

# Brief Discussion on the Efficacy of Combining Yiqi-jianpi Therapy with Chemotherapy for the Treatment of Colorectal Cancer

Zhongjia Yi \*

School of Traditional Chinese Medicine, Jinan University, Guangzhou 510632, China

\*Corresponding Author: Zhongjia Yi

## ABSTRACT

Colorectal cancer is one of the common and frequently occurring malignant tumors both at home and abroad. With the continuous economic development and improvement of living standards, the incidence of colorectal cancer has increased significantly due to the increasing prevalence of high-salt, high-fat, low-fiber diet. In recent years, the combination of Yiqi-jianpi therapy with chemotherapy for colorectal cancer has achieved better objective efficacy, and it has unique advantages in reducing toxicity, enhancing efficacy, improving the quality of life of patients, and prolonging survival period.

## KEYWORDS

Colorectal cancer; Yiqi-jianpi therapy; Chemotherapy; Supportive therapy

## 1. CURRENT TRENDS IN COLORECTAL CANCER

Colorectal cancer is the third most common malignant tumor globally, which is a malignant tumor originating from the mucous membrane of the intestinal epithelium. Its incidence and mortality rates are among the top of malignant tumors. With the continuous economic development and improvement of living standards, the incidence of colorectal cancer in China has been increasing year by year. Population aging and changes in diet and lifestyle are the main reasons for the sustained increase in the incidence of colorectal cancer in China. Clinically, colorectal cancer mainly manifests as changes in bowel habits or bowel habit, accompanied by mucus and pus stool, blood stool, abdominal distension, and abdominal pain. Currently, Western medicine treats colorectal cancer mainly with surgery, chemotherapy, radiotherapy, targeted therapy, and immunotherapy, which has greatly reduced the mortality rate and recurrence and metastasis rate of colorectal cancer, but also brought about corresponding side effects and complications. To some extent, it has lowered the quality of life of patients. Traditional Chinese medicine, as one of the important auxiliary means of treating colorectal cancer, has the functions of enhancing therapeutic effects, reducing side effects, and improving immunity when used in combination with other therapies to treat colorectal cancer. The following will discuss the therapeutic effects of Yiqi-jianpi therapy combined with chemotherapy for colorectal cancer.

## 2. THE CAUSES AND PATHOGENESIS OF COLORECTAL CANCER FROM THE PERSPECTIVE OF TRADITIONAL CHINESE MEDICINE

Currently, the pathological factors of cancer in traditional Chinese medicine can be summarized as deficiency, phlegm, stasis, and toxicity. Qi deficiency is the prerequisite for the formation of tumors,

and cancer toxicity arises from stagnation of qi, leading to the condensation of phlegm and the formation of stasis, which induces the formation of cancer toxicity. Cancer toxicity and phlegm-stasis entangle together to form cancerous tumors [1]. Colorectal cancer, as one of the common malignant tumors of the digestive tract, is not recorded in the medical literature of traditional Chinese medicine. However, based on its clinical manifestations and characteristics, it can be classified under the categories of "accumulation," "enteritis," "intestinal cyst," "diarrhea," "viscera toxicity," "locking anus fistula," and "perianal carbuncle."

The Yellow Emperor's Inner Canon says, "People who are prone to diseases in the intestines due to accumulation of waste matter...will have bad digestion, which leads to the accumulation of harmful substances. If this accumulation persists, it will cause injury to the intestines and stomach. If the temperature in the intestines and stomach is not maintained properly, even a slight accumulation of harmful substances can cause them to be retained and stop flowing. If this accumulation persists, a serious condition will develop. "It can be seen that the causes and symptoms of cancer were recorded by ancient people. Colorectal cancer is located in the intestines and has the closest relationship with the spleen and stomach. In traditional Chinese medicine, the kidney is considered the "root of life" and the spleen is called the "source of life after birth" and the "source of the generation of Qi and blood." Food and drinks are transformed into essence and fluids by the spleen, which are then transported to the heart and lungs and transformed into Qi and blood. This Qi and blood are distributed throughout the body to nourish the muscles of the limbs. At the same time, the spleen is responsible for metabolism, while the stomach is responsible for receiving food, and the large intestine is responsible for transporting waste. Each organ in the body has its own function. Then the body's qi and blood are abundant, and yin and yang are in balance. With a strong constitution, the body is better able to resist illnesses caused by external pathogens. On the other hand, if the spleen is weak, it cannot perform its functions of transforming and transporting, so that the nutrients and essence of food and drink cannot be transformed and transported, leading to the lack of nutrients necessary to maintain the normal physiological functions of the body. As a result, the body's vital energy is depleted, and pathogenic toxins are generated, leading to the birth of various diseases. Colorectal cancer is a syndrome characterized by both deficiency of the fundamental substance (qi) and exuberance of pathogenic factors (pathogenic heat and dampness). The fundamental deficiency is usually due to spleen deficiency, while the exuberant pathogenic factors are damp heat. Patients with colorectal cancer often have a history of consuming excessive fatty, sweet, and spicy foods, which can damage the spleen and stomach's ability to digest and absorb food. When the spleen and stomach's ability to digest and absorb food is impaired, dampness and toxins are generated internally, which can accumulate and transform into heat over time. When this damp heat accumulates in the body, it can lead to the formation of tumors. Therefore, in traditional Chinese medicine, the treatment of colorectal cancer often focuses on strengthening the qi and spleen as the foundation, while clearing heat and dampness and detoxifying the body as the immediate goal. Clinically, various methods, such as promoting blood circulation and removing blood stasis, are used to treat the disease.

