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Clinical Effect of Auricular Point Sticking in Patients with Lung Cancer Receiving Chemotherapy

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Abstract: ***Objective:*** To discuss and analyze the clinical effect of auricular point sticking in lung cancer chemotherapy. ***Methods:*** Sixty-two patients with lung cancer treated with chemotherapy in Suqian Traditional Chinese Medicine Hospital of Jiangxi Province were selected for case evaluation and analysis. The time span of the research was from June 2020 to June 2021. The patients were divided into two groups: a study group (n = 31) and a control group (n = 31) based on their medical record numbers. All the patients were treated with conventional western medicine before and after chemotherapy to prevent adverse reactions; however, the patients in the study group were also treated with auricular point sticking in addition to the former. The relevant indexes of the two groups were compared. ***Results:*** The incidence of adverse reactions was significantly lower in the study group compared to the control group ($P < 0.05$); the rate of symptomatic relief of the patients in the study group was higher than that of the control group ($P < 0.05$); the stress response indexes toward chemotherapy of the study group were better than those of the control group ($P < 0.05$). ***Conclusion:*** Auricular point sticking for patients with lung cancer who are receiving chemotherapy can reduce the incidence of adverse reactions, alleviate clinical symptoms, such as chest distress, asthma, and poor appetite, significantly alleviate stress response caused by chemotherapy, as well as promote the treatment effect; thus, it is worthy of promotion.

Keywords: Auricular point sticking; Lung cancer; Chemotherapy

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1. Introduction

Chemotherapy is a routine treatment for lung cancer, as it can effectively control the progress of the disease, alleviate clinical symptoms, and prolong the survival time of patients [1]. Most chemotherapeutic agents have strong toxic effects. Therefore, most lung cancer patients receiving chemotherapy develop adverse reactions, such as anorexia, nausea, and vomiting, resulting in a significant reduction in tolerance and compliance for chemotherapy, which in turn affects the effectiveness of the treatment. At the same time, patients with lung cancer also develop clinical symptoms, such as chest distress, asthma, and poor appetite. The symptom relief from chemotherapy alone is poor [2]. Auricular point sticking is a characteristic external treatment in traditional Chinese medicine. Good therapeutic effect can be achieved through comprehensive stimulation of auricular points [3]. Some studies believe that auricular point sticking can significantly reduce the incidence of adverse reactions and improve the clinical symptoms related to lung cancer. This study analyzed the relevant basic data of the patients in the hospital and the clinical effect of auricular point sticking in patients with lung cancer receiving chemotherapy.

2. Materials and methods

2.1. General information

Sixty-two patients with lung cancer receiving chemotherapy in Suqian Traditional Chinese Medicine Hospital of Jiangxi Province were selected for case evaluation and analysis. The time span of the research was from June 2020 to June 2021. The patients were divided into two groups: a study group (n = 31) and a control group (n = 31) based on their medical record numbers. In the study group, there were 18 male patients and 13 female patients, age ranging from 42 to 71 years old, with an average age of 56.58 ± 4.76 years; 12 cases were of stage II lung cancer, 10 cases of stage III lung cancer, and 9 cases of stage IV lung cancer. In the control group, there were 16 male patients and 15 female patients, age ranging from 44 to 70 years old, with an average age of 56.69 ± 4.71 years; 14 cases were of stage II lung cancer, 9 cases of stage III lung cancer, and 8 cases of stage IV lung cancer. There was no significant difference between the two groups ($P > 0.05$).

The inclusion criteria were as follows: (1) patients with a diagnosis of non-small cell lung cancer through pathological examination; (2) patients with indications for chemotherapy; (3) patients who had signed the informed consent form.

The exclusion criteria were as follows: (1) patients with mental disorders and other diseases; (2) patients who were unable to cooperate with the study.

