

# Pang Fuwan Uses Yao Medicine to Observe the Therapeutic Effects on the Physical and Mental Symptoms of Patients with Advanced Non-Small Cell Lung Cancer

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## Abstract

**Objective:** Investigate the efficacy and safety of Yao Medicine in the treatment of advanced non-small-cell lung carcinoma, and explore the best therapeutic measure for clinical benefit. **Methods:** From July 2020 to July 2022, 84 patients with advanced non-small-cell lung carcinoma were selected and randomly divided into the Observation Group and control group, and the control group was treated with routine Western medicine, with 42 cases in each group. The activity of daily living (ADL) was assessed before and after treatment, meanwhile, the self-rating depression scale (SDS) and self-rating anxiety SAS (SAS) were used to assess the improvement of a bad mood, and quality of life SF-36 was used to assess the quality of life, to judge the efficacy and safety. **Results:** The effective rate of observation group was 91.67%. The effective rate of the control group was 76.19%. The effective rate of the observation group was significantly higher than that of the control group ( $P < 0.05$ ). There were no significant differences in the scores of SDS, SAS and quality of life between the two groups before treatment ( $P > 0.05$ ), and after treatment, the scores of SDS, SAS and quality of life in the two groups were compared with those in the control group ( $P > 0.05$ ), the scores of VAS, SDS and SAS decreased significantly, while ESCV, angle of straight leg elevation, ADL, physiological score, emotional score, social score and health status score increased significantly, the difference was statistically significant ( $P < 0.05$ ). **Conclusion:** Yao Medicine can improve the psychosomatic symptoms of patients with advanced non-small-cell lung carcinoma better, with better efficacy and higher safety.

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## Keywords

Yao Medicine, Non-Small-Cell Lung Carcinoma, Advanced Stage, Efficacy, Physical and Mental

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## 1. Introduction

With the continuous changes in lifestyle, environmental factors, and the deepening of aging, the incidence of lung cancer, a malignant disease, is showing an increasing trend, with a lower age of onset and a high mortality rate [1]. This brings a significant economic and psychological burden to patients and their families [2]. Therefore, exploring effective treatment measures is one of the difficult problems that medical workers need to solve today. The distinctive features of Yao medicine in the treatment of tumors have gradually been recognized by clinical doctors. As the only specialized hospital for Yao medicine in the country, our hospital has summarized the physical and mental symptoms of late-stage non-small cell lung cancer patients treated by Yao medicine, for clinical reference.

## 2. Objectives and Methods

### 2.1. Research Subjects

From July 2020 to July 2022, 84 cases of advanced non-small cell lung cancer patients admitted to our department were included in the study after signing an informed consent form. The research protocol was approved by our hospital's ethics committee.

### 2.2. Screening Criteria

1) Inclusion Criteria a) Diagnosed with advanced non-small cell lung cancer by pathological examination (unresectable stage IIIA-IIIC or stage IV); b) Not treated with anlotinib or other anti-angiogenic drugs; c) History of chemotherapy with progression or recurrence, receiving second or third-line treatment; d) Expected survival  $\geq 3$  months.

2) Exclusion Criteria a) Patients with other severe physical diseases such as heart, liver, and kidney diseases; b) Pregnant and lactating women; c) Those with severe mental disorders and inability to communicate normally; d) Those with severe hypertension or cardiovascular and cerebrovascular diseases.

### 2.3. General Information

According to the principles of randomized double-blind controlled trials in clinical research, all patients were divided into an observation group receiving traditional Chinese medicine treatment and a control group receiving conventional western medicine treatment, with 42 cases in each group. Statistical analysis showed no differences in general information between the two groups, indicating good comparability. See **Table 1**. Comparing the baseline status of the two

**Table 1.** Comparison of general information of the two groups of patients (n = 42).

| Group             | Sex (n/%)  |            | Average Age (years) | Average Course of Disease (years) |
|-------------------|------------|------------|---------------------|-----------------------------------|
|                   | Male       | Female     |                     |                                   |
| Observation Group | 20 (47.62) | 22 (52.38) | 61.9 ± 2.0          | 3.8 ± 0.5                         |
| Control Group     | 19 (45.23) | 23 (54.77) | 61.5 ± 5.1          | 3.7 ± 0.6                         |
| $\chi^2/t$        | 2.079      |            | 0.218               | 0.211                             |
| <i>P</i>          | >0.05      |            | >0.05               | >0.05                             |

groups: based on the diagnostic criteria in the “2023 CSCO Non-Small-Cell Lung Cancer Diagnosis and Treatment Guidelines,” non-small cell lung cancer is classified into stage I (IA, IB), stage II (IIA, IIB), stage III (IIIA, IIIB, IIIC), and stage IV. Patients in this study were all in stage IIIA to IIIC or stage IV, had not received any relevant treatment before admission, and had no abnormalities in their baseline status, demonstrating good comparability.

