

TCM Constitution Classification Characteristics and Treatment Progress of Gastrointestinal Malignancies¹

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Keywords: TCM constitution, gastrointestinal malignancy, research progress, Qi deficiency constitution, Yang deficiency constitution

Abstract: Gastrointestinal malignant tumors are the most common malignant diseases in clinical practice and have become one of the major causes of death and health threats to human beings, and how to prevent and treat tumor diseases is a common problem for human beings. Western medicine has large side effects and unsatisfactory effects in the treatment of gastrointestinal tumors, while the "body constitution theory" of TCM has a long history, and the body constitution typing of TCM is closely related to the occurrence, development and prognosis of malignant tumors. The identification of TCM constitution is important for controlling the progression of gastrointestinal malignancies, relieving symptoms and improving the quality of survival of patients. This paper focuses on the relationship between TCM constitution and gastrointestinal tumors, which is useful for the treatment, prognosis and reduction of chemotherapy side effects in tumor diseases, with a view to clinical guidance and worthy of further study.

1. Introduction

Gastrointestinal malignancies are one of the most common malignant tumors that seriously endanger human health, with about 934,000 new cases per year worldwide, ranking second among all malignant tumors [1-2], and their incidence is increasing year by year. According to the International Agency for Research on Cancer (IARC) [3], in 2012, there were about 1.36 million new cases of colorectal cancer worldwide, ranking 3rd in malignant tumors, and about 690,000 deaths, ranking 4th in malignant tumors. According to the 2018 China Cancer Report [4-5], gastric cancer and colorectal cancer ranked second and third in the incidence of malignant tumors nationwide, respectively, and have a high recurrence rate [6]. Although chemotherapy and radiotherapy can effectively kill tumor cells and inhibit tumor growth, they are prone to drug resistance and clinical adverse effects in long-term application. Currently, Chinese medicine is becoming a new approach in the field of tumor treatment [2]. The "body constitution theory" of TCM has a long history and has a

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significant role in the prevention, treatment and prognosis of malignant tumors of the gastrointestinal tract, which not only further enriches the TCM theory system of malignant tumors, but also provides new ideas and methods for the prevention and treatment of malignant tumors in TCM.

2. TCM constitution and tumor susceptibility

The theory of TCM constitution is based on the traditional Chinese medical theory, which is used to understand the physiological and pathological characteristics of the population by studying their constitution types and characteristics, and to analyze the disease status and future development trend of the disease to further guide disease prevention and treatment [7].

According to the Golden Book of Medical School: "People breathe the same Qi, some show cold symptoms, some show hot symptoms, and some show real symptoms, each person has different symptoms depending on their body type." It is believed that disease evils can manifest themselves differently from one another depending on the patient's constitution, which is a result of the variability of the disease evidence due to the different constitutions in TCM, reflecting an underlying tendency of the organism and its susceptibility to disease, indicating that the constitution is closely related to the tendency to develop disease. Therefore, TCM should not only distinguish diseases and syndromes, but also distinguish physique. TCM divides the constitution types into nine: peaceful constitution, Qi deficiency constitution, Yang deficiency constitution, yin deficiency constitution, phlegm dampness constitution, damp heat constitution, blood stasis constitution qi depression constitution and special constitution [8]. In one study, 476 tumor patients of different age stages were identified by TCM constitution [9], and it was found that the occurrence of tumor diseases was closely related to the constitution, and people with biased constitution were more likely to develop malignant tumors than those with peaceful constitution. Wang Man et al [10] concluded that people of Yang deficiency constitution and Qi deficiency constitution constituted the majority of patients with gastrointestinal malignancies. Guo Jianwei et al [11] found that the TCM constitution type of gastrointestinal tumor patients was mixed biased constitution through investigation and analysis, and all gastrointestinal tumor patients exhibited Qi deficiency constitution, except for Qi deficiency constitution, most patients were accompanied by Yang deficiency constitution, Phlegm-damp constitution and Damp-heat constitution. Zhao Miaomiao et al [12] found in a screening study of people at high risk for colorectal cancer that people with Yang deficiency constitution were a high-risk influencing factor for colorectal cancer, indicating that people with Yang deficiency constitution are more likely to develop tumors. Liu Liting et al [13] studied the pathological typing of colorectal adenomatous polyps and found that mixed adenomas were dominated by Yang deficiency in body type, and people with Qi deficiency and Yang deficiency were more prone to precancerous lesions and even cancer in clinical practice. Therefore, during the treatment of tumor, we should take the advantage of tailor-made treatment according to the physical characteristics of the patient, and give treatment such as tonifying the temperature and Yang, helping to correct the biased physical constitution in time, maintaining the balance of yin and yang of the body, preventing further deterioration and aggravation of the tumor.

