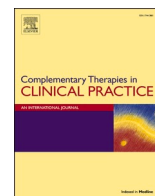




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Traditional Chinese Medicine treatment of COVID-19

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ABSTRACT

A new kind of Pneumonia caused by new corona virus has been widespread in China since winter of 2019. No effective treatment for this disease was verified, so the morbidity and mortality rate were supposed higher than flu. The Traditional Chinese Medicine is widely used in clinical practice in China, but many other countries of the world to deal with diseases that remain clinically challenging.

This new viral pneumonia was named COVID-19, and declared as Public Health Emergency of International Concern by the World Health Organization (WHO) on January 30, 2020. When the COVID-19 broke out, tens of thousands of Chinese people were infected, especially in Wuhan, the capital city of Hubei Province [1], where the infection rate was extremely high. At present, the cumulative number of diagnoses worldwide is 645,957. Chinese government made relevant decisions quickly to control the spread of the epidemic disease. For example, on January 20, 2020, Chinese government classified COVID-19 as a Class B infectious disease and treated it as Class A [2].

Supportive therapies are mainly used in clinical practice, such as oxygen therapy, antiviral therapy and corticosteroid therapy, because there is no specific effective treatment [3]. According to past experiences in the treatment of infectious diseases in China, Traditional Chinese Medicine, including herbal formulas, can be used to prevent and treat such infectious disease [4,5]. Therefore, Traditional Chinese Medicine (TCM) is widely used in the treatment of COVID-19 in China promptly. Here we introduce the herbal formulas that are commonly used in Chinese hospitals.

1. Prevention

According to clinical manifestations of patients who infected with COVID-19, it can be classified as “wet, heat, congestion”, in their lungs. In Traditional Chinese Medicine, we believe that lungs are delicate, so the disease first affects lungs’ function.

“Wet” refers to the factor with sticky and heavy turbidity that can cause a long course of disease and damage the function of the body. “Hot” refers to the factor with hot, dry, and rising turbidity that can cause disease. “Congestion” is a causative factor that can congest blood circulation and cause symptoms such as pain.

Traditional Chinese medicine believes that Qi is the basic substance that constitutes the human body and maintains basic functions. We divide Qi into the healthy Qi and the pathogenic Qi. The healthy Qi refers to substances that maintain the normal operation of our body. The pathogenic Qi refers to substances that can harm the health of our body.

Therefore, the aim of preventive treatment of TCM is to protect lungs. Yupingfeng San, a kind of preventative patent medicine, is chosen because of the nature of the lungs’ diseases, listed in Table 1. Yupingfeng

San is an ancient herbal medicine in TCM and used to protect lung Qi and avoid pathogenic Qi. In this medicine, there are three herbs: Astragalus, Fangfeng and Atractylodes. Astragalus can improve lung Qi and can reduce phlegm. Fangfeng can relieve the pathogenic Qi, remove dampness and relieve pain. Atractylodes enhances the spleen Qi, which can affect our digestion and absorption. Previous studies has shown that Yupingfeng San could regulate the body’s immune function.

These medicinal herbs should be mixed and boiled together with 1000ml pure water for about 15 minutes after boiling to get about 600ml tincture. Each tincture may be subdivided into three doses and taken orally 200ml once, three times a day.

2. Treatment of mild infection

Patients with mild infection often has fever, sweat, headache, thirst, cough, sore throat, red tongue tip, thin white or pale yellow coating and floating pulse. We base on above symptoms to diagnose if a patient is a mild one. According to theories of Traditional Chinese Medical, pathogenic Qi hurts lung Qi. If the lung Qi does not work properly, it will cause lung heat and dampness and some typical symptoms, including fever, cough, sore throat and fatigue. So we used the method of “clearing lung heat and dampness” to treat it. Two types of prescriptions, called Sangju yin and Yinqiao san, are commonly used in clinical treatment, and are shown in Table 2. The main function of these two prescriptions is to clear lung heat, expel phlegm, relieve cough, regulate the patient’s lungs and restore normal lung function. Clinically, we chose Yinqiao san for patients who had high fever and Sangju yin for patients who had severe cough.

These medicinal herbs should be mixed and boiled together with 1000ml pure water for about 15 minutes after boiling to get about 600ml tincture. Each tincture may be subdivided into three doses and taken 200ml orally once, three times a day.

From some studies, we found that Yinqiao san may have antibacterial and antiviral functions, and can be used to enhance the immune function of upper respiratory tract [6]. These two prescriptions can be used to treat patients with mild infection of COVID-19.

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Table 1
Herb prescriptions of Yupingfeng San.

Yupingfeng San	Astragalus 20g	Fangfeng 15g	Attractylodes 15g
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Table 2
Two types of prescriptions for mild patients.

Sangju yin	Mulberry leaf 15g	Chrysanthemum 10g	Forsythia 10g	Almond 9g
	Mint 6g	Chinese bellflower 6g	Reed root 15g	Licorice 3g
Yinqiao san	Forsythia 15g	Chinese bellflower 6g	Honeysuckle 15g	Mint 6g
	Bamboo leaves 6g	Licorice 3g	Nepeta 6g	Light tempeh 5g
	Burdock 6g			

3. Treatment of severe infection

In the early course of treatment for COVID-19, if the infection cannot be controlled, worse respiratory failure, multiple organ failure, and death will occur, then serious infection should be considered. These infectious patients have following main manifestations: high fever, cough, phlegm, difficult breathing, sweating, chest tightness, fatigue, nausea, bloating, red or dark red tongue, yellow coating and slippery or weak pulse. We base on the above symptoms to diagnose if patients are severe ones.

According to TCM, if early treatments are not effective, patients are improperly treated, or the pathogenic Qi is too strong, the healthy Qi (especially the lung Qi) will be damaged severely and lungs will not work. Therefore, more and more sputum will be produced and patients cannot breathe anymore. Maxingshigan tang(decoction) and Baihegujin tang are shown in Table 3 and could be used to benefit the healthy Qi, expel the pathogenic Qi and help the lung to expel sputum and get air.

These medicinal herbs should be boiled together with 1000ml pure water for about 30 minutes after boiling to get about 600ml tincture. Each tincture may be subdivided into three doses and taken orally 200ml once, three times a day.

Maxinshigan tang is mainly used to clear lung fever and reduce phlegm. Baihegujin tang can invigorate the lung Qi. We should mix the two prescriptions together when severe infection happens to benefit the healthy Qi and expel the pathogenic Qi.

4. Discussion

In 2003, a lot of descriptions of Traditional Chinese Medicine were used to prevent and treat SARS[7,8]. In 2009, National Administration of Traditional Chinese Medicine of China issued a Traditional Chinese Medicine program for treatment of H1N1 infection [9]. Based on these experiences, we believe that Traditional Chinese Medicine is effective

Table 3
Two types of herb prescriptions for severe patients.

Maxinshigan Tang	Ephedra 15g	Almond 10g	Plaster 20g	Licorice 9g
Baihegujin Tang	Shudihuang 15g	Dihuang 15g	Angelica 15g	White peony 6g
	Xuanshen 10g	Chinese bellflower 6g	Ophiopogon 6g	Lily 6g
	Beimu 6g	Licorice 3g		

for COVID-19, so we use it during the outbreak of COVID-19, and it works very well clinically.

There is no effective treatment for COVID-19 until now. However, during the treatment of Covid-19 in China, we found that the intervention of traditional Chinese medicine can reduce the severe symptoms of patients. The empirical therapy of Traditional Chinese Medicine is been widely used in Chinese hospitals now, and this therapy might be useful for people all around the world.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ctcp.2020.101165>.

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