2.2. Method

Both groups of patients were treated with chemotherapy. The patients received different chemotherapy regimens according to their conditions, some of which include GP (gemcitabine plus nedaplatin), DP (docetaxel plus nedaplatin), TP (paclitaxel plus nedaplatin), and NP (vinorelbine plus nedaplatin). The patients in the control group were injected with 3 mg of granisetron intravenously, 30 minutes before chemotherapy, and 8 mg of ondansetron intravenously, 2 hours after chemotherapy, to prevent adverse reactions.

The patients in the study group were treated with auricular point sticking in addition to the treatment received by the patients in the control group. Thirty minutes prior to chemotherapy, the patients were asked to maintain a supine or sitting position and auricular point sticking was applied. The selected acupoints were Shenmen, Pizhixia, Dachang, Ge, Wei, Fei, Pi, and other acupoints. For each patient, auricular point sticking was done following these steps: disinfect the skin with alcohol; place the cowherb seed sticker on the corresponding area of the acupoint; press hard on the point until the area becomes numb, swollen, painful, and hot; press on the acupoint for 1-2 minutes and 3-5 times a day; after an interval of one week, remove it and repeat the steps on the contralateral ear.

2.3. Evaluation criteria

The incidence of adverse reactions after treatment and the rate of relief from clinical symptoms such as asthma, chest distress, and poor appetite were determined. After treatment, the scores from the Numeric Rating Scale (NRS), Hamilton Rating Scale for Depression (HAM-D), and Hamilton Rating Scale for Anxiety (HAM-A) were used to determine the stress response from chemotherapy.

2.4. Statistical analysis

SPSS 23.0 software was used to analyze the research data; t-test was used for the measurement data ($\overline{x} \pm s$), and chi-square (χ^2) test was used for the count data (%). $P < 0.05$ indicates a statistical difference.

3. Results

3.1. Incidence of adverse reactions after treatment

The incidence of adverse reactions was significantly lower in the study group compared to the control group ($P < 0.05$) (**Table 1**).

Table 1. Incidence of adverse reactions after treatment (n/%)

Group	Nausea	Vomit	Abdominal distention	Abdominal pain
Research group (n = 31)	5 (16.1)	4 (12.9)	7 (22.6)	6 (19.4)
Control group (n = 31)	17 (54.8)	15 (48.4)	18 (58.1)	17 (54.8)
$\chi 2$ value	10.145	9.182	8.110	8.363
P value	0.001	0.002	0.004	0.003

3.2. Rate of relief from clinical symptoms

The rate of relief from clinical symptoms of the study group was higher than that of the control group ($P < 0.05$) (**Table 2**).

Table 2. Rate of relief from clinical symptoms (n/%)

Group	Chest distress	Asthma	Poor appetite
Research group (n = 31)	25 (80.6)	26 (83.9)	28 (90.3)
Control group (n = 31)	17 (54.8)	17 (54.8)	18 (58.1)
$\chi 2$ value	4.723	6.146	8.423
P value	0.029	0.013	0.003

3.3. Stress response indexes after chemotherapy

The stress response indexes of the study group after chemotherapy were better than those of the control group ($P < 0.05$) (**Table 3**).

Table 3. Stress response indexes after chemotherapy ($\overline{x} \pm s$)

Group	NRS score	HAM-A score	HAM-D score
Research group (n = 31)	1.83 ± 0.45	14.07 ± 1.53	14.35 ± 1.69
Control group (n = 31)	4.96 ± 0.88	23.94 ± 2.77	23.28 ± 2.85
t value	17.632	17.366	15.006
P value	0.000	0.000	0.000

4. Discussion

Chemotherapy is a routine treatment for lung cancer. During the treatment, chemotherapeutic agents are used to block metastasis, proliferation, and infiltration of cancer cells, kill cancer cells, as well as prolong the survival time of patients [4]. Platinum-based drugs are commonly used as a chemotherapeutic agent in the treatment of lung cancer; these drugs have toxic effects. Upon treatment, they travel to the central nervous system through the blood circulatory system, inducing various adverse reactions. This, in turn, leads to the intolerance to chemotherapy, which then affects the effectiveness of the treatment. Moreover, chemotherapeutic agents cannot alleviate the main clinical symptoms of lung cancer patients, which include

asthma, chest distress, and poor appetite. Therefore, the treatment plan for these patients needs to be adjusted appropriately [5].

