



E1488

JACC March 27, 2012

Volume 59, Issue 13



Chronic CAD/Stable Ischemic Heart Disease

NON-INVASIVE CORONARY FLOW RESERVE ASSESSMENT PREDICTS ADVERSE OUTCOME IN WOMEN WITH SUSPECTED OR KNOWN CORONARY ARTERY DISEASE WITHOUT OBSTRUCTIVE CORONARY ARTERY STENOSIS

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 11:00 a.m.-Noon

Session Title: Non-Obstructive CAD: What Are We Missing?

Abstract Category: 2. Chronic CAD/Stable Ischemic Heart Disease: Clinical

Presentation Number: 1200-137

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Background: Evaluation of coronary flow reserve (CFR) is the physiological approach to assess the severity of coronary stenosis and microvascular dysfunction. Impaired CFR occurs frequently in women with suspected or known coronary artery disease (CAD) and recently invasive coronary microvascular reactivity to adenosine showed a prognostic role in women. The aim this study was to assess the role of non-invasive CFR to predict long-term cardiovascular event rate in women with suspected CAD without obstructive coronary artery stenosis.

Methods: CFR in left anterior descending coronary artery was assessed by adenosine (140 micrograms/ kg over 5 minutes) transthoracic echocardiography in consecutive 161 women (mean age 65.2 ± 10.2 years) with suspected CAD without obstructive coronary artery disease at coronary angiography. Cardiovascular events considered during follow-up (FU) were: cardiac death, myocardial infarction, unstable angina, coronary revascularization by percutaneous transluminal coronary angioplasty (PCI) or coronary bypass surgery (CABG), ischemic stroke and episode of congestive heart failure.

Results: During a mean FU of 32.5 19.6 months, 53 cardiac events occurred: 6 nonfatal myocardial infarction, 22 unstable angina, 7 PCI, 1 CABG, 3 ischemic stroke and 8 episode of congestive heart failure and 6 cardiac death. Using a receiver operating characteristic (ROC) curve analysis, CFR 2.14 was the best predictor of cardiac events (area under the curve=0.74, sensitivity 88%, specificity 67%) and was considered as abnormal CFR. Abnormal CFR was associated with lower cardiac-events free survival (30% vs 80%, $p<0.0001$). Twenty-eight (70%) women with reduced CFR had cardiac events at FU whereas only twenty-five (20%) with normal CFR ($p=0.0001$). At multivariate Cox analysis, smoke habitus ($p=0.003$), metabolic syndrome ($p=0.01$), and CFR ($p<0.0001$) were significantly associated with cardiac events at FU.

Conclusion: Noninvasive CFR provides an independent predictor of cardiovascular prognosis information in women with suspected CAD without obstructive coronary artery disease and impaired CFR seem to be associated with lower cardiac-events free survival in the FU.