Abstract

Taking the process of treating coronavirus disease 2019 (COVID-19) with Western medicine and traditional Chinese medicine (TCM) as the research object, this article compares the characteristics of Western medicine and TCM from the perspectives of etiology, pathogenesis, diagnosis, and treatment. Western medicine and TCM each has its own theoretical system. Each has its own exposition in explaining the etiology and pathogenesis of the disease, and each has its own characteristics and advantages in diagnosis and treatment. Integrating TCM and Western medicine can improve the effect of treatment by forming a coordinated traditional Chinese and Western medicine treatment method.

Keywords: Combination of Chinese and Western medicine, comparative study, coronavirus pneumonia, COVID-19

Introduction

In January 2020, the new coronavirus pneumonia (coronavirus disease 2019 [COVID-19]) epidemic saw its first outbreak in Wuhan, Hubei Province, and it spread subsequently to the other parts of China. Since then, the epidemic has occurred wantonly around world. As of November 13, 2020, the total number of confirmed cases worldwide had exceeded 53 million, with more than 1,300,000 deaths.\(^1\) At the beginning of the Wuhan outbreak, the epidemic situation was uncontrollable and the number of severe cases and deaths increased rapidly, in part, due to the weak awareness of the disease. Even now, “no effective drugs have been found to treat the new coronavirus.”\(^2\) However, one month after the outbreak of the epidemic, with the widespread participation of traditional Chinese medicine (TCM) practitioners, the level of understanding the disease has improved, the treatment methods were expanded, and the synergistic treatment of integrated traditional Chinese and Western medicine achieved remarkable results. The number of patients whose symptoms progressed from mild to severe or who became critically ill decreased significantly,\(^3\) alleviating the treatment pressure of designated hospitals and saving a lot of valuable medical resources. The combination of TCM and Western medicine has become a characteristic “Chinese experience.”\(^4\) This article compares the respective characteristics of Western medicine and TCM in the treatment of COVID-19.

Understanding of epidemics in traditional Chinese medicine

In TCM, infectious diseases were named “epidemics (疫病)” or “pestilences (瘟疫)”, which accompanied the development of human society and took countless lives. According to Zhong Guo Yi Bing Shi Jian (《中国疫病史鉴》History of Epidemic Diseases in China), there were at least 321 attacks of epidemics in China from the Western Han Dynasty to the Opium War in 1840. Chinese people accumulated rich experience in the prevention and treatment of epidemics, and TCM played an essential role herein.\(^5\) Understanding epidemics in TCM can be traced back to Huang Di Nei Jing (《黄帝内经》Huangdi’s Internal Classic). Su Wen “Liu Yuan Zheng Ji Da Lun Pian” (《素问· 六元正纪大论篇》Basic Questions “Major Discussion on the Progress of the Six Climatic Changes”) said that “Pestilence prevails and people tend to die suddenly.”

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Based on the diagnosis of Western medicine, TCM collected descriptive and acupuncture and moxibustion were mainly used in the treatment.[6] In the Eastern Han Dynasty, there was a pandemic cold damage, and Zhang Zhongjing (張仲景) wrote in his Shang Han Za Bing Lun (《傷寒雜病論》) “Discussion on Acupuncture Methods”) proposed triple energizer identification and gave treatment accordingly. In the Song and Yuan dynasties, a large number of ready-made medicines were recorded in the medical books compiled under the sponsorship of the government, including Tai Ping Sheng Hui Fang (《太平聖惠方》) and Jiao Zheng He Ji Ju Fang (《校正和劑局方》) Corrected Formulary of Pharmacy Bureau and Tai Ping Hui Min He Ji Ju Fang (《太平惠民和剂局方》) and corrected the system of “six channel patterns of identification” and gave treatment accordingly. In his Shang Han Za Bing Lun (《傷寒雜病論》) wrote the very first monograph on warm disease study in TCM, i.e., Wen Yi Lun (《溫疫論》) “Discussion on Acupuncture Methods”) proposed the idea of “perverse qi causing disease (戾氣致病)” as etiology. He suggested that “Pestilences are not caused by wind, cold, summer-heat or dampness, but rather an abnormal qi between heaven and earth (夫瘟疫之为病, 非风、非寒、非暑、非湿, 乃天地间别有一种气所感)” and he believed that “The pathogenesis is latent in the pleuropneumonographic interspace (邪伏膕原)”. So, it was critical to force the pathogen out of the body and it was also important to strengthen the healthy qi. On this basis, Ye Tianshi (葉天士) invented the system of “defense-qi-nutrient-blood pattern identification”, and Xue Shengbai (薛生白) differentiated the syndrome types of dampness-heat disease. Subsequently, Wu Jutong (吳鞠通) proposed triple energizer identification and wrote Wen Bing Tiao Bian (《溫病條辨》) “Discussion on Acupuncture Methods”) Systematized Identification of Warm Diseases), which established the status of the school of warm diseases in TCM. In modern times, good therapeutic effect was obtained when TCM was used to treat epidemic encephalitis B in 1974, severe acute respiratory syndrome (SARS) in 2003, and influenza A in 2009. It can be inferred that TCM has thousands of years of history in preventing and treating epidemic outbreaks, with the help of rich experience accumulated and theoretical systems established. TCM has made great contributions to the prevention and treatment of infectious diseases.