### **3. YIQI-JIANPI THERAPY IS ONE OF THE MAIN TREATMENT APPROACHES FOR COLORECTAL CANCER.**

In traditional Chinese medicine, there are eight methods of treating diseases, namely "sweating, vomiting, purging, harmonizing, warming, clearing, dissolving, and supplementing." The method of tonifying qi and strengthening the spleen belongs to the supplementing method. It aims to promote the function of the spleen and stomach, regulate the flow of qi, transform and transport nutrients, nourish the limbs and muscles, and ultimately achieve the goal of treating symptoms such as fatigue, poor appetite, and loose stool. Qi deficiency is the basis for disease to occur, and regardless of the stage of the disease, the patient should be nourished with vital energy and the fundamental principle of eliminating pathogens should be followed. For patients with colorectal cancer, the main manifestation of deficient qi is deficient qi of the spleen and stomach, characterized by fatigue, poor

appetite, abdominal distension, and loose stools. In addition, surgical trauma can also deplete qi and blood, injuring the spleen and stomach. By strengthening the vital energy and tonifying the spleen and stomach, the body's vital energy can be supported, promoting the function of the spleen and stomach, so that the Qi and blood can be generated. With a strong vital energy, the body can resist diseases better, reducing the damage to the vital energy caused by cancer, and effectively improving the survival rate of colorectal cancer patients and reducing the rate of metastasis and recurrence of tumors.

In clinical practice of treating colorectal cancer with traditional Chinese medicine, the representative prescriptions of Shenling Baizhu San, Liujunzhi Decoction and Buzhong Yiqi Decoction, which are used to regulate qi and promote digestion, are often used as the basis for flexible modification. Among them, atractylodes and astragalus can strengthen the Qi and regulate the spleen, while dangshen can strengthen the spleen and lungs, tuckahoe can regulate the spleen and eliminate dampness, and glycyrrhiza can nourish the spleen and promote Qi. All these commonly used herbs have the function of strengthening Qi and regulating the spleen. Modern pharmacological studies have shown that atractylenoids are the main active components of atractylodes that exhibit anti-tumor activity. They can inhibit the proliferation of colorectal cancer cells by regulating the phosphatidylinositol-3-kinase/protein kinase B signaling pathway, and they can also inhibit the expression of B-lymphoma-2 gene and protein, inducing apoptosis in colon cancer cells [2]. Astragalus polysaccharides can reduce immune tolerance during anti-tumor treatment, while Astragalus total saponins can induce apoptosis of colon cancer cells by inhibiting p21 [3]. Astragalus polysaccharide can inhibit the expression of CD44 antigen on the surface of tumor cells in vitro, which may therefore reduce the cancer cell's proliferation and invasive ability [4]. Poria polysaccharide can reduce the expression of signal regulator protein- $\alpha$  and the mouse mucin-like hormone receptor with growth factor-like module, hinder the invasion and metastasis of tumor cells, and inhibit related immune and hematopoietic function disorders [5].

#### **4. THE EFFICACY OF YIQI-JIANPI THERAPY COMBINED WITH CHEMOTHERAPY IN THE TREATMENT OF COLORECTAL CANCER**

For early stage colorectal cancer patients, surgical treatment is the main treatment method, but for advanced stage patients, surgical treatment combined with chemotherapy is the currently recognized best treatment model. Most colorectal cancer patients have no obvious early symptoms, so when they are diagnosed, they are often in the middle or late stages. Major surgeries deplete the body's energy and blood, damaging the vital energy. The application of chemotherapy drugs after surgery has also to some extent reduced the mortality rate and recurrence and metastasis rate of colorectal cancer, but long-term chemotherapy also brings corresponding side effects, reducing the quality of life of patients and consequently affecting their compliance with medical treatment. In traditional Chinese medicine, chemotherapy drugs are classified as "poisonous drugs" that attack the cancer evil while damaging the body's vital energy. This can lead to weakened spleen and stomach functions, liver and kidney deficiencies, and other related symptoms, which are consistent with the gastrointestinal reactions caused by chemotherapy drugs in clinical practice. The clinical main manifestations of adverse reactions caused by chemotherapy drugs are diarrhea, constipation, nausea and vomiting, which have a serious impact on the quality of life of patients and are one of the major reasons why patients cannot tolerate the treatment and fail. Therefore, clinical practice often uses herbs such as Yiqi-jianpi and Buyi-ganshen to prevent and treat the adverse reactions after chemotherapy.

