

Long COVID Response to Classical Chinese Medicine

Louis A. Kazal, Jr, MD, FAAFP; Karen L. Huyck, MD, PhD, MPH, FACOEM; Brendan Kelly, LAc, MAC

Abstract

Background • Long COVID remains a significant burden for patients, clinicians, employers, and the U.S. healthcare system. Despite substantial resources and scientific studies directed at understanding and treating long COVID, its cause, and thus targeted treatment remains elusive. Conventional medicine focuses on symptom evaluation to rule out other etiologies. Intervention typically offers the patient current understanding and education and provides reassurance and context for their symptoms. Treatment is mostly supportive care directed at symptom management to improve quality of life, including occupational and physical therapy, breathing exercises, pulmonary rehabilitation, and mental health therapy. Classical Chinese Medicine (CCM) can help make sense of an individual's response to COVID-19 infection, as each pathophysiological change caused by COVID can be correlated with CCM principles, therefore a corresponding treatment approach is available.

Methods • A case series of four representative patients with long COVID treated with CCM is presented. Symptom complex, CCM diagnoses and treatment, and response to treatment are provided for each case, and the rationale for the selected therapy approach is explained.

Results • All four patients recovered fully from long COVID after treatment with CCM therapy. These cases are representative of 56 patients successfully treated thus far with CCM for long COVID.

Conclusion • There is no single treatment for long COVID in Western or Chinese medicine. Western medical treatment centers around reassurance and supportive care, whereas CCM treatment can be more directly targeted and individualized to underlying causes and increase the probability of recovery. These cases indicate the potential of CCM for treating long COVID. However, more research is needed to evaluate the effectiveness of this approach to long COVID recovery.

Louis A. Kazal, Jr., MD, FAAFP, Professor, Department of Community and Family Medicine, Geisel School of Medicine at Dartmouth, Hanover, New Hampshire. **Karen L. Huyck, MD, PhD, MPH, FACOEM**, Associate Professor, Department of Medicine, Geisel School of Medicine at Dartmouth, Hanover, New Hampshire. **Brendan Kelly, LAc, MAC, DAHM(c)**, Adjunct Professor, Johnson State College and Northern Vermont University, Jade Mountain Wellness, Burlington, Vermont.

Corresponding author: Louis A. Kazal, Jr., MD, FAAFP
E-mail: louis.a.kazal@dartmout.edu

Introduction

Long COVID is defined by the World Health Organization (WHO) as the continuation or development of new symptoms three months after the initial SARS-CoV-2 infection, with symptoms lasting for at least two months with no other explanation.¹ The cumulative global incidence of long COVID is thought to be 400 million individuals.² In the U.S., it is estimated that 7% of adults

have had long COVID and 5.3% (or about 1 in 20) are currently experiencing long COVID.^{3,4} Relatively early in the pandemic, more than 200 symptoms of long COVID were identified, reflecting the ability of SARS-CoV-2 to affect multiple organs.⁵ Further into the pandemic, this number was reduced to 37 symptoms as more representative of long COVID.⁶ However most recently, the National Academies released a new definition of long COVID and a list of more than 200 symptoms possibly representing long COVID (see appendix).⁷

The most common symptoms of long COVID are fatigue, cognitive deficits (“brain fog,” attention, and memory), dizziness, post-exertional malaise (physical or mental effort), shortness of breath, cough, palpitations, anxiety, depression, headache, loss of taste and smell (less so with recent variants), and gastrointestinal symptoms.⁸ Long COVID is also a common cause of disability. In a study involving working-age people with long COVID, more than half reported moderately severe or worse functional limitations negatively impacting the ability to perform activities of daily living and work.⁹

There are various theories on the development of long COVID, its causes, and its symptoms.¹⁰ A general theory is that overactive immune cells release high levels of inflammatory substances that injure tissues and organs, and over time cause the production of autoantibodies.¹¹ Another theory holds that after the initial immune system response “eliminates” the virus, some SARS-CoV-2 particles may survive in one or more organs, and these reactivate and provoke an immune response, further damaging tissues, causing the re-appearance of symptoms, and establishing a chronic inflammatory process.¹² Other possibilities include the reactivation of latent viruses in the herpes virus family, such as previous infection with Epstein-Barr virus, accounting for some of the symptomatology.¹³ It is likely that long COVID results from a combination of these yet unknown pathophysiological processes.

This wide range of underlying and overlapping abnormalities leads to complex clinical presentations,¹⁴ creating a challenge for potential treatments. It is therefore no surprise that a standardized treatment remains elusive for a virus acting in diverse ways in different individuals. Current treatment is largely symptomatic, supportive, and rehabilitative, as the diverse underlying pathology is not readily amenable to pharmaceutical therapy.^{15,16}

In contrast to limited treatment options available with conventional Western medicine, Classical Chinese Medicine (CCM) is well-suited to treat long COVID and the multi-organ, multi-system nature of its symptomatology.^{17,18} Additionally, CCM, which includes the multiplicity of traditions prevalent before the increased Westernization during the Cultural Revolution in China,¹⁹ also incorporates clinically important disease progression theories that modernized versions of Chinese medicine may lack.^{20,21} A holistic understanding of the interrelation of organs and in-depth disease progression traditions position CCM to understand, diagnose, and treat the different physical, mental, and emotional symptoms of long COVID. Central to this holism is that each patient is unique. How and why patients develop long COVID may differ, thus requiring customized and person-specific care. CCM can interface with conventional medicine as it can translate Western understanding of acute and long COVID into Eastern medical diagnoses, thereby linking traditions. See Tables 1-3. CCM also provides potentially effective personalized diet and lifestyle recommendations based on diagnostic findings to address symptoms, thus encouraging and empowering patients to actively engage with their healing.

In this article, we present a series of long COVID cases treated with CCM to bring attention to this successful intervention, explain the approach, and provide a link between known Western pathophysiology and CCM treatment plans. These cases are representative of the 56 long COVID cases treated to date with the long COVID CCM protocol presented below. Eastern and Western diagnostic and treatment methodologies used in each case and the response to treatment have been presented.

