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The Efficacy of Acupuncture Combined with Medication in Treating Gastrointestinal Reactions in Chemotherapy Patients with Gastrointestinal Tumors

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Abstract: Objective: To analyze the efficacy of acupuncture combined with medication in treating gastrointestinal reactions in patients with gastrointestinal tumors undergoing chemotherapy. **Methods:** A total of 86 patients with gastrointestinal tumors undergoing chemotherapy admitted to our hospital from March 2022 to March 2023 were selected as the research subjects. Patients in the control group received single-drug therapy, while those in the observation group received acupuncture combined with medication. The application conditions were compared between the two groups. **Results:** There were no significant differences in various indicators between the two groups before treatment. After treatment, all indicators in the observation group were better than those in the control group. The effective treatment rate in the observation group (72.09%) was significantly higher than that in the control group (93.02%) ($P < 0.05$). **Conclusion:** For patients with gastrointestinal tumors undergoing chemotherapy, acupuncture combined with medication can be employed to alleviate gastrointestinal reactions, which is beneficial for improving the treatment efficacy and ensuring the safety of patients undergoing treatment.

Keywords: Acupuncture; Drug Treatment; Gastrointestinal Tumors; Chemotherapy

Chemotherapy is an important treatment modality for malignant tumors. In recent years, with the advancement of medical technology and deepening understanding, attitudes towards chemotherapy have undergone significant changes. While chemotherapy can suppress tumor cells, it also damages normal tissues, leading to various side effects such as nausea, vomiting, diarrhea[1], constipation, and abdominal pain. These adverse effects significantly impact the smooth progress of chemotherapy treatment, necessitating the control of gastrointestinal reactions in patients to achieve treatment goals. Some scholars believe that chemotherapy-induced gastrointestinal reactions are associated with visceral hypersensitivity, gastrointestinal dysmotility, and vagal nerve dysfunction. For patients with gastrointestinal tumors undergoing chemotherapy, acupuncture combined with medication treatment can improve gastrointestinal reactions and subsequently enhance their quality of life. In acupuncture treatment, stimulation of specific acupoints in patients promotes the circulation of qi and blood, effectively regulates muscle tension, and alleviates symptoms of nausea and vomiting. At the same time[2], acupuncture stimulates nerve regeneration,

which can improve intestinal function and alleviate symptoms of diarrhea. Therefore, this treatment method demonstrates high effectiveness and practical value. This study primarily analyzes gastrointestinal reactions in patients undergoing chemotherapy for gastrointestinal tumors and explores the combined application value of acupuncture and medication treatment. The findings are reported as follows.

1. Materials and Methods

1.1 General Information

The study included 86 patients with gastrointestinal tumors undergoing chemotherapy at our hospital from March 2022 to March 2023, with 43 patients in each group. Inclusion criteria were as follows: ① Tolerance to chemotherapy treatment; ② Normal findings on electrocardiogram[3], coagulation routine, etc.; ③ Absence of mental illness and communication barriers; ④ Signed informed consent form. Exclusion criteria were as follows: ① Patients with cognitive, mental, and communication disorders; ② Patients with severe infectious diseases; ③ Patients with respiratory failure, liver or kidney dysfunction[4]; ④ Patients with confusion and communication difficulties. There were no statistically significant differences in general patient data ($P > 0.05$), as detailed in **Table 1**.

Table 1 Comparison of General Patient Data between Two Groups[n, $\bar{\chi} + s$]

Group	Number of examples	Number of examples		Age	Average Age
		Male	Female		
Reference Groups	43	22	21	38~79years old	(57.45±2.41) years old
Observing Group	43	23	20	37~79years old	(57.01±2.78) years old

1.2 Methods

1.2.1 Control Group

The control group received medication treatment. 3mg of Granisetron hydrochloride was added to sodium chloride injection and administered to patients via intravenous injection 15 minutes before chemotherapy[5].

1.2.2 Observation Group

Based on the control group, the observation group received acupuncture treatment in addition to medication. Acupuncture points selected included Zusanli (ST36), Neiguan (PC6), Yinlingquan (SP9), Taibai (SP3), Zhongwan (CV12), Tianshu (ST25), and Taichong (LR3). Acupuncture treatment was administered to patients 4 hours after chemotherapy. Single-hand needle insertion technique was applied to Neiguan, Taibai, Zusanli, Taichong, and Yinlingquan points. The reinforcing technique was applied to Zhongwan and Tianshu points, aiming for patients to experience soreness or distension. After obtaining qi, needle retention was performed for 2 minutes, and qi was guided again every 10 minutes. The duration of each session was 10 minutes, and treatment was administered three times daily. During needle retention, moxibustion was applied by burning moxa sticks and placing them near the needle handle.

