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Q&A: Hyperbaric oxygen therapy led to 'significant cognitive improvement' in long COVID

A study published recently in *Nature* found that hyperbaric oxygen therapy led to positive results for cognition and functionality for those with long COVID.

Healio spoke to co-author **Amir Hadanny, MD, PhD**, chief medical officer and head of research at the Sagol Center for Hyperbaric Medicine and Research, based in Israel, about his research into the use of hyperbaric medicine to optimize brain and body performance in individuals dealing with the after-effects of a COVID-19 infection.



“Long COVID causes chronic injury for many months and even years, which calls for an effective treatment.”

Amir Hadanny, MD, PhD



Healio: What was the impetus for your study?

Hadanny: A few months into the pandemic when we were still in the midst of evaluating effective therapy for COVID-like the rest of the world, we were shocked to learn the long-term effects of our patients and long COVID syndrome. A of patients could not go back to work and their day-to-day lives due to significant cognitive and physical decline.

Healio: Why choose hyperbarics as opposed to any other therapy?

Hadanny: Very few therapeutic modalities have shown real value in the treatment of brain injuries. Medications, phys therapy, cognitive therapy and other therapies target symptoms rather than the actual pathophysiology with very lirr efficacy on the patients' symptoms and quality of life.

en therapy (HBOT) protocol could affect tion of tissue.

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There are several theories proposed for long COVID pathophysiology, including blood vessel occlusion, inflammation direct viral tissue destruction, but the end result is dysfunctional brain tissue and injury with low metabolism, similar other etiologies.

Healio: What were your expectations for study results, and how were they exceeded?

Hadanny: When we designed this study, long COVID was new and we didn't know the extent of the injury it caused the body and the persistence of symptoms patients would experience.

We learned the sham-treated patients remained significantly impaired compared to the HBOT treated group.

As time went on, the medical community started to recognize long COVID as a serious issue, and it remains a problem today, even 1 1/2 years after the pandemic. Long COVID causes a chronic injury and symptoms for many months and years, which calls for an effective treatment.

Healio: What specific improvements to cognition and health did participants refer to when they said they "felt like they had their life back?"

Hadanny: The patients who received the HBOT protocol experienced significant improvement in memory, executive function and processing speed, which enabled them to go back to work, participate in multiple-participant conversations, read long emails and enjoy a book.

Emotionally, patients experienced decreased levels of depression and anxiety, which helped them return to interacting with their families and friends, attend events and enjoy activities again.

Healio: Is there anything else you feel is pertinent to explain or clarify?

Hadanny: We learned both cognitive and emotional changes correlated with brain perfusion and microstructural changes as well as brain network changes as seen in the MRI and functional MRI results post-treatment. This means healing injuries in the brain led to the resolution of symptoms.

Reference:

Zilberman-Itskovich S, et al. *Nature*. 2022;doi.org/10.1038/s41598-022-15565-0.

Sources/Disclosures

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Source: Healio Interviews

Disclosures: Hadanny is employed by Aviv Scientific.

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