

Visceral fat as a determinant of sympathetic activation in cardiac outpatients

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INTRODUCTION & AIM

- Visceral adiposity is recognized for its contribution to systemic inflammation and autonomic dysregulation, where elevated resting heart rate (RHR) and blood pressure serve as clinical markers of increased sympathetic tone
- To investigate the link between visceral fat and markers of sympathetic activation, in 203 cardiac outpatients, evaluating if physical activity act as effect modifiers.

METHODS

- Visceral fat was measured using bioelectrical impedance (OMRON BF511). Blood pressure (SBP and DBP) and RHR were recorded twice in a clinostat position and averaged
- Adjusted **multivariable regressions** (age, sex, comorbidities, and treatment factors) were used to analyze the impact of visceral fat on RHR, SBP, and DBP. Sensitivity analysis excluded beta-blocker users.

RESULTS

- The study population had a mean age of 62.7 years and was 53% male. Patients in the highest tertile of visceral fat exhibited significantly higher RHR, SBP, and DBP.
- Multivariable analysis confirmed that visceral fat is **independently associated** with RHR ($p = 0.002$) and DBP ($p = 0.012$).
- Sport activity showed a significant negative interaction with visceral fat on SBP ($\beta = -1.99$ mmHg, $p = 0.021$) and a trend toward attenuating the effect on DBP ($\beta = -0.81$ mmHg, $p = 0.085$), indicating that exercise mitigates the hemodynamic impact of visceral adiposity.

CONCLUSIONS

- **Visceral adiposity** stands as an **independent determinant of higher resting heart rate and diastolic blood pressure** in cardiac outpatients, indicating its role in sympathetic activation.
- These findings suggest that the **assessment of visceral fat in clinical settings** can effectively identify patients with an elevated autonomic burden, offering a clear target for managing modifiable cardiovascular risk.

Figure 1: Resting heart rate and diastolic blood pressure across visceral fat tertiles

