PERSPECTIVE

Relationship Between Traditional Chinese Medicine(TCM) Constitution and TCM Syndrome in the Diagnosis and Treatment of Chronic Diseases

Xiuxiu Sang, Zhongxia Wang, Shuyi Liu, Ruilin Wang*

Integrative Medical Center, 302 Military Hospital, Beijing 100039, China

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Abstract Chronic diseases are global threats to human health. By applying the traditional Chinese medicine (TCM) theory of body constitution to the treatment of chronic diseases, and comprehensively identifying and differentiating the syndrome, disease, and constitution, TCM can be fully used in the diagnosis and treatment of chronic diseases. In this manner, population-based and evidence-based modern medicine can organically align with the individual-focused and speculation-based TCM, with subsequent benefits for the control of chronic diseases, reducing their burden on human health.

IN the current context of rapid urbanization and industrialization, many individuals expect life-style changes and substantial enhancements in life expectancy. However, chronic diseases such as diabetes, cardiovascular disease, cancer, chronic liver disease, and chronic respiratory diseases have become considerable threats to global human health.¹⁻² In 2013, the Global Burden of Disease Study found that the proportion of disease burden (disability-adjusted life years) caused by chronic diseases in China

was approximately 77% of the overall disease burden in China. Thus, chronic diseases in China have restricted economic development and social sustainability. Policies that can effectively prevent and control chronic diseases are of great importance in reducing the contribution of chronic diseases to the overall disease burden.

The benefits of Traditional Chinese Medicine (TCM) in preventing and treating chronic diseases are widely recognized. In the context of a variety of existing chronic disease guidelines, it is useful to consider how to better integrate modern medicine, where diagnosis and treatment are mainly based on clinical evidence from population and laboratory-based tests, with TCM, where diagnosis and treatment are mainly based on individualized observation of the symptoms. In the process of integrating the two medical models, the TCM theory of body constitution has been continuously applied in medical practice. After the formation of chronic diseases, the symptoms are typically sustained and

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*Corresponding author E-mail: wr17905@163.com; Tel: 86-10-66933024.

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relatively stable. We believe that only by distinguishing syndrome and combining constitution identification with syndrome differentiation, effective diagnosis and treatment of chronic disease can be performed in TCM.

The TCM theory of body constitution identification, a secondary discipline within TCM, has been increasingly applied in the practice of integrative medicine. It proposes three key scientific standpoints.³ First, constitutions are separable, such that the common body constitutions can be grouped by similarity, following an appropriate method of identification. Second, constitution and disease are related, such that the progress of chronic diseases is associated with constitution, and may influence susceptibility to, and the pathological pattern of, the disease. Third, constitutions are adjustable, such that a biased constitution in a sub-health state can be adjusted to a gentler constitution (i.e., a state of health), thereby effectively preventing the development of chronic diseases. Based on the above three key viewpoints, which comprise an overall view of the human body from the perspective of TCM, interventions to prevent and control chronic diseases can be advanced.

IMPORTANCE OF TCM CONSTITUTION IDENTIFICATION IN THE MANAGEMENT OF CHRONIC DISEASES

For the diagnosis and treatment of chronic diseases, western medicine attempts to identify common characteristics of clinical and pathological changes and then develop therapeutic methods. This approach is advantageous in that it promotes specific strategies of diagnosis or treatment and that guidelines based on strong evidence can be extensively implemented in clinical practice. However, individualization (i.e., personalized medicine) does not always garner sufficient attention. In contrast, TCM specifically cares for individuals in its approach to the development of disease. The TCM theoretical system is characterized by treatment based on syndrome differentiation and emphasis of individualized diagnosis and treatment. However, it is relatively hard to understand, which contributes to difficulty in mastering and operating TCM in practice.

The relationship between TCM constitution and formation of chronic disease

TCM regards the formation, or onset, of a chronic

disease as the development of a biased constitution that continuously accumulates and ultimately reaches a change in its basic nature. When a temporarily biased constitution occurs, due to congenital or acquired disposition, the human body typically suffers from a variety of discomforts. In this period, laboratory tests often fail to detect the underlying abnormalities. This condition is regarded as "sub-health" status. The biased constitution can be corrected if effective treatment is performed and the identifiable symptoms are relieved; thus, the sub-health status can be stopped and returned to a state of health. Conversely, if the temporarily biased constitution continues to accumulate, it will ultimately reach a stable, unbalanced status: chronic disease, which is then detectable by the laboratory examinations of modern medicine.

In terms of TCM constitution, certain biased constitutions are related to specific chronic diseases. For example, the phlegm-dampness constitution was found to be closely related to the formation of metabolic syndrome-associated diseases,^{4,5} such as diabetes and hyperlipemia.⁶⁻⁸ When a chronic disease is diagnosed, the relatively stable, biased constitution is typically difficult to adjust, such that a patient with chronic disease is less likely to be fully cured than a patient with non-chronic disease. For instance, the current treatment approaches for diabetes, hypertension, and chronic liver disease are mainly used to limit their progression and prevent complications.