1.3 Observation Indicators

An electronic constant pressure gauge was used to analyze patients' gastric distension during isovolumetric expansion, and detailed records were made of their maximum tolerance, maximum tolerated volume, LF/HF ratio, and gastric compliance. Simultaneously, the treatment effects on patients were analyzed and recorded[6].

1.4 Statistical Analysis

The data from this study were processed using SPSS 18.0 statistical software.

2 Results

2.1 Comparison of Isovolumetric Gastric Distension Indicators between the Two Groups

Before treatment, there were no significant differences in the indicators between the two groups. After treatment, all indicators in the observation group were significantly better than those in the control group ($P < 0.05$). See **Table 2** for details.

Table 2 Comparison of isovolumetric gastric distension indicators between the two groups[$n(\bar{x} \pm s)$]

Group	Number of examples	Maximum receptivity(mmHg)		Maximum tolerated volume(ml)		LF/HF()		Gastric Compliance(ml/mmHg)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Reference Groups	43	8.50±2.33	9.20±1.74	329.14±38.44	341.78±56.33	2.91±1.18	2.90±0.97	48.21±9.46	49.63±7.61
Observing Group	43	8.34±2.49	13.85±1.66	327.85±40.41	540.52±60.25	2.95±1.15	1.41±0.56	48.43±8.07	61.43±5.66
t		0.307	12.679	0.151	15.800	0.159	8.723	0.116	8.158
P		0.759	0.000	0.879	0.000	0.873	0.000	0.907	0.000

2.2 Comparison of Clinical Efficacy between Two Groups

The effective rate of treatment in the observation group (72.09%) was significantly higher compared to the reference group (93.02%) ($P < 0.05$). See **Table 3** for details.

Table 3 The clinical efficacy of the two groups was compared[n(%)]

Group	Number of examples	significant effectiveness,	effectiveness	ineffectiveness.	overall efficacy
Reference Groups	43	15	16	12	72.09
Observing Group	43	18	12	3	93.02
x^2					6.540
P					0.010

3. Discussion

During chemotherapy, gastrointestinal reactions are extremely common. Vomiting can result in fluid loss, nutritional imbalance[7], electrolyte imbalance, dehydration, and consequently affect the patient's immune system, increasing their psychological burden. Research indicates that vomiting can delay chemotherapy, and some patients may even develop resistance, further affecting disease treatment. The mechanism of gastrointestinal adverse reactions induced by chemotherapy is complex, damaging peripheral nerves and severely disrupting gastrointestinal motility. Ondansetron hydrochloride is a commonly used clinical drug that has significant effects in the treatment and prevention of chemotherapy-induced nausea and vomiting during radiotherapy, chemotherapy, and surgery, slowing disease progression, avoiding disease aggravation, and thereby prolonging patient survival. However, after single-drug therapy, patients are prone to gastrointestinal reactions, leading to discomfort that can severely impact treatment effectiveness and daily life.

In acupuncture treatment, needling the Neiguan, Zusanli, and Tianshu points can effectively prevent gastrointestinal reactions induced by chemotherapy for gastrointestinal tumors. It can also alleviate symptoms such as diarrhea, nausea, vomiting, and abdominal pain to some extent. The mechanism involves needling acting on chemotherapy drugs[8], such as gastrin and endothelin, to minimize damage to the gastric mucosa caused by chemotherapy drugs, accelerate the restoration of gastric mucosal function, achieve effective regulation of the gastrointestinal neuroendocrine mechanism, improve gastrointestinal motility[9], and reduce adverse reactions. Acupoint selection is crucial in acupuncture treatment, taking into account the patient's condition. Point selection based on syndrome differentiation mainly depends on factors such as disease-induced factors and systemic symptoms; proximal point selection refers to selecting points near the disease site or local lesions; distal point selection involves selecting points further away from the disease site. The Stomach Meridian of Foot Yangming is an important meridian for treating gastrointestinal diseases. Some studies have found that needling points on the Stomach Meridian of Foot Yangming can effectively regulate gastrointestinal blood flow, electrophysiological function, hormones[10], and gastrointestinal motility, with significant effects such as enhancing gastric and intestinal peristalsis, relieving gastric pain, and improving nausea and

vomiting. The Tianshu point can invigorate the spleen and eliminate dampness, regulate the intestines and stomach, and alleviate pain and spasms. Zusanli can regulate the intestines and stomach, nourish the viscera, and is generally applied in the prevention and health care of abdominal diseases in clinical practice.

