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Post-COVID-19 Long Hauler Clinical Program: Change in Health-Related Quality-of-Life

Marc Brodsky, MD[1]

Abstract

Background and Objective: An Integrative Medicine Center created a post–COVID-19 myalgiac encephalomyelitis (ME) program in response to a July 2020 Centers for Disease Control and Prevention document that described fatigue and other functional symptoms. The objective is to present process improvement data on change in health-related quality-of-life (HRQOL) in patients who participated in the "long hauler" program.
Methods: For process improvement purposes, 39 consecutive patients who participated in the post–COVID-19 ME program from August 2020–August 2021 were asked to complete the 12-Item Short Form Survey (SF-12) before treatment and a month later.
Results: Twelve participants (31%) completed a baseline and follow-up survey. Mean SF-12 physical component summary scores improved 5 (SD 9) and mental component summary scores improved 4 (SD 9) in patients who completed baseline and follow-up surveys. Case studies of two patients who completed the SF-12 at baseline and after 4 weekly treatments illustrate the program's standardized treatment approach.
Conclusion: Data collected for process improvement reasons describe changes in HRQOL for participants in a post–COVID-19 ME program. Follow-up practice-based clinical trials may discern optimal approaches for patients with this chronic condition.

Keywords

integrative medicine, global health, health care

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Background and Objective

An Integrative Medicine Center created a post–COVID-19 myalgiac encephalomyelitis (ME) program in response to a July 2020 Centers for Disease Control and Prevention (CDC) document that described fatigue and other functional symptoms.[1] The objective is to present process improvement data on change in health-related quality-of-life (HRQOL) in patients who participated in the "long hauler" program. Case studies of two patients who completed the 12-Item Short Form Survey (SF-12)[2] at baseline and after 4 weekly treatments illustrate the standardized treatment approach.

Methods

For process improvement purposes, 39 consecutive patients who participated in the post–COVID ME program from August 2020–August 2021 were asked to complete SF-12 before treatment and a month later. Average age was 50 (17–78); 92% women; 3% Asian, 5% African American, 5% Hispanic, and 87% Caucasian. Analysis dataset contained no patient identifiers.

Results

Twelve participants completed a follow-up survey. Two with post-viral sequelae (oxygen requirement and stroke) did not provide data, and 25 patients did not present at 1-month follow-up to complete survey. Table 1 presents the SF-12

[1]Center for Integrative Medicine and Wellness, Stamford Health, Stamford, CT, USA

Corresponding Author:
Marc Brodsky, Stamford Health, 32 Strawberry Hill Court, Stamford, CT, 06902, USA.
Email mbrodsky@stamhealth.org

physical component summary (PCS) and mental component summary (MCS) scores of patients who completed baseline and follow-up surveys. Mean PCS scores improved 5 (SD 9), and mean MCS scores improved 4 (SD 9).

Patient 14, a 50-year-old female, completed baseline SF-12 survey and follow-up after 4 weekly treatments. Her case describes the range of ME-related symptoms of fatigue and cardiopulmonary, neurologic, gastrointestinal, and musculoskeletal effects and the Center's standardized long hauler treatment approach. She tested positive for COVID-19 in March 2020. Symptoms began with exacerbation of asthma that had been treated with a combination inhaled corticosteroid and long acting beta2-agonist. After improving with nebulizer treatments over the next several days, she noted thoracic pain and dyspnea that prompted emergency department visits. Evaluation for ongoing symptoms continued with a pulmonologist (normal chest computerized tomography scan), a cardiologist (sinus tachycardia per Holter monitor), a neurologist (normal magnetic resonance imaging brain), and a gastroenterologist who diagnosed gastroparesis. Subsequently, the patient noted muscle spasms in cervical and thoracic muscles with temporal mandibular joint pain and chronic tension headaches for which the neurologist prescribed an anti-convulsant medication. At her initial post–COVID-19-ME program visit in March 2021, she noted palpitations, dyspnea, and fatigue had improved though pain symptoms persisted. Physical exam demonstrated myofascial trigger points in the trapezius muscle. An evidence-based treatment protocol included the following: (1) anti-inflammatory diet[3] including turmeric and ginger,[4,5] (2) treating her myofascial pain with trapezius muscle trigger point injections,[6] (3) breath work to reduce anxiety and incentive spirometry for dyspnea, and (4) lifestyle interventions of 30 minutes walking 5 days a week[7] and sleep hygiene recommendations of stimulus control, sleep restriction, and cognitive behavioral therapy.[8] After 4 weekly treatments in addition to COVID vaccinations which the patient perceived improved her energy, she reported no adverse treatment effects and improved quality-of-life in home, work, and social contexts. Of note, her 4-week follow-up SF-12 MCS score relative to baseline improved though her SF-12 PCS worsened in contrast to her report of relief of pain and functional symptoms at her 4-week follow-up clinic appointment.

