

CLINICAL VIGNETTE

An Integrative Approach in the Management of Long COVID Fatigue

Payam Bokhoor, MD

Introduction

At least 65 million individuals worldwide are estimated to have long COVID, with cases increasing daily.¹ Symptoms of long COVID are variable with multi-system organ involvement. Fatigue is a common persistent symptom of long COVID. While the term fatigue has diverse meaning, symptoms commonly include persistent exhaustion, brain fog, weakness and hypersomnia which can last weeks, months or remain persistent.² Persistent long COVID fatigue can result in chronic fatigue syndrome (CFS)/myalgic encephalitis (ME).³ Similarly, Traditional Chinese Medicine (TCM) has long documented the phenomena of persistent post infectious fatigue and many similar clinical manifestations of long COVID. Currently, there is no directed therapy for long COVID fatigue or CFS/ME. While there is much to learn about long COVID, integrative medicine as well as TCM can provide promising interventions symptom management and recovery.

Case

A 39-year-old male without significant past medical history was referred to the UCLA Center for East-West Medicine (CEWM) for continued pervasive symptoms of long COVID fatigue. He initially contracted COVID-19 February 2021. He was not vaccinated and experienced fevers, SOB, cough, myalgias, fatigue along with loss of taste and smell as his initial symptoms. He did not require hospitalization or oxygen therapy and was managed with outpatient supportive care. Most of his acute symptoms restarted within three weeks. However, he reported onset debilitating fatigue, with impact on work and daily activities. He was seen by his primary care team and treated supportively with recommendations for fluids, increased vitamin D intake, and adequate sleep. Despite these interventions, he continued to suffer from significant persistent debilitating fatigue, brain fog, and symptoms of occasional dizziness. Further evaluation including ECHO, CT chest, PFTs, and extensive lab testing did not show causative pathology. He received COVID-19 vaccination two months after COVID infection which was tolerated, but without improvement in his long COVID symptoms.

He presented to CEWM seven months after infection, with continued debilitating fatigue. He reported significant worsening of his fatigue with exertion, as well as insomnia, occasional dizziness and pervasive brain fog. An integrative history helped create a unique patient centered treatment plan. Prior to COVID-19 infection, he prided himself on his health. He

exercised with high interval training or boxing 5 times per week. He slept 6 to 7 hours per night without insomnia or symptoms of sleep apnea. He worked as a financial analyst which required significant mental focus and attention to detail.

Currently, he could only walk a few blocks and noticed significant worsening fatigue and myalgias when he would try to exert himself. He had significant trouble with focus and made simple errors at work. He had insomnia with trouble both falling and staying asleep. He still obtained 6 to 7 hours of sleep, which was fragmented with multiple naps throughout the day and evening use of electronics to catch up with work. He tried melatonin without much benefit. A trial of trazodone and Zolpidem were aborted given worsening daytime hypersomnolence. He now drank up to 3-4 caffeinated beverages a day to be able to get through work sub-optimally.

Additional history noted high stress level prior to COVID-19 infection after his younger sister died in a MVA 6 months prior. He had marital conflict regarding his immunosuppressed 3-year-old son and anxiety to keep him safe during the pandemic. He did not usually like to vocalize his stressors. He had never tried therapy and was never successful in restorative practices. He previously relied heavily on high intensity exercises, which he no longer performed due to his new physical limitations.

On physical exam, there was localized neck tenderness with cervical myofascial trigger points. He did not meet the criteria for diagnosis of fibromyalgia. With six months of pervasive fatigue, post-exertional malaise, unrefreshing sleep, as well as impaired concentration, he met the Institute of Medicine (IOM) criteria for ME/CFS.⁴ From a TCM perspective, his physical exam and symptoms provided a pattern diagnosis of damp phlegm with spleen QI deficiency.

A patient centered treatment plan was developed, including lifestyle modification, improved sleep, stress management, and TCM self-care principles in conjunction with acupuncture and trigger point injections. At initial evaluation, he was working 60 hours a week with high stress and poor sleep hygiene. He was given a work letter to request part-time status to engage with medical recommendations. He was told to avoid high intensity exercise, and guided on progressive exercise along with restorative Qi gong and meditation. Sleep hygiene was discussed including the importance of adequate sustained sleep and limiting prolonged daytime naps. He was treated with weekly

acupuncture and introduced to trans-cutaneous electrical nerve stimulator (TENS) machine for daily acupressure and stimulation. Trigger point injections were performed for myofascial symptoms.

At 4 weeks, he reported a 25% improvement in his fatigue and brain fog. With slow graded exercise he was able to increase walks to about a mile per day. With these improvements, his clinic visits were decreased to every other week. Further emphasis was placed on his diet, limiting caffeine, decreasing dairy and adding Qi and yin tonics. American ginseng and magnesium glycinate were added for sleep, fatigue, stress, and his Qi deficiency. Continued focus on stress management, with emphasis on marital disagreements regarding their child. He was encouraged to initiate marriage family therapy.