Table 1. Acute Viral Infection (Western) vs. Wind Invasion (Classical Chinese Medicine)

Acute viral cellular invasion	Wind Cold Invasion
Acute immune response and inflammation	Heat, in the Wei Qi/Protective Qi (Lung) and/or systemic Heat
Thrombosis and microclotting	Blood stagnation/Congeaed Blood/ Blood Stasis often with Heart/Small Intestine Heat or Heat in the Blood

Table 2. Acute Tissue and Organ Viral Infection (Western) vs. Classical Chinese Understanding

Upper respiratory infection	Heat in Lung, with possible Dampness, Qi stagnation, Qi deficiency, Yin deficiency
Possible pneumonia	Heat in Lung, with possible Dampness and Qi stagnation
Cardiac dysfunction	Heat in the Heart, with possible Dampness and possible Qi and Blood stagnation
Neurological dysfunction	Internal Wind (in the Liver and Gallbladder)
Renal dysfunction	Heat in the Kidney/Bladder with possible Dampness, Qi stagnation, Yin deficiency. Possible Kidney Qi deficiency and Bladder Qi stagnation

Table 3. Long COVID Western Understanding vs. Classical Chinese Medicine Understanding

Chronic inflammation	Heat, often in the Stomach/Spleen and Lung/Large Intestine. Possible systemic Heat, possible Heat in Blood
Endothelial dysfunction	Blood stagnation/Congeaed Blood/ Blood Stasis often with Heart/Small Intestine Heat or Heat in Blood
Microclotting	Blood stagnation/Congeaed Blood/ Blood Stasis often with Heart/Small Intestine Heat or Heat in Blood
Immune dysregulation	Heat in Lung, with possible Dampness, Qi stagnation, Qi deficiency, Yin deficiency. Possible Stomach/Spleen Heat and/or Qi deficiency
Organ damage from acute process	Heat in specific organs with possible Dampness with possible Qi and Blood stagnation
Occult viral persistence	Lingering effects of Wind Cold Invasion with possible Heat, Dampness and Qi and Blood stagnation
Viral reactivation	Lingering effects of Wind Cold Invasion with possible Heat, Dampness and Qi and Blood stagnation
Auto-immunity	Lingering effects of Wind Cold Invasion with possible Heat, Dampness and Qi and Blood stagnation

Case Series

Case Study #1

Background and Clinical Presentation. A 35-year-old normally healthy Caucasian female developed a respiratory infection and was diagnosed with COVID in December 2020. She was then diagnosed with long COVID based on new symptoms that occurred after the initial COVID diagnosis and persisted beyond three months. She had a

history of long-standing stable depression treated with sertraline but without any history of headaches, chronic fatigue, fibromyalgia, chronic pain, asthma, or cough. She was a mother of two children (below six years of age) and was employed full-time as a social worker.

CCM treatments started in December 2021. At the time of presentation, the patient was experiencing shortness of breath with minor exertion, difficulty exercising, and a loud cough, worse with exertion. She reported constant fatigue that was sometimes extreme and was often exhausted by 2 PM each workday. She also reported reduced appetite; heart palpitations throughout the day; night sweats; dizziness (with and without exertion); afternoon headaches; pain across the forehead; dull, intermittent lower back pain; and increasing difficulty in working due to these symptoms.

Therapeutic Intervention and Outcome. The initial course of treatment was 16 acupuncture sessions over approximately 11 months from December 2021 to November 2022 and herbal prescriptions. Lifestyle and dietary recommendations were incorporated which included stopping exercise, increasing sleep by 1-2 hours nightly, increasing resting and decreasing daily activity, eliminating dairy and other mucous-producing foods, such as oatmeal and foods with gluten, emphasizing cooked food, and deemphasizing raw food. Sertraline was discontinued through a supervised taper and monitored for recurrence of depressive symptoms.

There was a notable symptomatic improvement with CCM. Her shortness of breath became mild and infrequent, allowing her to return to moderate exercise. The constant fatigue was replaced by a significant increase in energy, returning to pre-COVID energy levels. Her appetite normalized. The palpitations became mild and decreased to occasional, with most days free of palpitations. Her headaches, cough, and dizziness resolved. Night sweats decreased with none most evenings. The back pain resolved, and she was able to work without limitations. She reported, "I feel really good overall."

Acupuncture was continued in 2023, every 4 to 6 weeks and herbs were taken daily. Both treatments effectively managed her long COVID symptoms and continued to promote her well-being. Refer to the supplementary section for physical examination findings before and during treatment, along with the details, and rationale of the treatment protocol.

Case Study #2

Background and Clinical Presentation. A 56-year-old Caucasian woman developed a COVID respiratory infection in March 2020 and was subsequently diagnosed with a long COVID based on the persistence of symptoms beyond three months. She had a history of asthma but was otherwise in good health. She had no history of headaches, chronic fatigue, fibromyalgia, chronic pain, or cough and was employed full-time in a stressful professional job.

CCM treatment started in October 2020. At the time of the presentation, she was experiencing shortness of breath that limited exercise, and chest tightness that felt like "pressure on my lungs, and a weight on my chest." She reported extreme, constant fatigue that decreased her ability to work full-time. She experienced daily "intense" headaches in the morning, usually located in her temples, and reduced short-term memory which also affected her ability to work. Her bones "felt cold from the inside," including her hands; cold and damp conditions worsened the sensation. Her appetite and interest in food were reduced.

Therapeutic Intervention and Outcome. The initial course of CCM treatment was nine acupuncture sessions administered approximately over two months from October 2020 to December 2020 with a herbal prescription which started after about seven weeks of treatment. Treatments continued until April 2021 with monthly treatments thereafter for six months and 22 additional acupuncture sessions. Diet and lifestyle recommendations were incorporated, along with stopping exercise, increasing sleep by 1-2 hours nightly, increasing resting, decreasing daily activity, eliminating dairy and gluten, and other mucous- and heat-producing foods from the diet, including cinnamon and nutmeg. Cooked foods were emphasized, and raw food was discouraged.

There was a notable symptomatic improvement with treatment. After the initial two months of CCM treatment, she reported a significant decrease in the sensation of lung pressure and a resolution of the feeling of weight on her chest. By six months, her lung symptoms had resolved. After the initial two months of treatment, her energy had increased significantly, and by six months, fatigue had resolved. After the initial two months of treatment, there were still mild intermittent headaches, but by eight months, they had resolved. By eight months, her memory returned to baseline. Cold and damp conditions no longer worsened her symptoms, and her cold sensations were resolved. Her appetite and interest in food improved after the initial two months of treatment and were back to normal after six months. Eight months after the initial treatment, her energy returned to pre-COVID levels, and she could work without limitations. After the initial nine treatments over two months and an additional 13 treatments over six months, she reported, "I feel better now than before I had COVID."

Acupuncture treatments continued monthly in 2021 and 2022, approximately every four weeks and the herbal prescription was taken daily. Both treatments successfully managed her long COVID symptoms and promoted a sense of well-being. She elected to receive acupuncture every four to six weeks and take the herbs into 2023. Refer to the supplementary section for physical examination findings before and during treatment, along with the details and rationale of the treatment protocol.

Case Study #3

Background and Clinical Presentation. A 66-year-old retired normally healthy female who was retired and who exercised regularly before a COVID diagnosis in May 2023 developed new symptoms of chest pain and chest tightness three to four weeks after recovery from COVID that persisted beyond three months.