#### 2.4. Treatment Measures

Control group: Chemotherapy (Gemcitabine/Paclitaxel) combined with platinum-based drugs (Cisplatin/Carboplatin/Oxaliplatin) is used for treatment. The specific usage, dosage, and timing of medication should be adjusted according to the instructions of the corresponding drugs and the patient’s tolerance to adverse reactions. 21 days constitute one cycle, and the criteria for stopping the medication are: 1) disease progression; 2) occurrence of severe adverse reactions.

Observation group: In addition to the treatment in the control group, traditional Chinese medicine prescriptions are administered, specifically: Lingzhi 13 g, Shaonianhong 30 g, Baibu 30 g, Niudali 20 g, Didancao 30 g, Daoshuilian 30 g, Shidagong 15 g, Huangdanmu 40 g, Gancao 7 g, Nantianzhu 30 g, Xianhecao 20 g, Wuzhigen 30 g. Boil to 300 ml, 3 times/day.

Treatment: Following the instructions, two sets make up one treatment cycle lasting 21 days each. The effectiveness of the treatment will be evaluated after four consecutive treatment cycles.

#### 2.5. Observation Indicators

Lumbar Function Assessment: Before and after treatment, the lumbar function of the two groups of patients was scored using the Japanese Orthopaedic Association Lumbar Function Assessment Scale (JOA) [3]. The JOA scale has a total score of 29 points and includes clinical signs, degree of daily activity limitation, and subjective symptoms, comprising 3 items. The score is directly proportional to the improvement in lumbar function.

Activities of Daily Living Assessment: Before treatment and six months after treatment, the living abilities of the two groups of patients were assessed using the Activities of Daily Living Scale (ADL) [4]. The total score of this scale is 100 points, consisting of the Physical Self-Maintenance Scale and the Instrumental

Activities of Daily Living Scale. The score is directly proportional to the quality of life.

Assessment of Improvement in Negative Emotions: Before treatment and six months after treatment, the negative emotions of the two groups of patients were assessed using the Self-Rating Depression Scale (SDS) [4] and the Self-Rating Anxiety Scale (SAS) [4]. The normal upper limit of the total raw score for both scales is 41 points, and the standard total score is 53 points. The score is directly proportional to the degree of negative emotions.

Quality of Life Score: Before treatment and six months after treatment, the quality of life of the two groups of patients was assessed using the Quality of Life (SF-36) Scale [4], which mainly includes physical function, emotional function, social function, and role limitations due to physical health. The score is directly proportional to physical ability.

## 2.6. Assessment of Therapeutic Efficacy

Partial Response (PR): Tumor volume reduction of more than 50%, sustained for at least 4 weeks.

Stable Disease (SD): Tumor volume reduction of 25% to 49%, sustained for less than 4 weeks.

Progressive Disease (PD): Failure to meet the above criteria.

Overall treatment effectiveness rate = (number of PR + SD cases)/total cases × 100%.

## 2.7. Statistical Methods

The research data were organized and analyzed using SPSS 21.0 statistical software. Percentage was used for categorical data,  $\chi^2$  test was employed, and t-test was used for continuous data, presented as (mean ± standard deviation). The result of a one-sided test is statistically significant, then  $P < 0.05$ .

## 3. Results

### 3.1. Comparison of Therapeutic Effects between Two Groups

The effective rate in the observation group was 91.67%, while in the control group it was 76.19%. A comparison of the two groups showed a significant increase in the effective rate in the observation group, with a statistically significant difference ( $P < 0.05$ ), as shown in **Table 2**.

