

Research Progress of Traditional Chinese Medicine in the Treatment of Lung Cancer

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Abstract: *In recent years, traditional Chinese medicine has achieved remarkable results in the treatment of a variety of diseases. More and more experts and scholars began to study the role of traditional Chinese medicine in the treatment of lung cancer. This paper reviews the current situation and research progress of traditional Chinese medicine in the treatment of lung cancer in recent years, in order to provide accurate and reliable theoretical reference for the clinical treatment of lung cancer.*

Keywords: Lung cancer, Traditional Chinese medicine, Research progress.

1. Introduction

Lung cancer is one of the most common malignant tumors in clinic. Its incidence and mortality have been increasing year by year in recent years. According to statistics, lung cancer is the world's leading malignant tumor in terms of incidence and mortality [1]. The clinical treatment methods for lung cancer mainly include surgery, radiotherapy and chemotherapy, targeted therapy and immunotherapy. Although they have a certain degree of clinical therapeutic effect, the effect is not very ideal. These methods can cause different degrees of toxic and side effects. Clinical studies have shown that traditional Chinese medicine has unique advantages in the treatment of lung cancer, which can not only improve symptoms, but also improve the quality of life and prolong the life cycle, and to a certain extent, it can stably control the tumor lesions of patients. This study mainly reviews the current situation and research progress of traditional Chinese medicine in the treatment of lung cancer, in order to provide ideas and accurate and reliable theoretical reference for the clinical treatment of lung cancer

2. TCM Understanding of Lung Cancer

The understanding of lung cancer in traditional Chinese medicine stems from the accumulation of ancient medical classics and clinical practice. Although there is no modern disease name of 'lung cancer', it can be classified into 'Xiben', 'Feiji', 'Feiyong', 'Feiju', 'Feiwei' and other categories according to its symptoms (such as cough, hemoptysis, chest pain, shortness of breath, weight loss, etc.). As early as in 'Huangdi Neijing' and 'Nanjing', there are descriptions similar to lung cancer symptoms [2]. 'Su Wen · Qi Bing Lun' said: 'full of gas inverse under the threat of disease... The name of the disease is Xiben. "Difficult to pass" pointed out: "lung product, named Xiben, under the right side, covered as a cup. For a long time, it is cold and hot, asthma cough lung congestion. "Miscellaneous disease source flow rhinoceros candle" describes the process of fighting between vital qi and pathogenic factors, endogenous phlegm and blood stasis, and the formation of mass for a long time [3].

3. Etiology and Pathogenesis

Tracing its etiology and pathogenesis, as early as in the 'Huangdi Neijing', there are records of 'deficiency', 'loss', and 'fatigue', and mentions theories such as 'excess of evil qi leads to excess, and deficiency of essence qi leads to deficiency', which lays a theoretical foundation for the treatment of consumptive disease with traditional Chinese medicine [4]. 'Source of disease theory volume three · consumptive disease' said: 'The person of consumptive disease, Yin and Yang damage, blood gas coagulation astringent, can not pass through the meridians, so the accumulation in the interior. It is pointed out that the deficiency of Yin and Yang is damaged for a long time, the stagnation of Qi and blood is not smooth, and the accumulation can form tumors [5]. Just as the 'Yellow Emperor's Internal Classic · Plain Questions · Pricking Theory' says: 'The healthy Qi is in the body, and the evil cannot be dry; where the evil is gathered, its qi will be empty. It shows that the basic pathogenesis of lung cancer is the deficiency of vital qi, especially the weakness of lung qi, which leads to the invasion of external evil into the interior and the nostalgia of evil poison. In recent years, the pathogenesis of lung cancer in traditional Chinese medicine is the deficiency of vital qi, the dysfunction of viscera, the blockage of external evils in the lung, and the long-term stagnation in the chest, which leads to the failure of lung qi to disperse, the stagnation of blood circulation, the accumulation of diseases and the formation of masses.

Modern doctors explained the understanding of lung cancer based on their own clinical experience. For example, Professor Gao Pengxiang [6] believes that the external six qi can be transformed into six evils when they invade the human body, and the dysfunction of the five internal organs can also be transformed into fire heat, which burns the lung collaterals, injures the body fluid and consumes the liquid, resulting in phlegm, blood stasis and toxin knotting in the lung and forming a mass. The incidence of lung cancer should be responsible for the wind, fire (heat).

