

# Analysis of the Efficacy of Yiqi Chutan Therapy for Lung Cancer

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## ABSTRACT

Lung cancer has become a major public health problem worldwide, with the highest incidence and mortality rates among malignant tumors. With the emergence of new drugs such as targeted therapy and immunotherapy, the survival rate of lung cancer patients has been extended to some extent, but the overall prognosis is still not satisfactory. In traditional Chinese medicine, Yiqi Chutan therapy is the basic approach for treating lung cancer, which has the functions of reducing toxicity, enhancing efficacy, inhibiting the recurrence and metastasis of lung cancer, improving symptoms, and improving quality of life.

## KEYWORDS

Yiqi Chutan Therapy; Lung Cancer; Traditional Chinese Medicine; Compound Chinese Herbal Formula

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## 1. CURRENT TREATMENT SITUATION OF LUNG CANCER

In recent years, with the aging of society and environmental pollution, the incidence and mortality rate of malignant tumors have increased rapidly, becoming one of the main causes of death worldwide and a public health issue. Lung cancer is the most common respiratory system malignant tumor globally, posing a serious threat to human life and health [1]. Its invasion and metastasis are the main reasons for patient death, with approximately 90% of cancer deaths attributed to the invasion and metastasis of cancer cells [2]. With the emergence of targeted therapy, immunotherapy and other new drugs, the survival rate of lung cancer patients has been extended to some extent, but the overall prognosis is still not satisfactory. Inhibiting the invasion and metastasis of lung cancer cells remains a highly challenging problem, involving resistance to apoptosis, extracellular matrix degradation, epithelial-mesenchymal transition, angiogenesis, immune evasion, cancer cell migration and invasion, and abnormal expression of the tumor microenvironment. Therefore, it is of great significance to seek new treatment strategies and means to inhibit the invasion and metastasis of lung cancer. Traditional Chinese medicine, as an important part of Chinese traditional medicine, has a long history and rich clinical practice experience. It has the characteristics of multi-target, good efficacy, and small side effects. Herbal decoctions, patent medicines, single herbs, and herbal monomers all show good anti-tumor effects. They play an important role in inhibiting the invasion and metastasis of lung cancer and can prolong the survival time of patients and improve their quality of life. The following will elucidate the therapeutic efficacy of TCM in treating lung cancer using the therapy of Yiqi Chutan.

## **2. THE UNDERSTANDING OF LUNG CANCER IN TRADITIONAL CHINESE MEDICINE AND ITS PATHOGENESIS**

In traditional Chinese medicine, there is no specific disease name for lung cancer, but according to the relevant descriptions in ancient Chinese medical books, it can be classified into categories such as "ji", "yan", "liu", and "shi", which is a disease with the characteristic of "staying and not going away". Modern medicine believes that it is the abnormal proliferation product of the body under the action of carcinogenic factors, and it includes two major tissue types of small cell lung cancer and non-small cell lung cancer in pathology. The cause and pathogenesis of lung cancer in traditional Chinese medicine are based on the holistic view, adhering to the view of disease occurrence from both internal and external causes. For example, the Jisheng Fang said, "the formation of 'ji' is related to 'yin-yang imbalance' and 'qi organ weakness', and 'worries, anger, and other emotions' overexposure will hurt the five internal organs and become 'five ji'." The Inner Canon of Huangdi points out that "empty pathogenic influences" and "cold and heat in conflict" are the main causes of the disease known as tumors. In summary, the main causes and pathogenic mechanisms of this disease are: external pathogenic influences of the six pathogenic factors, smoke and smoke toxins, etc. invading the lungs; the interaction of internal causes such as emotional imbalances and excessive work and rest; and the combined effects on the lung's Qi, blood, yin, and yang, which disrupt the lung's function of dispersing and descending, causing the pathological products of dampness, phlegm, blood stasis, and toxins to adhere to each other, and the carcinogenic toxins produced accumulating in the lungs over a long period of time, eventually becoming a mass.

Modern Chinese medicine believes that lung cancer patients are generally weak and deficient, with localized accumulations of pathogenic factors. Lung cancer is a chronic, systemic disease characterized by a mixture of deficiency and excess, with the core pathogenesis being "phlegm, deficiency, toxicity, and stasis." Among these, deficiency is the key, which persists throughout the course of the disease, and the approach should be to combine supportive therapy with the elimination of pathogenic factors. Therefore, in prescribing drugs for lung cancer, it is appropriate to combine the elimination of pathogenic factors with supportive therapy, with the combination of drugs that eliminate pathogenic factors and supportive drugs serving as the principal medicinals.