Compared with chemotherapy alone, the combination of Yiqi-jianpi therapy with chemotherapy can significantly improve the effectiveness of treatment, prolong the life cycle of patients, improve their quality of life, and reduce side effects. Modern relevant studies have shown that herbal formulas for Yiqi-jianpi therapy can regulate intestinal microecology, reduce intestinal microbial dysbiosis, and can raise the levels of immune function indicators such as CD3+, CD4+, and CD4+/CD8+, thereby improving the patient's immune system [6]. The application of the classic Yiqi-jianpi formula Sijunzi

Decoction combined with oxaliplatin treatment has been proven to be more advantageous than simple chemotherapy, which can significantly improve symptoms such as nausea, vomiting, poor appetite, mouth sticking, loose stool, fatigue, and weakness in patients. It can also significantly improve the TCM syndrome score, alleviate the adverse reactions after chemotherapy, and improve the immune function and platelet count (Plt), aspartate aminotransferase (AST), and alanine aminotransferase (ALT) indicators. It does not affect the liver and kidney function [7].

As the disease progresses, the degree of qi deficiency in colorectal cancer patients becomes increasingly severe. Therefore, tonifying qi and strengthening the spleen and stomach is a crucial step for colorectal cancer patients to support the normal function of the body and eliminate pathogenic factors. The combination of Yiqi-jianpi therapy with chemotherapy can enhance the overall vitality of the body, thereby increasing the body's ability to restrain cancer toxins and confine them to the local area, preventing them from spreading and metastasizing at will; it can also enhance the resistance of the uninfected organs to pathogens and improve their defensive functions, thus preventing cancer toxins from accumulating; and finally, it can effectively reduce the toxic side effects of chemotherapy, improve the patient's survival rate, and improve prognosis.

## 5. SUMMARY

With the continuous improvement and development of modern medicine, traditional Chinese medicine therapy is gradually involved in the treatment of cancer at various stages of modern medicine, and has achieved better clinical efficacy. Traditional Chinese medicine treats diseases by prescribing drugs based on the actual conditions of the patient and differentiating syndromes. The combination of Yiqi-jianpi therapy with chemotherapy for colorectal cancer aims to follow the principle of bolstering the body's vital energy and promoting the functioning of internal organs, thereby enhancing the body's immunity and helping restore the functions of internal organs. This approach has certain advantages in preventing the recurrence and metastasis of tumors and minimizing the toxic side effects of radiation therapy and chemotherapy. In the advanced stage, it can play a role in controlling tumor growth, alleviating symptoms, and improving the quality of life of patients, thereby prolonging their survival period.

The treatment of tumor diseases is a long process that requires the comprehensive use of all medical means to provide better medical support for patients. The combination of traditional Chinese medicine and Western medicine in treating malignant tumors has gradually achieved the integration of "diagnosis of disease" and "differentiation of syndromes", as well as the integration of "supporting the normal qi and blood" and "removing pathogenic factors". It has gradually shown significant advantages in alleviating clinical symptoms of tumors, enhancing the effectiveness of chemotherapy and radiation therapy, and stabilizing tumor lesions. In the future, how to better integrate the advantages of traditional Chinese and Western medicine treatment, improve the synergistic effects of combined treatment, and form a systematic theory and treatment method of integrating traditional Chinese and Western medicine in the treatment of cancer still requires our joint efforts.

## REFERENCES

- [1] Haibo Cheng, Mianhua Wu. Exploration of Professor Zhou Zhongying's Academic Thought on "Cancer Poison". Chinese Journal of Traditional Chinese Medicine 2010, 25(6) :866-869
- [2] DENG M, CHEN HJ, LONG JY, et al. Atractylenolides (I, II, and III): a review of their pharmacology and pharmacokinetics [J]. Arch Pharm Res, 2021, 44(7) :633-654.
- [3] IONKOVAI, MOMEKOVG, PROKSCHP. Effects of cycloartane saponins from hairy roots of astragalus membranaceus bge on human tumor cell targets [J].
- [4] XINT, ZHANGFB, JIANGQY, et al. The inhibitory effect of a polysaccharide from *Codonopsis pilosula* on tumor growth and metastasis in vitro [J]. Int J Biol Macromol, 2012, 51(5):788-793.

- [5] Wang Yue, Shuangshuang Tian, Xiaoqian Liu, et al. Research progress on the extraction, structure and pharmacological effects of *Poria cocos* polysaccharides [J]. *World Traditional Chinese Medicine*, 2021, 16(17):2548-2555.
- [6] Feiran Zhang, Aosi Xie, Jinhai Zhang, et al. A clinical study on the effects of Four Gentlemen Decoction on the intestinal microbiome and immune function of patients with colorectal cancer after surgery and chemotherapy [J]. *Journal of Shantou University School of Medicine*, 2020, 33(4): 206—208.
- [7] Mingjie Xue, Sun Yan, Huang Min. The Effect of Four Gentlemen Decoction on Adverse Reactions of Chemotherapy in Patients with Colorectal Cancer and Its Impact on the Levels of PLT, AST, and ALT in Serum [J]. *Modern Oncology*, 2021, 29(7): 1161—1165.