The Experience of Treating Patients with Pneumonia Secondary to the Coronavirus Disease 2019 Using the Guizhi Method of Traditional Chinese Medicine

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Abstract

This paper is a discussion of Professor Tang Nong’s approach to the diagnosis and treatment of the coronavirus disease 2019 (COVID-19) while providing a case report at the end. Professor Tang Nong considered that the main etiologies of the disease are “cold, wet, and poisonous.” He suggested resolving the body’s dampness by balancing internal organ functions, detoxifying the lungs, and providing heat. However, the treatment of cold with herbs and cleansing heat must not be performed too early to prevent the spread of the disease. Using principles from the basic theory of Fuyang Pai from traditional Chinese medicine (TCM), this project used the Huashi Qingfei immune formula (modified Guizhi Erchen decoction), which has been shown to be effective, to treat patients diagnosed with COVID-19. At present, the participation of TCM in our hospital is over 96% with a cure rate of approximately 90%.

Keywords: Fuyang, Guizhi method, novel coronavirus pneumonia, traditional Chinese medicine

INTRODUCTION

Since December 2019, there have been outbreaks of coronavirus disease 2019 (COVID-19) in many places around the world, with high lysability and high prevalence, and the outbreak has spread rapidly throughout the country, with the Guangxi Zhuang Autonomous Region having seen such cases in late January 2020. The Fourth People’s Hospital of Nanning, a designated hospital for infectious diseases, admitted its first confirmed patient on January 23; by March 05, 2020, a total of 58 confirmed patients had been admitted. Professor Tang Nong, as the chief consultant of the COVID-19 prevention and control team of Guangxi Chinese Medicine Administration, and the chief expert of Chinese medicine prevention and control of COVID-19 at the Fourth People’s Hospital of Nanning City, came to the front line and led all traditional Chinese medicine (TCM) personnel to carry out the treatment work, and achieved good results. The participation rate of TCM for treatment reached over 96%, and the method was found to be very effective. At present, 90% of affected patients have been cured and discharged, two critically ill patients passed through the high-risk period without any remarkable incidence after being weaned from the ventilator, and five with severe illness were reclassified as nonhigh risk patients, of which one case has been cured and discharged. This paper discusses Professor Tang Nong’s experience and dialectical thinking in the treatment of COVID-19.

Chinese Medicine Treatment for New Coronavirus Pneumonia

Based on the current epidemiologic investigations, the COVID-19 standard diagnosis and treatment group of the Chinese National Health Commission determined that the incubation period of the virus ranges from 1 to 14 days, with...
most cases exhibiting an incubation period of 3–7 days. Fever, dry cough, and fatigue are the main clinical manifestations of COVID-19, although a small number of patients also exhibit nasal congestion, rhinorrhea, sore throat, myalgia, diarrhea, and other symptoms. Severely ill patients usually present with dyspnea or hypoxemia 1 week after the onset of symptoms, which can quickly progress to acute respiratory distress syndrome, septic shock, metabolic acidosis, coagulation dysfunctions, and multiple organ failure. Notably, some severe and critically ill patients present with low-to-moderate grade fever during the disease. Mild cases typically only present with low fever and mild fatigue without pneumonia.[1]

Patients affected with the novel coronavirus were identified using patient data from doctors’ rounds, interviews, and through tongue and pulse diagnosis. Extensive studies by Professor Tang Nong and his team led to the conclusion that COVID-19 patients were mostly ill due to body heat, which was accompanied by fatigue, dry cough, and poor appetite. Patients have a more obvious cold wet depression or cold wet hot characteristics, early tongue moss to light red tongue white thick moss-based, to the medium-term or have a basic disease or older body weakness is high fever, or even continue to continue not to retreat, the performance of yellow moss or yellow greasy moss.

From the symptoms and clinical manifestations described above, the characteristics of patients with COVID-19 in Guangxi at the time of writing were mainly “cold and wet,” with heat combined with cold, dampness, and stagnation for a lengthy period of time. This categorizes COVID-19 as a “wet virus epidemic” in TCM.[2] The underlying pathogenesis of the disease can thus be summarized as dampness, stasis, heat, and deficiency. The focus of the disease was found to be mainly in the lung. In patients with chronic illness and in those with compromised lung defensive Qi, pathogenic wind takes advantage of the gap and invades the body with rapid onset. Pathogenic dampness then closes and blocks blood circulation thereby causing prolonged stasis, ultimately affecting the heart, spleen, stomach, and kidney. The combination of dampness and heat leads to further loss of positive qi and the formation of deficiencies and solid inclusions.

