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Peer Review

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

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This commentary presents a concise and clinically relevant discussion highlighting the potential role of 5-minute electrocardiography-derived heart rate variability (HRV) as a pragmatic biomarker for autonomic nervous system dysfunction in post-acute infection syndromes (PAIS), including Long COVID and ME/CFS. The manuscript effectively synthesizes emerging literature linking immune dysregulation, neuroinflammation, and autonomic imbalance, and it appropriately emphasizes the clinical practicality, non-invasive nature, and cost-effectiveness of short-term HRV monitoring. The structured presentation of HRV parameters and their proposed interpretations in PAIS enhances the article's educational clarity and translational relevance for clinicians. However, the commentary has several limitations that reduce its scientific robustness. The evidence base supporting the clinical diagnostic or prognostic value of 5-minute HRV in PAIS remains preliminary, and the manuscript would benefit from a more critical appraisal of heterogeneity across studies, methodological variability, and the debated interpretation of metrics such as the LF/HF ratio. Additionally, the article places strong emphasis on HRV utility without sufficiently discussing competing or complementary autonomic assessment tools, including tilt-table testing, continuous monitoring, or wearable-based physiological tracking. While standardization challenges are acknowledged, more detailed discussion regarding reproducibility, inter-individual variability, and confounding factors such as medications, respiratory patterns, and comorbidities would strengthen the analysis. The manuscript would also benefit from clearer delineation between hypothesis-generating perspectives and evidence-supported clinical recommendations. Overall, the article offers a timely and clinically engaging perspective on autonomic dysfunction in PAIS and contributes to growing interdisciplinary dialogue; however, stronger critical synthesis of current

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evidence and expanded discussion of methodological limitations would enhance its scholarly impact and clinical applicability.

Declarations

Potential competing interests: No potential competing interests to declare.