

Application Study of Aromatic Essential Oil Cold Compress Patches in Alleviating Gastrointestinal Reactions in Chemotherapy Patients

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Abstract: Objective: To explore the efficacy of aromatic essential oil cold compress patches in relieving gastrointestinal reactions among breast cancer patients receiving chemotherapy. **Methods:** A total of 60 inpatients with breast cancer undergoing chemotherapy, who were admitted to the Department of Thyroid and Breast Surgery of a Grade A Tertiary Hospital in Nanning, Guangxi, from August 2024 to March 2025, were enrolled as research subjects. They were randomly divided into observation group and control group, with 30 cases in each group. The control group received routine nursing care, while the observation group was additionally treated with aromatic essential oil cold compress patches on the basis of routine nursing care. The prescription consists of Citri Reticulatae Pericarpium 15g, Bambusae Caulis in Taeniam 15g, Jujubae Fructus 5 pieces, Zingiberis Rhizoma Recens 9g, Amomi Fructus Rotundus 6g, Pinelliae Rhizoma 6g, Magnoliae Officinalis Cortex 6g, Amomi Fructus 6g, Anisi Stellati Fructus 6g, Foeniculi Fructus 6g, Glycyrrhizae Radix et Rhizoma 6g, and Ginseng Radix et Rhizoma 3g. The essential oil extracts derived from the above traditional Chinese medicine components were formulated into aromatic essential oil cold compress patches by the Preparation Room of our hospital after experimental research. The processed product was developed into functional medical acupoint cold compress patches, which were applied to treat nausea and vomiting induced by chemotherapy in breast cancer patients, followed by clinical efficacy observation. Intervention methods: Starting on the day of chemotherapy, the primary nurses applied cold compress patches containing traditional Chinese medicine essential oil ingredients behind both ears of the patients. The patches were placed at Wangu (GB12), the depression inferior and posterior to the mastoid process of each ear, and removed after 6 to 12 hours. The intervention was administered for 3 consecutive days and discontinued once the patients' nausea and vomiting were relieved. The efficacy of the two groups in improving chemotherapy-induced gastrointestinal reactions among breast cancer patients was compared. **Results:** The overall effective rate differed significantly between the control group and the observation group ($P < 0.05$). **Conclusion:** Aromatic essential oil cold compress patches can alleviate gastrointestinal reactions in chemotherapy patients and improve their quality of life, which is worthy of clinical promotion and application.

Keywords: Aromatic Essential Oil; Cold Compress Patches; Symptom Relief; Chemotherapy-induced Gastrointestinal Reactions.

1. Introduction

Breast cancer is one of the most common malignant tumors in women. At present, the main therapeutic methods for breast cancer include surgical treatment and chemotherapy. Chemotherapy refers to the use of drugs to kill cancer cells or inhibit the growth of tumor cells. Studies have shown that chemotherapeutic agents used in chemotherapy can not only eliminate tumor cells, but also damage normal human tissues. Therefore, chemotherapy may cause a series of adverse reactions in patients, such as myelosuppression, neurotoxic reactions, and gastrointestinal reactions [1]. Chemotherapy-induced nausea and vomiting (CINV) is one of the most severe, distressing, anxiety-provoking and frightening side effects in patients receiving chemotherapy [2]. Studies have indicated that the incidence of nausea and vomiting ranges from 40% to 80% among cancer patients without antiemetic interventions during chemotherapy [3]. Patients may develop gastrointestinal reactions such as nausea and vomiting of varying degrees during chemotherapy, which seriously impair their physical and mental health and reduce their quality of life. The application of aromatic essential oil cold compress patches serves as a therapeutic approach. Applying the patches on corresponding acupoints can alleviate

gastrointestinal reactions in chemotherapy patients, which possesses distinctive clinical value. Meanwhile, it is observed during the study that this intervention can relieve patients' stress, help them build confidence and further facilitate rehabilitation. This study explores the clinical efficacy of aromatic essential oil cold compress patches in mitigating gastrointestinal reactions among chemotherapy patients. The relevant analysis is presented as follows:

1.1. Materials and Methods

1.1.1. Study Subjects

Patients with breast cancer receiving chemotherapy in the Department of Thyroid and Breast Surgery of a Grade A Tertiary Hospital in Nanning from August 2024 to March 2025 were enrolled as study subjects.

1.2. Ethical Review

This study was implemented after approval by the Hospital Ethics Committee. All participants gave informed consent and signed the informed consent form prior to enrollment.