Nanning, Guangxi, is in the subtropical zone and thus experiences a humid and hot climate throughout the year. Citizens of Nanning are therefore more susceptible to the evils of cold and dampness which increases their risk of disease. The pathogenesis in this case can be explained by dampness and cold restraining Qi.

TREATMENT METHOD AND FORMULATION ANALYSIS

According to a passage in Su Wen Sheng Qi Tong Tian Lun, “The key factor of Yin and Yang is that only when Yang is compact can it strengthen Yinjing (yin-essence). The imbalance between Yin and Yang is just like a year that only has spring but no autumn, or only has winter but no summer. Thus, balancing Yin and Yang is the Shengdu (the supreme standard) for cultivating health. If Yang is too powerful to be compact, Yinjing will be exhausted. Only when Yin is at peace and Yang is compact can Jingshen (Essence-spirit) be normal. If Yin and Yang separate from each other, Jingqi (Essence-qi) will be completely exhausted.” The passage points out that a harmonious relationship between yin and yang is achieved when yang qi is dense. Only when yang qi is tight and yin qi is peaceful can normal living activities be maintained and the state of yin and yang be achieved. Professor Tang Nong believes that the relationship between the human body and yin and yang is as follows: Yang is located inside while yin is found outside. This is the most basic structure depicting the relative position of yin and yang in the human body; yang is directed upward and outwards while yin is directed downward and inward.[3] According to Mr. Zheng Qin’an, “People live one breath, that is, this Qian yuan qi is also because of Qian gas, fell in the Kun Palace, then changed out of the world, the origin of this king’s fire.” Therefore, Qianyuan is the root of life, and this epidemic is no exception. According to the “Yin and yang ontology structure theory,” the main principle of treatment is to eliminate cold and dampness while restoring the normal relationship between yin and yang in the human body. However, pathologic internal heat caused by long-term confinement must also be taken into account during treatment. The combination of Guangxi’s terrain and climate conditions creates an environment where wet and hot are dominant, cold periods are short, and winter is relatively warm, especially in Guangxi’s capital Nanning. Because of these factors, the ephedrine and laurel methods were abandoned. Therefore, the early stages of the disease abandon the slightly steep ephedrine method, using the gentle Guizhi method.

The Huashi Qingfei immune formula was used (Guizhi Erchen Decoction); the prescription is as follows: Guizhi tip 15 g, Rhizoma atraclyodis 15 g, root of Dahurian angelica 15 g, Acorus gramineus 20 g, south hawthorn fruit 20 g, tangerine peel 15 g, prepared pinellia tuber 20 g, poria 15 g, Radix puerariae 20 g, honeysuckle 20 g, baked licorice 5 g, and ginger 30 g. This prescription dehumidifies, neutralizes, and detoxifies the lungs. Guizhi tip warms through vein conditioning Yang Qi, the bitter, warm and humidity of R. atractylodis are a common medicine for the king. D. angelica, A. gramineus, tangerine peel, pinellia tubers, and poria can help to eliminate depression fever while South hawthorn fruits and ginger function as assistant drugs to strengthen the spleen and to block the production of phlegm. R. puerariae and honeysuckle also function as assistant drugs that penetrate evil to eliminate potential heat poisons. Baked licorice is a courier herb that moderates the property of herbs. In addition, Trichosanthis fructus shells and semen lepidii can be added to the mixture depending on the patient’s clinical symptoms and to patients with a wide chest to regulate Qi and Xie lung detoxification (adjuvant).

CASE STUDIES

Case 1: Patient LAN xx, is a 73-year-old male who was...
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transferred to the Emergency Department on February 09, 2020 due to back pain for 12 days and fever for 10 days. He had a history of hypertension and was maintained on nifedipine. The patient’s family member, who spoke on behalf of the patient, noted that his waist pain appeared 12 days ago without obvious cause and was accompanied by dull pain around the umbilicus, poor appetite, fatigue, and dizziness. The patient was hospitalized in a local hospital where his body temperature was recorded at 38.68 on admission. Computed tomography (CT) of the chest showed bilateral pleural effusion and ground-glass opacities at the lung peripheries. Routine blood examination was performed and showed the following results: a lymphocyte count of $0.68 \times 10^9/L$, a hemoglobin level of 121 g/L, a platelet count of $181 \times 10^9/L$, and C-reactive protein measurements at 77.6 mg/L. Upon admission, the patient was given piperacillin-tazobactam with levofloxacin to fight bacterial infection and ribavirin to fight the viral component of the infection. The patient was noted to have recurrent fever even after the combined treatment.