4. Dialectical Classification

The dialectical classification of lung cancer is quite flexible, and it is difficult to form a unified standard. The clinical symptoms of lung cancer patients are diverse, and it is difficult to completely match the theoretical symptoms of a

certain syndrome type. The common clinical syndromes [10] are sorted out as follows: 1) Qi and Yin deficiency syndrome: cough, low cough sound, less sputum, blood in sputum, shortness of breath, shortness of breath, night sweats, spontaneous sweating, dry mouth, thirst without desire to drink, white complexion, fatigue, fatigue, anorexia, red tongue, thin tongue coating, tongue with teeth marks, weak pulse; 2) Yin deficiency phlegm heat syndrome: cough less phlegm, or dry cough, dry throat discomfort, or expectoration with blood, chest fullness and shortness of breath, hot flashes and night sweats, dizziness and tinnitus, upset and dry mouth, yellow urine, dry stool. Red tongue, tongue coating light peeling or tongue light without coating, pulse string count weakness; 3) Qi stagnation and blood stasis syndrome: cough, blood in phlegm, chest tightness, chest pain, pain, shortness of breath, purple lips, constipation, dark purple tongue, dark red tongue, tongue ecchymosis, pulse string, pulse astringent; 4) Yin deficiency and heat toxin syndrome: main syndrome: cough choking, phlegm less sticky, vomiting adverse, or blood in phlegm, or a small amount of hemoptysis, upset less sleep, hot flashes, night sweats, dry mouth, dry throat, hoarse voice, red or dark red tongue, thin yellow fur or less fur or stripped fur, thready pulse; 5) Phlegm and blood stasis syndrome: cough, sputum, sputum sticky, sputum in the blood, chest tightness, chest pain, pain is fixed.

5. Treatment Methods

Traditional Chinese medicine treatment of lung cancer in various forms, mainly including traditional Chinese medicine, acupuncture, massage, diet, etc., has the advantages of definite curative effect and less adverse reactions, and can adjust the microcirculation state of the body and improve the quality of life of patients. The following are some of the main treatment methods of lung cancer in traditional Chinese medicine:

5.1 Traditional Chinese Medicine Oral Administration

Modern doctors choose different traditional Chinese medicine prescriptions for treatment according to the dialectical classification of patients. For example: Professor Wu Yu [11] treats qi and yin deficiency syndrome by supplementing qi and nourishing yin, detoxifying and resolving phlegm and resolving masses, supplemented by regulating qi, activating blood circulation and removing dampness. She often uses Shashen Maidong Decoction, Maimendong Decoction and Shengmai Decoction as the basic prescription to strengthen the body and eliminate pathogenic factors. Professor Han Mingxiang [12] created Qiyu Sanlong Decoction according to clinical experience based on the traditional Chinese medicine theory of “overall deficiency and local accumulation” of lung cancer. Astragalus membranaceus and solanum nigrum are both monarch drugs in the prescription. Astragalus membranaceus can nourish lung and benefit qi, while solanum nigrum can resist cancer and detoxify qi, which has a good effect on the treatment of yin deficiency and heat toxin syndrome. Qi and blood stasis syndrome is a common syndrome type in patients with lung cancer. In the clinical adjuvant treatment of this syndrome type, traditional Chinese medicine is mainly based on Yiqi Huoxue [13]. The prescription is modified by Bufei Huayu Decoction. Bufei Huayu Decoction is helpful to resist the immune damage

caused by tumor and chemotherapy. It can inhibit tumor formation and promote the recovery of patients by regulating immune factors. WANG Wenping et al. [14] believed that the pathogenesis of lung cancer is phlegm and blood stasis. In clinical practice, it is mainly based on promoting blood circulation and removing blood stasis and regulating qi activity. At the same time, it is supplemented by softening hard mass, resolving phlegm and removing blood stasis. The prescription is modified Xuefu Zhuyu Decoction and Erchen Decoction. Through the methods of promoting blood circulation and removing blood stasis, eliminating phlegm and resolving mass or tonifying healthy qi, the state of the body is improved, which is not only helpful to improve the patients.

