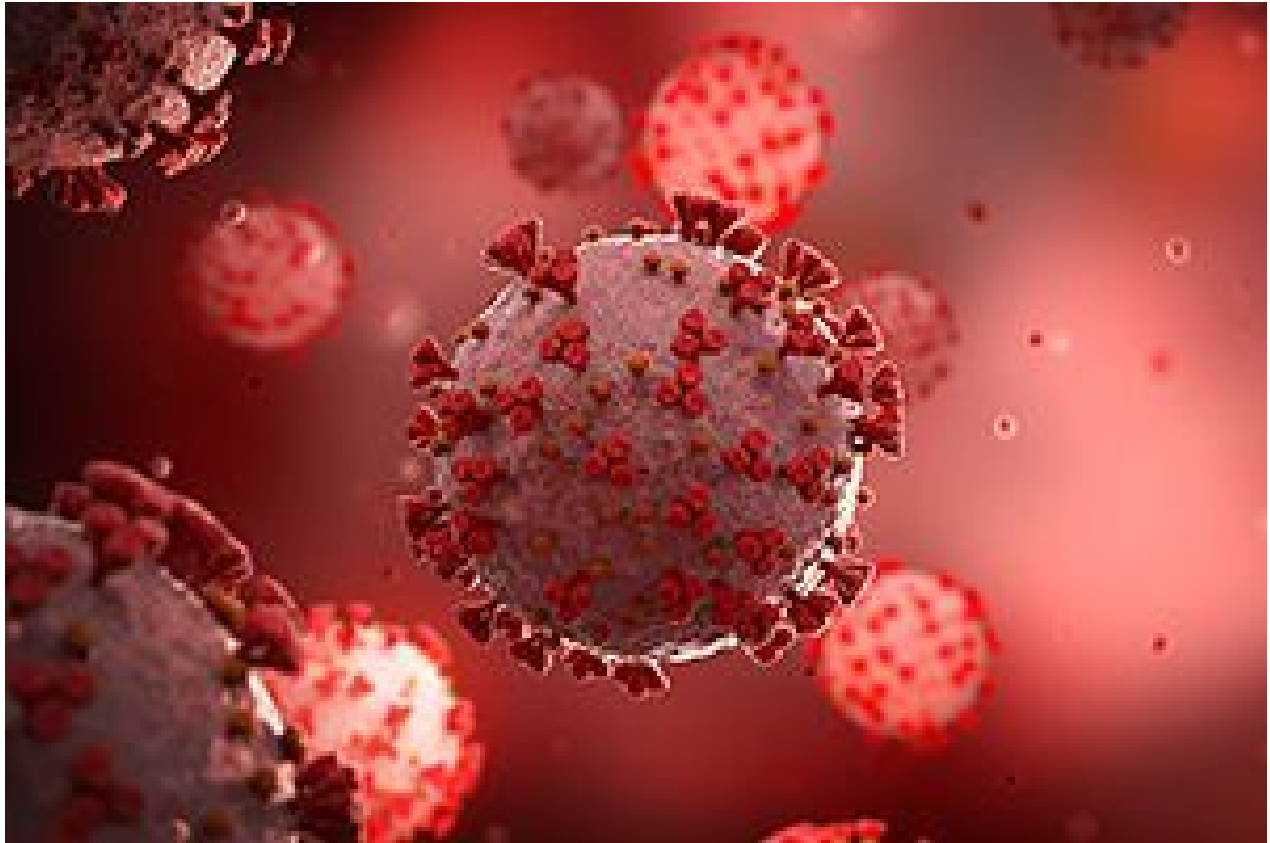


# The Cytokine Storm in COVID-19 Patients: A TCM Point of View

The COVID-19 pandemic has been affecting the whole world since the early part of 2020. As a traditional Chinese medicine practitioner in the Philippines, I would like to share my experience treating 300 COVID-19 patients since the pandemic began. The turning point in the process of treating COVID-19 is the correct handling of the "cytokine storm."

"Cytokine storm" refers to a group of related medical conditions in which the immune system fights infection by releasing cytokines and biological chemicals, which normally are meant to be helpful to the body in moderation.<sup>1</sup> But when a certain pathway is too much engaged, the immune system starts causing damage to the body. In some cases, it causes organ failure and even death.

Cytokine storm is one of the major complications related to COVID-19 severity and is also a critical cause of death from it. But early recognition and appropriate treatment can decrease morbidity and mortality. Proper intervention and treatment will also help speed up recovery. Identification and treatment of the cytokine storm are essential to help rescue patients with severe COVID-19.



The TCM book *The Yellow Emperor's Classic of Medicine* states, "*Zheng Qi Cun Nei, Xie Bu Ke Gan, Xie Zhi Suo Cou, Qi Qi Bi Xu.*" This means if one's *zheng qi* (righteous *qi*) is sufficient; *xie*, evil *qi* / pathogenic *qi* will not invade, but when the evil *qi* attacks, it means one's *zheng qi* is deficient.