“XiYanPing, XueBiQing” was later administered to clear the heat and detoxify his body followed by the use of antiviral, anti-infection, hormone, shock, and other Western medicine therapies. However, these were found to be ineffective in treating the patient. On February 4, the patient tested positive for the COVID-19 nucleic acid while on noninvasive ventilator-assisted breathing. A repeat CT of the chest showed a bilateral increase in the size and density of previously observed ground-glass opacities. These developments prompted the use of other treatments, such as a novel method to improve immunity using “Human Immunoglobulin and the Thymalfasin” and the use of “Nifedipine Tablets” to suppress inflammation. However, because the patient remained in critical condition after administering the aforementioned treatments, he was transferred to the Fourth People’s Hospital of Nanning City for further treatment. Although the patient was diagnosed with hypertension in 2019, he was reportedly noncompliant with treatment using nifedipine tablets. The patient reportedly conducted his activities in the square around his home, did not have a contact history with both Wuhan residents and outsiders, and denied the clustering disease. His diagnosis using Western medicine terminology was as follows: (1) severe COVID-19; (2) bilateral pleural effusion; and (3) hypertension level 2, high-risk group. The patient’s diagnosis using TCM was as follows: severe COVID-19 (pestilence-toxicity blocking the lung).

On February 9, the patient noted chest tightness, shortness of breath after activities, dry and bitter mouth, poor appetite, poor sleep, and a dark red tongue with a thick, white, moss-like covering [tongue moss see Figure 1]. The focus of the disease was obvious. Pulse slip, treatment with dissolve wet and conditioning middle jiao, clear lung detoxification, excitation of lung. A repeat CT scan of the chest was performed on transfer which showed bilateral ground-glass opacities on the lower lobe, vascular congestion, and hyperinflation. The lesions are under the pleural membranes of the lungs. As shown in Figure 2, the patient was treated with TCM using the following prescription [Table1]:

On February 11, the patient complained of a persistently dry and bitter mouth despite drinking more water and sweating less. The patient was noted to sleep well and had normal urine output and good pulse. However, he had not had bowel movement for 2 days and also exhibited poor appetite and a thick, mossy, skittish, and dark red tongue [Figure 3]. Lactic acid level was 2.7 mmol/L and the patient’s oxygenation index was at 219 mmHg. Three doses of Chinese medicine were administered as follows [Table2]:

On February 14, during the patient’s third consultation, there was a noted decrease in the severity of mouth dryness and bitterness. In addition, the patient was noted to be drinking more water, had normal urine output, and had regular bowel movement (once a day). He denied fever episodes, sweating, cold intolerance, myalgia, and abnormal bowel movement. However, the patient still had poor appetite, tachycardia, and persistence of a thick, greasy, yellow moss on a dark red tongue [Figure 4]. He was administered three doses of TCM with the following components [Table3]:

On February 17, the patient complained of apparent weakness, chest tightness, asthma, poor appetite, and mild dry mouth and thirst; he denied cough, sputum production, fever, and sweating. The patient slept well and had normal bowel movement. The red fur of the tongue was thick, greasy, and yellowish; his pulse was slippery. A chest CT scan performed on February 15 revealed a slight increase in the size of the lung lesions [tongue moss picture in Figure 5]. The patient’s oxygenation index on the same day was 135 mmHg. The tongue coating is shown in Figure 6. Three doses of Chinese medicine with the following formula were administered [Table4]:

On February 19, the patient noted a slight decrease in asthma severity after activity and denied cough and sputum production. The patient was able to sleep well, but still noted slight drying of the mouth and poor appetite. The patient had good fluid intake and normal bowel movement and denied fever

Figure 1: Tongue coating on admission (February 9)

Figure 2, the patient was treated with TCM using the following prescription [Table1]:
Ma, et al. Guizhi method to treat the COVID-19 episodes. The tongue was found to be of a normal dark red color with a greasy, thick, and white covering. The patient’s pulse was slippery. Three doses of Chinese medicine were again administered as follows [Table5]:

On February 21, the patient’s asthma had improved significantly, and he could tolerate eating by himself without discomfort. The tongue, including the bottom portion, was small and red, while the moss was thick and yellow. The patient’s pulse was slow. Four doses of Chinese medicine were administered with the following formula [Table6]:

On February 25, the patient was in a generally good condition, without obvious discomfort, and could perform activities of daily living (ADLs) independently. The patient’s pulse was thin, and his tongue was red with white moss; tightly roots after a little thick greasy yellow moss had not disappeared. He was advised to continue taking three doses of the original prescription to eliminate dampness and prevent disease transmission.