3. Research progress

3.1 Modern research progress of gastrointestinal malignancies

At present, gastrointestinal malignancies are the most common and frequent diseases with the highest threat to people's life and high mortality rate among the gastrointestinal diseases. Surgical resection of the primary lesion, supplemented by radiotherapy after surgery is still the preferred method for gastrointestinal malignant tumors. The early detection rate of gastrointestinal tumors is

relatively low, and most patients have developed to the middle and late stages when diagnosed, losing the opportunity of surgery. In clinical practice, radiotherapy is mainly used, and the clinical effect is not satisfactory.

The treatment methods for gastrointestinal malignancies mainly include surgical resection, chemotherapy, radiotherapy, targeted drug therapy, immunotherapy, etc., while chemotherapy, as the main treatment for malignant tumors, has been widely used in clinical practice. Figueredo et al [14] showed that postoperative adjuvant chemotherapy is an influential factor in the prognosis of stage II and III gastric and colorectal cancers. The currently internationally accepted regimen of oxaliplatin (Oxa) in combination with 5-fluorouracil (5-FU) and calcium metatetrahydrofolate (LV) has been widely used and is now the base chemotherapeutic agent for both. Current treatment for gastrointestinal malignancies: DCF regimen chemotherapy: given sequentially: docetaxel 75 mg/m², dl, intravenous drip; DDP 75 mg/m², dl intravenous drip; 5-FU 750 mg/m², dl-5 intravenous drip, 8 h.

Radiotherapy, as the main clinical treatment for malignant tumors, not only acts on tumor lesions, but also causes damage to most systems and organs of the patient's body, resulting in many adverse reactions, so that some patients have severe reactions to chemotherapy drugs and cannot tolerate them, which greatly affects their therapeutic effects. Some studies found that people with Qi deficiency and Yang deficiency in tumor patients are more prone to toxic side effects after chemotherapy [15], and TCM has obvious advantages in regulating body composition.

3.2 Chinese medicine for gastrointestinal malignancies

According to Chinese medicine, Qi, blood and fluid are the basic substances that constitute and maintain the life activities of the human body. Qi is the marshal of blood, blood is the mother of qi, and when qi moves, blood moves. Qi deficiency will lead to Qi stagnation and blood stasis, and Qi stagnation and blood stasis will lead to phlegm coagulation; Yang deficiency will lead to cold, and cold will lead to water-dampness internal stagnation, which will also lead to phlegm coagulation and blood stasis; at the same time, blood stasis can also lead to Qi stagnation, and phlegm aggravates Qi stagnation and blood stasis. Phlegm travels with Qi and is found everywhere, either blocking in the lungs, or stopping in the stomach, or clouding the heart, or depressing the liver, or moving in the kidneys, or flowing through the meridians, thus producing various symptoms. Both phlegm and stasis are produced by fluid. Phlegm is the early stage of stasis, and stasis is the further development of phlegm. Qi stagnation and blood stasis leads to phlegm coagulation, and phlegm aggravates Qi stagnation and blood stagnation. In the process of gastrointestinal tumor, Qi, blood and phlegm are mutually causative and suffer together. It has been reported in the literature [16] that Qi deficiency and Yang deficiency are prevalent in patients with gastrointestinal malignancies, mainly manifesting as a mixed biased physique with Qi deficiency and Yang deficiency as the main traits. Qi deficiency is highly correlated with Qi and Blood deficiency, and Yang deficiency is highly correlated with Spleen and Stomach deficiency. Therefore, in the prevention and control of gastrointestinal tumors in Chinese medicine, Qi deficiency should be the main clue to regulate the balance between Qi, Blood and Phlegm by replenishing Qi.

Tailoring treatment to the individual refers to the selection and use of prescriptions based on the patient's different physique, age, gender and living environment, under the guidance of the theory of diagnosis and treatment, in order to develop a treatment method suitable for different physiques. It is not only one of the three causes in the Yellow Emperor's Classic of Internal Medicine, but also one of the most important therapeutic rules in Chinese medicine, documenting the different strengths of the body's qi, blood, yin, yang and organs, resulting in different physiques. At the same time, the disease, disease outcome, syndrome and prognosis are also different, so the core is to distinguish