CCM treatment started in October 2023. Symptoms at the time of presentation included intermittent chest pain and pressure ranging from mild to severe. Before COVID, she walked two to three miles five to six times weekly. With no activity, the chest pressure and pain could be as low as 0-1/10 and intermittently 3-4/10 at rest and when lying down to sleep. With activity and exercise, she reported pain and pressure up to 8/10. Pain and pressure increased with simple daily activities such as walking up stairs. She had a cardiac and pulmonary work-up, which was negative, and prior Western treatments were not beneficial.

Therapeutic Intervention and Outcome. Chinese medicine treatments started in October 2023. Nine acupuncture treatments were administered over approximately eight weeks. Diet and lifestyle changes were incorporated, including reducing coffee intake, eliminating exercise, increasing rest, decreasing daily activity, increasing sleep and time in bed, emphasizing cooked food and limiting raw food, and increasing intake of root vegetables including potatoes, carrots, and beets.

After eight acupuncture treatments, the patient “often had no chest pain or pressure,” but the pain/pressure that did remain, increased with sleep, indicating Yin and Blood deficiency. It is to be noted that this is not an uncommon event in CCM, not unlike a Jarisch Herxheimer reaction, with short-term exacerbation of symptoms followed by long-term improvement. By the ninth treatment, she noted “I’m 95% better—95% back to normal.” She had no chest pressure and limited, infrequent pain, mostly when lying down; she was back to walking without chest pain or pressure.

CCM treatments successfully managed her long COVID symptoms and promoted a sense of well-being, and she was discharged after nine acupuncture sessions. Kindly refer to the supplementary section for physical examination findings before and during treatment, along with the details and rationale of the treatment protocol.

Case Study #4

Background and Clinical Presentation. A retired 73-year-old woman with chronic obstructive pulmonary disease (COPD) and a history of Lyme disease (in 1992 and 1998) tested positive for COVID in November 2022 and continued to have symptoms at three months.

CCM treatment started in August 2023. She presented with brain fog that prevented her from thinking clearly, recalling words and events, and performing some daily activities. She felt chilled when tired, reported a “racing mind” throughout the day, had poor sleep (waking every two to three hours, and exhibited poor balance.

She also reported an exacerbation of pre-COVID conditions with an increase in baseline headache, muscle pain, fatigue, and chest tightness symptoms. At the time of her initial appointment, headaches were worse than baseline with constant pain, and she rated them as 7.5/10 (and could reach 10/10). About five weeks before the initial acupuncture treatment, she reported that her headache was “constant, 24/7. “At worst, I feel like a rod is going thru my temples; at best, my temples feel as if they are in a vice.” She had “pain in temples, around the lower back of the head, behind the eyes, which feels strained and tired.” She reported that “the constant headache has pushed me to my limit.” She also reported that her back and general muscle pain were “worse since COVID.” There was an increase in fatigue to “extreme fatigue” and increased shortness of breath. She felt “exhausted all the time and short of breath.” She could push herself to do two to three small tasks a day but then had to lie down and rest, and sometimes she had to rest in bed the entire next day. She also reported an increase in chest tightness.

Therapeutic Intervention and Outcome. The initial course of CCM treatment was 23 acupuncture sessions over approximately four months. Herbs were started after the first week of treatment, initially to treat a Chinese medicine understanding of acute viral infection (acute Wind Cold). Herbs were then continued to address symptoms related to a long COVID. To reduce Phlegm, Heat, and Internal Wind, diet and lifestyle recommendations were incorporated, including the elimination of coffee and all dairy, increasing animal protein intake while eliminating chicken and turkey, increasing root vegetable intake, eliminating all spicy food (onions, garlic, cayenne, turmeric, ginger, etc.), avocado, and alcohol, increasing rest, decreasing daily activity, increasing time in bed, emphasizing cooked food and limiting raw food, and increasing root vegetables, including potatoes, carrots, and beets.

One week after the treatment started, the patient developed new symptoms of a scratchy throat, “aches everywhere”, and a dry cough. Chest tightness and fatigue increased. However, by the third week of treatment, her head pain had decreased to 0-1/10. She began feeling less fatigued and could do more activities at home. The racing of her mind decreased and was no longer constant throughout the day and was less at night. Her brain fog and recall of words and events improved allowing for better daily functioning. Baseline shortness of breath remained the same with exertion. By the end of treatment, she no longer had head pain or migraines. An e-mail from December 20, 2023, stated, “I feel a huge shift...energy much improved, and I’m overall feeling close to my old self.” “I feel as if I’m living thru a medical miracle.”

CCM treatments successfully managed her long COVID symptoms and promoted a sense of well-being, and she was discharged after 23 acupuncture sessions. See the supplementary section for physical examination findings before and during treatment, along with the details and rationale of the treatment protocol.

Table 4. Case Comparison

	Case 1	Case 2	Case 3	Case 4
Age	35 years	56 years	66 years	73 years
Duration of symptoms prior to treatment	12 months	8 months	5 months	6 months
Main presenting symptoms	Cardiovascular, pulmonary, endocrine, neurological, digestion, pain, fatigue	Pulmonary, fatigue, pain, digestion	Pulmonary, cardiovascular, fatigue, pain	Pain, neurological, fatigue, pulmonary
Classical Chinese medicine diagnosis	Systemic Qi deficiency especially Kidney and Pericardium Qi deficiency, Lung and Heart Heat, Liver Blood deficiency, Blood Stasis	Systemic Qi deficiency and Qi stagnation especially Kidney & Pericardium Qi deficiency. Stomach and Spleen Heat and Dampness, Liver and Heart Blood stagnation, Yin deficiency and Dryness in Kidney, Lung and Spleen	Heart Heat, Systemic Qi deficiency, Liver Blood deficiency, systemic Dryness and systemic Yin deficiency (Kidney, Spleen, Lung)	Systemic Heat and Dampness, Liver and Heart Blood stagnation, Lung Qi stagnation, internal Wind in the Liver and Gallbladder, Kidney and Pericardium Qi deficiency
Work status at intake	Symptoms limited ability to work full-time & daily activities	Symptoms limited ability to work full-time & daily activities	Retired; symptoms limited daily activity	Retired; symptoms limited daily activity
Comorbid conditions	None	Asthma	None	COPD and Lyme disease
Total number of acupuncture sessions	16	22	9	23
Length of treatment	11 months	8 months	2 months	4 months
Herb therapy	Yes	Yes	No	Yes
Lifestyle changes	Yes	Yes	Yes	Yes
Rationale for diet changes	Decrease Dampness-Phlegm and Heat and to increase Qi/energy	Decrease Dampness-Phlegm and Heat and to increase Qi/energy	Decrease Dampness-Phlegm and Heat and to increase Qi/energy	Decrease Wind, Heat and Dampness/Phlegm, increase Qi
Disposition	Continued treatment every 6-8 weeks to promote well being	Continued treatment every 6-8 weeks to promote well being	Continued treatment every 2-3 weeks to address pre-COVID symptoms	Continued weekly treatment to address pre-COVID symptoms of chronic Lyme disease
Work status at discharge	No limitations; working full time	No limitations; working full time	Retired	Retired
Patient feedback	"I feel really good overall."	"I feel better now than before I had COVID."	"I'm 95% better-95% back to normal."	"I feel a huge shift...energy much improved...and I'm overall feeling close to my old self. I feel like I'm living through a medical miracle. Thank you does not begin to express my gratitude."

