



Long-COVID Fatigue Treatment Methods

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Introduction

Clinical Question: In patients with long-COVID, what are the effects of various proposed treatment methods, including pharmacological, complementary, and alternative options, on long-COVID related fatigue within 1 year of treatment commencement?

Introduction: The evidence gathered from this literature review suggests that the best-practice treatment protocol for long-COVID fatigue involves collaboration between a patient and their healthcare team to review the various treatment options and determine which will be most effective for a particular patient. This process should reflect a collaborative and individualized approach that emphasizes the importance of the patient's input and involvement on treatment outcomes. When selecting treatment options, it is important to remember that not all treatments work the same for every patient. Treatment efficacy will, in part, depend on patient compliance and patients' beliefs and biases about whether a treatment will work as well as variability in metabolism of different pharmaceuticals, vitamins, and supplements.

Finding the most effective treatment for an individual will rely on patient and healthcare team collaboration, trial and error, and choosing treatment options that appeal to individual patients and integrate well with a patient's personality, lifestyle, desire to feel better, and outcome goals.

Purpose: The purpose of this project is to explore current best-practice research regarding the various treatment options for long-COVID related fatigue. Treatments explored here include (1) pharmacologic treatments: modafinil and antihistamines; (2) complementary treatments: hyperbaric oxygen therapy, rehabilitation programs, cognitive behavioral therapy, vitamin C, oxaloacetate, and antioxidants; (3) alternative treatment methods: acupuncture and aromatherapy.

Results

- A variety of treatment options for long-COVID fatigue are being researched and implemented. Choosing the most effective treatment for patients involves trial and error and personalizing methods to best suit individual patients.
- This is a small literature review with articles that represent mostly preliminary results, so there are many more options than are discussed here, but our hope is that this will give doctors and nurses a starting point in discussing treatment options with patients.
- According to the articles included here, modafinil, antihistamines, anhydrous enol-oxaloacetate, IV vitamin C, rehabilitation programs, hyperbaric oxygen therapy, aromatherapy, and acupuncture have all been beneficial in reducing fatigue in patients with long-COVID.
- Based on the articles found for this literature review, the use of antioxidants in the treatment of long-COVID fatigue requires further research to determine its efficacy, and cognitive behavioral therapy does not show positive results in treatment of chronic fatigue.

Significance of Problem

What is long-COVID? Three years after the emergence of the novel SARS-CoV-2 virus near the end of 2019, many survivors still face long-term consequences of the virus in the form of a post-viral illness called "long-COVID". Long-COVID is characterized by a collection of chronic, multi-organ symptoms that patients experience after resolution of acute COVID-19. The World Health Organization defines long-COVID as a condition that "occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually 3 months from the onset, with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis" (Soriano et al., 2022, p.103). The most commonly reported symptom of long-COVID is extreme, debilitating fatigue that leads to physical, psychological, and behavioral complications.

Who develops long-COVID? The vast majority of patients who develop long-COVID did not require hospitalization during acute COVID-19 infection, meaning that the severity of acute COVID symptoms does not correlate to risk of developing long-COVID.