### 3.2. Comparison of Improvement in Adverse Emotions in Two Groups of Patients

Before treatment, there was no statistically significant difference in the SDS and SAS scores between the two groups ( $P > 0.05$ ). After treatment, compared with the control group, the SDS and SAS scores in the observation group both showed a significant decrease, with statistical significance ( $P < 0.05$ ), as shown in **Table 3**.

**Table 2.** Comparison of therapeutic effects between two groups (n = 42, n/%).

| Group             | PR | SD | PD    | Overall Treatment Effectiveness Rate (%) |
|-------------------|----|----|-------|--|
| Observation Group | 10 | 28 | 4     | 91.67                                    |
| Control Group     | 8  | 24 | 10    | 76.19                                    |
| $\chi^2$          |    |    | 18.26 |  |
| P                 |    |    | <0.05 |  |

**Table 3.** Comparison of improvement in adverse emotions in two groups of patients (n = 42, points).

| Group             | SDS              |                 | SAS              |                 |
|-------------------|------------------|-----------------|------------------|-----------------|
|                   | Before Treatment | After Treatment | Before Treatment | After Treatment |
| Observation Group | 50.19 ± 5.69     | 23.05 ± 5.11    | 52.33 ± 7.89     | 22.01 ± 5.22    |
| Control Group     | 50.12 ± 5.70     | 36.38 ± 4.72    | 52.35 ± 7.88     | 36.22 ± 5.34    |
| t                 | 1.21             | 4.38            | 0.99             | 3.99            |
| P                 | >0.05            | <0.05           | >0.05            | <0.05           |

### 3.3. Comparison of Life Quality Scores in Two Groups of Patients

Comparison of life quality between the two groups of patients showed no significant differences in physiological, emotional, social, and health status scores before treatment ( $P > 0.05$ ). After treatment, compared with the control group, the observation group showed a significant increase in all scores, with statistical significance ( $P < 0.05$ ), as shown in **Table 4**.

### 3.4. Comparison of Safety between Two Groups of Patients

No adverse reactions were observed in either group.

## 4. Discussion

Yao medicine attributes the etiology of malignant tumors to the excessive invasion of external pathogenic factors, the deficiency of the body's positive energy, and the imbalance between excess and deficiency, allowing the entry of external pathogenic factors which eventually lead to the formation of malignant tumors [5]. According to Yao medicine, there are six elements, with the five elements representing the tangible aspects of the human body's systems, equivalent to the modern anatomy of the human body; the sixth element, referred to as "qi" by Yao medicine, represents the intangible aspect, symbolizing the spiritual (soul) system. Yao medicine believes that malignant tumors are a type of organism, possessing not only physical systems but also spiritual (soul) systems. For example, in the case of lung cancer, Yao medicine attributes the cause to the excessive

**Table 4.** Comparison of life quality in two groups of patients (points).

| Group             | Physiological    |                 | Emotional        |                 | Social           |                 | Health Status    |                 |
|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
|                   | Before Treatment | After Treatment |
| Observation Group | 11.21 ± 3.00     | 30.34 ± 2.42    | 17.22 ± 3.14     | 33.45 ± 3.98    | 17.22 ± 4.56     | 26.16 ± 3.45    | 7.32 ± 1.09      | 18.22 ± 1.45    |
| Control Group     | 11.16 ± 3.14     | 19.38 ± 2.36    | 17.37 ± 3.45     | 24.21 ± 3.30    | 17.15 ± 4.06     | 20.98 ± 3.77    | 7.45 ± 1.27      | 14.45 ± 1.29    |
| t                 | 0.15             | 7.16            | 0.21             | 5.78            | 0.25             | 3.52            | 0.13             | 4.97            |
| P                 | >0.05            | <0.05           | >0.05            | <0.05           | >0.05            | <0.05           | >0.05            | <0.05           |

invasion of external pathogenic factors through the nasal cavity, leading to internal deficiency and the inability to counteract the pathogenic factors, resulting in an imbalance between excess and deficiency. The pathogenic factors accumulate in the lungs, eventually transforming into toxic substances, leading to clinical symptoms related to the physical system such as tumors and coughing up blood. This is attributed to the lungs being affected by the external pathogenic factors related to the metal element, seeking resonance with the same element, thus causing pathological changes in the lungs [6].