1.3. Inclusion Criteria

1) Female breast cancer patients undergoing chemotherapy, predominantly with nausea and vomiting; 2) Aged 18 years or

older; 3) Having received no less than 4 cycles of chemotherapy; 4) In good general condition and capable of cooperating with treatment; 5) Voluntarily participating in this trial and signing the informed consent form.

1.4. Exclusion Criteria

1) Patients allergic to the traditional Chinese medicine ingredients in the prescription; 2) Patients complicated with acute or chronic diseases involving the cardiovascular and cerebrovascular systems, liver, kidneys, hematopoietic system and other organs; 3) Patients with diabetes or severe skin diseases; 4) Participants enrolled in other clinical drug trials; 5) Patients with language communication disorders or mental illnesses.

1.5. Grouping

A total of 60 patients were enrolled in accordance with the inclusion and exclusion criteria. All subjects were randomly divided into two groups by the random number method. The control group received routine nursing care of the department. On the basis of routine nursing care identical to the control group, the observation group was additionally treated with aromatic essential oil cold compress patches, with 30 cases in each group.

1.6. Intervention Methods

1.6.1. Control Group

The control group received routine nursing care.

(1) Before chemotherapy: Primary nurses provided verbal health education for patients, including introducing chemotherapeutic drugs and relevant precautions during medication. Patients were informed of coping strategies for chemotherapy-related adverse reactions. Nurses monitored patients' emotional changes and delivered psychological nursing.

(2) On the day of chemotherapy: Dietary guidance was provided. Patients were instructed to refrain from eating within two hours before chemotherapy, and to choose light and easily digestible food after chemotherapy while avoiding spicy and greasy food, so as to reduce gastrointestinal irritation and relieve adverse reactions such as nausea and vomiting. Patients' adverse reactions were monitored in real time and targeted nursing measures were implemented accordingly.

1.6.2. Observation Group

On the basis of the same routine nursing care as the control group, the observation group additionally received intervention with aromatic essential oil cold compress patches.

Guided by the theories of traditional Chinese medicine, this study modified the classical prescription *Jupi Zhuru Decoction* recorded in *Synopsis of Prescriptions of the Golden Chamber* based on clinical practice to prepare aromatic essential oil. The modified formula consists of dried tangerine peel 15g, bamboo shavings 15g, 5 jujubes, fresh ginger 9g, amomum kravanh 6g, pinellia tuber 6g, magnolia bark 6g, villous amomum fruit 6g, star anise 6g, fennel 6g, licorice root 6g and ginseng 3g. The medicinal herbs in this formula exert the following effects: Dried tangerine peel is pungent and warm in nature, capable of regulating qi and harmonizing the stomach to relieve hiccup. Bamboo shavings are sweet and cold, which clear heat and soothe the stomach to arrest vomiting. Licorice root and jujube assist ginseng in tonifying qi and strengthening the middle energizer for stomach deficiency, and also harmonize the medicinal

properties. Fresh ginger, pungent and warm, harmonizes the stomach and stops vomiting. Combined with bamboo shavings, it creates a therapeutic effect of warmth within heat-clearing. Pinellia tuber and magnolia bark nourish yin and harmonize the stomach. Villous amomum fruit warms the middle energizer and stomach, so as to arrest vomiting and diarrhea. Amomum kravanh and star anise with fennel warm yang and dispel cold, regulate qi and relieve pain. Ginseng is sweet and warm, functioning to tonify qi and replenish deficiency. When combined with dried tangerine peel, it realizes tonification amid qi movement. According to literature records, dried tangerine peel, jujube, fresh ginger, amomum kravanh, villous amomum fruit, fennel and ginseng in the formula are rich in volatile oil and plant essential oil. Experimental data prove that such ingredients possess physiological activities including regulating qi and harmonizing the stomach, warming the middle energizer and stomach, as well as regulating qi to arrest vomiting. Based on *Jupi Zhuru Decoction*, the essential oil extracts of medicinal components were prepared into aromatic essential oil cold compress patches. Applied behind the ears, the patches can penetrate through the retroauricular skin and regulate the human nervous system. Integrating the efficacies of each herb — dried tangerine peel for regulating qi and harmonizing the stomach, bamboo shavings for clearing heat and soothing the stomach, pinellia tuber and magnolia bark for nourishing yin and harmonizing the stomach, villous amomum fruit for warming the middle energizer and stomach, amomum kravanh, star anise and fennel for warming yang and dispelling cold, and ginseng for tonifying qi and replenishing deficiency — the patches release persistent aromatic scent and exert a certain effect on relieving chemotherapy-induced adverse reactions such as nausea and vomiting in breast cancer patients.