On February 28, the patient’s general condition was noted to be well, except occasional bouts of diarrhea after cold exposure. He remained completely independent on all ADLs. The tongue was reddish yellow, similar to staining after intake of Chinese medicine, and his veins were thin [Figure 7 for a picture of tongue fur]. The patient’s status was changed from critical to stable, and he was advised to continue taking three doses of the medicine as before. A repeat chest CT on February 26 demonstrated absorption of earlier lesions, reduced consolidation, and reduced pleural thickening [Figure 8].

On March 2, the patient was deemed cured and hence discharged.

Table 1: First diagnosis of prescriptions for Chinese medicine on 9 February

| Aster 15 g | Rhizoma atractylodis 15 g | Angelica 15 g |
| Tangerine peel 15 g | Pinelliae rhizoma praeparatum 20 g | Angelica 15 g |
| Tangerine peel 15 g | Baked licorice 5 g | Ginger 30 g |
| Semen lepidii 15 g | Perilla seed 15 g | Cardamom 15 g |
| Reed rhizome 30 g | Amomum villosum 15 g | Guizhi tip 15 g |
| South hawthorn fruit 20 g | Zhufushen 15 g |
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This patient was a 70-year-old male with a history of liver-yang hyperactivity. In this case, yang injured yin and caused Qi consumption, causing the body to be empty. Ultimately, the ascending functions of the stomach and spleen were impaired, a phenomenon which was aggravated by wet disease and pulmonary gas depression resulting in persistence of pathologic wetness. Fever, cough, and other symptoms soon develop and the disease can potentially undergo rapid development. Additionally, during the early stages of the disease, there is no product of warming and dampness to aid the release of evil. At present, the various antiviral and antibacterial drugs used for symptomatic treatment are cold and cool products, which easily promote dampness inside the body. If cold and dampness remain stagnant for a long time, they will transform into heat. Heat will readily hurt essence and cause gas consumption, which leads to stagnation of Qi and blood and ultimately weakness of the body; this explains the rapid disease development frequently seen in this disease. Affected patients develop clinical symptoms of asthma, chest tightness, fever, and other symptoms of impaired pulmonary function in TCM. These symptoms are usually accompanied by a dry or bitter mouth, and constipation caused by Yang Ming heat. Therefore, the treatment should focus on eliminating the pathogen while clearing heat-toxicity. The prescription formula to the patient was based on the simulation of the moisture-clearing lung-immune formula, which was clinically added and subdivided according to syndrome differentiation. Sleep improvement was apparent during the second consultation, but the patient was weak, had numerous comorbid diseases and was prone to the symptoms of BaiHu decoction with Yang and gas consumption. Therefore, gypsum and anemarrhena were added to enhance the efficacy of clearing heat toxins. The patient’s condition was slightly improved after the third consultation, and T. wilfordii was added to remove dampness and heat toxins, and to nourish yin and body fluids. During the fourth consultation, the patient exhibited phlegm production and symptoms of dampness and heat, resulting in worries.

Table 2: Second diagnostic prescription of Chinese medicine on 11 February

| Ingredient                         | Quantity |
|------------------------------------|----------|
| Atractylodes 15 g                  |          |
| Anemarrhena 15 g                   |          |
| Reed rhizome 30 g                  |          |
| Ginger 15 g                        |          |
| Ophiopogonis radix 30 g            |          |
| Aster 15 g                          |          |
| Semen lepidii 15 g                 |          |

Table 3: Third diagnostic Prescription of Chinese Medicine on 14 February

| Ingredient                         | Quantity |
|------------------------------------|----------|
| Guizhi tip 15 g                    |          |
| Root of Dahurian angelica 15 g     |          |
| South hawthorn fruit 20 g          |          |
| Ginger 15 g                        |          |
| Trichosanthis pericarpium 15 g     |          |
| Cardamom 15 g                      |          |

Table 4: Fourth diagnostic prescription of Chinese medicine on 17 February

| Ingredient                         | Quantity |
|------------------------------------|----------|
| Guizhi tip 15 g                    |          |
| Root of Dahurian angelica 15 g     |          |
| South hawthorn fruit 20 g          |          |
| Ginger 30 g                        |          |
| Peel of Trichosanthes kirilowii 15 g |        |
| Pogostemon cablin 15 g             |          |