## **3. YIQI CHUTAN IS ONE OF THE MAIN TREATMENT PRINCIPLES FOR LUNG CANCER**

Lung cancer is a disease characterized by overall deficiency and local excess. In traditional Chinese medicine treatment, a combination of "supporting the proper function" and "removing pathogenic factors" should be used. The assessment of the balance between the vital energy and pathogenic factors should be made based on the different stages and periods of the disease, as well as whether the patient has undergone surgery, radiation therapy, chemotherapy, targeted therapy, or immunotherapy. The treatment should be tailored to the individual, the time, and the location, and should be based on the specific situation to administer the appropriate treatment. In the case of lung cancer, early stage patients are mostly characterized by excessive pathogenic factors, so treatment should focus on eliminating pathogens with supportive therapy. For intermediate stage patients, both supportive and pathogen-eliminating therapies should be used. Late stage patients are mostly characterized by deficient vital energy, so the treatment should focus on supporting vital energy with pathogen-eliminating therapy. As the patient's condition and the balance of yin and yang changes, the syndromes may shift or coexist, and the medication should be adjusted flexibly. However, throughout the course of the disease, most patients have internal deficiency of vital energy and weak resistance against pathogens, so it is important to protect the vital energy.

Boosting qi and eliminating phlegm is the basic approach for treating lung cancer. Lung cancer patients generally have a deficiency of qi, making it difficult for them to resist the pathogen. By

supporting the body's vital energy (often with ginseng and astragalus), the goal is to achieve "tumor-bearing survival." Ginseng is a vitalizing herb, and the first-ranked herb in the Shen Nong's Herbal is ginseng. It primarily nourishes the five internal organs, calms the spirit, stabilizes the soul, stops palpitations, dispels pathogenic influences, and has the effect of strengthening the spleen and nourishing the body. Astragalus has a sweet taste and a slightly warm nature, and it enters the spleen and lung meridians, with the function of nourishing the spleen and tonifying the middle. There are many studies showing that astragalus can enhance the immune function of patients, and it has the effects of inhibiting the proliferation of tumor cells and promoting the apoptosis of tumor cells. Meanwhile, phlegm is the leading cause of lung cancer, and it is particularly emphasized in the elimination of pathogenic factors. In the treatment, especially in the elimination of phlegm, Chinese medicine is often used, such as Ban Xia, Zhe Bei Mu, and Sheng Nan Xing. Currently, the treatment of lung cancer often combines traditional Chinese medicine and Western medicine. Modern medicine's many treatment methods, such as surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy, can be broadly considered as "eliminating pathogenic factors." Traditional Chinese medicine can be combined with these methods, and the "supporting the normal qi" and "eliminating pathogenic factors" strategies should be used flexibly based on the changes in the balance between the two. Different treatments should be given in different stages to achieve the goals of reducing toxicity, enhancing efficacy, inhibiting the recurrence and metastasis of lung cancer, improving symptoms, and improving quality of life.

The efficacy of Yiqi Chutan therapy in treating lung The essence of the prescription for lung cancer treatment is the application of syndrome differentiation and treatment. Lung cancer is often classified into four types based on syndromes: lung stagnation with phlegm and blood stasis, spleen deficiency with phlegm and dampness, yin deficiency with phlegm and heat, and qi-yin deficiency. However, there are differences in the cold and heat tendencies of each syndrome. Selecting appropriate principles and methods of treatment based on syndrome differentiation is the key to treating lung cancer with Chinese medicine. When formulating prescriptions, it is important to follow the cold and heat characteristics of the internal organs and correct the patient's yin-yang imbalance through the use of cold and heat tendencies. The goal is to achieve yin-yang harmony through the use of the principal medicinal ingredient. We can use the cold, warm, hot, and cool properties of medicines to create a bias in the formula as a whole, using the bias of the medicines to correct the bias of the patient. Cold patients can be warmed, while hot patients can be cooled. In the lung cancer formula, the commonly used herbs with cold and heat properties are: warm-drying cold phlegm herbs such as Ban Xia and Nan Xing; cooling-phlegm herbs such as Yuxing Cao, Xiaku Cao, and Zhebei Mu; warm-tonifying herbs such as Huang Qi and Bai Zhi; cooling herbs such as Sha Shen, Shengdi Huang, and Zhebei Mu; cooling herbs with stronger cold-clearing heat properties such as Bai Hua She She Cao, Huang Qin, Ban Zhi and Shangci Gu; and warm-hot herbs such as Gui Zhi, Gan Cang, and Ma Huang. By combining "disease diagnosis" and "pattern diagnosis," we consider the whole body and balance yin and yang to achieve the goal of inhibiting tumors and improving the quality of life for patients.