Patient 39 is a 78-year-old female with post–COVID-19 ME pain and functional symptoms. She had received monoclonal antibody infusion after testing positive for COVID-19 in March 2021. Prior to her COVID-19 infection, her medication regimen included aromatase inhibitor for breast cancer, serotonin and norepinephrine reuptake inhibitor for idiopathic neuropathy, and benzodiazepine for insomnia. At initial presentation, she reported ongoing ME-related symptoms of fatigue, cough, headache, diffuse body aches, dyspnea, nausea, chest pain, and concentration problems. She also noted worsened sleep disturbance with frequent awakening. Physical exam demonstrated myofascial trigger points in the upper and lower trapezius muscle. She reported improvement of all symptoms after 4-weeks of the Center's standardized post–COVID-19 ME dietary, mind-body stress reduction, non-opioid pain management, and lifestyle treatment approaches.

Discussion

In July 2020, the CDC described post–COVID-19 ME-associated ongoing symptoms with neuromuscular, immune, and metabolic abnormalities in patients who had recovered from acute COVID-19 infection. An Integrative Medicine Center described in this article commonly evaluates and treats patients with similar constellation of "overlapping" ME-associated symptoms of pain, functional gastrointestinal disorders, mood conditions, cognitive deficits, and chronic fatigue.[9]

The Center's Integrative Medicine model approaches problem-solving for patients with overlapping symptoms by

Table 1. 12-Item Short Form Survey (SF-12) Physical Composite Summary (PCS) and Mental Composite Summary (MCS) scores at baseline and at 4-week follow-up.

Patient	PCS (Baseline)	PCS (Follow-up)	MCS (Baseline)	MCS (Follow-up)
1	33	53	50	60
6	21	28	31	29
8	35	38	44	59
10	41	31	36	50
12	27	30	41	51
13	35	46	58	54
14	42	39	43	54
17	31	19	33	53
19	29	35	41	35
25	23	40	35	29
32	40	48	40	31
39	38	39	45	49

PCS, physical composite summary; MCS, mental component summary.

considering multi-factorial contributors. In addition to any post-acute direct effects of the virus itself, allostatic overload from the body's regulatory systems attempting to adapt to stress from post-infectious inflammatory responses, myofascial pain, anxiety-PTSD, deconditioning, and perhaps other contributors may collectively lead to persisting ME-associated symptoms.[10]

An evidence-based Integrative Medicine model informed a core treatment protocol for post–COVID-19 ME with dietary, mind-body stress reduction, non-opioid pain management, and lifestyle approaches. In August 2020, a Medical Group wide memo announced the Integrative Medicine Center's post–COVID-19 ME program. Treatment goal was to improve the chronic symptoms by at least 30% over the first month of treatment which is standard for our patients in general at the Center.

The ME program's evidence-based protocol replicates our usual approach to a treatment plan. For process improvement purposes, we assessed HRQOL in the long hauler program with a validated survey instrument at baseline and a follow-up survey after 4 weekly Integrative Medicine treatment sessions. Analysis dataset contained no patient identifiers.

The majority of patients did not return for follow-up. One hypothesis based on the Center's 13 years of experience in patient care is that patients who improved were less likely to follow-up. Alternatively, the drop-outs may have improved to the same degree, improved to a lesser degree, or worsened relative to the participants who completed the baseline and follow-up HRQOL survey instrument. A research methodology such as practice-based clinical trials will offer insights into reasons for drop-outs and any associated selection bias.

Conclusion

Data collected for process improvement reasons describe changes in HRQOL for participants in a post–COVID-19 ME program. Follow-up practice-based clinical trials may discern optimal approaches for patients with this chronic condition.

Declaration of Conflicting Interests

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ORCID iD

Marc Brodsky https://orcid.org/0000-0002-9365-7241

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