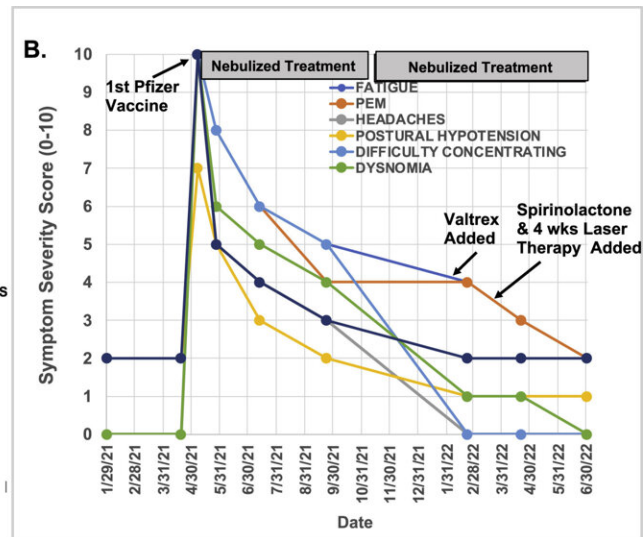
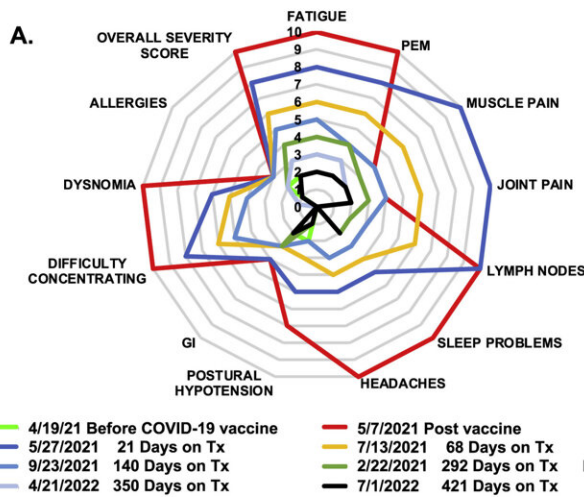


Immunologists advance research into long COVID, chronic fatigue syndrome

February 1 2024



Symptoms improve over time in ME/CFS patient (ME 1) during nebulized antioxidant/anti-pathogen therapy. Credit: *Brain, Behavior, & Immunity - Health* (2023). DOI: 10.1016/j.bbih.2023.100720

A study led by UMass Chan Medical School viral immunologists Liisa Selin, MD, Ph.D., and Anna Gil, Ph.D., discovered similarities in immune system dysfunction as a potential biomarker among people living with long COVID and myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). The research also introduced a novel treatment and a method to track effective treatment interventions. The research was [published](#) online in *Brain, Behavior & Immunity*.

Dr. Selin, professor of pathology, and Dr. Gil, instructor of pathology, have been working to understand the connection between long COVID and ME/CFS and their overlapping symptoms, such as debilitating, unrelenting exhaustion and, in some, a worsening after exercise or cognitive exertion, a symptom known as post-exertional malaise.

In the new study, researchers identified a set of CD8 T-cell cytokine biomarkers that distinguished the long COVID and ME/CFS patient groups from the control group.

CD8 T cells are an important immune cell in fighting viral infections and cancer by making special cytokines. Depending on their type, composition and context, cytokines can either help or hinder the body's immune and [inflammatory responses](#) to infectious diseases and other insults.

According to the study, people with long COVID and ME/CFS had dysfunctional CD8 T-cells, decreasing their ability to produce the helpful cytokines. This dysfunction was associated with symptoms such as exhaustion and cognitive dysfunction.

Preliminary results from a small, retrospectively assessed group treated with the novel agent [Inspiritol](#), showed an improvement in CD8 T-cell function that paralleled patients' reports of reduced symptoms, including fatigue and cognitive difficulties over the course of treatment.

"This work represents a great advancement in helping to characterize long COVID and ME/CFS, and, potentially, to measure the effectiveness of promising treatments. Additional studies, including large and fast-tracked clinical trials of treatments, should be conducted to further validate our findings," Selin said.

More information: Anna Gil et al, Identification of CD8 T-cell

dysfunction associated with symptoms in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and Long COVID and treatment with a nebulized antioxidant/anti-pathogen agent in a retrospective case series, *Brain, Behavior, & Immunity—Health* (2023). [DOI: 10.1016/j.bbih.2023.100720](https://doi.org/10.1016/j.bbih.2023.100720)

Provided by UMass Chan Medical School

Citation: Immunologists advance research into long COVID, chronic fatigue syndrome (2024, February 1) retrieved 27 April 2024 from <https://medicalxpress.com/news/2024-02-immunologists-advance-covid-chronic-fatigue.html>

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