The specific intervention measures were as follows:

(1) Before chemotherapy: The primary nurses provided patients with verbal health education, including the introduction of chemotherapeutic drugs and relevant precautions during medication. Patients were informed of the coping measures for chemotherapy-induced adverse reactions. Nurses paid close attention to patients' emotional changes and implemented psychological nursing.

(2) On the day of chemotherapy: Dietary education was provided. Patients were instructed to avoid food intake within two hours before chemotherapy, take light and easily digestible food after chemotherapy, and avoid spicy and greasy food, so as to reduce gastrointestinal irritation and relieve adverse reactions such as nausea and vomiting. Patients' adverse reactions were observed in real time, and corresponding nursing care was carried out.

(3) Composition of the aromatic essential oil formula: Based on the classical prescription *Jupi Zhuru Decoction*, modifications were made according to clinical application. The formula consists of dried tangerine peel 15 g, bamboo shavings 15 g, jujube 5 pieces, fresh ginger 9 g, amomum kravanh 6 g, pinellia tuber 6 g, magnolia bark 6 g, villous amomum fruit 6 g, star anise and fennel 6 g, licorice root 6 g, and ginseng 3 g. The essential oil extracts of the above traditional Chinese medicinal components were developed and prepared into aromatic essential oil cold compress patches by the preparation room of our hospital. Through scientific processing, functional medical acupoint cold compress patches were produced, which were applied for the treatment of chemotherapy-induced nausea and vomiting in

breast cancer patients for clinical efficacy observation.

(4) Starting on the day of chemotherapy, primary nurses applied cold compress patches containing traditional Chinese medicine essential oil ingredients behind both ears of patients. The patches were pasted on the Wangu (GB12) acupoint, the depression at the posteroinferior side of the bilateral mastoid processes, and removed after 6 to 12 hours. The intervention lasted for 2 to 3 days and was stopped once the patients' nausea and vomiting symptoms were relieved.

1.7. Evaluation Indicators

1)Validity judgment criteria: The grading of chemotherapy-induced nausea and vomiting was based on the World Health Organization (WHO) toxicity grading criteria for anticancer drugs [4]. Grade 0: No nausea and vomiting; Grade I: Slight nausea that does not affect diet and daily activities, with mild vomiting (1–2 times per day); Grade II: Nausea interfering with diet and daily activities, with moderate vomiting (3–5 times per day); Grade III: Patients

confined to bed due to severe nausea and vomiting, with severe vomiting (more than 5 times per day).

2)Efficacy grading criteria: Markedly effective: No nausea and vomiting, corresponding to Grade 0; Effective: Mild nausea and vomiting, corresponding to Grade I; Ineffective: Obvious nausea and vomiting, corresponding to Grade II and above. The results are shown in Table 1.

1.8. Statistical Analysis

SPSS 24.0 statistical software was used for data analysis. A P value of less than 0.05 was considered statistically significant.

2. Results

2.1. Comparison of Clinical Efficacy between the Two Groups

Table 1. Comparison of clinical efficacy between the two groups n (%)

Group	n	Markedly Effective	Effective	Ineffective	Total Effective Rate/%
Observation Group	30	16(53.3)	11(36.7)	3(10.0)	90.00
Control Group	30	8(26.7)	12(40)	10(33.3)	66.67

Data analysis showed that $\chi^2=6.479$, $P<0.05$, indicating that the clinical efficacy of the observation group was significantly superior to that of the control group.

3. Discussion

In conclusion, traditional Chinese medicine aromatherapy exerts multiple therapeutic effects, such as eliminating pathogenic turbidity, resuscitating and inducing consciousness, harmonizing stomach qi, and descending adverse qi to relieve vomiting. Guided by the basic theories of traditional Chinese medicine and combined with classical ancient prescriptions and professional opinions of TCM physicians, this study proportionally compatible single herbal essential oils with refreshing and antiemetic effects. Through scientific processing, medical functional acupoint cold compress patches were developed and applied to the intervention of chemotherapy-induced nausea and vomiting in breast cancer patients. The aromatic essential oil cold compress patches feature simple and feasible preparation process, high safety without adverse reactions, easily available medicinal materials and affordable price. In addition, this intervention can effectively relieve patients' physical discomfort and psychological burden, improve their quality of life and treatment satisfaction. With high patient acceptability, it is worthy of clinical popularization and application.

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