Therefore, the relationship between chronic diseases and TCM constitution is as follows: a specific constitution tends to develop into a certain type of chronic disease. When a chronic disease has developed, some chronic symptoms can change with relative ease, while others will last for an extended period; thus, the body enters a chronic state with regard to symptoms, which we consider a Chronic Disease-Related Constitution.

The correlation between TCM constitution and treatment for chronic diseases

The characteristic pathological changes of certain chronic diseases can be identified through general constitution identification. The Evaluation Scale of TCM Constitution Identification, issued in 2009 by the Chinese Medicine Institute for Trial Implementation in China, can be used easily and effectively to classify the constitutions of chronic diseases. Constitution identification, combined with precise differentiation of tem-

porary syndromes that may occur in this constitution, contributes to individualized treatment. For instance, the general principle in the treatment of alcoholic liver cirrhosis with a damp-heat constitution is a focus on releasing heat and dampness, which is then adjusted according to differences in the identified syndromes.^{9,10} Because of the long-term stability and irreversibility of chronic diseases, treatment involves a long-term plan to adjust the constitution, coupled with comprehensive interventions in diet, sleeping, and physical activities.

The role of TCM constitution in the management of chronic diseases

It is not incompatible for western medicine to focus on commonalities of diseases and for TCM to focus on disease at the individual level. The key concept in TCM constitution identification is not only to focus on differences in the general features of a disease, but also to find common features among individual instances of the disease. In terms of specific diseases, it is important to find characteristics among the general regularities of the disease, as well as to identify similarities among a variety of symptoms. The general regularities above could be regarded as a disease diagnosis in western medicine, and the specific characteristics are the focus of syndrome differentiation in TCM. Constitution identification in TCM summarizes characteristics of stable signature symptoms that have formed during the development of disease and categorizes them into patterns, by which it recognizes a specific subgroup with common symptoms in a larger population of individuals with disease; accordingly, it delivers individualized strategies for diagnosis and treatment. Therefore, it functions as a bridge to connect the common and individual features of a disease. Moreover, it provides conceptual unity, such that it is easy to apply in medical practice.

CURRENT STATUS AND ADVANCES IN TCM CONSTITUTION OF CHRONIC DISEASES

The Classification and Determination of Constitution in TCM by Qi Wang has been implemented as a tentative professional standard by the China Association of Chinese Medicine. Additionally, it was implemented as a National Public Health Service standard in 2009—this is the only TCM health screening program in China. The standard describes physical characteristics

and facilitates identification of nine basic TCM constitutions: gentler type, qi-deficiency type, yang-deficiency type, yin-deficiency type, damp-heat type, phlegm-dampness type, blood stasis type, qi-depression type, and specific endowment type. In 2013, the standard of Classification and Determination of Constitution for Older People was launched by the China Association of Chinese Medicine, providing a TCM diagnostic approach specifically for the elderly.

Application of TCM constitution in China

Currently, TCM constitution identification has been applied in the diagnosis and treatment of some chronic diseases in China with the promotion of the China Association of Chinese Medicine, as well as the support of local health administration departments and hospitals. The reported cases originated from a range of locations in China, including Beijing, Tianjin, Henan, Hebei, Shaanxi, Shandong, Shanxi, Jiangsu, Ningxia, Inner Mongolia, Shanghai, Yunnan, Sichuan, Guizhou, Heilongjiang, Liaoning, Xinjiang, Tibet, Hainan, Gansu, and Qinghai. Diseases included diabetes, hypertension, heart disease, fatty liver, and other chronic diseases.¹¹⁻¹⁴

Studies of TCM constitution in chronic disease

The clinical value of TCM constitution identification has been preliminarily demonstrated; however, TCM constitution identification has been applied to chronic diseases mainly in the domain of “diagnosis,” as few studies have been performed in the context of “treatment.” Although there have been a small number of substantial studies that used modern technology to investigate TCM syndromes,¹⁵⁻¹⁷ the majority of studies on the relationship between constitution and syndrome have been theoretical investigations. The boundary of constitution and syndrome is often ambiguous during the development of chronic diseases; moreover, constitution and syndrome are sometimes difficult to clearly distinguish from each other. Thus, additional studies are needed regarding objective indicators of chronic diseases to enable TCM constitution recognition to become more objective and accurate.

