

# Treatment for COVID-19

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The hospital treatment for this coronavirus was largely restricted to basic life support in the initial stage as the virus took us by surprise. Patients were administered IV fluids to maintain body electrolytes. Various western medicines were prescribed to quench symptoms as they arise so that organs were kept from failing. Similar to SARS, this virus works in a way that the immune system of an infected individual self-attacks the lungs in a process called the “cytokine storm”, leading to pneumonia-like symptoms: difficulty breathing, coughing, sore throat, general malaise, evil chills, fever, etc. before organ failures would occur.

In a city of 14 million population, 5 million had left Wuhan before the lockdown. The remaining 9 million as a result shared the meager number of hospital beds should anyone become infected. Those who couldn't get admitted by hospitals but were fortunate enough to recuperate at home instead of being isolated in quarantine facilities waited in hope for their own immunity to kick off. Among these cases, a man provided account of his recovery by taking hot saunas in a high-frequency infrared room upon which he sweat a lot and fevers subsided. In another case, a young man from the UK named Connor Reed who was teaching English in Wuhan reported self-recovery by drinking hot whiskey with honey, a traditional Irish remedy called “hot toddy”, while refusing to take the antibiotics prescribed by the doctors. The recoveries from these self-cure methods can possibly be attributed to various factors including perspiration, electromagnetic waves, active enzymes, vitamins or bacteria in the honey and so forth. Although they meant everything to the particular individual's survival, lack of populational data restricted their scientific replicability. Therefore such methods were often rebuked by the authority.

With all respect, what kind of methods can scale up for a population without posing too much threat to the notion of “science?” The best candidate is western medicine, also known as Conventional Medicine that spans the use of chemically-derived, RCT-tested specialty drugs, to the development of vaccines. However, this procedure can take time, and a low-end estimate is 3-4 months, too long to wait out as the virus would have wrecked enough havoc. Even as Ebola drug Remdesivir was found effective in helping an American COVID-19 patient recover, more data need to be gathered to establish its efficacy. A good news is that Remdesivir clinical trial has been launched in Wuhan on Feb 3 2020, but still, it would be risky to put all the eggs in one basket. Before long it becomes clear that traditional Chinese medicine (TCM), again, can be counted on to turn things around in the most speedy fashion. Its beautiful magic put an end to SARS epidemic in 2003. A decade later, as a great number of steroids-treated SARS survivors were experiencing detrimental side effects including pulmonary fibrosis and osteonecrosis (bone loss, bone death and sudden collapse), those recovered from a TCM approach benefited tremendously.

TCM healing centers around the immune system of patients. In viewing the body as a whole, it identifies a disease condition by the “syndrome” rather than by the “disease nomenclature”. It seeks to apply conducive herbs and acupuncture to maneuver the patient's innate immunity to fight off the disease. Similar to the idea of *viriditas* or “force of life” coined by abbess Hildegard von Bingen, this vital energy is reflected in the microcosm of human physiologies as well. It is an attribute of the divine nature to self-adjust and heal. By clearing the obstructions to let this

vital tendency work on the body, patients can achieve recovery, at the same time, to not dread of the complications often associated with modern medical interventions. TCM is such a way to re-awaken that inherent *viriditas* in us.

### **Two Hypotheses Regarding the Herbs' Functioning in the Body**

- I. By activating immunity to kill the coronavirus (annihilator).
- II. By soothing the immunity so that it doesn't overreact towards the pathogen (peace-maker).

The “annihilator” hypothesis is easy for the mind to grapple as it follows the modern “combative” philosophy, in which the virus is depicted as “enemies”. And enemies are supposed to be conquered or annihilated. In contrast, the “peace-maker” hypothesis could easily cause public outcries, as the idea of human and virus co-existing in peace sounds absurd and farfetched. Yet it has its footings in several outstanding scientists’ studies concerned with avian influenza virus, with which an analogy may be drawn for COVID-19.

Frederic Keck in his book *Avian Reservoirs* mentioned two revolutionary thinkers in this field. Malik Peiris, a Hong Kong flu expert and director of Pasteur Centre in 2007 hypothesized based on his research that the lethality of avian influenza viruses in humans came from an excess of chemical mediators invading the respiratory track, aka. the “cytokine storm.” For this reason he no longer framed virus as “enemies”. Similarly, Israeli ornithologist Amotz Zahavi remarked that, “If the host doesn't cooperate, it is to the parasite's advantage to act virulently. It is only the hosts' support that enables the non-virulent phenotype to overcome the virulent one.” In other words, a pathogen isn't necessarily virulent at the beginning. The fact that it later changed character and ended up attacking the host was likely to have been provoked by the host's overreactive immune system. How many times we've seen a sheepish dog turned to ferocious attackers when instigated by mischievous kids tossing stones at it, while the kids justified their behavior by saying that the dog shouldn't have invaded their space in the first place?

