



TREATMENT & PREVENTION

## What Can TCM Do in Battling the Coronavirus in America?

Sheldon Li, PhD

The world seems like it's been turned upside down. It has been an unprecedented journey for each of us. As citizens, we keep thinking about what we can do to help combat the coronavirus. I would like to share my thoughts on why and how TCM might help in the ongoing fight against the coronavirus in the U.S.

From Infection To Fatality: How Does The Coronavirus Strike?

COVID-19 is a novel coronavirus that primarily infects the lungs. The viral particle uses its crown (corona) to bind to a protein called ACE2 that is most abundant on the surface of the alveolar cells of the lungs. As its binding has a strong affinity,<sup>1</sup> the virus enters the lung cells easily.

Most infections present only mild symptoms. In a study that sampled 1,099 confirmed cases, the common clinical manifestations included fever (88.7 percent), cough (67.8 percent), fatigue (38.1 percent), sputum production (33.4 percent), shortness of breath (18.6 percent), sore throat (13.9 percent), and headache (13.6 percent).<sup>2</sup>

In CT imaging of the chest, GGO, or ground-glass opacity, was observed in 56.4 percent of patients. GGO is an abnormality characterized by a partial filling-in of air spaces in the lungs, which makes normal breathing compromised. In addition, bilateral patchy shadowing of the lungs, a hallmark of pneumonia, was observed in 51.8 percent of patients.<sup>2</sup>



For mild cases (80 percent), no hospitalization is necessary and isolation at home is the recommended protocol. However, if the infection progresses to shortness of breath, immediate medical attention is advised. Supplemental oxygen and a ventilator may be needed.

As the virus enters the cells, the immune system wages war, rallying various types of immune cells and cytokines. For reasons not yet known, in some cases the immune response may go out of control, flooding the body with cytokines. This is what's known as a *cytokine storm*, which is as serious as it sounds, eventually leading to organ failure(s).

COVID-19 autopsies reveal diffuse alveolar damage. The alveoli are tiny air sacs in the lungs. These sacs expand and absorb the oxygen during inhalation, and shrink to expel carbon dioxide. On autopsy, the alveoli of the victims were filled with cellular fibromyxoid exudates (mucus) in both lungs. This explains why COVID-19 patients have low oxygen saturation levels and breathing difficulty, even when oxygen is provided from a ventilator.

What Are The Standard COVID19 Treatment Options?

As I write this, specific antiviral treatment is not yet available. Since the occurrence of the virus, many antiviral drugs have been tried without much success. Only the experimental antiviral drug remdesivir seems to show some promise.<sup>1</sup> In fact, the first-diagnosed U.S. COVID-19 patient was reported recovered from severe condition after its use.

While we are still waiting for the results of the clinical trials, from what I hear, and considering the dire situation of the pandemic, it appears that we cannot count on remdesivir alone for treatment.

The antimalarial drugs hydroxychloroquine and chloroquine recently received emergency-use authorization from the FDA for targeted COVID-19 therapy, based on some doctor reports of their success in treating patients with the disease. Approval of the malarial drugs by the FDA is not yet

based on the drug's efficacy.

The way these drugs work is not well-understood, but clearly they are not directly antiviral. It appears that they may alter the cellular environment, such as pH levels, thereby impairing the ability of the virus to replicate.<sup>1</sup> Moreover, hydroxychloroquine may help mitigate cytokine storms.

With the lack of specific antiviral treatments, current treatment is largely supportive, which may include IV fluids, supplemental oxygen and ventilators, and auxiliary treatments for other affected vital organs. The most important treatment is ventilation, which makes the shortage of the devices in the U.S. so concerning. Ultimately, the success of treatments relies on the strength of each patient's immune system.

### What Support Can Traditional Chinese Medicine Offer?

What TCM does is to mobilize the body's defense, clear the internal environment, and restore the balance and harmony within the body. In the end, our body has a better chance to fight off the virus.

As the current treatment protocols are primarily about supportive care, TCM was called in to provide support as well in China. So far, TCM has been utilized in more than 90 percent of COVID-19 patients in China.<sup>3</sup> The results seem to be impressive, as highlighted below.