Dexamethasone, 5-HT3 receptor antagonist, neurokinin-1 receptor antagonist, and other drugs are mostly used to prevent vomiting and other adverse reactions caused by chemotherapy. In this study, granisetron, as a typical 5-HT3 receptor antagonist, was selected. After treatment, the body releases serotonin (5-HT3); the drug competitively blocks the action of serotonin at the receptor, thus inhibiting nerve impulse transmission. This mechanism achieves the clinical effect of the drug in alleviating vomiting [6].

According to the theory of traditional Chinese medicine, the adverse reactions of the digestive system after chemotherapy for lung cancer are related to gastrointestinal dysfunction and the reversed flow of Qi caused by impaired harmonious downbearing of the stomach. The treatment should be based on the principle of harmony and stomach depression [7]. Patients with lung cancer have lung-Yin deficiency, spleen- and lung-Qi deficiency, Qi and Yin deficiency, Qi stagnation, as well as blood stasis in the long run. The clinical manifestations of these patients include asthma, chest distress, poor appetite, and other clinical symptoms. The treatment should be directed to warming and tonifying Qi in the spleen and the lungs. Auricular point sticking is a characteristic external treatment in traditional Chinese medicine, which can stimulate the sensitive parts of the auricles and Shu points. The theory of traditional Chinese medicine believes that the ear belongs to the place where the veins converge and the twelve meridians are all connected to the ear. Acupoints such as Shenmen, Pizhixia, Dachang, Ge, Wei, Fei, and Pi are selected in auricular point sticking. The action on Shenmen produces a calming and downbearing counterflow effect; the action on Pixiazhi inhibits the vomiting center at the cerebral cortex; the action on Pi and Fei strengthens the spleen and benefits the lung. Pressing on the cowherb seed sticker can dredge meridians as well as regulate Qi and the blood. This, in turn, would alleviate the adverse reactions of the digestive system caused by chemotherapeutic agents and improve clinical symptoms, such as chest distress, poor appetite, and asthma [8]. Compared with western medicine, auricular point sticking has several advantages, such as easy to operate, low cost, and non-toxic side effects, thus having high clinical value.

The results from this study showed that the incidence of adverse reactions after treatment was lower in the study group compared to the control group, suggesting that auricular point sticking in patients with lung cancer receiving chemotherapy can reduce the incidence of adverse reactions. The remission rate of gastrointestinal symptoms of the study group was lower than that of the control group, suggesting that auricular point sticking can shorten the remission time of gastrointestinal symptoms in patients with lung cancer receiving chemotherapy. The stress response indexes of the patients in the study group after chemotherapy were better than those of the control group, suggesting that auricular point sticking during chemotherapy for patients with lung cancer can reduce their stress response as well as improve their physical and mental state. In auricular point sticking and pressing, doctors should inform the patient of the purpose of the treatment and the expected curative effect in detail; the selection of the auricular points should be based on the patient's condition, and the patient should be guided to press the cowherb seed sticker by themselves. While sleeping, the patient should avoid pressing the area. If the patient develops perichondrium pain, it should be handled properly in a timely manner to ensure the effectiveness of the treatment.

In conclusion, auricular point sticking for patients with lung cancer receiving chemotherapy can reduce the incidence of adverse reactions, alleviate clinical symptoms, such as chest distress, asthma, and poor appetite, significantly alleviate the stress response caused by chemotherapy, as well as promote the treatment effect. Therefore, it is worthy of promotion. However, there are several limitations in this study: the sample size is small, the research time is short, the process design is not comprehensive enough, and it lacks comparative comprehensive analysis and research of the same type of data. The specific mechanism

of auricular point sticking for patients with lung cancer receiving chemotherapy still requires continuous evaluation and analysis.

Disclosure statement

The authors declare that there is no conflict of interest.

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