

# Review of: "[Case Report] Profound Symptom Alleviation in Long-Covid Patients After PAMP-Immunotherapy: Three Case Reports"

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Potential competing interests: No potential competing interests to declare.

Gaudek R. and colleagues reported a case series of patients who experienced a significant improvement in their long COVID-19 (LC) symptoms after receiving PAMP-immunotherapy, a brief and low-cost regimen that appeared to be effective in improving LC symptoms in three patients.

A main limitation that should be addressed is that the authors cannot conclude on the effectiveness of PAMP-immunotherapy on symptom improvement in LC, since the number of cases is very small and the placebo effect or spontaneous resolution of symptoms should be considered.

A major rationale for this treatment strategy is that SARS-CoV-2 may persist in a significant number of patients with COVID-19. However, the pathogenesis of LC is largely unknown, and several mechanisms were hypothesized, including immune dysregulation, endothelial dysfunction, altered neurological signaling, microbiota disruption, and others.

Please note that the definition of LC by the World Health Organization is inconsistent with the definition used in your article, since symptoms should persist for at least two months after infection or vaccination to define LC according to the WHO. Moreover, I think that the protocol you used to treat your patients should be better specified. I suggest inserting a methods section in your paper for the benefit of the clarity and reproducibility of your results.