

Peer Review

Review of: "The Undervalued Role of 5-Minute HRV in Post-Acute Infection Syndromes: A Commentary"

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This commentary addresses an important and emerging clinical topic by highlighting the potential utility of short-term heart rate variability (HRV) as a practical biomarker for autonomic dysfunction in post-acute infection syndromes, including Long COVID and ME/CFS. The manuscript is well-written, clinically relevant, and successfully synthesizes immunological and autonomic mechanisms into a coherent argument supporting the diagnostic and monitoring value of 5-minute ECG-derived HRV. The inclusion of physiological explanations and summary tables enhances readability and educational value. However, the article would benefit from several improvements to strengthen its scientific depth and clinical applicability. First, while the commentary presents convincing theoretical associations, it would be strengthened by incorporating a more systematic and critical appraisal of existing empirical studies, including discussion of study heterogeneity, sample size limitations, and variability in HRV measurement protocols. Second, expanding the comparison between short-term and long-term HRV monitoring with quantitative evidence regarding sensitivity, specificity, and prognostic value would improve the strength of clinical recommendations. Third, the manuscript would benefit from clearer guidance on standardized HRV acquisition protocols, including patient positioning, respiratory control, and artifact correction procedures to enhance reproducibility. Additionally, discussing potential confounding variables such as medications, comorbid cardiovascular conditions, and psychological stress would improve clinical interpretation. Finally, outlining future research directions, including prospective longitudinal studies integrating HRV with immune biomarkers and functional outcomes, would enhance the manuscript's translational impact. Addressing these points would significantly strengthen the commentary's scientific rigor and increase its practical value for clinicians and researchers investigating autonomic dysfunction in post-infectious syndromes.

Declarations

Potential competing interests: No potential competing interests to declare.