To examine coexistence from a different angle, there are countless stories where coroners found in an individual died of natural cause, presence of tumors which apparently didn't affect the person's wellbeing when he was alive. Since humans have long been coexisting with cancer cells, what difference does it make to supplant that with virus? In fact, this shouldn't be too surprising as countries across the globe have reported in many occasions “asymptomatic carriers” or “sane carriers”, those who have the virus but do not exhibit any symptom. Somehow, the body and mind of those individuals have made peace with the virus.

The truth is, as humans we're tempted to think that we have the power to annihilate. TCM on the contrary, believes in peace-making. As the environment is shared among all species of animals and microbes, our survival is the best when the eco-system maximizes its diversity. However, this doesn't mean the two hypotheses are at odds with each other. The annihilator theory would stand true if no virulent trace was found in recovered individuals. Maybe the time has come that the virus decided to change its chemical structure, either by force or voluntarily due to the system's convincing befriending signal. Note that in the annihilator theory, “kill” is just a rhetoric to denote the verbose phrase “make the virus disappear”. To test the two theories,

patients recovered from COVID-19 would serve a good point of departure. Following up on their self-reported symptoms, chest scan, virus PCR 1-week, 1-month, 3-month and 6-month after their dismissal would help draw a virus roadmap, therefore enabling us to uncover the virus evolution across time inside the human body.

### An Explanation on the Molecular Level

So is there any explanation backed up by biochemical evidence to support the herb's working in the body? Out of many theories, Dr. Wu Jun, Associate Research Professor from City of Hope Cancer Center in California offered a straight-forward explanation: oxidative stress. His point is that during the cytokine storm of COVID-19, the inflammatory process produces free radicals in great quantities, thus causing overwhelming level of oxidative stress in the organ tissues. Moderate oxidation triggers apoptosis, while too much oxidation may lead to necrosis. Dr. Wu therefore, recommended using large dose of Vitamin C or E to counteract the free radicals. While for a healthy individual 500mg VC or 100mg VE is needed as daily dietary supplement, the amount needs to be elevated to 3000mg VC or 1000mg VE for COVID-19 patients. He also mentioned that TCM formulas such as the Minor Bupleurum Decoction also does the trick. This is perhaps due to the high levels of particular antioxidants in the herbal decoctions.

### The Shanxi Experience

This outbreak poses enormous occupational threats to healthcare workers. More than 1700 doctors and nurses have been infected, with a number of deaths occurred mostly in Hubei Province. To see the provincial difference in responding to this outbreak, a good reference is Shanxi Province, a region whose economy depended primarily on coal extraction and was often considered a hinterland. Four hundred miles north of Wuhan, with a population of 37 million, Shanxi contained its total infections at about 129 cases, among which, majority has recovered. Such result could be heralded "a feat" even when it is compared to the country's economic powerhouse on the east, Jiangsu Province of 80 million people, where across the month, cases went over 626. Shanxi credited its achievement to many reasons. Among them, the "joint use of eastern and western medicines" piqued one's interest the most. As a matter of fact, Shanxi healthcare workers had been taking a preventative formula composed of six ingredients as described below:

Huangqi (Radix Astragali) 10g	Baizhu (Rhizoma Atractylodes Macrocephalae) 10g	Fangfeng (Radix Saposhnikoviae) 10g
Jinyinghua (Honeysuckle) 10g	Lianqiao (Forsythia) 10g	Lugen (Reed Rhizome)10g

Healthcare workers used this formula like a talisman against pernicious influence. And the fact that Shanxi hasn't seen a single infection among active HCWs may be partially due to this preventative measure. In treating the infected, Shanxi adopted the **Tingli Xiefei Tang** (Pepperweed Seed Lung-Draining Decoction, 葶苈泻肺汤) as the base formula. It's made of two ingredients, namely:

Tinglizi (Pepperweed Seed) 15g	Dazao (Jujube) ~12 pieces
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But of course, variations with other herbs are applied for patients with different sets of symptoms. According to *Jingui Yaolue* by Eastern-Han Dynasty doctor Zhang Zhongjing, the primary indications for this formula are chest congestion, feeling of expectorant blocking the passage, wheezing coughs and difficulty lying down. This formula helps drain the lungs and clear the mucus. Syndrome-formula correspondence is central to TCM.