Figure 6: Tongue coating February 17

Figure 7: Tongue coating on February 28. Tongue coating apparently recovered. The yellow color was due to drinking traditional Chinese medicine.
about weathering and fire. Therefore, the bitter cold gypsum and anemarrhena were removed from the prescription along with T. wilfordii, coix seed, and wrinkled giant hyssop. The spleen and stomach were then restored using cardamom and malt. During the fifth consultation, the symptoms continued to improve albeit at a slower rate than other patients. Considering that the team used large doses of warm desiccating formula in a patient with a Yang deficient constitution, dampness was not cleared efficiently and resulted in the stagnation of dampness, and persistence of wetness. This leads to an invasion of the lungs, heart, and kidney, ultimately causing dyspnea. Dampness eventually trapped the spleen, leading to a decrease in appetite, disorders in body fluid transport, and dry mouth. Wet evil is a negative evil, although heating but not to appear the obvious symptoms of thirst. Therefore, on the basis of the original formula, Monkshood was added to warm the kidney Yang and receive Qi. Lumbricus was added to remove hemostasis, dredging collaterals, and promote diuresis to prevent asthma. Together, these promote yang, dissipate dampness for diuresis, and clear heat from the body. There were no other discomforts noted during the sixth consultation, but Bulbus allii macrostemonis was added to the prescription to enhance the effects of T. sanjie, and Qi-stagnation was performed to remove chest paralysis to improve the patient’s asthma symptoms. The seventh and eight consultations were to consolidate the curative effect, help disperse the damp evil thoroughly, and prevent transmission.

This critically ill patient did not use herbs to warm the cold and dampness 1 week before the onset of disease, and thus, the disease progressed rapidly. The tongue was thick, dark red, and white; these are signs of accumulating cold pathogens transforming into fire. Therefore, care of the body’s Yang qi must be taken into consideration during the whole process of treatment, especially when warming and treating cold-dampness at the same time. The untimely use of cold drugs must be avoided, due to the wet evil lingering delay and can lead to “volt ice” adverse consequences. At the same time to care for the care of the middle jiao and lower jiao, to reach the upper focus of the hair, middle jiao solid, the lower jiao is smooth, in order to achieve the restoration of the normal relationship between the body and the vulva, the disease will naturally fade away. In the whole treatment process of COVID-19, attention must always be given to the care of Yang Qi, the regulation of spleen and stomach qi, and blood especially in the later processes of the disease. This allows the patient health care to be guided according to the meridian and acupoints of TCM, gradually improving health conditions and relieving the pain, which is referred to as follows: “pathogenic qi cannot invade the body if antipathogenic qi remains strong.”

**Summary**

Throughout the process of preventing and treating epidemic diseases in Nanning, Guangxi, President Tang Nong’s medication guidance has demonstrated excellent clinical efficacy in front-line practice. Fever and other symptoms were rapidly and significantly resolved in some patients after a dose of TCM. The above cases of elderly patients with critical illness belong to the high-risk category. The current antibiotic and antiviral drugs had no obvious clinical efficacy. When TCM is included in the clinical treatment, the symptoms disappear completely and nucleic acid testing results are negative.
Moreover, the use of TCM in critically ill patients with atypical pneumonia also resulted in a significant curative effect.

Taken together, the extensive participation of TCM in the epidemic situation in Guangxi resulted in the improvement of patient symptoms and an increase in the cure rate. At the same time, this treatment did not have apparent adverse effects on liver and kidney functions, no obvious side effects, and no sequelae, making it highly safe for use. According to Tang Nong, the key pathogenesis of the epidemic in Guangxi was “cold and dampness.” Based on the “ontological structure of yin and Yang,” the main treatment principle was to warm yang to eliminate the cold and dampness, thereby restoring the ontological structure of yin and Yang. The drug of choice used in our hospital, the immune formula for eliminating dampness and clearing the lungs (Guizhi Erchen Decoction) was used to treat clinical symptoms with significant efficacy. At present, the overall participation rate of TCM treatment in our hospital was more than 96% with a cure rate of 90%, demonstrating the significant contribution of TCM. Here, I will share the dialectical thinking and experience of treating patients with COVID-19 with TCM to encourage the whole country and help everyone fight the epidemic.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

**Ethical Statement**

This article has been informed and agreed by the patient mentioned and his family.

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