Discussion

In this descriptive case series, four patients, each with long COVID, recovered from their illness, regaining energy, stamina, and respiratory function, with an improvement of brain fog and other cognitive functions, and even resolution of some of these issues. These cases are representative of 56 patients treated thus far with CCM for long COVID. See Table 4 for a comparison summary of the four cases.

Each patient received targeted interventions, unique to their long COVID presentation based on CCM principles. In the long history of Chinese medicine, well-established diagnostic and treatment methods allow for treating viral infections, be it SARS-CoV-2 or other viruses. Traditions of Chinese medicine provide an in-depth understanding of how viruses can affect different organs and how infections can progress from external (more superficial in the body) to internal conditions (more deeply seated). Long COVID treatment using a CCM approach offers an alternative to

attempts of "one size fits all." Western medicine has not found a medication or combination of therapeutics to resolve the variety of long COVID symptoms. The pathophysiology is too variable for a reductionistic medicine model. CCM is ideal for treating diseases with diverse presentations, including cases where the underlying molecular mechanisms have not been elucidated or the disorder has multiple potential underlying causes. The inability of the Western medical approach to effectively address the variety of long COVID symptoms may be why the patients seek a different approach.

Chinese medicine clinicians recognize the nature of viral conditions, their variability, and different stages, and apply a clinical perspective that is most effective for each diagnosis. See Tables 1-3.

As is true with most viral infections, the CCM understanding of the nature of COVID is Cold, confirmed by several observations, including common initial symptoms of feeling chilled followed by alternating chills

and fever, pulse, and tongue diagnoses (physical examination) indicating the presence of Cold, and the increase in cases in the colder seasons of autumn and winter. With this framework of the nature of COVID, the School of Cold (Shang Han Lun) becomes the initial tradition to apply as it specializes in diagnosing and treating both the cold nature of COVID and the initial cause of the imbalance that promotes the long COVID.¹⁷

In addition to the importance of the School of Cold, the School of Heat (Wen Bing Xue) is also relevant.¹⁸ Physiologically, the conventional diagnosis of inflammation correlates to the Chinese diagnosis of Heat. Due to the prevalence of pre-existing internal inflammation, the School of Heat provides an important understanding of how COVID can contribute to and create additional inflammatory responses that can have wide-ranging effects on organs and body systems. This includes symptoms related to respiration, circulation, digestion, and pain.

The neurological tradition of Chinese medicine provides additional important insights. Known as the Wai Ke,²² this tradition describes how inflammation/Heat, common with COVID can contribute to neurological symptoms. These include migraine headaches, lack of stability, twitching, and seizures. Specifically, the inflammation/Heat, common with long COVID can reduce the relaxation and coolant in the body (called Yin deficiency), which can contribute to or create overstimulation in the brain (called Internal Wind), and is conventionally diagnosed as brain fog.

Finally, the discriminating disease progression theory describes the progression of long-COVID. Known as Bian Hua/To Change and Transform,²³ has four stages, beginning with the inflammation described above. In addition to this Heat, which creates overstimulation, thus contributing to a wide range of symptoms, it can also trigger the second stage of Dryness where the coolant is reduced internally. Using a common analogy, the Heat of the first stage can cook off the internal coolant while relaxation would happen as if a pot of water was placed on a hot cook stove. This second stage of a lack of fluids is associated with hormonal issues, including night sweats, hot flashes, and symptoms of Dryness, including those of the eyes and skin.

From the second stage of Dryness comes the third stage, Dampness. While Dryness is a lack of fluids, Dampness is an excess of fluids, which comes from the body attempting to create or hold onto heavier fluids that cannot be “cooked off” from the first stage of Heat. The Dampness, which physically correlates to the conventional medicine diagnosis of mucous, can originate in the digestive system (associated with the stomach and spleen in Chinese medicine) and cause a wide range of symptoms, including those associated with food assimilation and cognition, particularly “brain-fog.” With Dampness being an excess of fluids, it can impede the body’s functioning, creating a wide range of issues such as lethargy and

fatigue, and contribute to pain by creating blockages in the flow of Blood and energy (called Qi in Chinese medicine).

From the third stage of Dampness comes the fourth stage of Internal Wind, which is the neurological excess described above in the discussion about the Wai Ke/Neurology tradition. With Dampness being an excess of Yin (fluids, coolant, relaxation), the body can respond by creating an excess of Yang (an overstimulation of the brain), which can create the neurological symptoms described above.

The integration of the Chinese medicine traditions of (i) the School of Cold (Shang Han Lun), (ii) the School of Heat (Wen Bing Xue), (iii) the Neurology tradition/Wai Ke, and (iv), disease progression theory of To Change and Transform/Bian Hua provides a distinct understanding of the progression of long COVID from initial exposure to the virus to the development of the myriads of symptoms associated with the condition.

From a Chinese medicine perspective, the cases described above demonstrate the integration of these four traditions allowing for the successful treatment of a range of long COVID diagnoses. These include Qi deficiency (including Kidney, Liver, Heart, Lung, Stomach and Spleen and Pericardium, and San Jiao), Heat in the Upper Jiao (Lung and Heart), Blood deficiency, Heart and Liver Blood stagnation and Blood Stasis, Kidney and Pericardium/San Jiao Yang deficiency, Qi stagnation (including in the Liver, Heart, Spleen and Lung), Heat and Dampness in the Lung and Large Intestine, Stomach and Spleen, Heart and Small Intestine and Liver and Gallbladder, Yin deficiency and Dryness (including in the Kidney, Spleen and Lung), Liver Blood deficiency, Internal Wind in the Liver and Gallbladder and exterior Wind Cold in the Lung and Large Intestine.