**Comparison of the etiology of coronavirus disease 2019**

In Western medicine, the understanding of etiology is based on anatomy, pathology, and physiology. Western medicine holds that COVID-19 is caused by human infection of the SARS coronavirus 2 (SARS-CoV-2) carried by certain animals, leading to lung inflammation. According to TCM, COVID-19 is an externally contracted febrile disease with high infectivity and falls into the category of “epidemics”. Its outbreak in Wuhan this year was triggered by the humid climate in this city at that time, as well as by the warm winter season. The cold and wet weather conditions caused wet evil qi enroaching on the human lungs, resulting in a “cold damp (plague) epidemic ( 寒濕(瘟)疫).”[7] Although the two systems differ in their understanding of the cause of the disease, both agree that some kind of external material invades the lungs through the respiratory tract, resulting in lung troubles.

**Comparison of pathogenesis of coronavirus disease 2019**

Western medicine contends that COVID-19 is caused by the already-known SARS-CoV-2 virus that passes through the respiratory tract into the lung, stimulating the body’s immune system to produce an inflammatory reaction. Then, then alveolar endothelial tissue is damaged where the inflammatory serous exudated adheses to the alveolar surface, extensively damaging the alveolar oxygen exchange function and reducing the oxygen content in the blood, thus leading to severe hypoxia in patients.[8] TCM proposes that “dampness toxin (濕毒)” is the core cause of disease, and the qi of dampness evil enters from the mouth and nose, invades the lung, reduces the ability of the lung to propagate. According to TCM theory, the lung governs the waterway. When the waterway becomes blocked, body fluid is unable to disperse and it is formed into internal dampness and phlegm. These cold nature pathogens then coagulate the blood, hinder the meridian, causing not only the lung but also the spleen becomes dysfunction, leaving qi trapped inside and collapse. Moreover, “dampness toxin”, together with cold, heat, stasis, and deficiency, is one of the pathogenesis.[9,10] In Western medicine, there is organ damage caused by the virus, leading to organ dysfunction or even organ failure. In light with TCM, there is a kind of aggressive invasion of the viscera, leading to blockage of the circulation of the meridians, and internal block and external collapse in the end.

**Comparison of diagnoses of coronavirus disease 2019**

Western medicine collects the samples of respiratory secretions to undergo nucleic acid detection to make a definite diagnosis. The severity of the disease is assessed by means of blood tests and imaging examinations of viscera. The disease is classified as being mild, common, severe, and critical.[11] Based on the diagnosis of Western medicine, TCM considers comprehensively the main symptoms and clinical manifestations to determine the severity of the disease. In the course of COVID-19, there are five stages of clinical
treatment for diagnosed cases, i.e. mild disease (cold-dampness stagnated in the lung and dampness-heat stagnated in the lung), moderate disease (dampness-toxin stagnated in the lung and cold-dampness obstructing the lung), severe disease (epidemic toxin blocking the lung and blazes of both qi and nutrient), critical disease (internal blockage and external collapse), and recovery stage (qi deficiency of the lung and spleen and deficiency of qi and yin). Therefore, in the diagnosis, Western medicine relies on the detection of the virus, examination of the human body, and collection of laboratory data with which to make analysis and judgment. TCM makes analysis and judgment according to the external presentations of hostile invasion of the viscera.

