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Arrhythmias

CENTRAL AND GENERAL ADIPOSITY AND RISK OF INCIDENT ATRIAL FIBRILLATION IN OLDER ADULTS: THE CARDIOVASCULAR HEALTH STUDY

ACC Moderated Poster Contributions
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Session Title: Arrhythmias: AF/SVT- Emerging Risk Factors for Atrial Fibrillation
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Background: Increased body mass index (BMI) is associated with greater risk of atrial fibrillation (AF) in middle-aged adults. Whether measures of central adiposity, such as waist circumference (WC) and waist-hip ratio (WHR), are related to AF in older adults, in whom there is expansion and central redistribution of fat mass with aging, remains unknown.

Methods: We investigated the associations of general and central measures of adiposity with incident AF in the Cardiovascular Health Study, a community-based longitudinal cohort of adults ages 65 and older. Using anthropometric determinations from 4,276 participants free of prevalent AF or cardiovascular disease (age 72.4±5.4; women 61.7%), we tested the hypothesis that WC and WHR are associated with incident AF independent of BMI.

Results: During median follow-up of 13 years, 1,050 cases of AF occurred. The association of BMI with AF was U-shaped (quadratic term, p=0.02), such that the estimated minimum risk of AF occurred at a BMI of 23.8 kg/m2, with higher and lower BMI values associated with higher risk. After adjustment for age, sex, race, smoking, physical activity, alcohol use, estrogen therapy and serum creatinine, the HR per SD (4.7 kg/m2) increase above mean BMI (26.6 kg/m2) was 1.08 (95% CI 1.02-1.15). WC and WHR were linearly related to incident AF, although a significant adjusted association was observed for WC (HR 1.14 per SD [95% CI 1.07-1.22]), but not WHR (HR 1.02 [95% CI 0.96-1.10]). The relationship between BMI and AF was rendered non-significant after additional adjustment by WC (HR 0.92 per SD [95% CI 0.82-1.03]) or mediators (hypertensive, glycemic, lipid and inflammatory measures; HR 1.03 per SD [95% CI 0.96-1.10]). By contrast, WC remained associated with AF after adjustment for BMI and mediators (HR 1.22 [95% CI 1.08-1.37]).

Conclusion: In this older cohort, WC was associated with risk of incident AF in a linear manner that was independent of BMI or putative mediators; BMI was not associated with risk after adjustment for WC. These findings highlight the importance of central adiposity to AF risk in elders, and suggest that routine measurement of WC might be useful for cardiovascular risk assessment in this population.