

Hot flashes and carotid intima media thickening: Findings from the SWAN Heart Study

Hot flashes are associated with impaired quality of life during the menopausal transition but generally have been regarded as having few medical implications. Emerging findings link hot flashes to indices of cardiovascular risk, such as elevated cardiovascular risk factors and markers of endothelial dysfunction. No investigation has examined relations between hot flashes and carotid intima media thickening (IMT), a subclinical cardiovascular disease (CVD) marker prospectively associated with incident CVD. The purpose of this study was to examine cross-sectional and longitudinal associations between reported hot flashes and carotid IMT. Participants were 411 women in the Study of Women's Health Across the Nation Heart Study who had an intact uterus and ovaries and were free of CVD at study entry. At the SWAN Heart baseline examination and follow up visit, which occurred on average two years later, participants completed interviews for hot flashes, physical measurements and a blood draw, and ultrasound assessment of carotid IMT. Associations between hot flashes and IMT were evaluated in linear regression models with covariates for age, site, race, education, body mass index, smoking, systolic blood pressure, lipids, glucose, diabetes status/medication use, CVD status/medication use, hormone therapy use, and menopausal status. In separate multivariable models, hot flashes (any/none) were related to concurrently assessed IMT at baseline ($b=0.02$, $SE=0.01$, $p=0.05$) and follow-up ($b=0.02$, $SE=0.01$, $p=0.02$). Moreover, women reporting hot flashes at both study visits had significantly increased follow-up IMT relative to women reporting no hot flashes at either visit ($b=0.03$, $SE=0.01$, $p=0.02$). Associations persisted with additional control for serum estradiol concentrations. No interactions between age, HT use, or menopausal status were observed. Results indicate that hot flashes are associated with increased carotid intima media thickening, a marker of subclinical CVD. These findings further support the emerging literature linking hot flashes to CVD risk.

The SWAN Heart Study has grant support from the National Institutes of Health (NIH), DHHS, through the National Institute on Aging (NIA), the National Heart Lung and Blood Institute (NHLBI), and the NIH Office of Research on Women's Health (ORWH) (Grants AG12546, AG12505, AG029216, HL065581, HL065591). The content of this abstract is solely the responsibility of the authors and does not necessarily represent the official views of the NIA, NINR, ORWH or the NIH.