

Editorial

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The role of traditional Chinese medicine in the prevention and treatment of coronavirus disease 2019

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Coronavirus disease 2019 (COVID-19) has spread rapidly since its outbreak in 2019, which constitutes a pandemic. As of March 28, 2022, there were 4,76,374,234 confirmed cases and 6,108,976 confirmed deaths globally, which seriously threatened human life and health [1]. COVID-19, declared a pandemic by The World Health Organization (WHO), is one of the greatest challenges the world has faced for centuries. In the face of the sudden disease outbreak, traditional Chinese medicine (TCM), which has developed over thousands of years, has achieved remarkable progress in the global fight against the pandemic. With effective policies and measures, China has contributed “Chinese solutions” worth noting in the global response to the pandemic. Nowadays, the situation of pandemic prevention and is grim worldwide. We should promptly summarize the experience, learnings, and achievements of TCM in dealing with the current pandemic, and pay attention to the distinct advantages of TCM. Under the context of pandemic prevention and control, TCM should be involved in the early, comprehensive, and in-depth management of patients. Health policy guarantee mechanisms should be improved to implement practical strategies for the prevention and control of major emerging infectious diseases globally.

Understanding of COVID-19 in TCM

COVID-19 is highly contagious, and people are susceptible to it. Therefore, COVID-19 belongs to the category of “plague diseases” in TCM. The disease is caused by feeling “Li

Qi,” which is equivalent that upon infection with pathogenic microorganisms. Throughout global pandemic history, COVID-19 has rapidly affected >100 countries and regions worldwide, making it the fastest and most widespread large-scale plague to date. However, COVID-19 has also broken through TCM perception on pandemic diseases. Its characteristics of universality (space-time span), concealment (asymptomatic infection), variability (continuous variation of virus strains), and complexity (complex syndrome manifestations) have brought significant challenges and opportunities for innovation to plague disease theory in TCM.

TCM treatment requires the investigation of the cold and heat attributes of newly emerging infectious diseases. In this regard, we creatively put forward the concept of “Li Shi,” which refers to the affinity of “Li Qi” to the physical and chemical properties (temperature, humidity, etc.) of the external environment. In an optimal external environment, “Li Qi” shows high activity and high pathogenicity. Based on “Li Shi,” we developed a four-dimensional qualitative method to determine TCM attributes of plague disease. The four dimensions are “Li Shi,” external environmental and climatic factors, patients’ internal environmental status (physique, etc.), and clinical manifestations, to comprehensively decide the TCM attributes of COVID-19 and other plague diseases. Among them, “Li Shi” is the determinant factor, and external environmental and climatic factors (“six Qi” or “six Yin”) is the auxiliary condition. The direction of cold and heat is determined by the bodies after infection with “Li Qi.” The clinical manifestation results from the comprehensive action of various factors, which is the starting point of syndrome differentiation and treatment. Based on this, COVID-19 is characterized as a “cold-dampness epidemic” from the perspective of TCM. After more than two years of practice, our team treated COVID-19 patients from different periods, different regions, and different strains of the virus. Although symptoms vary, the essential characteristics of “cold and dampness” in the early stage of the disease are present. Therefore, cause assessment can be used to formulate a collective prevention and treatment

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plan for “Li Qi” for the close contact/sub-close contact, asymptotically infected, and early diagnosed patients. However, for patients in the middle and late stages, the pathogenesis evolves in different ways of cold or heat. We can then formulate individualized prevention and treatment plans through syndrome differentiation and treatment from the perspective of the syndrome. According to the above-mentioned understanding of the attributes and characteristics of COVID-19 TCM treatment, we should systematically and comprehensively analyze the characteristics and differences of COVID-19 worldwide, and summarize the anti-epidemic experiences of TCM.

Application of TCM in fighting epidemic situation

Since the outbreak of COVID-19, TCM has played an irreplaceable role in the prevention and treatment of the pandemic, breaking the prejudice that “TCM is a slow doctor.” The treatment ability and curative effect of TCM on new infectious diseases are positive. Clinical research shows that the total effective rate of TCM on COVID-19 is > 90%, which can effectively alleviate symptoms, block the development from the mild/ordinary type to severe type, improve the cure rate, reduce the mortality rate, promote the recovery of convalescent population, and reduce recurrence. In this pandemic, our country adheres to the principle of “moving forward, sinking the center of gravity, and early/whole-process intervention” of TCM. Therefore, a series of effective clinical prescriptions represented by “three prescriptions and three drugs” have been continuously recommended for application in the Guidelines on the Novel Coronavirus-Infected Pneumonia Diagnosis and Treatment. In the whole chain of diagnosis and treatment from prevention, treatment to rehabilitation, the idea of “Zhi Wei Bing” of TCM (preventive medicine of disease) is fully understood:

In the aspect of prevention before disease, we focus on the prevention and control of the epidemic situations in communities, centralized isolation/home isolation populations, and critical control personnel such as frontline epidemic prevention. TCM use can adjust their overall state and enhance their ability to resist external pathogens, thus significantly reducing the diagnosis rate and effectively preventing the occurrence of COVID-19.

In terms of preventing the deterioration of existing diseases, the patients with mild/ordinary symptoms followed a comprehensive TCM treatment plan, which effectively relieved the clinical symptoms of patients

and alleviated the progression of symptoms from mild/ordinary to severe. Meanwhile, the severely/critically ill patients are treated with the combination of TCM and Western medicine, which effectively reduced the mortality rate and the incidence of complications. A retrospective cohort study of 721 cases showed that the occurrence of symptoms from mild/ordinary to severe in the treatment group with Hanshiyi formula was 0, while that in the control group without TCM was 6.5% [2]. In addition, a retrospective study on the treatment of severely and critically ill patients in two hospitals in Wuhan found that the risk of death of patients treated with integrated TCM and Western medicine decreased by >80% compared with patients not receiving TCM [3, 4].

