

Impacts of Post-COVID-19 Syndrome on Cardiovascular Autonomic Changes

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Dear Editor,

The article by Davanço et al., entitled “Post-COVID-19 Syndrome and Autonomic Repercussions on Cardiovascular Variables”¹ (ABC Heart Fail Cardiomyop. 2023; 3(3): e20230056), makes an important contribution to understanding the autonomic repercussions of COVID-19 on cardiovascular modulation. This study stands out for addressing an emerging and highly relevant clinical topic by investigating heart rate variability (HRV) parameters in patients with post-COVID-19 syndrome, using robust temporal and spectral domain measures. The methodological rigor, adherence to STROBE guidelines, and adequate characterization of the comparison groups are noteworthy, lending solidity to the conclusions presented.

The correlation between increased parasympathetic indices (RMSSD, HF) and reduced global variability parameters suggests a complex autonomic adaptation,

possibly mediated by persistent inflammatory mechanisms²—a hypothesis of great pathophysiological value.

However, some aspects deserve consideration for future investigations. The sample selection could be improved through more detailed control of confounding factors. We observed that the control group was composed of healthy individuals who practiced regular physical activity, and stricter control of this variable,³ in addition to the use of medications that modulate the autonomic nervous system (ANS), and the exact time elapsed since infection, would increase the validity of the comparisons.

Furthermore, the absence of inflammatory or biochemical markers (e.g., IL-6, TNF- α , C-reactive protein) limits the exploration of the interaction between residual inflammation and autonomic dysfunction.⁴ Regarding methodology, the adoption of complementary analyses, such as approximate entropy or cross-correlation analysis between HRV and blood pressure variability, could enrich the understanding of the complex post-viral autonomic dynamics.⁵

Finally, a longitudinal follow-up of these patients, even in a small cohort, would allow us to infer whether the observed changes represent a transient state of autonomic readjustment or a persistent marker of cardiovascular risk.

The work of Davanço et al., 2023,¹ constitutes a valuable and timely contribution to the cardiology literature by opening space for integrated research between autonomic dysfunction and chronic post-COVID-19 inflammation. The above observations are intended only to reinforce the merit of the study and encourage the continuation of research in this promising field.

Keywords

Sistema Nervoso Autônomo; COVID-19; Inflamação; Síndrome de Pós-COVID-19 Aguda

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