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Observation on the Nursing Effect of Ginger Moxibustion on Gastrointestinal Symptoms in Patients with Heart Failure Due to Yang Qi Deficiency

Yijing Wang*

Xuzhou Hospital of Traditional Chinese Medicine, Xuzhou 221000, Jiangsu Province, China

***Corresponding author:** Yijing Wang, asd581711@126.com

Abstract: *Objective:* To evaluate the nursing measures and effects of ginger moxibustion in the treatment of heart failure (yang qi deficiency type) with gastrointestinal symptoms. *Methods:* 86 patients with heart failure (yang qi deficiency type) accompanied by gastrointestinal symptoms who were admitted to the hospital between January 2023 and January 2024 were selected and divided into 43 cases in each group by random number table grouping; Group I implemented integrated care, while Group II adopted conventional care. The indicators of care were compared between the two groups. *Results:* After the nursing care, the digestive symptom scores of Group I were lower than those of Group II, and the psychological scores were lower than those of Group II ($P < 0.05$). *Conclusion:* Ginger moxibustion can improve gastrointestinal symptoms and enhance the psychological health of patients with heart failure (yang qi deficiency type) with gastrointestinal symptoms.

Keywords: Ginger moxibustion; Yang qi deficiency; Heart failure; Gastrointestinal symptoms

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1. Introduction

Heart failure is mostly an end-stage manifestation of heart disease, and its pathogenesis is blood stasis and yang and qi deficiency, and the common type is the symptomatic yang qi deficiency type, which can be seen as decreased exercise capacity, fluid retention, and pulmonary stasis, etc. The principles of traditional Chinese medicine (TCM) treatment are eliminating pathogens, strengthening vital qi, promoting blood circulation, and benefiting qi, etc. [1]. Heart failure can lead to gastrointestinal stasis, which in turn induces gastrointestinal symptoms such as abdominal distension and nausea, which can aggravate patient's disease burden and increase their psychological burden. Ginger moxibustion is a commonly used treatment for this comorbidity, which can stimulate the meridian points, replenish the deficiency and benefit the qi, regulate the qi and blood circulation, and then improve the blood circulation of the digestive tract and alleviate the related symptoms. In order to

ensure the overall efficacy of moxibustion, more often than not, integrated care is added on the basis of this therapy, paying attention to the psychological changes of the patients, providing targeted guidance, and combining with Chinese medicine characteristic care, which can obtain a better quality of care [2]. For this reason, 86 patients with heart failure (yang qi deficiency type) accompanied by gastrointestinal symptoms were selected in this study to evaluate the intervention effect of ginger moxibustion + integrated nursing care.

2. General information and methods

2.1. General information

86 patients with heart failure (yang qi deficiency type) accompanied by gastrointestinal symptoms who were admitted to the hospital for treatment between January 2023 and January 2024 were selected, and all of them received ginger moxibustion. They were divided into 43 cases in each group by random number table grouping; Group I implemented integrated care, while Group II adopted conventional care. The general information between the groups had no difference in comparison ($P > 0.05$), as shown in **Table 1**.

Table 1. Comparison of general information between groups [n (%), mean ± standard deviation (SD)]

Groups	Number of cases	Gender		Age (years)
		Male	Female	
Group I	43	25 (58.14)	18 (41.86)	42–89 (54.29 ± 2.33)
Group II	43	26 (60.47)	17 (39.53)	41–88 (54.18 ± 2.30)
χ^2/t	-	0.048		0.220
P	-	0.826		0.826

2.2. Methods

The treatment with ginger moxibustion was the same in both groups: the patient was kept in a supine position, the moxibustion practitioner sterilized the patient's Shenque points with 75% ethanol cotton balls, rolled the moxa floss into moxa pillars, which were in a conical shape with a diameter of about 1 cm. Ginger slices were spread at the Shenque points (thickness: 3 mm, diameter: 1.5 cm), and moxa pillars were placed on the slices of ginger and were set ablaze. The patient was asked about the feeling of ginger moxibustion; if there was a burning sensation, the ginger piece was slightly lifted, and a total of three moxa columns were burned. The treatment was carried out once a day for 2 weeks, and the skin was warm, flushed, and not accompanied by a burning sensation.