5.2 Acupuncture Treatment

Studies have found that acupuncture treatment can help reduce cancer pain, relieve cancer-related fatigue, depression and anxiety, sleep disorders, improve respiratory symptoms, and prolong survival. [15]. For example: auricular point sticking related acupoints [16], can play a role in promoting blood circulation, analgesia, tranquilizing mind, ventilating lung, relieving cough and asthma. Chu [17] added thumbtack needle therapy on the basis of conventional treatment (Hegu, Taichong, Neiguan and Zusanli were selected as the main points, and the back-shu points, front-mu points and Xi-cleft points of the relevant organs of the lesion were selected as the matching points). The results showed that the addition of thumbtack needle therapy had better clinical efficacy in patients with cancer pain, which could relieve pain, improve the quality of life and reduce the incidence of adverse reactions of opioid analgesics. Xu Qi et al. [18] used data mining technology to analyze the compatibility of acupoints in the treatment of non-small cell lung cancer by acupuncture and moxibustion. The results of frequency analysis showed that the top five acupoints were Zusanli, Feishu, Neiguan, Qihai and Guanyuan. The top three acupoints were bladder meridian of foot sun, stomach meridian of foot yangming and Renmai. The use of specific acupoints showed that the use frequency of intersection acupoints and combined acupoints was higher. After analysis and comparison, it was found that the core acupoint combination of acupuncture and moxibustion in the treatment of non-small cell lung cancer was Zusanli and Feishu.

5.3 Massage Therapy

Dong Yanqin et al. [19] found that chiropractic therapy can produce physical stimulation to local tissues in clinical treatment, which can dilate local blood vessels and increase blood supply, thereby improving microcirculation and accelerating local tissue metabolism. In addition, studies have shown that aromatherapy combined with acupoint massage can improve the negative emotions and sleep quality of patients with lung cancer chemotherapy, and reduce the degree of pain [20].

5.4 Dietetic Conditioning

Chinese medicine diet conditioning has a long history. ‘Huangdi Neijing Taisu’ records that ‘fasting food is food, and patients eat it as medicine’, reflecting the idea of

'homology of medicine and food, general use of medicine and food'. Among them, the common medicine and food are: cassia twig, ginger, jujube, liquor, mutton, sake, lily, japonica rice, orange peel, donkey-hide gelatin, chicken yellow, pig bile, vinegar, honey, pepper, plum, almond, hemp kernel, gum malt, turtle shell, oyster and so on [21]. Studies have found that traditional Chinese medicine diet can improve the body weight, BMI and serum prealbumin levels of lung cancer patients, and reduce the incidence of severe malnutrition [22].

6. Modern Scientific Research

At present, the treatment of lung cancer in Western medicine is mainly based on chemotherapy. Chemotherapy can prolong the survival time and improve the quality of life of patients. Generally, it can not cure non-small cell lung cancer, and the clinical application has obvious toxic and side effects. Radiotherapy is considered to be the best treatment for non-small cell lung cancer. It is usually supplemented by chemical drugs. The combination of radiotherapy and chemotherapy can enhance the efficacy, but radiotherapy often causes local tissue damage or systemic damage, as well as digestive tract system and urinary system dysfunction. Targeted drugs refer to the process of designing corresponding therapeutic drugs at the cellular and molecular level for the identified carcinogenic sites. The drugs enter the body and are closely combined with the carcinogenic sites, and finally cause programmed death of tumor cells without affecting normal cells [23]. It can be seen that there are still some problems in the treatment of lung cancer by Western medicine. Therefore, finding safer and more effective drugs to treat lung cancer has become a hot topic in recent years. Although traditional Chinese medicine can not fully play a leading role in the treatment of lung cancer, it often combined with western medicine surgery, chemotherapy, radiotherapy, targeted therapy and other methods in clinical treatment has played a significant therapeutic effect [24], the main treatment options include:

6.1 Traditional Chinese Medicine with Surgical Treatment

The results of Tang et al. [25] showed that the use of traditional Chinese medicine rehabilitation intervention after lung cancer surgery had significant clinical effects and high application value, which could significantly prolong the survival time of patients after surgery and greatly improve the clinical treatment effect of patients. In the perioperative rehabilitation of lung cancer, Liu et al. [26] based on the theory of consolidating the foundation, comprehensively used various traditional Chinese medicine therapies to protect the patient's healthy qi source, and combined well with other rehabilitation treatments. The results showed that the combination of traditional Chinese medicine in the perioperative rehabilitation of lung cancer can achieve better rehabilitation effects and is worthy of clinical application.