In terms of preventing disease recurrence, comprehensive intervention measures of TCM can effectively improve the clinical symptoms in the convalescent stage, reduce the risk of recurrence, and promote the absorption of pulmonary fibrosis and interstitial pneumonia. An observational study of 420 convalescent COVID-19 patients showed that the recurrence rate of positive reverse transcriptase polymerase chain reaction (RT-PCR) tests in the comprehensive intervention group of TCM was significantly lower than that in the non-intervention group [5]. Through the clinical study of “the three syndromes and six Chinese patent medicine” during the recovery phase of COVID-19, it was found that Chinese patent medicines such as Jinshuibao Capsule, Shengmai Yin, Ludangshen Oral Liquid, Xiangsha LiuJun Pill, and Shumian Capsule can improve cardiopulmonary dysfunction, digestive dysfunction, and sleep and emotional dysfunction of convalescent patients [6, 7]. In addition, our clinical study also showed that Qimai Feiluoping Decoction could significantly promote the absorption of interstitial inflammation and pulmonary fibrosis in patients with severe/critical disease in the convalescent stage, and preliminarily explored its antifibrosis mechanism from the pharmacological level [8]. The profound practice of TCM in the fight against COVID-19 has proven its unique role and advantages, fully verifying its effectiveness and scientific nature. This inspires us to promote the modernization and technological progress of TCM and reveal the scientific connotation within the modern language of science and technology.

Suggestions on future epidemic prevention and control

At present, the pandemic situation in the world is extremely serious and complex. Local outbreaks of different scales occur in China. China’s epidemic prevention force faces

significant challenges due to risk from home and abroad. While severe acute respiratory syndrome coronavirus 2 continues mutating, the protective efficacy of vaccines is weakening. Therefore, research and application of certain drugs still need exploration. In this case, we should be proactive and provide continuous, in-depth implementation of the experience and achievements of the anti-epidemic nature of TCM, thus strengthening its popularization and application worldwide. For future pandemic prevention and control, we give the following suggestions:

- (1) Prevention of epidemic situations by using the complete theoretical understanding of TCM on COVID-19 (e.g., during relatively cold periods in winter/spring, and abnormal temperature drops, attention to epidemic prevention and control measures, and administering “supplementing qi” drugs to “dispel cold and eliminate dampness” and prevent disease occurrence). By updating the national guidelines, we can allow mild patients, asymptotically infected people, and close contact/sub-close contact people to take universal Chinese patent medicines such as Lianhua Qingwen Capsules/Granules and Qingfei Paidu Granules for self-prevention and treatment through simple syndrome identification, thereby reducing pressure on the medical sector.
- (2) Implement policy on early and full intervention of TCM in sudden epidemic situation and improve policy guarantee mechanisms. A response mechanism using TCM to deal with major epidemics nationwide needs to be established. Emergency TCM management teams should be present at all levels of health administrative departments. Appropriate and coordination mechanisms should be established between management, decision-making departments, and medical institutions, to promote the integration of TCM into national infectious disease prevention and control systems. Support for an information platform to ensure the timely launch and comprehension for the prevention and control of the early stage of an epidemic using TCM should be in place.
- (3) Comprehensively promote diagnosis and treatment measures using TCM and Western medicine for patients with severe/critical diseases and reduce the patient death rate where possible. Integrating traditional Chinese and Western medicine is a significant feature of epidemic prevention and control, which is also a detailed practice of inheritance and innovation in TCM. Therefore, for severe/critical patients with acute infectious diseases (i.e., COVID-19), we need to

improve further the mechanism of collaboration between Chinese and western medicine, strengthening the joint consultation and treatment using this system. By constantly improving the diagnosis and treatment scheme of integrated traditional Chinese and Western medicine, we can enhance the effectiveness of clinical treatments to reduce mortality of severe/critical patients.

- (4) Establishing TCM rehabilitation clinics timeously in areas with large-scale outbreaks to supply excellent treatment during the “last kilometer” of COVID-19 treatment. While some patients may meet the discharge criteria through a negative RT-PCR test, many patients still have discomforting symptoms. Therefore, severely ill patients may need rehabilitation to restore adequate lung function. Hence, the establishment of TCM rehabilitation clinics can seamlessly connect treatment and restoration, while adopting comprehensive TCM intervention measures combining group and individualization, such as traditional exercises, appropriate technology, dietary guidance and emotional therapy, help promote the recovery of bodily functions and improve quality of life.
- (5) Under the new background of epidemic prevention and control, we need to standardize the new paradigm of TCM research and supply scientific and technological support for better promoting the anti-epidemic advantages of TCM. The TCM system will deepen the integration mechanism for clinical and scientific research, strengthen the top-level design of scientific research, take clinical treatment as the core, and cover the whole chain of prevention, treatment, and rehabilitation. We will conduct multidisciplinary joint research on the analysis of TCM syndromes of plague diseases, research on community prevention and control using TCM, the clinical evidence-based research of effective prescriptions, and the research on the action mechanism of TCM. Furthermore, we must closely track the variation characteristics during viral transmission and fill the gaps in clinical and basic research of TCM in coping with novel Coronavirus variant strains. In addition, China should further strengthen international cooperation and actively share TCM diagnosis, treatment plans, and experience. We should conduct prospective, multi-center clinical trials and real-world studies on TCM from a global perspective, cooperate with international innovative research institutions, and learn from modern science and technology to promote the development of TCM.

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