

CONGRESS ABSTRACT

VISCERAL FAT AS A DETERMINANT OF SYMPATHETIC ACTIVATION IN CARDIAC OUTPATIENTS.

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Background: Visceral adiposity contributes to systemic inflammation and autonomic dysregulation. Elevated resting heart rate (RHR) and blood pressure may reflect increased sympathetic tone. Psychological disturbances such as insomnia or anxiety may further influence autonomic balance in cardiac patients. Objective: To examine the association between visceral fat and markers of sympathetic activation in cardiac outpatients, and to assess whether insomnia or anxiety modify these relationships. Methods: We conducted a single-visit, cross-sectional study of 203 consecutive cardiology outpatients. Visceral fat was measured using the OMRON BF511 device. Systolic (SBP) and diastolic blood pressure (DBP) and RHR were recorded twice in the clinostat position and averaged. Clinical, pharmacologic, and psychological data were collected. Visceral fat (continuous and tertiles) was analyzed in relation to RHR, tachycardia, SBP, and DBP using multivariable linear and logistic regression, adjusting for demographic, metabolic, and treatment variables. Interaction terms between visceral fat and insomnia or anxiety were included to test for effect modification. Sensitivity analyses excluded beta-blocker users. Analyses were carried out using STATA 18.0 StataCorp LLC, (TX) USA. Results: The mean age was 62.7 ± 12.5 years; 53% were male. Patients in the highest visceral fat tertile showed significantly higher RHR ($p = 0.022$), SBP ($p < 0.001$), and DBP ($p < 0.001$). Visceral fat remained independently associated with RHR after adjustment ($\beta = 0.72$ bpm per SD; 95% CI 0.26–1.16; $p = 0.002$). Crude associations with SBP and DBP were positive ($\beta = 1.55$ mmHg per SD; $p < 0.001$ for SBP, $\beta = 0.61$ mmHg per SD; $p < 0.001$ for DBP), but after adjustment only DBP remained significant ($\beta = 0.47$ mmHg per SD; $p=0.012$). No significant interactions were found between visceral fat and insomnia or anxiety. Results were unchanged after excluding beta-blocker users. Conclusion: Visceral adiposity is independently associated with higher resting heart rate and diastolic blood pressure in cardiac outpatients, supporting its role as

a determinant of sympathetic activation. Assessing visceral fat may help identify patients with elevated autonomic burden and potentially modifiable cardiovascular risk.

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

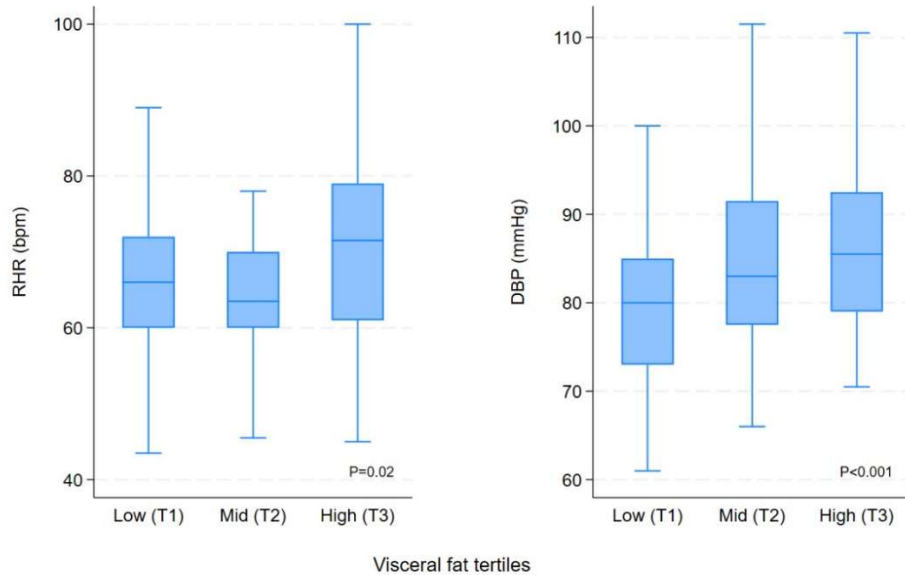
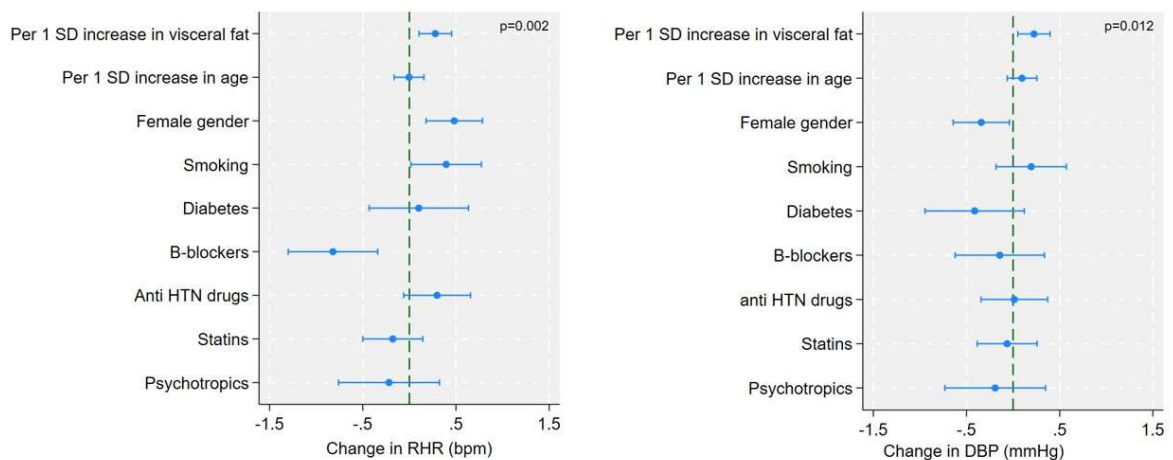


Figure 2: Adjusted Association of Visceral Fat with Resting Heart Rate and Diastolic Blood Pressure



Forest plots showing adjusted β coefficients (95% CI) for the association between visceral fat (per 1 SD increase) and (right) resting heart rate and (left) diastolic blood pressure. Estimates derived from multivariable linear regression. The vertical line indicates no association ($\beta = 0$).

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