Analyzing the results of this study, before treatment, there were no significant differences in various indicators between the two groups; after treatment, all indicators in the observation group were superior to those in the reference group; the effective rate of treatment in the observation group (72.09%) was significantly higher compared to the reference group (93.02%) ($P < 0.05$). This indicates that for patients with gastrointestinal tumors undergoing chemotherapy, acupuncture combined with drug therapy can alleviate gastrointestinal reactions induced by chemotherapy, effectively increase the maximum tolerance pressure and maximum tolerance volume of patients, and improve visceral sensation thresholds, reducing visceral sensitivity. In acupuncture treatment, by reducing visceral sensitivity, it plays an important role in improving gastric compliance and increasing vagal nerve function tension, balancing the vagus nerve and sympathetic nervous system, thereby effectively relieving symptoms such as abdominal pain, bloating, nausea, and vomiting in patients.

Analyzing the research results, there were no significant differences in various indicators between the two groups before treatment; after treatment, all indicators in the observation group were superior to those in the reference group; the effective rate of treatment in the observation group (72.09%) was significantly higher compared to the reference group (93.02%) ($P < 0.05$). This also indicates that for patients with gastrointestinal tumors undergoing chemotherapy, in order to alleviate their gastrointestinal reactions, acupuncture combined with drug therapy can be conducted, which is beneficial for improving treatment effectiveness and ensuring patient safety. The combination of acupuncture and medication for treating gastrointestinal reactions can be considered a "double insurance". Medication can prevent gastrointestinal bleeding and bacterial infections, thereby improving gastrointestinal immunity, while acupuncture can promote local blood circulation and provide nutritional support to patients. Some studies have found that stimulating corresponding acupoints can promote local circulation, and the circulatory system can provide nutritional support to the body. Additionally, it can metabolize killed cells, further improving gastrointestinal function. From this study, it was observed that the tolerance of patients in the observation group greatly improved, especially after acupuncture for three days, the symptoms of nausea and vomiting were significantly relieved, and some patients' symptoms of gastrointestinal bleeding improved, indicating that both drugs and acupuncture played a certain role. However, it is worth noting that acupuncture requires reasonable selection of acupoints and stimulation based on the manifestation of the patient's symptoms. For some severe gastrointestinal reactions, it may be necessary to increase the time and frequency of acupoint stimulation to improve function. In terms of medication, appropriate adjustments should be made according to the severity of the symptoms to avoid enhancing the patient's gastrointestinal discomfort due to irrational drug use, which may affect the patient's recovery. Some studies have suggested that when acupuncture and medication are used together to treat gastrointestinal adverse reactions, attention should also be paid to gastrointestinal disorders because chemotherapy drugs have many effects on patients' bodies, and many patients have weak digestive abilities. When using drugs, it is necessary to consider whether such drugs will affect the patient's gastrointestinal tract again. If the patient's gastrointestinal function is poor, the use of relevant drugs may increase the burden on the gastrointestinal tract, while during acupuncture, attention should be paid to the patient's excretion conditions, such as whether there is bloating, whether the amount of excretion is reduced, or whether the appearance of excreta meets expectations, to judge the digestion situation and ensure the patient's digestion ability to the maximum extent. In addition, changes in patient signs, especially gastrointestinal signs, should be recorded during the combined medication process, and appropriate treatment plans should be formulated based on the patient's gastrointestinal signs to comprehensively and effectively protect the patient's health, avoid more harm from gastrointestinal adverse reactions, and provide a better recovery environment for patients, reducing the impact of the disease on patients.

In summary, the combined application of acupuncture and medication can not only effectively alleviate patients' gastrointestinal reactions and clinical symptoms but also play an important role in improving treatment effects and prognosis for patients.

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