between body and treatment, and the characteristics of physique should be considered in the treatment and medication. Wang Qi [17], a master of traditional Chinese medicine, put forward the diagnosis and treatment mode of "combining body identification, disease identification and syndrome differentiation" in 2005. He believed that syndrome differentiation should start with body identification, adjusting body first, treating disease and adjusting body simultaneously, and adjusting body if there is no syndrome. Body identification is the core and body adjustment is the foundation. When formulating the treatment plan, we should fully consider the internal relationship among body, disease and syndrome, and consider the impact of physical differences on disease, prognosis and treatment plan. To adjust the selection and dosage of prescriptions and drugs for different physique, we should not only consider the treatment of "syndrome" to improve patients' symptoms, but also seek the basic cause of disease treatment, identify physique, fundamentally improve patients' physique and implement personalized treatment. Professor Jiang Min [18] believes that the basis of constitution syndrome is constitution, and the nature of syndrome is affected by constitution. As a major disease endangering human health, the occurrence, recurrence and metastasis of tumor are also closely related to constitution. Biased constitution is the decisive factor for the recurrence and metastasis of tumor patients. Therefore, in the treatment of malignant tumors, we should first identify constitution, identify body first, and regulate biased constitution with traditional Chinese medicine. TCM practitioners should conduct early screening of people with Yang deficiency and Qi deficiency constitution and intervene early to treat them, adjust their constitution, and make them develop toward a pacified constitution. Thus, the accumulation of pathological products can be curbed, and the internal environment of the body can be adjusted so that tumors lose the environment for production or recurrence of metastasis and further deterioration, which can achieve the purpose of tumor treatment and prevention [19]. Preventing diseases before they occur, preventing changes in existing diseases, and intervening in advance with comprehensive treatment to relieve patients' discomfort and improve the quality of survival. Comprehensive interventions for "treating the disease before it occurs" and correcting the biased physique can reduce the incidence of malignant tumors.

Studies have shown [20-21] that the side effects of chemotherapy are obvious and harmful to the human body, and the reasons for this may be related to the imbalance in the body mass of malignant tumors and the toxicity of chemotherapy drugs further destroying the function of the internal organs. Therefore, in order to reduce side effects, TCM interventions for biased constitution should be performed before chemotherapy starts. It can be seen that the essence of tailor-made treatment should be tailor-made according to the body constitution, and the first step should be to identify the body constitution and develop the corresponding treatment plan according to the characteristics of different body constitutions.

In general, TCM constitution not only has obvious influence on the occurrence, development, and prognosis of tumor, but also has some correlation on the sensitivity and side effects of chemotherapy for tumor. To prevent and reduce the toxic and side effects of chemotherapeutic drugs, traditional Chinese medicine should not only consider the etiology and pathogenesis of the disease, the cold, heat and cool of chemotherapeutic drugs, the function of spleen and stomach and other related viscera, but also start with regulating the constitution of traditional Chinese medicine, so as to cooperate with chemotherapy and reduce adverse reactions by improving the constitution of patients. Traditional Chinese medicine plays an irreplaceable role in the regulation and improvement of physical fitness.

4. Summary and Prospect

To sum up, the TCM Constitution of patients with gastrointestinal malignant tumors is mainly Qi deficiency and Yang deficiency. In the clinical practice, the main clues of Qi deficiency and Yang deficiency are used to identify and assess the risk of the patients. For cancer susceptible patients, we

provide comprehensive interventions for "treating the disease before it happens" and personalized physical health care programs. Through TCM, we adjust the dynamic balance of Qi, blood and phlegm in people with high risk of gastrointestinal tumors, correct the biased constitution, so as to maintain the homeostasis of the body, achieve the purpose of preventing and controlling the occurrence and development of gastrointestinal tumors, and thus reduce the incidence of malignant tumors. For patients with gastrointestinal malignant tumors, the combination of "identification of body - identification of disease - identification of symptoms", adjusting the internal environment of the body and changing the environment conducive to tumor growth are all useful in controlling tumor progression, relieving symptoms and improving the quality of survival of patients.

