

Resting Heart Rate Variability Profile in Women with Stage II-III Breast Cancer Enrolled in the MAMA_MOVE Program

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INTRODUCTION & AIM

Breast cancer survivors with stage II-III disease are exposed to cardiotoxic treatments, comorbidities, and psychosocial stressors that may impair cardiovascular health and cardiac autonomic regulation (Arab et al., 2016; Caro-Móran et al., 2016). Heart rate variability (HRV) is a non-invasive marker of autonomic function, yet resting HRV profiles in this population remain poorly described (Kloter et al., 2018). This study aimed to describe resting HRV in women with stage II-III breast cancer enrolled in the community-based MAMA_MOVE program and to explore differences between stage II and stage III.

METHODS

Design: Descriptive cross-sectional study.

Participants: 11 women with stage II-III breast cancer enrolled in the community-based MAMA_MOVE exercise program.

- **Stage II:** n = 5; age 58.20 ± 8.14 years
- **Stage III:** n = 6; age 57.00 ± 5.40 years

HRV assessment: Quiet, controlled room; Polar H10 chest strap.

Protocol: 10-min seated stabilization + 5-min recording of RR intervals; exported to Kubios HRV[®] software.

Outcomes: Heart rate, readiness, PNS and SNS indices, physiological age, time-domain metrics (mean RR, SDNN, RMSSD, Poincaré SD1/SD2, stress index), frequency-domain indices (LF and HF power; LF/HF ratio), respiratory rate, measurement quality, and self-reported mood.

RESULTS & DISCUSSION

No stage effect: Independent-samples Mann-Whitney U tests showed no differences between stage II and stage III for any HRV-related variable (all p > 0.20).

High variability: The overall sample exhibited a heterogeneous resting HRV profile with wide inter-individual variation across indices.

Interpretation (descriptive): In this small sample, resting autonomic profiles appear to vary more between individuals than between stages.

Implication: These data provide an initial reference profile in a community-based exercise setting and support larger longitudinal studies to clarify HRV patterns over time.

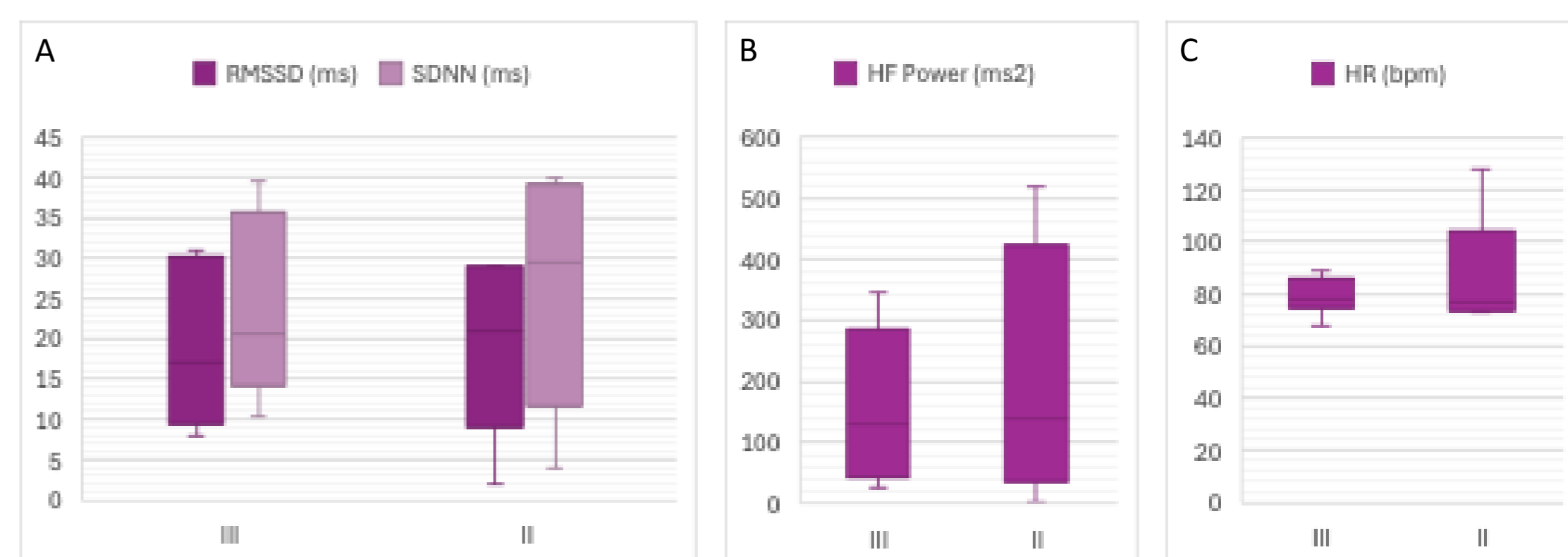


Figure 1. Resting HRV by disease stage (II vs III): (A) RMSSD and SDNN (ms), (B) HF power (ms²), and (C) HR (bpm).

CONCLUSION

Resting HRV assessment was feasible and well tolerated. No stage-related differences were observed, providing a baseline autonomic profile for future longitudinal studies.

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