

Impact of Frailty on Cardiac Autonomic System

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Clinical frailty leads to a progressive homeostatic dysregulation in physiological systems, including cardiac autonomic nervous system (CANS). Reduction of heart rate variability (HRV) and sympathovagal balance (SVB) reported in previous studies, reflect this multisystem homeostenosis. Also, frail older adults are more likely to develop cardiovascular diseases such as myocardial. Therefore, a better understanding of the association between CANS and frailty could provide an opportunity to utilize CANS descriptors (e.g., HRV and SVB) in frailty assessment and to study the association between cardiovascular disease and frailty. In this session, the impact of frailty on CANS will be reviewed within nine studies. In addition to exploring the association between HRV and SVB parameters with frailty, agreement and disagreement between studies are reviewed. Furthermore, utilized equipment for recording ECG and heart rate in previous studies are investigated and the pros and cons of wearable sensors for frailty assessment are discussed. In conclusion, available published literature shows that the CANS is impaired in frail compared to non-frail older adults. However, there is a need to standardize monitoring protocols, especially by monitoring a larger and more diverse cohort. Furthermore, integrating wearable sensors in longitudinal settings could provide an opportunity to study the association of CANS with frailty.