The CCM understanding of the underlying causes of long COVID also allows for the treatment of the diverse manifestations for the disease, including the symptoms of shortness of breath with tightness in chest, chest pain, fatigue, reduced appetite, palpitations, cough, night sweats, dizziness, headaches (including ‘intense headaches’ and ‘severe, debilitating headaches’), decreased short-term memory, ‘brain fog’, ‘racing mind’, insomnia, lower back pain, and bones “feeling cold from the inside,” as seen in the cases presented.

Limitations of this case series are those inherent to an observational study and lack of a control group. Furthermore, patients with long COVID can fully recover over time on their own. While this may have been the case for the patients in this series, at their first visits they were not on a trajectory of recovery and all experienced some immediate improvement after the first treatment. At present, it is not clear what percent of patients with long COVID recover fully. In a recent study, patients who had mild to moderate and those who had severe to critical acute symptoms both had equally and significantly more cognitive symptoms from long COVID compared to healthy control subjects two years post-COVID.²⁴ This

long-term study found persistent psychiatric and neurological symptoms and brain functional alteration shown on functional MRI (putamen, temporal lobe, and superior parietal gyrus).

Of note, studies of CCM treatment are consistent with the priorities outlined in the Department of Health and Human Services National Research Action Plan on Long COVID, including studies of non-pharmacologic interventions to prevent and treat long COVID, identifying and evaluating optimal person-centered and community-centered models of care, and reducing health inequities associated with long COVID.²⁵

Conclusion

No single treatment exists for long COVID. Western medicine has identified three areas to focus treatment: symptomatic, supportive, and rehabilitative. Despite these treatments, patients with long COVID can have long-lasting symptoms and significant disability. As seen in the four case studies, CCM may offer patients, the opportunity to substantially or completely regain normal function through the clinical application of the synthesis of CCM traditions. Patients can experience a reduction in the intensity of symptoms, return to full-time work, and live a more engaged life with the potential for complete recovery. CCM should be studied as a stand-alone or adjunctive treatment for long COVID. In addition, future studies will benefit from a randomized controlled approach to studying the effectiveness of this treatment and the use of validated patient-reported outcome measures.

Conflict of interest

None

Author Approval

All authors have seen and approved the manuscript

Funding Statement

There was no funding support for the work presented.

References

1. Post COVID-19 condition (Long COVID). World Health Organization. Accessed January 3, 2025. <https://www.who.int/europe/news-room/fact-sheets/item/post-covid-19-condition>
2. Al-Aly Z, Davis H, McCorkell L, et al. Long COVID science, research and policy. *Nat Med*. 2024;30(8):2148-2164. doi:10.1038/s41591-024-03173-6
3. Fang Z, Ahrnsbrak R, Rekito A. Evidence Mounts That About 7% of US Adults Have Had Long COVID. *JAMA*. 2024;332(1):5-6. doi:10.1001/jama.2024.11370
4. Long COVID. National Center for Health Statistics. Accessed January 3, 2025. <https://www.cdc.gov/nchs/covid19/pulse/long-covid.htm>
5. Davis HE, McCorkell L, Vogel JM, Topol EJ. Long COVID: major findings, mechanisms and recommendations. *Nat Rev Microbiol*. 2023;21(3):133-146. doi:10.1038/s41579-022-00846-2
6. Thaweethai T, Jolley SE, Karlson EW, et al; RECOVER Consortium. Development of a Definition of Postacute Sequelae of SARS-CoV-2 Infection. *JAMA*. 2023;329(22):1934-1946. doi:10.1001/jama.2023.8823
7. Examining the Working Definition for Long COVID. National Academies. Accessed January 3, 2025. https://www.nationalacademies.org/our-work/examining-the-working-definition-for-long-covid?utm_source=HMD+Email+List&utm_campaign=f9ac25f5be-EMAIL_CAMPAIGN_2024_05_30_07_11&utm_medium=email&utm_term=0-f9ac25f5be-%5BLIST_EMAIL_ID%5D&mc_cid=f9ac25f5be&mc_eid=9d0ae56f70#sl-three-columns-b4067691-399a-4ca6-a6e8-3cecd0a695de
8. Gheorghita R, Soldanescu I, Lobiuc A, et al. The knowns and unknowns of long COVID-19: from mechanisms to therapeutical approaches. *Front Immunol*. 2024;15:1344086. doi:10.3389/fimmu.2024.1344086
9. Walker S, Goodfellow H, Pookarnjanamorakot P, et al. Impact of fatigue as the primary determinant of functional limitations among patients with post-COVID-19 syndrome: a cross-sectional observational study. *BMJ Open*. 2023;13(6):e069217. doi:10.1136/bmjopen-2022-069217
10. Castanares-Zapatero D, Chalou P, Kohn L, et al. Pathophysiology and mechanism of long COVID: a comprehensive review. *Ann Med*. 2022;54(1):1473-1487. doi:10.1080/07853890.2022.2076901
11. Sher EK, Cosović A, Džidić-Krivić A, Farhat EK, Pinjić E, Sher F. Covid-19 a triggering factor of autoimmune and multi-inflammatory diseases. *Life Sci*. 2023;319:121531. doi:10.1016/j.lfs.2023.121531
12. Mehndru S, Merad M. Pathological sequelae of long-haul COVID. *Nat Immunol*. 2022;23(2):194-202. doi:10.1038/s41590-021-01104-y
13. Moynan D, Barkat R, Avramovic G, Morley D, O'Kelly B, Lambert JS. The reactivation of herpesviruses in severe COVID-19; a retrospective analysis of a critical care cohort. *Clin Infect Pract*. 2023;19:100232. doi:10.1016/j.clinpr.2023.100232
14. Ballering AV, van Zon SKR, Olde Hartman TC, Rosmalen JGM; Lifelines Corona Research Initiative. Persistence of somatic symptoms after COVID-19 in the Netherlands: an observational cohort study. *Lancet*. 2022;400(10350):452-461. doi:10.1016/S0140-6736(22)01214-4
15. Banerjee I, Robinson J, Sathian B. Treatment of Long COVID or Post COVID syndrome: A Pharmacological approach. *Nepal J Epidemiol*. 2022;12(3):1220-1223. doi:10.3126/nje.v12i3.48532
16. Greenhalgh T, Knight M, A'Court C, Buxton M, Husain L. Management of post-acute covid-19 in primary care. *BMJ*. 2020;370:m3026. doi:10.1136/bmj.m3026
17. Zhang Z, Ye F, Wiseman N, Mitchell C, Feng Y. *Shang Han Lun: On Cold Damage, Translation & Commentaries*. Paradigm Publications; 1999.
18. Wen J-M. *Warm Disease Theory: Wen Bing Xue*. Paradigm Publications; 2003.
19. Unschuld PU. *Medicine In China: A History of Idea*. 1985. 1st edition, chapter 9, p. 229-262. University of California Press, Berkely and Los Angeles, California.
20. Williams JE, Moramarco J. The Role of Acupuncture for Long COVID: mechanisms and Models. *Med Acupunct*. 2022;34(3):159-166. PMID:35832109 doi:10.1089/acu.2021.0090
21. Hollifield M, Cocozza K, Calloway T, et al. Improvement in Long-COVID Symptoms Using Acupuncture: A Case Study. *Med Acupunct*. 2022;34(3):172-176. PMID:35832108 doi:10.1089/acu.2021.0088
22. Information cited about the Wai Ke/Neurology tradition has not been translated into English. From third author's personal class notes from co-author's Kelly's study with Dr. Jeffrey Yuen.
23. Information cited about the Bian Hua disease progression theory has not been translated into English. From third author's personal class notes from co-author's Kelly's study with Dr. Jeffrey Yuen.
24. Zhao Y, Liang Q, Jiang Z, et al. Brain abnormalities in survivors of COVID-19 after 2-year recovery: a functional MRI study. *Lancet Reg Health West Pac*. 2024;47:101086. PMID:38774424 doi:10.1016/j.lanwpc.2024.101086
25. The Office of Long COVID Research and Practice (OLC) | HHS.gov. Department of Health and Human Services, Office of the Assistant Secretary for Health. 2022. National Research Action Plan on Long COVID, 200 Independence Ave SW, Washington, DC 20201.

