placement of peritoneal drainage tube, perioperative analgesia and so on. Shenghuangsan powder was applied to the treatment group according to treatment experience, and Shenghuangsan powder is made up by 250 g sun dried ginseng, 250 g raw rhubarb, 250 g *Salvia miltiorrhiza*, 150 g orange, 100 g rutaecarpa, 100 g clove, etc.,

Table 3. The therapeutic effect comparison between the treatment and the control group (n, %).

Group	n	Remission	Excellent	Effective	No effect	Total effect rate (%)
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which was made into powder directly by manufacturing laboratory [15,16]. Placebo made at the same time is basically consistent with that of treatment group in appearance, color, smell, package and label. Unified numbered by statistics office and randomly numbered according to patients during clinical application, relevant powder will be selected and wet by transdermal agent to apply on umbilicus [17,18]. It should be change once a day and 7 d is regarded as a course of treatment. Anal exhaust defecation time, drinking time, etc. should all be monitored.

Statistics analysis

SPSS 20.0 was used to deal with the data. T test was adopted for counting data materials, and Redit test was adopted for clinical effective analysis, $P < 0.05$, which is of statistics magnificence.

Result

Efficacy determination

Evaluation index: The main clinical evaluation index of postoperative rehabilitation of gastrointestinal function is based on the first anal exhaust defecation time, feed by fluid and semi fluid time, postoperative hospital stay and hospitalization expenses (Table 2) [3,4].

Table 2. The indexes of patients with postoperative recovery ($\bar{x} \pm s$).

Objects	Treatment	Control Group
First anus exhausting time (h)	37.2 ± 3.8*	36.5 ± 4.2
First defecation time (h)	65.3 ± 5.2*	70.4 ± 6.8
Time to take fluids (d)	3.6 ± 0.8*	4.5 ± 1.3
Time to take semi-liquids (d)	6.9 ± 1.2*	7.5 ± 1.1
Postoperative hospital stay (d)	13.9 ± 2.6*	17.1 ± 2.7
Hospitalization expense (RMB)	36842 ± 3785*	40615 ± 3729

*Noted that this subject of treatment group was significantly different from the control group.

TCM evaluation

Evaluation standards of TCM major and minor symptom and judgment standard of TCM syndrome curative effect [4-6]. Feed fluid and HOD are all evidently better than control group, and differences are of statistics significance ($p < 0.05$); differences in hospitalization expenses of the two groups are without statistics significance ($p > 0.05$, (Table 1); the total clinical effectiveness of treatment group is 92.5%, while that of control group is 71.6%. Compare the two and the difference is of statistics significance ($p < 0.01$, Table 3).

Control	68	9	13	24	22	67.6
Treatment	68	21	18	20	9	86.7*

*Noted that this subject of treatment group was significantly different from the control group.

Discussion

Gastrointestinal function recovery is an important link to abdominal operations, especially operations on digestive tract and will directly influence the effect of abdominal operations [19]. If it cannot be recovered successfully, not only the postoperative rehabilitation will be seriously influenced, but the insufficient blood supply and oxygen supply of postoperative intestinal mucosa will contribute to, despite of weakening the functions like physiological peristalsis and digestion and absorption, intestinal mucosal barrier, apoptosis of intestinal mucosa cells, increased permeability, providing tunnels for intestinal bacterial endotoxin, and it will evolve into originating or initiating organs with Systemic Inflammatory Response Syndrome (SIRS) and Multiple Organ Dysfunction Syndrome (MODS). The heavy ones may cause death. Therefore, it is vital important to recover intestinal functions for the operation recovery and prevention of complication in perioperative management. At present, the main treatment of postoperative gastrointestinal function recovery is to take gastrointestinal motility drugs [20].

Conclusion

This study showed that postoperative exhaust and defecation time, recovery time, early time of lower ground movement and clinical efficacy of TCM Syndrome of treatment group are all earlier and better than those of control group, and differences are of statistics significance ($p < 0.05$). Thus, providing better and more efficient medical service is imperative, so as to improve the surgery result by decreasing complication and providing better prognosis.

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***Correspondence to**

Yonghe Wang

Pharmacy Department

Jinan Zhangqiu District Hospital of TCM

PR China