6.2 Chinese Medicine with Chemotherapy Treatment

Li Xia et al. [27] treated non-small cell lung cancer by studying the basis of chemotherapy combined with modified American ginseng lily ophiopogon decoction. The results showed that modified American ginseng lily ophiopogon

decoction combined with chemotherapy could improve the clinical efficacy of patients with non-small cell lung cancer, reduce clinical symptoms, enhance immune function, control inflammation, and reduce toxic and side effects such as renal dysfunction. A large number of clinical studies have confirmed that the combination of traditional Chinese medicine and chemotherapy in the treatment of advanced NSCLC has a significant effect, which can improve the clinical effect, improve the quality of life and clinical symptoms of patients, prolong the survival time of patients, improve the immune function of the body, reduce chemotherapy-related bone marrow suppression and digestive system adverse reactions and other side effects [28].

6.3 Traditional Chinese Medicine Combined with Radiotherapy

Zhang Jian et al. [29] found that Bazhen Decoction combined with radiotherapy and chemotherapy can improve the immune function and quality of life of patients with advanced lung cancer, and can significantly improve the quality of life and immune function of patients. Clinically, patients with lung cancer radiotherapy have common manifestations of radiation pneumonitis such as dry cough, shortness of breath, chest pain, etc., which are mostly caused by fire-heat evil toxin invading the lung and sticking to phlegm-dampness and blood stasis. Clinical syndrome differentiation is mostly considered as lung depression and phlegm-stasis, yin deficiency and phlegm-heat syndrome. In addition, radiation dermatitis often occurs during radiotherapy, mainly manifested as skin pigmentation or even ulceration and burning pain, which belongs to the category of 'burn'. It is caused by the combination of heat, fire, toxin and dampness. Clinically, the use of heat-clearing and detoxifying drugs such as ulcer oil has a good effect.

6.4 Traditional Chinese Medicine Combined with Targeted Therapy

Li Xiaojian et al [30] treated NSCLC patients with traditional Chinese medicine combined with targeted therapy. The results showed that this treatment method could significantly improve the adverse reactions such as rash, diarrhea, liver toxicity, cardiac toxicity, improve clinical symptoms, improve quality of life, prolong survival, and play a good role in 'reducing toxicity and increasing efficiency'. Zhang Yan et al. [31] used Fuzheng Huaji Sanjie Decoction combined with targeted drugs. The results showed that the combination of Fuzheng Huaji Sanjie Decoction and targeted drugs was helpful to delay the drug resistance time, significantly reduce the clinical symptoms, reduce the adverse reactions of drugs, improve the immune function, and play a protective role in lung function.

7. Summary and Outlook

This paper systematically discusses the research progress of traditional Chinese medicine in the treatment of lung cancer. Compared with western medicine, traditional Chinese medicine pays more attention to syndrome differentiation and treatment. Personalized treatment plans can be formulated according to the patient's constitution, course of disease and stage of disease development. Many scholars have shown that traditional Chinese medicine has a multi-target and

multi-channel effect. It can not only directly inhibit the growth of cancer cells, but also regulate the immune function of the body and improve the microenvironment, which can significantly improve the therapeutic effect and improve the quality of life of patients. Its combination with western medicine treatment can reduce the toxic and side effects such as inflammation, rash, bone marrow suppression, and gastrointestinal reactions caused by western medicine treatment, improve patients' tolerance to western medicine treatment methods such as radiotherapy, chemotherapy, and targeted therapy, and enhance the therapeutic effect. However, there are still some challenges: the clinical observation objects of traditional Chinese medicine treatment for lung cancer are not uniform, the number of samples is small, there is no clear standard for syndrome differentiation, and there is a lack of a large amount of evidence-based medical evidence. The lack of scientific, unified and standardized treatment measurement standards limits its promotion and application to a certain extent. It is necessary to carry out multi-center, randomized and prospective large-scale clinical trials to obtain objective data. The combination of traditional Chinese and Western medicine in the treatment of lung cancer is the trend of future development. How to give full play to the advantages of traditional Chinese and Western medicine, realize the complementary advantages and improve the therapeutic effect is the key problem to be solved.

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