The new medical model, known as the “Biopsychosocial Model,” places significant emphasis on psychological, social, and environmental factors. By integrating research methods from the fields of biology, psychology, and sociology, this model comprehensively considers these factors in the diagnosis and treatment of diseases. At its core, the Biopsychosocial Model views humans as a whole, taking into account not only the biological characteristics and pathophysiological processes of the body but also the individual’s psychological state and the impact of the social environment on health. This concept is similar to the Yao medicine’s principle of “Harmony of the Three Elements.” Yao medicine follows the principle of “Harmony of the Three Elements” as the theoretical basis of medical practice, emphasizing the harmony among heaven, earth, and humanity. The harmony of the three elements refers to the interconnectedness of heaven, earth, and humanity. Heaven and earth represent the natural order, while humanity encompasses the way of life and societal norms. Medical practice pertains to the way of life, which is interconnected with nature and societal norms. Yao medicine recognizes that societal norms, psychological factors, and others are factors contributing to the formation of malignant tumors, therefore placing importance on eliminating these factors rather than solely treating the symptoms. Hence, the approach to treating diseases has shifted from focusing solely on trends to a shared responsibility of mind and body [7]. Both the Biopsychosocial Model and Yao medicine’s “Harmony of the Three Elements” underscore the human body as a holistic system, emphasizing the close connection between individuals and their environment and nature. They acknowledge the influence of internal biological and psychological factors as well as external environmental and natural interventions. By combining these two approaches with

the concept of “shared mind-body treatment,” a more comprehensive approach to diagnosing and treating diseases can be achieved, ultimately improving medical outcomes and patients’ quality of life.

According to the theory of “pathogenesis” in Yao medicine, the causes of malignant tumors in patients are mostly attributed to “external pathogen invasion, deficiency of healthy qi, imbalance of excess and deficiency.” Therefore, treatment should focus on “dispelling pathogens while supporting the healthy qi and balancing excess and deficiency.” The combination of Yao medicine in this study has a dual effect of attacking and supplementing: Lingzhi can nourish qi, calm the spirit, and strengthen the qi; Shaonianhong can promote blood circulation, detoxify, Baibu can clear the lungs and stop coughing, Niudali can tonify deficiency, moisten the lungs, strengthen tendons, and activate collaterals; Didancao can clear heat, cool the blood, and detoxify; Daoshuilian, Shidagong can clear heat and transform phlegm; Huangdanmu can detoxify, reduce swelling; Gancao can relieve urgency, stop pain, tonify qi, and supplement deficiency; Nantianzhu can clear and drain lung heat, promote meridian circulation; Xianhecao can support the healthy qi and supplement deficiency; Wuzhigen can tonify qi and supplement the lungs. The combination of these herbs can collectively enhance the effects of “dispelling pathogens while supporting the healthy qi and balancing excess and deficiency.” When applied to the treatment of patients with advanced small cell lung cancer, it shows significant therapeutic effects. The study results indicate an efficacy rate of 91.67% in the observation group compared to 76.19% in the control group. The difference between the two groups is statistically significant ( $P < 0.05$ ) with no observed adverse reactions. With the continuous improvement in the standard of living, people are increasingly paying attention to their mental health while focusing on physical health. Therefore, in clinical research, the emphasis is more on the effectiveness of the treatment on the adverse emotions and quality of life of the patients. Due to the significant fear of the unknown disease among lung cancer patients, it often leads to anxiety and subsequently depression, affecting the quality of life of the patients. This study observed the psychological state and found that Yao medicine could effectively improve the psychological state of the patients. The reason for this may be attributed to the fact that this treatment can effectively alleviate the physical symptoms of the patients, leading to greater confidence in the relief or even cure of the disease, thereby alleviating their anxiety and depression about the disease.

In conclusion, Yao medicine can effectively improve the physical and mental symptoms of patients with advanced non-small cell lung cancer, demonstrating good effectiveness and high safety, thus deserving clinical application and promotion. Due to challenges in the source of research samples, conducting large-scale data analysis is currently difficult. It is hoped that future studies will comprehensively collect detailed data to explore and enhance the treatment mechanism of Yao medicine for advanced non-small cell lung cancer, providing a clearer theoretical basis for its clinical application and development.

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## Conflicts of Interest

The authors declare no conflicts regarding the publication of this paper.

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