HEART FAILURE RISK ACROSS THE SPECTRUM OF ANKLE-BRACHIAL INDEX: THE ATHEROSCLEROSIS RISK IN COMMUNITIES STUDY

Poster Contributions
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Authors: Deepak K. Gupta, Hicham Skali, Brian Claggett, Rumen Kasabov, Amil M. Shah, Laura Loehr, Gerardo Heiss, Vijay Nambi, David Aguilar, Lisa Wruck, Aaron Folsom, Wayne Rosamond, Scott Solomon, Brigham and Women’s Hospital, Boston, MA, USA

Background: The ankle-brachial index (ABI) is a simple, non-invasive marker of mortality and atherosclerotic cardiovascular risk. However, the relationship between ABI and the risk for heart failure (HF) is less well characterized.

Methods: Between 1987-1989, in the Atherosclerosis Risk in Communities study, an oscillometric device was used to measure blood pressure and calculate the ABI. ABI was available in 13,150 middle aged participants free from prevalent HF. Incident HF events were defined by the first hospitalization with an ICD-9 code 428.x through 2008. The risk of HF was assessed across the spectrum of ABI using restricted cubic splines and Cox proportional hazards models.

Results: With decreasing ABI, the proportion of participants that were female, hypertensive, diabetic, obese, or smokers increased. Over a mean 17.7 years of follow up, 1809 HF events occurred. Lower ABI was associated with an increased risk for HF, although there was a significant interaction by sex (p<0.001), but not race (p=0.46). In multivariate models adjusted for clinical covariates, including coronary heart disease (CHD) and time varying myocardial infarction, an ABI ≤ 1.0 in men was associated with a 70-75% increased risk for HF, while an ABI ≤ 0.9 in women portended a 39% increased risk for HF, when compared to an ABI of 1.11-1.20 (Figure).

Conclusion: Among middle aged Americans, an ABI ≤ 1.0 in men and ≤ 0.9 in women is independently associated with an increased risk for HF.