Comparison of treatment approaches for coronavirus disease 2019

Western medicine believes that the root of the disease lies in the SARS-CoV-2 virus. Only by reducing or eliminating the virus from the body can we reduce the pulmonary inflammation, alleviate the damage to organ function and achieve the purpose of curing the patients of the disease. However, no specific drugs have been found to be fully effective against the virus, so we can only use some immune enhancers and non-specific antiviral drugs, such as hydroxychloroquine and Redsiever. Because of their lack of pertinence and limited curative effect, it is impossible to prevent some patients with mild symptoms from becoming severely ill, and then becoming critically ill. TCM is based on the theory of dampness toxin invading the lung, that as long as it can remove dampness and blood stasis, dispel pathogenic factors and toxins, dredge the veins, improve the lung and spleen functions, it can then achieve the purpose of curing the patients of the disease. The “three drugs and three prescriptions (三药三方)” recommended in the national “COVID-19 Treatment Plan”, represented by the Lian Hua Qing Wen Capsule (莲花清瘟胶囊) and the Qing Fei Pai Du Decoction (清肺排毒汤), are effective TCM treatment schemes based on the etiology and pathogenesis of a cold-dampness epidemic toxin blocking the lung and trapping the spleen. TCM has achieved good clinical results in the Wuhan epidemic outbreak, preventing the symptoms of the vast majority of patients from progressing from mild to severe and from severe to critical.

It can be seen that, although Western medicine has a clear diagnosis and modern assessment methods, the overall effect is not ideal because there are no drugs that specifically eradicate the virus. Relying on its own unique theoretical system, TCM treats disease through syndrome differentiation by incorporating inspecting, listening, smelling, inquiring, and pulse-taking to determine treatment principles and methods, as well as prescriptions and drugs. It is because the treatment methods of resolving dampness, removing toxin and clearing the lung that the overall efficacy of TCM treatment is superior to the Western medicine for mild, moderate and severe cases.

It is worth pointing out that once the patient’s condition becomes critical, that is, once they enter the state of internal blockage and external collapse, TCM is limited in the choice of drugs or treatment methods. Western medicine can rely on modern advanced medical technology, such as the use of ventilators, plasma exchange, hemodialysis, extracorporeal membrane oxygenation, lung transplantation, and etc. Western medicine has obvious advantages to save the lives of such patients.

In addition, Western medicine has an irreplaceable advantage in the following areas: 1) Prevention and control of large-scale infections, 2) Determining the source of infection, 3) Blocking the transmission route, and 4) Protecting vulnerable populations. There are systematic and targeted prevention and control measures in Western medicine in response to public health emergencies, including quarantine, contact tracing and vaccination. TCM, with its theory of “treating disease before its onset”, also has obvious advantages, especially in disease prevention. However, further exploration and study are warranted for effective participation of TCM in the prevention and treatment of public-health-emergency cases.

Chinese and Western medicine work together: 1 plus 1 is greater than 1

The medical system is different between Western medicine and Chinese medicine. However, in the fight against this epidemic, the two kinds of medical sciences share one goal. Each of them has its advantages, so they can work together to curtail the disease and play an equally important role in the triumph over the epidemic. Moreover, in the epidemic prevention and treatment, TCM has gradually become the main force. The combination of TCM and Western medicine is a combination of traditional and modern technical methods against the disease, which is a unique Chinese experience. In clinical practice, they can play the role of 1 plus 1 becoming greater than 1 where TCM therapy is combined with Western medicine therapy to have a curative effect that is much greater than that of TCM or Western medicine alone.

TCM and Western medicine, although differing in theory and practice, have the same purpose. The combination of traditional Chinese and Western medicine, through their complementary advantages, maximizes the effect of traditional and modern medicine, improves the curative effect and can accelerate the rehabilitation of patients. It is the construction of a valuable Chinese programme for the shared future of humankind. Nowadays, there is still a serious global pandemic threat outside of China. We should collect clinical data about the TCM and Western medicine treatment of COVID-19 from all countries to establish a database, analyze, and evaluate the therapeutic effect objectively, and to summarize the experience and explore the advantages of integrated treatment. This will provide a treatment regimen with Chinese characteristics for the prevention and control of global pandemic.

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Conflicts of interest
There are no conflicts of interest.

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