Group II implemented conventional care. During ginger moxibustion, patients were prohibited from moving around freely, the patients' therapeutic responses were observed, and adverse reactions were treated appropriately: no symptomatic treatment was needed for small local blisters and the blisters could disappear on their own; larger blisters were punctured with a sterile syringe to aspirate the fluid in the blisters, and wrapped with sterile gauze.

Group I was based on Group II, and comprehensive integrated nursing care was implemented:

(1) Daily living care: Patients were advised to pay attention to warmth, avoid wind and cold attacks, regulate work and rest time, and sleep 8 hours per day. According to the patient's age, individual physical condition, and exercise tolerance level, an exercise program was formulated, and it was recommended that patients play taijiquan, jog, brisk walk, or swim, and they could exercise for 30 minutes per day, and avoid strenuous exercise. Reasonable adjustment of the ward environment was

carried out through regular ventilation twice a day, each time more than 20 minutes to ensure good ventilation. The indoor temperature was adjusted according to the individual needs of patients, and 22–25℃ was appropriate. At the same time, the negative effects of smoking, drinking, full meals, tiredness, and wind and cold on the disease were explained, and the patients were asked to quit smoking and drinking and correct their bad habits.

(2) Dietary care: Nurses informed patients of the daily salt intake and water intake to prevent sodium retention. They encouraged patients to have more milk, fish, shrimp, meat, and other high-quality protein, and less soy products and other vegetable protein. Patients adhered to low-salt and low-fat diets, chose foods that activate blood circulation and dissipate cold, warm the yang, and open the channels, such as hawthorn, lychee, longan meat, mutton, leeks, dried ginger, etc., avoided sweets and greasy, deep-fried foods, and had less bitter melon and watermelon and other cold foods.

(3) Emotional care: Nurses assessed the patient's family environment, personality traits, and disease conditions, analyzed their negative psychological performance, and then carried out targeted emotional care. For example, for those who were anxious and irritable, nurses talked to them face-to-face, used friendly facial expressions and body movements to gain their trust, then guided them to express their inner thoughts, introduced disease knowledge step by step, and improved their awareness of their own condition. For those who were depressed or lost, music therapy or diversion methods could be adopted, encouraging patients to listen to soft music with a gentle rhythm to relax their body and mind, or read, play chess, paint, etc., to cultivate personal interests and divert attention.

(4) Chinese medicine characteristic nursing: (a) Acupressure point massage: The Zusanli, Neiguan (bilateral), Sanyinjiao, Shenque, and Zhongwan acupuncture points were pressed and massaged using the thumb pad. Each point was pressed for 2 minutes until a sensation of soreness, numbness, or distention was felt, followed by gentle rubbing for 5 to 10 seconds. The Zhongwan point was treated as the center, and circular massage within a 2 cm diameter was performed for 3 minutes at a frequency of 60 times per minute, aiming for a feeling of elasticity. This acupoint massage was conducted once daily, with a treatment course lasting 7 days. (b) Acupoint application: 10 g of Rhizoma Typhonii, 12 g of Cortex *Magnoliae officinalis*, 20 g of Poria, 6 g of cinnamon twig, 12 g of stir-fried Rhizoma Atractylodis, 5 g of Herba Agastachis, 12 g of *Pinellia* tuber, 5 g of *Perilla* stem, 6 g of *Aucklandia* root, and 2 g of clove were taken and grounded into a powder and mixed with fresh ginger juice to form a paste. The paste was applied to the Shenque acupoint and secured with a medical adhesive patch. The application was done once daily for 4 to 6 hours each time, for a duration of 3 days.

2.3. Observation indicators

(1) Gastrointestinal symptom score: A 4-level scoring method was implemented, containing 15 items such as abdominal pain, belching, heartburn, increased flatulence, loose stools, etc.; with 0 points recorded for asymptomatic, 2 points for mild symptoms, 4 points for obvious symptoms, and 6 points for severe symptoms.

(2) Psychological scores: The Anxiety and Depression Self-Rating Scales were selected, with standard scores of 50 and 53, respectively, indicating negative psychological tendencies.