At 12 weeks he reported 65-75% improvement in fatigue and noticed significant improvement in his brain fog. He no longer had postural dizziness and was now working full time. While he still reported some limitations in recall memory, he noted great improvement in his concentration and was able to complete work in a timely manner. He continued weekly marriage family therapy with improvement in his relationship with his wife and decreased marital stress. Sleep was improved to 7 hours nightly, with fewer awakenings. He napped only a few times per week with naps less than 30 minutes per day. He remained on the recommended diet, supplements and limited caffeine and continued the restorative Qi gong and meditation. He increased exercise tolerance, running a few miles each week, with light interval training without significant fatigue. Given continued improvement, clinic visits and acupuncture treatment were decreased to monthly. At 20 weeks, he reported about 80% symptom improvement. While he still had mild limitations, he was very pleased with his progress and felt he had "regained my life and former self back."

Discussion

Long COVID includes a multitude of symptoms, with fatigue being most common. When fatigue lasts for over six months, about 50% of this patient's meet criteria for ME/CFS.^{5,6} Up to 75% of people with ME/CFS cannot work full-time with up to 25% unable to work at all.¹ In 2022, 2-4 million Americans were reported out of work due to complications from Long COVID. Neurocognitive complaints were a leading etiology.⁷ Long COVID was estimated to result in \$170 to \$230 billion in lost wages.⁷⁻⁹

Multiple etiologies have been proposed for Long COVID. These include diminished natural killer cell function, mitochondrial dysfunction, and endothelial abnormalities. Currently there is no consensus on treatment for Long COVID fatigue. An integrative whole person approach helps enlist the patients as a central figure in the healing process and guides western medical evaluation. One of the most important tenets is to ensure patients are validated and felt listened to. Many patients have drastic changes in their physical/mental abilities for months to years without clear answers and treatments. Building a strong

relationship allows patients to feel supported and comfortable discussing other contributing factors. This is an important integrative tenet to improve motivation and recovery.

A patient centered treatment plan was developed including lifestyle modification, improved sleep, stress management, in conjunction with acupuncture/TPIs and TCM self-care principles. A 2022 prospective longitudinal cohort study reported life stressors as a substantial factor in worse functional, cognitive and neuropsychiatric outcomes 12 months post severe COVID-19 infection.¹⁰ Practices such as Qigong, Tai-Chi, yin-yoga and meditation have been shown to help vagal stimulation with promise in helping Long COVID.¹¹ Recent literature reports anti-inflammatory effects from routine Q-gong practice with reduction in TNF-alpha, CRP and IL-6 levels.¹² Strenuous exercise can worsen symptoms of Long COVID, contributing to post exertional malaise.¹³ Focus on both physical and cognitive pacing as well as slow graded physical activity have great promise in reducing exacerbations in Long COVID patients with post-exertional malaise. These practices are now recommended by the CDC and NIH as self-management strategies.^{14,15}

TCM is well suited to treat diseases elusive to western medicine, where causality and treatments may not be linear. TCM assesses overall constitutional make up when recommending treatment options. Our patient's symptoms coupled with his tongue and pulse diagnosis characterized a spleen Qi deficiency pattern in TCM. Qi deficiency shares many overlapping symptoms including, fatigue, post-exertional malaise, neurocognitive deficiencies and dysautonomia. In a TCM framework, Qi deficiency has been well understood for centuries and may arise after severe infections.¹⁶ A systematic review and meta-analysis of acupuncture for post-viral fatigue syndrome reported acupuncture targeting Qi deficiency was significantly more effective than sham acupuncture to improve fatigue scores and overall quality of life.¹⁷

In our patient, we used a multi-modal person-centered East-West Medicine approach for symptom management and treatment. Many integrative therapies were utilized simultaneously. Focus was placed on mitigation of stressors, sleep hygiene, and employing slow pacing to decrease mental and physical demands. Diet was shifted from a pro-inflammatory processed diet to an anti-inflammatory diet high in antioxidants, omega fatty acids, ginger and turmeric. Additionally, qi tonifying food were introduced to further expedite recovery. TCM restorative practices, self-acupressure and acupuncture were used to help Qi deficiency.

Magnesium has been well reported to assist with insomnia, muscle cramps/tension, fatigue and anxiety. Hypomagnesemia can lead to increase pro-inflammatory cytokines and propensity toward oxidative stress.¹⁸⁻²⁰ Magnesium was started to assist with poor sleep, anxiety, stress and support fatigue. We use a holistic approach combining acupuncture with addressing underlying lifestyle problems. After 20 weeks of treatment this patient with ME/CFS who presented with over 6 months of

debilitating Long COVID fatigue reported 80% resolution of symptoms.

Conclusion

Long COVID involves multiple organ systems. Debilitating fatigue with neurocognitive complaints remains at the forefront of symptoms, with many patients going on to develop ME/CFS. Long COVID has already affected millions of patients with numbers continuing to increase.¹ Diagnostic and treatment options are currently insufficient for many Long COVID patients. This vignette presents a comprehensive patient centered TCM integrative approach to improve the quality of life for a patient with Long COVID fatigue.

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