SWACSM Abstract

Abdominal Adiposity Indexed by the Sagittal Abdominal Diameter and Risk of Mortality in 14,119 U.S. Adults

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ABSTRACT

The body mass index (BMI) is frequently used as a general measure of overweight and obesity. It is a good predictor of disease and premature death. However, research shows that indices of abdominal adiposity tend to be better predictors of disease risk and mortality than BMI. To date, the sagittal abdominal diameter (SAD), an index of abdominal adiposity, has never been evaluated as a predictor of mortality. **PURPOSE:** The present study was conducted to determine the extent that adults with different levels of SAD vary in their risk of all-cause mortality over an average follow-up of 6 years. **METHODS:** A total of 14,119 randomly selected adults, ages 20-79, from the National Health and Nutrition Examination Survey (NHANES), were included. SAD was measured by trained technicians during the years 2011-2016. The abdominal height of subjects was assessed in the supine position and a sliding-beam abdominal caliper with a built-in bubble was used to ensure a vertical measurement. Mortality data were acquired from the U.S. public-use linked mortality files (LMF), which are available for NHANES participants through 2018. Adjustments were made for 9 baseline potential confounding variables, including age, sex, race, BMI, cardiovascular disease, cancer, liver disease, smoking, and alcohol use. Subjects were divided into sex-specific quartiles based on their SAD values, and Cox proportional hazard ratios were calculated to determine risk of mortality over the follow-up period using SAS 9.4. **RESULTS:** With all the covariates controlled, hazard ratios showed a dose response relationship with all-cause mortality. Specifically, adults in Quartile 1 **(Q1),** those with the lowest sex-specific abdominal adiposity, had 0.45 (95% CI: 0.28-0.73) times the risk of mortality compared to those in Quartile 4 **(Q4).** Additionally, risk of mortality was 0.63 (95% CI: 0.42-0.95) for adults in **Q2** vs **Q4**, and 0.67 (95% CI: 0.48-0.93) for **Q3** vs **Q4**, each statistically significant. In the **Q1 vs Q4** comparison, risk of mortality was 55% lower for those with the leanest SAD values. Overall, SAD was related to risk of all-cause mortality in a dose-response pattern. **CONCLUSION:** Epidemiologists and health care providers should seriously consider utilizing SAD as a screening tool within their programs. It is an excellent predictor of all-cause mortality.