2.4. Statistical analysis

Data were analyzed by SPSS28.0 software, measurement values were compared/tested by *t*-test, count values were compared/tested by χ^2-value, and $P < 0.05$ was a statistically significant difference.

3. Results

3.1. Comparison of digestive symptom scores between the two groups

Before nursing (**Table 2**), there was no difference in the digestive symptom scores of the two groups ($P > 0.05$). After nursing (**Table 3**), the digestive symptom scores of Group I were lower than those of Group II ($P < 0.05$).

Table 2. Comparison of digestive symptom scores between the two groups before nursing care (mean ± SD, score)

Points	Group I (n = 43)	Group II (n = 43)	t	P
Abdominal pain	2.99 ± 0.41	3.01 ± 0.40	0.229	0.819
Belching	2.35 ± 0.44	2.36 ± 0.42	0.108	0.914
Heartburn	3.15 ± 0.24	3.16 ± 0.22	0.201	0.841
Increased flatulence	2.58 ± 0.37	2.59 ± 0.34	0.130	0.896
Loose stools	2.36 ± 0.42	2.38 ± 0.45	0.213	0.832
Bloating	2.48 ± 0.37	2.49 ± 0.31	0.136	0.892
Nausea and vomiting	2.51 ± 0.55	2.53 ± 0.51	0.175	0.862
Acid reflux	2.88 ± 0.38	2.90 ± 0.35	0.254	0.800
Borborygmus	2.24 ± 0.27	2.26 ± 0.25	0.356	0.722
Decreased bowel movements	2.41 ± 0.33	2.48 ± 0.35	0.954	0.343
Upper abdominal tightness	2.46 ± 0.38	2.49 ± 0.37	0.371	0.712
Tightness in bowel movements	2.45 ± 0.31	2.48 ± 0.33	0.434	0.665
Hard stools	2.28 ± 0.33	2.27 ± 0.31	0.145	0.885
Feeling of incomplete bowel movement	2.61 ± 0.51	2.65 ± 0.50	0.367	0.714
Increased bowel movements	2.46 ± 0.33	2.48 ± 0.31	0.290	0.773

Table 3. Comparison of digestive symptom scores in the two groups after nursing care (mean ± SD, score)

Points	Group I (n = 43)	Group II (n = 43)	t	P
Abdominal pain	1.08 ± 0.33	1.65 ± 0.27	8.766	0.000
Belching	0.74 ± 0.15	1.52 ± 0.26	17.040	0.000
Heartburn	1.45 ± 0.33	1.84 ± 0.35	5.316	0.000
Increased flatulence	0.92 ± 0.24	1.62 ± 0.25	13.245	0.000
Loose stools	0.66 ± 0.15	1.81 ± 0.35	19.804	0.000
Bloating	0.51 ± 0.12	1.37 ± 0.26	19.694	0.000
Nausea and vomiting	0.54 ± 0.12	1.41 ± 0.18	26.371	0.000
Acid reflux	1.21 ± 0.32	1.58 ± 0.37	4.960	0.000
Borborygmus	1.21 ± 0.23	1.69 ± 0.28	8.686	0.000
Decreased bowel movements	0.66 ± 0.24	1.61 ± 0.31	15.890	0.000
Upper abdominal tightness	1.12 ± 0.31	1.70 ± 0.22	10.005	0.000
Tightness in bowel movements	1.02 ± 0.25	1.63 ± 0.24	11.542	0.000
Hard stools	0.55 ± 0.15	1.30 ± 0.18	20.990	0.000
Feeling of incomplete bowel movement	0.75 ± 0.19	1.52 ± 0.24	16.495	0.000
Increased bowel movements	0.61 ± 0.15	1.50 ± 0.33	16.100	0.000

3.2. Comparison of psychological scores between the two groups

Before nursing, there was no difference in the comparison of the psychological scores of the two groups ($P > 0.05$). After nursing, the psychological scores of Group I were lower than those of Group II ($P < 0.05$), as presented in **Table 4**.

