Circulation. 2007 Jul 10;116(2):143-50. Epub 2007 Jun 18.

Prevalence and prognostic significance of wall-motion abnormalities in adults without clinically recognized cardiovascular disease: the Strong Heart Study.

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Comment in:

- Circulation. 2007 Jul 10;116(2):126-30.

Abstract

BACKGROUND: Left ventricular wall motion (WM) abnormalities have recognized prognostic significance in patients with coronary or other heart diseases; however, whether abnormal WM predicts adverse events in adults without overt cardiovascular disease has not been assessed. Our objective was to determine whether echocardiographic WM abnormalities predict subsequent cardiovascular events in a population-based sample.

METHODS AND RESULTS: Participants (n=2864, mean age 60+/-8 years, 64% women) without clinically evident cardiovascular disease in the second Strong Heart Study examination who had complete echocardiographic WM assessment were studied. Echocardiographic assessment revealed that 5% of participants (n=140) had focal hypokinesia, and 1.5% (n=42) had WM abnormalities. Relationships between WM abnormalities and fatal and nonfatal cardiovascular events (including myocardial infarction, stroke, coronary artery disease, and heart failure; n=554) and cardiovascular death (n=182) during 8+/-2 years follow-up were examined. In Cox regression, after adjustment for age, gender, waist/hip ratio, systolic blood pressure, and diabetes mellitus, segmental WM abnormalities were associated with a 2.5-fold higher risk of cardiovascular events and a 2.6-fold higher risk of cardiovascular death (both P<0.0001). In similar multivariable models, global WM abnormalities were associated with a 2.4-fold higher risk of cardiovascular events (P=0.001) and a 3.4-fold higher risk of cardiovascular death (P=0.003).

CONCLUSIONS: Echocardiographic left ventricular WM abnormalities in adults without overt cardiovascular disease are associated with 2.4- to 3.4-fold higher risks of cardiovascular morbidity and mortality, independent of established risk factors.

PMID: 17576870 [PubMed - indexed for MEDLINE]**Free Article**