SUPPLEMENTAL SECTION

Classical Chinese Medicine Treatment Protocols

Case #1 Physical Exam and Treatment Protocol

Physical Exam

At intake. On CCM physical exam (pulse and tongue diagnoses) at the start of treatment, pulses were systemically weak, deficient in all positions on the left and right indicating systemic Qi deficiency. The lower Jiao pulses on the left and right were also deep, indicating Kidney and Pericardium/San Jiao Yang deficiency. With tongue diagnosis, the tip of the tongue was red indicating Lung and Heart Heat. The tongue in general was pale and thin, indicating Blood deficiency. Significant distended and discolored veins on the bottom of the tongue indicated Blood Stasis.

During treatment. CCM physical exam demonstrated objective improvement, correlating with symptom resolution. Over the course of treatment, the tongue showed increased redness, including raised red areas throughout the tongue that resolved, representing a release of internal Heat. The tongue became less thin and pale signifying a decrease in Blood Deficiency. There was also a decrease in the distention and discoloration of the veins on the bottom of the tongue because of the decrease in Blood Stasis. Significant improvement in pulse was detectable with the strength of the upper and middle Jiao pulses on the left and right side increasing due to an increase of Qi. The lower Jiao pulses on the left and right side also became less deep, indicating an increase in Kidney and Pericardium/San Jiao yang.

Acupuncture treatments with points used and purpose of point and needles action (through 12/22)¹

- **To clear Heat:** Stomach 40, Large Intestine 11, Lung 7, Stomach 36 (also used to tonify Stomach Qi and post-natal Qi), Liver 2
- **To move Qi stagnation:** Large Intestine 7, Xi Cleft point, Lung-6, Xi Cleft, Liver 3
- **To move Blood stagnation:** Heart 7, LR 3, Heart 6, Xi Cleft. Liver 6, Xi Cleft
- **To tonify Qi:** Stomach 36, Kidney 3, Spleen 3, Lung 9
- **To tonify Yang:** Kidney 2, Spleen 2

Protocols

To move abdominal Qi stagnation in Liver/ Gallbladder and Stomach/Spleen and to clear abdominal Heat and Damp: open Dai Mai, Gallbladder 41 and San Jiao 5 with Liver 13 and 14 with Ren 15

Herbs (with formula name, single herbs, and their actions):^{ii-iv}

- **To clear Heat:** Base formula: Bai Hu Tang/White Tiger Decoction: Shi Hu/Herba Dendrobii, Zhi Mu/Rhizoma Anemarrhenae, Geng Mi/Semen Oryzae, Zhi Gan Cao/Radix Glycyrrhizae Preparata
Additions: Lung dryness (Yin deficiency)—Chuan Bei Mu/Bulbus Fritillariae Cirrhosae, Jie Geng/ Radix Platycodi, to clear Heat through Large Intestine—Da Huang/Radix et Rhizoma Rhei, for Heart Heat—Mu Tong/Caulis Akebiae, for Kidney Yang deficiency—Rou Gui/Cortex Cinnamomi, for post-natal Qi deficiency (Lung and Spleen)—Dang Shen/Radix Codonopsis, for Dampness—Bai Zhu/ Rhizoma Atractylodis Macrocephalae
- **To open Lungs with Lung tightness, clear phlegm, clear inflammation, tonify Qi and Blood:** Elecampagne/Inula helinium, Astragalus/Astragalus membranous, Nettles/Urtica dioica, Dang Gui/Angelica sinensis, Lobelia/Lobelia inflata, Crampbark/Viburnum opulus, Willow/Salix spp, Licorice/Glycyrrhiza glabra, Mullein/Verbascum thapsus
- **To tonify Qi and Blood to address fatigue:** American Ginseng/Panax quinquefolius, Asian Ginseng/Panax ginseng, Nettles/Urtica dioica, Dang Gui/Angelica sinensis, Licorice/Glycyrrhiza glabra

Treatment Specifics: The initial focus of the acupuncture treatments was to clear inflammation/Heat and phlegm systemically and in the Lung, Large Intestine, and Stomach particularly.

Treatment 1: Needles added sequentially as pulse diagnosis confirmed progression of treatment

- Part 1: Lung 6, 7 dispersed with Lung 7 Luo point to open Lungs and Wei to clear Heat and phlegm through skin. Lung-6 Xi
- Xi Cleft point to move Lung Qi stagnation to assist with clearing of Heat and phlegm
- Part 2: Large Intestine 11: dispersed to clear Heat from Lung and

Large and clear Heat systemically

- Part 3: Kidney 2, Spleen 2: tonified to tonify Kidney and Spleen Yang to balance the clearing and dispersing of above points.