### **Lung Cleansing Decoction**

On February 6 2020, the National TCM Administration (NTCMA) upon examining provincial feedbacks issued a recommendation to adopt **Qingfei Paidu Tang** (Lung-Cleansing, Toxin-Releasing Decoction, 清肺排毒汤) in every jurisdiction affected by the outbreak. In a 10-day trial spanning four provinces, this formula showed 90% efficacy in a sample of 214, as marked by relieved symptoms and better chest scan result. Note that the outcome measure does not include any mandate for patients to test absolutely “negative” to be deemed “recovered” from the virus. This is important as it once again emphasizes a possibility of human co-existing with the virus. Throughout the course of applying traditional herbs to tackle this outbreak, some recovered cases were reported to have been “twice infected” after they were dismissed from the hospital, leading to criticisms that TCM failed to uproot the problem. Would the same people making this comment adopt a more lenient perspective towards TCM if they were informed of the peace-maker hypothesis?

The 21 ingredients for **Qingfei Paidu Tang** are listed below (Common names are used except if without). This formula combines four *Jingfang* prescriptions; *Jingfang* prescriptions are those from Zhang Zhongjing’s *Shang Han Lun*). Their names and destinations are also as follows. The executive order also mentioned that COVID-19 patients without fever can use this formula with reduced amount of gypsum, and those with heavy fever can increase it. Note that gypsum is extremely cold in nature therefore good for purging heat from the body.

Mahuang (Ephedra) 9g	Zhi Gancao (Prepared Licorice) 6g	Xingren (Apricot Kernel) 9g	Sheng Shigao (Gypsum) 15-30g (prepared by boiling)
Guizhi (Cinnamon) 9g	Zexie (Rhizoma Alismatis) 9g	Zhuling (Polyporus) 9g	Baizhu (Rhizoma Atractylodes Macrocephalae) 9g
Fuling (Poria) 15g	Chaihu (Radix Bupleuri) 16g	Huangqin (Radix Scutellariae) 6g	Jiang Banxia (Ginger-Prepared Pinellia) 9g
Shengjiang (Ginger) 9g	Ziwan (Radix Asteris) 9g	Donghua (Flos Farfarae) 9g	Shegan (Rhizoma Belamcandae) 9g
Xixin (Herba Asari) 6g	Shanyao (Yam) 12g	Zhishi (Immature Bitter Orange) 6g	Chenpi (Orange Peel) 6g
Huoxiang (Herba Pogostemonis) 9g			

<b>Name</b>	<b>Primary Symptom</b>
Wuling San (Poria Five-Herb Powder)	Water retention, abnormal fluid metabolism, e.g. edema
Xiao Chaihu Tang (Minor Bupleurum Decoction)	Alternating chills and fevers, chest discomfort and fullness
Maxing Shigan Tang (Ephedra, Apricot Kernel, Gypsum and Licorice Decoction)	Febrile conditions, lung infections
Shegan Mahuang Tang (Belamcanda and Ephedra Decoction)	Coughs, shortness of breath

Last but not least, an interesting topic to explore is the regional difference in applying TCM herbs. This shouldn't come too much a surprise because individuals have different constitutions or predispositions. To go along that line of thinking, China being a vast country, its striated geography determined that some regions are hotter and more humid than others. As the environment shapes people's constitution, places like Guangdong Province have devised their own herbal formula Pneumonia No.1 ("Toujie Quwen Keli" 透解祛瘟颗粒) composed of 16 ingredients listed below (including 5 major ones). It is a ready-to-mix pack: patient can simply dissolve the content in hot water to be taken. In a controlled trial spanning eight hospitals in Guangdong, doctors compared a 14-day recovery rate among three patient groups, those treated with TCM alone, TCM and western medicine conjointly, and western medicine alone, and found the recovery (number dismissal divided by group size) to be 23.26% (10/43), 17.44% (15/86) and 15.15% (5/33) respectively. Although it is not clear if the differences are statistically significant, it does offer insights into the benefits of herbal treatments. On a side note, more cautious doctors recommended this formula for less severe patients, and were frank about its function to mitigate the damage, rather than decimating the virus. It is quite clear that as people become more and more informed about COVID-19, the peace-maker theory as a guiding principle for treatment will gain more popularity.

Lianqiao (Forsythia)	Shan Cigu (Rhizoma Pleionis)	Jinyinghua (Honeysuckle)	Huangqin (Radix Scutellariae)
Chaihu (Radix Bupleuri)	Qinghao (Herba Artemisiae Apiaceae)	Chantui (Cicada Slough)	Qian Hu (Radix Peucedani)
Chuanbei (Bulbus Fritillariae Cirrhosae)	Wumei (Dark Plum)	Xuanshen (Radix Scrophulariae)	Tubie Chong (Woodlouse)
Cangzhu (Rhizoma Atractylodis)	Huangqi (Radix Astragali)	Taizhishen (Radix Pseudostellariae)	Fuling (Poria)

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