*Zheng qi* is a general term that refers to the body's overall resistance to disease and the collection of all types of anti-pathogenic *qi* in the body. Evil *qi* / pathogenic *qi* refers to substances or virus that can harm the health of our body and cause diseases. The onset of COVID-19 and its pathological transmission confirmed the concept of "*Zheng Qi Cun Nei, Xie Bu Ke Gan, Xie Zhi Suo Cou, Qi Qi Bi Xu.*"

The questions I had were: How could I prevent COVID-19 patients from reaching the cytokine storm phase? What is the treatment principle for TCM? I had to observe the symptoms to help me in my search.

### Cytokine Storm Symptoms

There are many symptoms, but the most common for the indication of cytokine storm that I have been encountering are severe fatigue or malaise, muscle and joint aches, headache, cough, shortness of breath, and oxygen saturation lower than normal (which is 95 or higher), lethargy and poor responsiveness. The color of the tongue body turns purple or prone to purple color, which is an important sign that the patient is experiencing a major fight between the *zheng qi* (righteous *qi*) and the evil *qi* (*xie qi* / pathogenic *qi*). This indication can be seen during or even at the early stage of the cytokine storm.

### Pathomechanism of Cytokine Storm in TCM

Even though COVID-19 attacks the lungs, the symptoms are related to more than the lungs, which includes other *zang-fu* organs and the *qi* blood system. This helps explain why it affects other *zang-fu* organs and the *qi* blood system.

*Qi*, of course, is the basic substance that constitutes the human body and maintains basic functions. The lung governs the *qi* of the whole body, and the production and circulation of the whole body's *qi*. This includes *zong* / pectoral *qi*, whose function is to promote the respiration of the lungs, help the heart in circulating blood, and supplement the prenatal / primordial / *yuan qi*.

The lungs are delicate, so the virus invades them first, which damages the lung *qi* and causes lung *qi* deficiency. In severe cases, this will result in hypoxia. When the lung *qi* is exhausted, as in severe cases, the functions of the other organs also will be affected, thus leading to organ failure.

The lungs control the channels and vessels. Heart controls the blood vessels. Lung *qi* is essential in aiding the heart in blood circulation, so the lungs play an important role in maintaining the health of blood vessels.

*Qi* is the commander of the blood. When *qi* is deficient or collapsing from the strong fight between *zheng qi* and the virus, blood circulation slows down, causing blood stagnation or clotting. Tongue body reflects the *zang-fu* organs' pathogenic changes. This is why the purple color or purplish color of the tongue body is a very significant warning sign in COVID-19 patients. When *zheng qi* is sufficient, the blood circulation will be improved or regulated.

The cytokine storm is due to the lung *qi* already collapsing and the *qi* of other *zang-fu* organs being affected by the exhausted lung *qi*. This explains why the symptoms of the cytokine storm are not only related to the lungs, but also affect other organs and the whole body as a system. The pathological transmission depends on individual's basic body constitution.

#### TCM Treatment Principle and Method

It has been reported that "The cytokine storm induced by COVID-19 infection appears to be more severe in COVID-19, resulting in the development of extensive micro- and macrovascular thrombosis and organ failure."<sup>2</sup>

The treatment in Western medicine is anticoagulation therapy; but in TCM, the pathomechanism of the cytokine storm is that *zheng qi* is exhausted or collapsing from fighting with the evil *qi*. This explains why the cytokine storm is a turning point for COVID-19 patients. If *zheng qi* conquers the said evil *qi*, the body will progress toward recovery. But if the patient has some comorbidities, which means *zheng qi* is in a deficient state originally, the chance of winning the fight is low, which will lead to organ failure or even death.

The treatment principle for COVID-19 patients in the cytokine storm phase, or even in the mild cases, must be strengthening of the *zheng qi* for the body. This means increasing the army for the battle. So, besides the basic pattern differentiation principle, tonifying is a necessary principle in treating COVID-19 cases at all stages.

The most commonly used herb for tonifying *qi* in my practice for COVID-19 patients include:

- *Ren shen* (*Radix ginseng*): enters the heart, lung and spleen; powerfully tonifies the primordial *qi*; nourishes the spleen and the lungs; tranquilizes the mind and benefits the brain. Dose: 6-12 grams.<sup>3</sup>
- *Xi yang shen* (American ginseng): enters the heart, lungs and kidneys; tonifies *qi* and *yin*; clears heat and generates fluid. Dose: 6-12 grams.<sup>3</sup>

*Note:* The pattern differentiation of each case determines use of *ren shen* vs. *xi yang shen*.

#### Clinical Takeaway

The coronavirus is a strong virus that caused a worldwide pandemic and in some cases, traumatized the human body, consuming more *qi* than traditional viruses / evil *qi*. It attacks the lungs. The cytokine storm is due to the lung *qi* already collapsing and the *qi* of other *zang-fu* organs being affected by the exhausted lung *qi*. Thus, strengthening or tonifying *qi* is an important principle to win the battle against COVID-19, particularly during the cytokine storm phase.

### *References*

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