Objectification of TCM constitution

Remarkable progress has been made in terms of TCM constitution objectification in recent years. Studies that have correlated experimental results of modern medicine, such as metabolomics and genomics, with

TCM constitutions have provided a more objective understanding of these constitutions. For example, gene expression (e.g., *ELOVL7*, *SOCS3*, and *CLU*) differed between the phlegm-dampness constitution group and gentler constitution group; further, levels of thyroid-stimulating hormone and hemoglobin, as well as red blood cell count, were significantly different between individuals with the yang-deficiency constitution and individuals with the gentler constitution. This suggested that individual differences based on TCM constitutional theory may have a biological basis.¹⁸⁻²⁰ The combination of modern medicine with TCM could better demonstrate the necessity and feasibility of constitution identification for the diagnosis and treatment of chronic diseases.

IMPORTANT ISSUES FACING CONSTITUTION IDENTIFICATION IN CHRONIC DISEASES AND SUB-HEALTH STATUS

A chronic disease results from a qualitative transformation to a quantitative transformation (i.e., from relative bias to absolute bias). In terms of TCM constitution, once a chronic disease is clearly diagnosed, it is difficult to fully return to a healthy state, and the possibility of recovery is relatively lower than in a case of non-chronic disease. Thus, clinical treatment for chronic diseases, such as diabetes, hypertension, and chronic liver disease, is mainly to control the progression of the disease and prevent severe complications. Thus, treatment for chronic disease has its own principles and rules, compared with treatment of sub-health status.

In TCM, sub-health status can be diagnosed by four diagnostic methods (inspection, auscultation-olfaction, interrogation, and palpation) as a specific syndrome and be treated accordingly. In contrast, in laboratory or imaging examinations, an individual in a state of sub-health typically exhibits negative results, and is often considered to be "disease-free," so few modern targeted interventions can be used in these cases. When a diagnosis of chronic disease has been established by typical symptoms and/or laboratory abnormalities, modern medicines often are administered as long-term conventional therapy. At this point, the objective of TCM when integrated with western medicine is to enhance its efficacy, eliminate side effects, and improve quality of life.^{21,22}

"Constitution" and "syndrome"

Because chronic diseases are generally irreversible pathological states, they are difficult to reverse; in many cases, they continue to progress. In terms of "syndrome" in TCM, the pathological state of chronic disease is a "syndrome" that cannot be cured and may re-appear. For example, in patients with alcoholic cirrhosis accompanied with esophageal varicose veins, gastrointestinal symptoms are difficult to prevent because of the irreversible portal hypertension. In terms of TCM constitution, once liver cirrhosis is formed, the pathological abnormalities become relatively stable. This relatively stable cirrhosis pathology correlates with the constitution of chronic disease. In decompensated cirrhosis, the clinical symptoms, such as fatigue and poor appetite, are often enduring and remain throughout the course of disease. Except by liver transplantation, it is difficult to control the symptoms of portal hypertension caused by cirrhosis, even by using integrated Chinese and western medical approaches. The release of symptoms is typically temporary and likely to recur. The long-lasting differentiated constitution contrasts with the short-lived nature of syndrome identification.

The miscellaneous state of constitution

According to the Classification and Determination of Constitution, in some occasions, a score may refer to a few constitutions, rather than a single constitution type. This does not indicate that TCM constitution identification is contradictory or incorrect. The composition of a few constitutions in an individual is a specific pathological state that has been stable for an extended period of time in the body. TCM identifies constitutions and classifies them generally into certain types, aimed at recognizing global forms of each constitution, while retaining operational definitions of each constitution. With the establishment of the correlation between TCM constitutions and the results of metabolomic and genomic studies, objective knowledge of TCM constitution will be increasingly accurate.

Role of TCM constitution identification in integrative medicine

Emphasizing the importance of TCM constitution identification in chronic disease diagnosis and treatment does not intend to overstate or expand the indication of Integrative Medicine in the treatment of chronic diseases. We must admit the limitations of both Chinese

and western medicine approaches in the therapy of chronic diseases. Because the pathological disorder present in a chronic disease is often relatively stable, (i.e., the constitution is long-lasting), integrative medical treatment of chronic diseases must be both long-term and persistent. Therefore, the most appropriate individualized therapeutic protocol should be implemented to control the progress of the disease and improve quality of life, through which we can fully use both traditional Chinese medicine and western medicine.

In conclusion, TCM constitution identification, as an evaluation tool for estimating the overall condition of an individual in a state of sub-health, can be used to predict the risk of chronic diseases at each stage of prevention, diagnosis, and treatment, emphasizing the superiority of the overall concept of TCM. It is valuable in TCM diagnosis and treatment of chronic disease, and can serve as a multidimensional model for disease prevention. Moreover, it is accessible to patients and relatively simple for physicians to implement. Based on health preservation and disease prevention, TCM constitution identification could be implemented in diet, exercise, and daily life in a simple, economic, and pleasant manner, where the combination of Chinese and western medicine can achieve a robust and positive effect. Further, it can enable better prevention and treatment of chronic diseases, thus realizing the goal of reducing the morbidity, mortality, and disability associated with chronic diseases.

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