References

- [1] Rebecca Siegel MPH et al. *Cancer statistics, 2014* [J]. *CA: A Cancer Journal for Clinicians*, 2014, 64(1): 9-29.
- [2] Su R, Li L, Xu H-B. *Clinical observation of compound bitter ginseng injection in the adjuvant treatment of gastrointestinal malignancies* [J]. *Chinese Journal of Hospital Pharmacy*, 2015, 35(04): 322-325.
- [3] Kristina Susi Ari, Permitasari Ni Putu Ayu Linda, Krisnadewi Kadek Ida, et al. *Incidence and Mortality of Cancers Related to Secondhand Smoking in Southeast Asia Countries* [J]. *Asian Pacific Journal of Cancer Prevention*, 2019, 20(3): 971-976.
- [4] Zhang YH, Gao RK, Li J. *Research on the prevention and treatment of gastrointestinal malignancies based on the theory of Chinese medicine emotion and spirit* [J]. *World Journal of Chinese Digestion*, 2018, 26(27): 1575-1580.
- [5] Wanqing Chen PhD, MD et al. *Cancer statistics in China, 2015* [J]. *CA: A Cancer Journal for Clinicians*, 2016, 66(2): 115-132
- [6] Ji Jafu. *Tumor-free techniques and principles of surgery for malignant tumors of the gastrointestinal tract* [J]. *Chinese Journal of Practical Surgery*, 2005(04): 254-256.
- [7] Xu BW, Li J, Cao LChang, Zhang XiaoXiao, Han YiYi. *Exploring the application of the method of helping yang and eliminating yin in tumor clinical evidence based on the theory of "yang transforming qi and yin forming"* [J]. *Journal of Traditional Chinese Medicine*, 2020, 61(09): 772-775+780.
- [8] Yang Xiaolei, Yang Chao, Zhang Qinting, Sun Quan, Ge J. *Study on the correlation of TCM body types in patients with malignant tumors* [J]. *Journal of Liaoning University of Traditional Chinese Medicine*, 2015, 17(08): 164-166.
- [9] Zhao H-B, Gong W-J. *The relationship between TCM constitution and malignant tumor prevention and treatment* [J]. *Chinese Medicine Herald*, 2019, 16(31): 127-130.
- [10] Wang M, Zhou T, Hu KW. *Advances in the study of TCM constitution in malignant tumors* [J]. *Chinese Medicine Herald*, 2018, 24(23): 36-39.
- [11] Guo Jianwei, Guo Dan, Chen Liang, Gu Jinghui, Lin Nan, Liao Qianghua, Su Xiaoxiang, Lan Xiaoqin, Sun Xueping, Wang Lin. *Chinese medicine physical identification and MLH1 gene polymorphism in patients with gastrointestinal tumors*[J]. *World Journal of Integrative Chinese and Western Medicine*, 2021, 16(05): 949-952+956.
- [12] Zhao Miao Miao, Zeng Bao Zhu, Du Min, Wang Weifeng. *Logistic regression analysis of colorectal cancer and TCM physical fitness and related risk factors* [J]. *Chinese Journal of Integrated Traditional Chinese and Western Medicine*, 2019, 39(01): 23-27.
- [13] Liu L. T. *Exploring the relationship between colonic adenomatous polyps and body mass based on the four signs theory* [D]. *Beijing University of Traditional Chinese Medicine*, 2017.
- [14] Nakamura T, Mitomi H, Kanazawa H, et al. *Tumor budding as an index to identify high-risk patients with stage II colon cancer* [J]. *Dis Colon Rectum*, 2008, 51 (5) : 568-572.
- [15] Xiao Baiyuan. *The relationship between TCM constitution and toxic side effects after chemotherapy in tumor patients* [D]. *Beijing University of Traditional Chinese Medicine*, 2012.
- [16] Wu C.Y., Feng Y., Li J. *Study on the role and significance of Chinese medicine for the prevention and treatment of gastric cancer in a superior population based on the theory of TCM constitution* [J]. *World Journal of Chinese Digestion*, 2016, 24(24): 3543-3549.
- [17] Wang Q. *Classification of nine basic TCM physical types and the basis of their diagnostic expressions* [J]. *Journal of Beijing University of Traditional Chinese Medicine*, 2005, 28(4): 1-8.
- [18] Wu Xiaoqing, Lu Wenping. *Exploring the pathogenesis and treatment of ovarian cancer from Yang deficiency constitution* [J]. *China Medicine Herald*, 2020, 17(34): 123-126.
- [19] Li Xianhong, Kuang Xiuying. *The role of the idea of "treating the untreated disease" and Chinese medicine physical identification in tumor prevention and treatment*[J]. *Journal of Traditional Chinese Medicine Oncology*, 2019, 1(04): 7-11.
- [20] Zhang Miao, Tian Shaodan, Liu Li, et al. *Physical characteristics of malignant tumor patients and analysis of physical causes of leukopenia after chemotherapy* [J]. *Jilin Chinese medicine*, 2017, 37(1): 14-18.

[21] Xu Y, Zheng H R. *A simulation-based method for predicting cancer cell lethal genes [J]. Beijing Biomedical Engineering, 2017, 36(6): 591-596.*