Treatment 2: Needles added sequentially as pulse diagnosis confirmed progression of treatment

- Part 1: Stomach 40, dispersed to clear Heat/inflammation in Stomach and systemically, Stomach 36 needled with no action to clear Heat and Phlegm in Stomach and systemically and to tonify post-natal Qi/Stomach Qi
- Part 2: Lung 6, 7 dispersed with Lung 7 Luo point to open Lungs and Wei to clear Heat and Phlegm through skin. Lung 6 Xi Cleft point to move Lung Qi stagnation to assist with clearing of Heat and Phlegm
- Part 3: Large Intestine 11 dispersed to clear Heat from Lung and Large and clear Heat systemically. Large Intestine 7 Xi Cleft point dispersed to move Qi stagnation in Large Intestine and Lung Qi stagnation to assist with clearing of Heat and Phlegm
- Part 4: Kidney 2 tonified to treat Kidney Yang deficiency and balance the cooling clearing and moving of parts 1-3

Case #2 Physical Exam Changes and Treatment Protocol Physical Exam

At intake. On CCM physical exam at the start of treatment, pulses were systemically weak indicating systemic Qi deficiency. Pulses also indicated Lung, Large Intestine, Stomach and Spleen Qi stagnation, Heat, and Dampness, specifically, Heat greater than Dampness. Also, the Liver and Heart pulses indicated Blood stagnation. Additionally, pulses also indicated Kidney and Pericardium Qi deficiency. Tongue diagnosis was notable for systemic dryness in all three burners, as well as Kidney, Spleen, and Lung Yin deficiency.

During Treatment. Physical exam (pulse and tongue) findings demonstrated objective improvement during the course of treatment, correlating with symptom resolution. Pulse and tongue diagnoses indicated a significant improvement in Heat and Dampness, as well as Qi and Blood stagnation, dryness, and Yin deficiency. The Kidney and Pericardium Qi deficiency also showed moderate improvement. See Table 5 for details and rationale of treatment protocol.

Acupuncture treatments with points used and purpose of point and needles action¹:

- **To clear Heat:** Dispersed Stomach 40, Large Intestine 11, Lung 7, Stomach 36 (also used to tonify Stomach Qi and post-natal Qi), Liver 2, Small Intestine 5, Bladder 60
- **To tonify Yin:** Tonify Kidney 10, Heart 3, Liver 8
- **To tonify Blood:** Tonify Liver-8
- **To move Qi stagnation:** Disperse Large Intestine 7, Xi Cleft point, Lung 6, Xi Cleft, Liver 3, Spleen 8 Xi Cleft
- **To move Blood stagnation:** Disperse HT 7, LR 3, HT 6, Xi Cleft. Liver 6, Xi Cleft
- **To tonify Qi:** Tonify Stomach 36, Kidney 3, Spleen 3, Lung 9

Herbs (with formula name, single herbs and their actions):ⁱⁱ

- **To clear Heat:** Base formula: Bai Hu Tang/White Tiger Decoction: Shi Hu/Herba Dendrobii, Zhi Mu/Rhizoma Anemarrhenae, Geng Mi/Semen Oryzae, Zhi Gan Cao/Radix Glycyrrhizae Preparata
Additions: Huo Ma Ren/Semen Cannabis, Chen Pi/Pericarpium Citri Reticulatae (to move stagnation), Fu Ling/Sclerotum Poriae Cocos (to drain Damp), Xu Duan/Radix Dipsaci (tonify Kidney Qi), Lian Qiao/Fructus Forsythiae (vent Heat)
- **To move Qi and Blood stagnation and tonify Qi:** Chi Shao/Radix Paeoniae Rubra, Tao Ren/Semen Persicae, Dang Shen, Chen Pi, Gan Cao, Yan Hu Suo
- **Single herbs to clear Heat and tonify Qi and Blood:** Sheng Di Huang, Dan Shen/Radix Salviae Miltiorrhizae, Bai Shao/ Radix Paeoniae Alba, Dang Gui/Angelica sinensis, Fang Feng/Radix Saposhnikoviae, Radix Ledebouriae, Sheng Jiang/Rhizoma Zingiberis Recens, Zhi Gan Cao/Radix Glycyrrhizae Preparata, Bai Zhu/Rhizoma Atractylodis Macrocephalae
- **To Tonify Kidney Qi and clear Heat:** Base of Liu Wei Di Huang Wan/ Six Flavored Decoction: Shu Di Huang, Shan Zhu Yu, Shan Yao, Fu Ling/Sclerotum Poriae Cocos, Mu Dan Pi/Cortex Moutan, Ze Xie/

Rhizoma Alismatis with addition of Xu Duan/Radix Dipsaci and Du Zhong/Cortex Eucommiae (Kidney Qi), Chen Pi/Pericarpium Citri Reticulatae, (Qi stagnation) Dan Shen/Radix Salviae Miltiorrhizae (congealed Blood), Dang Shen/ Radix Codonopsis (tonify Qi, cooling), Dang Gui/Angelica sinensis (tonify Blood)

- **To move Lung Qi, for Lung tightness and asthma:** Western Herbs, Lobelia/Lobelia inflata, Crampbark/Viburnum opulus, Licorice/Glycyrrhiza glabra

Additions: for tonifying Qi and Blood—Codonopsis/Codonopsis pilosula and Dang Gui/Angelica sinensis; for Phlegm—Elicampagne/Inula helenium; For cough—Wild Cherry/Prunus vulgaris; for Lung Heat/Inflammation—Echinacea/Echinacea purpurea; for Kidney Qi deficiency—Teasel Root/*Dipsacus fullonum*

Case #3 Physical Exam Changes and Treatment Protocol

Physical Exam

At intake. On CCM physical exam at the start of treatment, tongue and pulse diagnoses indicated Heat in the Heart (tip of the tongue was very red), systemic Qi deficiency (all pulses weak and empty), Liver Blood deficiency (tongue pale and thin), systemic dryness, and Yin deficiency (whole tongue thin and dry).

During treatment. Physical exam (pulse and tongue) findings demonstrated objective improvement during the course of treatment, correlating with symptom resolution. Tongue diagnosis showed a decrease in redness of the tip of the tongue indicating a decrease in heart Heat and less dryness, representing an increase in fluids. The fullness of all of the pulses increased systemically, particularly in the Lung, Spleen, Stomach, Heart, and Liver, indicating an increase in Qi systemically. See Table 6 for details and rationale of treatment protocol.

Acupuncture treatments with points used and purpose of point and needles action

- **To clear Heat:** Points dispersed Stomach 40, Large Intestine 11, Large Intestine 5, Lung 7, (also used to tonify Stomach and Spleen Qi), Liver 2, Small Intestine 5, Bladder 60, Heart 9, Yin Tang. Needles with no action: Stomach 36
- **To tonify Yin:** tonify Kidney 10, Heart 3, Liver 8
- **To tonify Blood:** tonify Liver 8
- **To tonify Qi:** Tonify Stomach 36, Kidney 2
- **To tonify Yang:** Kidney 2

Protocols

To clear Heat and quiet the Shen/Heart-mind: All points dispersed. Internal Dragons: Ren-14.5, Stomach 25, 32, 41. External Dragons: Du 20, Bladder 11, 23, 61. *To tonify Blood:* Points tonified, Chong Mai: Spleen 4 right side; Pericardium 6 left side

Additional treatments are scheduled to manage the symptoms of long COVID, promote well-being and treat symptoms that pre-dated COVID and long COVID including chronic back pain

Herbs: No herbs administered to date

Case #4 Physical Exam Changes and Treatment Protocol

Physical Exam

At intake. On CCM physical exam at the start of treatment, pulse diagnosis showed Heat and Dampness in Lung, Large Intestine, Spleen, Stomach, Heart, Small Intestine, and Liver and Gallbladder. Pulses also indicated Liver and Heart Blood stagnation and Lung Qi stagnation, internal Wind in the Liver and Gallbladder, and Qi deficiency in the Kidney and Pericardium.