Many doctors believe that the development of lung cancer cannot be separated from the lungs and spleen, and the treatment principle cannot be deviated from the method of Yiqi Chutan. The method of Yiqi Chutan includes "Yiqi," which means supplementing the qi of the spleen and lungs, with the function of supporting the normal physiological function. Nourishing the normal physiological function means that the pathogen will be eliminated naturally; "Chutan " means dissolving phlegm and dispersing nodules, with the effect of eliminating pathogenic factors. Once the pathogen is eliminated, the normal physiological function will be restored. The relevant research results show that a TCM treatment plan based on the principle of Yiqi Chutan can improve cough, hemoptysis, fever, dyspnea, poor appetite, fatigue, etc., the main related symptoms of cancer, and significantly improve poor appetite, fatigue, dry mouth, and constipation, etc., the chemotherapy-related symptoms. It can also increase the weight of patients and alleviate hematotoxicity [3]. The Yiqi Chutan formula, which is based on the principle of Yiqi Chutan , is composed of Western ginseng, fox nuts, Shangci Gu , Ban Xia , and Zhebei mu, etc. Western ginseng and fox nuts are used to invigorate Qi and strengthen

the spleen, Ban Xia and Zhebei mu are used to remove phlegm and dissolve accumulation, and Shangci Gu is used to detoxify phlegm and dissolve phlegm. The whole formula treats the root cause and the symptoms at the same time, and achieves the function of invigorating Qi, removing phlegm, and dispelling pathogenic masses. Clinical studies have shown [4-8], that the Yiqi Chutan formula can inhibit the growth of subcutaneous/venous transplanted lung cancer tumors in mice, and also has the effects of inducing lung cancer cell apoptosis and reducing the microvascular density of lung cancer tissue. In addition, it can also reduce the number of tumor-associated macrophages in the tumor microenvironment of Lewis transplanted tumor mice. These studies to some extent prove that the combination of Yiqi Chutan therapy with chemotherapy can improve the therapeutic effect and enhance the anti-tumor immune response.

#### 4. SUMMARY

At present, the incidence and mortality rate of lung cancer still rank first among malignant tumors in China, with poor overall prognosis. The therapy of Yiqi Chutan is in line with the pathogenesis of lung cancer, not only can it be traced back to the theory of traditional Chinese medicine, but it has also been verified in clinical practice. According to previous literature, The therapy of Yiqi Chutan can improve survival time, alleviate symptoms related to lung cancer, improve treatment-related side effects, delay the development of targeted drug resistance, and have considerable advantages in the treatment of advanced lung cancer patients. Throughout the course of lung cancer, the four characters of "phlegm, stasis, toxin, and deficiency" are pervasive. Supporting the normal function involves strengthening the spleen, nourishing the lungs, and tonifying the kidneys to adjust the imbalance of qi, blood, and yin and yang. Removing the pathogenic factors involves resolving phlegm, removing stasis, and detoxifying toxins. The basic treatment principle is "Yiqi Chutan ." The therapy of Yiqi Chutan in treating lung cancer has a higher level of safety and reflects the characteristics of traditional Chinese medicine in treating tumors, such as "stabilizing the tumor and living with the tumor" and "simple, convenient, inexpensive, and low toxicity." This indicates that traditional Chinese medicine has broad application prospects in treating tumors. However, lung cancer itself has a variety of pathological types and progresses rapidly, so how to better draw on the effective experience of lung cancer syndrome differentiation and treatment from the treasure house of traditional Chinese medicine in the scope of modern medical research and combine the relatively stable syndrome differentiation system with the flexibility of individual specificity to guide clinical treatment needs further in-depth research.

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