*Shorten the average recovery time:* According to an interview with Dr. Zhang Boli, who was in charge of a makeshift hospital in Wuhan and is one of the most respected TCM experts in China, application of TCM decoctions reduced the average time it took for patients to return negative for the virus test by three days.<sup>3</sup>

*Reduce the probability of worsening to critical condition:* Among the 567 patients treated in Dr. Zhang's hospital with TCM, such as *Qing Fei Pai Du Tang*, none experienced a worsening condition. In general, around 5 percent of COVID-19 patients would have expected to deteriorate to severe or critical conditions. Indeed, in comparison, in another makeshift hospital where 330 patients were enrolled and no TCM was administered, 32 worsened to severe condition.<sup>3</sup>

*Reduce the mortality from critical condition:* In a study just published by Dr. Tong Xiaolin, who is also a top TCM expert in China and a member of the Chinese Academy of Sciences, among 662 severe and critical cases of COVID-19, 178 were treated with standard treatment protocols and 484 were treated in addition with TCM decoctions. A total of 71 deaths were recorded, of which 56 were from the standard treatment group versus 15 from the TCM treatment group. The difference in mortality rate is statistically significant and it is concluded that the TCM treatment reduced the mortality by 87.7 percent.<sup>4</sup>

### How Does TCM Support Our Body's Battle Against Coronavirus?

I want to make it clear up-front that Chinese medicine does not kill the virus directly. What TCM does is to mobilize the body's defense, clear the internal environment, and restore the balance and harmony within the body. In the end, our body has a better chance to fight off the virus.

*Support a normal body temperature:* Tylenol is a common OTC drug that reduces fever temporarily. Fever, however, keeps coming back a few hours later. Many Chinese herbs clear heat as well. They may accomplish it by different means, such as by promoting sweating. Think about how a dog sticks out its tongue in the summer. This is its way of ventilating heat and thus adjusting

the body temperature; heat-clearing herbs act in the same way.

Drinking chicken soup and ginger tea serves a similar purpose. In the formulas I have seen, including the official one, the physiological actions of inducing sweating and ventilating the lungs are indispensable in the treatment of this disease.

*Cleanup of the lung environment:* As mentioned above, the surface of lung cells in critically-ill patients is covered by a layer of mucus secreted from the infected cells. The exudates (fluid buildup) is very harmful, as it prevents the efficient exchange of oxygen and carbon dioxide in respiration. Yet according to many case reports, the mucus is stuck in the lungs and can hardly get out, even with the help of mucus suction machines.

Apparently, it is critical to clear the mucus. Many Chinese herbs can help spit out or transform the mucus. This is again a critical function in the official formula *Qing Fei Pai Du Tang*.

*Support normal blood oxygen saturation:* Reduced levels of blood oxygen saturation cause shortness of breath and may lead to respiratory failure. Dr. Zhang believes Chinese medicine like *Sheng Mai Yin* and ginseng can help improve the levels of oxygen saturation.<sup>3</sup> These type of Chinese herbs in TCM are known as *qi* (vital energy) tonics, which work by helping improve energy levels and physical endurance.

Should TCM Be Used In The U.S. To Combat COVID-19?

Watching the pandemic unfolding in the past several months has been difficult. We should use all the tools available to combat the coronavirus. For most people, TCM is still foreign, mysterious and unscientific. The role of TCM in battling the virus has been a learning experience for me as well.

When we look at TCM, applying common sense, we may find TCM is not mysterious after all. The TCM supportive measures described above are all in line with standard supportive treatments. Let TCM play its part in helping yourself, your family, your community and our country.

Editor's Note: While the U.S. and global health care system may eventually position TCM as a front-line prevention and treatment method for COVID-19, our intention is only to disseminate the evidence regarding its potential role. The author is not offering treatment recommendations in lieu of CDC guidelines; nor are we endorsing such. At present, patients who suspect they may have been exposed to the virus, or are showing any symptoms indicative of it, should be directed to contact their medical doctor or local public health agency first for guidance.

## References

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