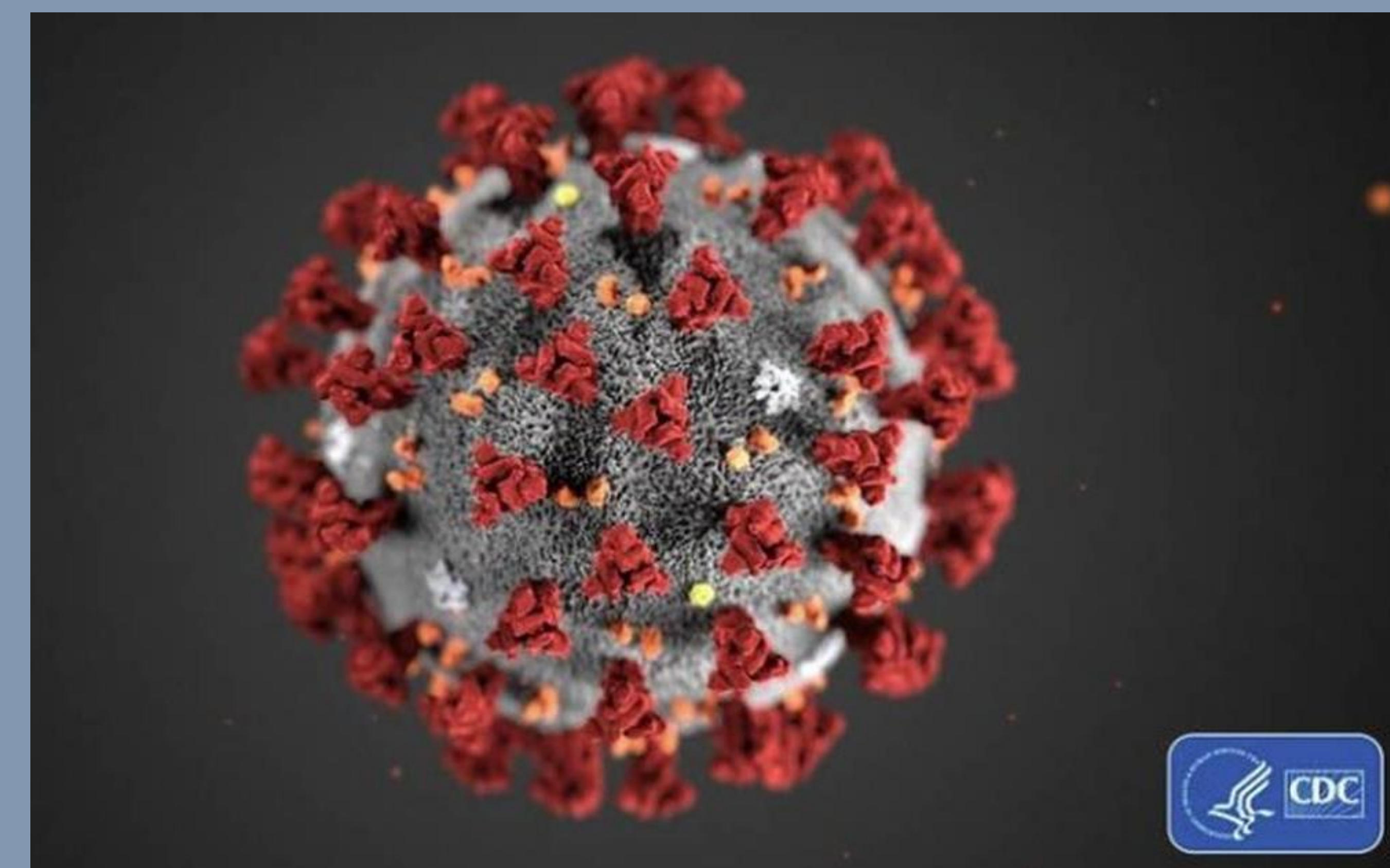
How common is long-COVID? Studies reflecting prevalence of long-COVID are ongoing and vary. One study estimates that "over 87% of COVID patients continue to experience at least one symptom, two months after COVID symptom onset" (Wong & Weitzer, 2021, p. 2) while other studies suggest that between 31% and 76% of COVID patients still experience at least one symptom six months after onset of acute COVID symptoms (Yong, 2021).

Method

A literature review was conducted using articles published between June 2019 and June 2022. The key words long-COVID/post-COVID syndrome/post-acute sequelae of SARS-COV-2 infection, fatigue, pharmacological treatment, complementary treatment/therapy, and alternative treatment yielded 10 articles, from the databases CINAHL (4), PubMed (5), and ProQuest (1), that provide a small sample of the potential treatment options currently being studied and used for treatment of long-COVID fatigue and reflect the wide range of treatments that are or may be effective in the treatment of this condition. The Johns Hopkins Appraisal System was used to assess the level and quality of evidence of the included articles.

Conclusion

Research shows a wide variety of treatment options to be effective for long-COVID fatigue. The best approach to treatment for long-COVID is collaborative, holistic, and individualized. We recommend discussing various treatment options with the patient, and through this dialogue, determining which treatment(s) to trial. Due to the time constraints on this project, we discovered eight of the *many* treatment options that research currently recommends: modafinil, antihistamines, hyperbaric oxygen therapy, rehabilitation programs, IV vitamin C, oxaloacetate, acupuncture, and aromatherapy. Research is ongoing, new information is being discovered, and treatment recommendations are constantly evolving, but by implementing a collaborative and individualized best-practice approach that is based on the most updated research on this emerging problem, long-COVID related fatigue can be effectively treated, and patients can achieve improved quality of life after COVID-19 infection.



Future Directions

Management of long-COVID symptoms should be collaborative and individualized, focused on meeting patients where they are to achieve their treatment outcome goals. Healthcare providers should be prepared to discuss several different treatment options with the patient to determine which treatment methods to try based on the patient's preferences, beliefs, and attitudes about the options. It is also important to keep in mind that people's bodies interact with medicines, vitamins, and supplements in different ways based on their metabolism and genetics. This will affect how these medications, vitamins, or supplements will act on the body and whether they will be effective or not. Healthcare providers must be prepared to explain these factors to their patients and collaborate with their patients to determine which treatments are likely to be the most effective for each individual patient.

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