During treatment. Physical exam (pulse and tongue) findings demonstrated objective improvement during the course of treatment, correlating with symptom resolution. Changes in pulses indicated less Heat and Dampness in Liver, Gallbladder, Heart, Small Intestine, Lung, Large Intestine, Stomach and Spleen; a decrease in internal Wind of Liver and Gallbladder; an increase in Kidney and Pericardium Qi; and a decrease in Heart and Liver Qi stagnation. See Table 7 for details and rationale of treatment protocol.

Acupuncture treatments with points used, purpose of point and needles action

- **To clear Heat:** Points dispersed Stomach 40, 41, Stomach 36, Large

Intestine 5, 11, Lung 7, Liver 2, Small Intestine 5, Bladder 60, 63, Heart 9, Yin Tang. Needles with no action: Stomach 36 (also used to tonify Stomach and Spleen Qi)

- **To tonify Yin:** tonify Kidney 10, Heart 3, Liver 8
- **To tonify Blood:** tonify Liver 8
- **To move Blood:** Heart 6, Liver 6, Liver 3
- **To move Qi:** Lung 6, Large Intestine 7, Small Intestine 6
- **To tonify Qi:** Tonify Stomach 36, Kidney 2, San Jiao 4
- **To tonify Yang:** Kidney 2, San Jiao 4
- **To clear internal Wind:** Gallbladder 34, Liver 3, Large Intestine 4
- **To clear internal and external Wind:** Bladder 2, Gallbladder 1

Protocols

To clear Heat and quiet the Shen/Heart-mind: All points dispersed; Internal Dragons: Ren-14.5, Stomach 25, 32, 41. External Dragons: Du 20, Bladder 11, 23, 61. *To clear in abdomen stagnation, Heat, and Dampness:* Dispersed Dai Ma left GB-41, right San Jiao-5, with disperse Liver 13, 14 and Ren 15. *To clear Heat, Dampness and Wind and quiet Shen/Heart:* Dispersed Ghost Points: Lung 11, Large Intestine 1, Spleen 1, with additions of Stomach 45, Yin Tang, Heart 9, Heart 6.

Additional treatments are scheduled to manage the symptoms of long COVID, promote well-being and treat symptoms that pre-dated COVID and long COVID including chronic back pain

Herbs (with formula name, single herbs and their actions):

- **To treat acute Wind Cold:** Xiao Qing Long Tang/Minor Blue Green Dragon: Gui Zhi/Ramulus Cinnamomi, Gan Jiang/Rhizoma Zingiberis, Xi Xin/Herba cum Radix Asari, Wu Wei Zi/ Fructus Schisandrae, Bai Shao/Radix Paeoniae Alba, Zhi Ban Xiao/Rhizoma Pinelliae Preparatum, Zhi Gan Cao/ Radix Glycyrrhizae Preparata. With addition for internal Wind, lung tightness, cough and Qi deficiency: Valerian/Valeriana off, Lobelia/Lobelia inflata, Wild Cherry/Prunus vulgaris, Astragalus/Astragalus membranous
- **For Heat and Dryness:** Bai Hu Tang/White Tiger Decoction: Shi Hu/Herba Dendrobii, Zhi Mu/Rhizoma Anemarrhenae, Geng Mi/ Semen Oryzae, Zhi Gan Cao/Radix Glycyrrhizae Preparata With additions for internal Wind, congealed Blood, Kidney Qi deficiency, to vent Heat through skin, clear Heat through Larger Intestine, move Qi and Blood to treat pain, move Spleen and Stomach Qi: Shi Jue Ming/Concha Haliotidis, Dan Shen/Radix Salviae Miltiorrhizae, Xu Duan/Radix Dipsaci, Lian Qiao/Fructus Forsythiae, Yan Hu Suo/Rhizoma Corydalis, Wu Ling Zi/Faeces Trogoptero, Excrementum Trogopteri seu Pteromi, Chen Pi/Pericarpium Citri Reticulatae
- **To clear Heat, tonify Yin and Blood, quiet the Shen/Heart-mind to promote sleep:** Tian Wan Bu Xin Dan/Heavenly Emperor Decoction: Sheng Di Wan/Radix Rehmanniae, Ren Shen/Radix Ginseng, Tian Men Dong/ Radix Asparagi, Mai Men Dong/Radix Ophiopogonis, Xuan Shen/Radix Scrophulariae, Dan Shen/Radix Salviae Miltiorrhizae, Fu Ling/Sclerotum Poriae Cocos, Yuan Zhi/Radix Polygalae, Dang Gui/Radix Angelicae Sinensis, Wu Wei Zi/Fructus Schisandrae, Bai Zi Ren/Semen Platycladi, Semen Biotae, Semen Thujae, Suan Zao Ren/Semen Zizyphi Spinosae, Jie Geng/Radix Platycodi. With addition for pain: Yan Hu Suo/Rhizoma Corydalis, Wu Ling Zi/Faeces Trogoptero, Excrementum Trogopteri seu Pteromi.
- **To strongly move Lung Qi to open Lungs and clear Lung Phlegm:** Lobelia/Lobelia inflata as single extract

- For a summary of point functions see A Manual of Acupuncture Deadman, Peter et al. Print Book, English, Edition 2. Journal of Chinese Medicine Publications, Hove, 2009
- For information about Chinese herbal formulas see Chinese Herbal Medicine: Formulas and Strategies. Bensky, Dan et al. English 2015 2nd edition. Eastland Press, Seattle, WA, USA.
- For information about Chinese individual herbs see Chinese Herbal Medicine. Materia Medica Bensky, Dan et al. English, 2015 3rd edition Eastland Press, Seattle, WA, USA.
- For information about the western herbs and their integration with Chinese medicine see Western Herbs in Chinese Medicine: Methodology & Materia Medica Garran, Thomas, Print Book, English, 2014 Passiflora Press. California, USA and Western Herbs According to Traditional Chinese Medicine: A Practitioner's Guide. Garran, Thomas English, 2008 Healing Arts Press, Rochester, VT, USA.