

Should abdominal obesity be used as a risk predictor?



A recent study by Tsujimoto and Kajio assessed the relationship between abdominal obesity and mortality among patients with heart failure and preserved ($\geq 45\%$) left ventricular ejection fraction (HFpEF). Results showed that the risk of all-cause mortality was significantly higher in patients with HFpEF with abdominal obesity than in those without abdominal obesity. The findings are published in *Journal of the American College of Cardiology*.

In a related commentary, also published in *JACC*, Gaston A. Rodriguez-Granillo MD, PhD and Patricia Carrascosa MD, PhD, both with the Department of Cardiovascular Imaging, Diagnóstico Maipú, Buenos Aires, Argentina, say that the interpretation of Tsujimoto and Kajio's findings is in conflict with the results of the Spanish Heart Failure Network, which identified body mass index and waist circumference as independent predictors of lower total mortality.

Tsujimoto and Kajio's study included 3,310 patients with HFpEF: 2,413 patients with abdominal obesity and 897 without abdominal obesity. All-cause mortality rates in patients with and without abdominal obesity were 46.1 and 40.7 events per 1,000 person-years, respectively. After multivariable adjustment, the risk of all-cause mortality was significantly higher in patients with abdominal obesity than in those without abdominal obesity (adjusted HR: 1.52; 95% confidence interval [CI]: 1.16 to 1.99; $p = 0.002$).

In comparison, the Spanish National Registry included a larger percentage of patients in New York Heart Association functional class III or IV and only 22 percent of patients with HFpEF $\geq 45\%$, whereas both studies had similar rates of ischaemic etiology.

"Although statistically sound, the exploration of multiple outcome variables could increase the risk of type I error and influence the results," Drs. Rodriguez-Granillo and Carrascosa point out. "Indeed the unadjusted risk of death did not differ between patients with and without abdominal obesity [in Tsujimoto and Kajio's study]." This means that abdominal obesity was defined using thresholds with body mass index as a basis rather than the relationship between waist circumference and risk, according to the commentators.

Drs. Rodriguez-Granillo and Carrascosa also highlight the fact that, among female patients, there was no association between mortality and abdominal obesity. They explain: "This could potentially be related to the significant sex-related differences in subcutaneous versus visceral fat content and to the finding that these fat depots appear to have a divergent impact on both vascular phenotype and clinical outcomes."

Finally, the two doctors emphasise the need for further research to determine whether the observed incremental risk of death among patients with abdominal obesity is related to an increased ratio of visceral to subcutaneous fat.

Source: [Journal of the American College of Cardiology](#)
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