Table 4. Comparison of psychological scores of the two groups (mean ± SD, score)

Groups	Number of cases	Anxiety		Depression	
		Before nursing	After nursing	Before nursing	After nursing
Group I	43	58.65 ± 4.18	35.26 ± 2.84	55.29 ± 4.31	32.15 ± 2.61
Group II	43	58.66 ± 4.25	40.18 ± 2.66	55.34 ± 4.28	36.59 ± 2.72
t	-	0.011	8.291	0.054	7.723
P	-	0.991	0.000	0.957	0.000

4. Discussion

According to Chinese medicine, the pathogenesis of heart failure is the underlying deficiency, and the root cause of the disease is heart qi and yang deficiency, with the yang qi deficiency type being the most prevalent. The long-term development of the disease will damage the regulation of qi and blood, and the spleen and stomach will be disrupted, affecting the rise or fall of vital qi, which will lead to gastrointestinal symptoms. This comorbidity will aggravate the patient's symptoms and reduce the patient's resistance to disease, thus inducing other complications. Therefore, it is necessary to adopt Chinese medicine symptomatic treatment for patients with heart failure (yang qi deficiency type) with gastrointestinal symptoms [3].

The umbilical regulation mechanism can act on vascular endothelial cells, causing them to release large amounts of vasoactive polypeptides, which in turn interferes with intracellular signaling processes and exerts therapeutic efficacy. The endothelial cells of umbilical veins can continuously secrete vasoactive peptides such as substance P, growth inhibitor, or cardiac natriuretic peptide, which can act on smooth muscle and endothelial cell channels to regulate vascular function [4,5]. Based on the above Chinese medicine theory, umbilical moxibustion therapy can be adopted for patients with this comorbidity, which can stimulate specific acupoints to regulate qi and blood by exerting both medicinal power and thermal power at the same time. Ginger moxibustion can use the dispersing effect of ginger and the warm stimulation of moxa to regulate the rise and fall of yang qi and viscera qi, and has the effect of warming the meridians and collaterals. It can also regulate the gastrointestinal function in both directions and improve the absorption capacity of the digestive tract, so as to relieve symptoms such as abdominal distension or nausea and vomiting [6]. In addition, ginger itself has the efficacy of warming the stomach and stopping vomiting, which can open the qi, accelerate the speed of gastrointestinal peristalsis, and then improve gastrointestinal symptoms such as flatulence and increased defecation. Based on this, the addition of integrated nursing can improve the treatment efficacy, regulate the living habits of patients, and improve the condition in all aspects. The measures of this care are comprehensive, covering the levels of daily living care, dietary care, emotional care, etc., which can enhance the patients' self-care consciousness, make them take the initiative to regulate their dietary behaviors, adhere to a healthy lifestyle, and actively regulate their state of mind [7,8]. Combination with Chinese medicine characteristic nursing can significantly alleviate the symptoms and maximize the therapeutic advantages of ginger moxibustion therapy.

The results showed that after nursing, the digestive symptom scores and psychological scores of Group

I were lower than those of Group II *(P* < 0.05). The reason is that daily living care includes the dimensions of warmth care, work and rest adjustment, moderate exercise, and environmental care, which can improve patients' self-care ability, enhance their physical fitness, and improve their disease resistance, which is conducive to the regression of the disease. Dietary care can list food taboos, protect the gastrointestinal function of patients, and prevent patients from aggravating gastrointestinal symptoms due to improper diet. Emotional care has the principles of dialectic and flexibility and can carry out differentiated nursing according to the psychological characteristics of patients, thus reducing their negative psychology and enabling them to efficiently cooperate with moxibustion treatment [9]. Chinese medicine characteristic nursing is the innovation in this treatment, acupoint massage can regulate local blood circulation, deliver nutrients to the massage area, and discharge metabolic products, thus improving discomfort. Acupoint application is selected as warming yang and benefiting qi, which has the effects of warming yang and tonifying the kidney, transforming qi and strengthening the spleen, and soothing the middle and moving qi, which can improve gastrointestinal motility and alleviate the manifestation of gastrointestinal stasis [10].

5. Conclusion

In conclusion, ginger moxibustion combined with integrated care can improve disease treatment and enhance the psychological state of patients with heart failure with gastrointestinal symptoms.

Disclosure statement

The author declares no conflict of interest.

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