

Prognostic Value of Non-invasive Cardiac Exams in CAD Patients



Non-invasive imaging techniques are increasingly used in the evaluation of patients with suspected or known coronary artery disease (CAD). A new study comparing the prognostic value of all available non-invasive cardiac investigations has found that a negative test result for all modalities conveys an excellent prognosis for patients with suspected or known CAD. The study is published in *European Heart Journal - Cardiovascular Imaging*.

See Also: [Noninvasive Imaging Helps Predict Heart Attacks](#)

The study results also show that outcome differences between modalities after a negative test result are profoundly influenced by large variations in population event risk.

The study, conducted by Martijn W. Smulders, MD (Maastricht University Medical Center, The Netherlands) and colleagues, aimed to compare the prognostic value of negative non-invasive cardiac investigations (coronary computed tomographic angiography [CCTA], cardiovascular magnetic resonance [CMR], exercise electrocardiographic testing [EET], positron emission tomography [PET], stress-echocardiography [SE], and single-photon emission tomography [SPECT]) in patients with suspected or known CAD and to explore the effect of adjustment for population event risk and presence of CAD.

The researchers conducted a meta-analysis of all relevant data. MEDLINE/PubMed database, EMBASE and Cochrane Library were searched from January 1990 to April 2015 for studies reporting annual event rates (AER) of myocardial infarction (MI) and cardiac death. Pooled estimates of AERs were calculated using a DerSimonian and Laird random-effects model. Multivariable linear meta-regression analysis was performed to compare the AER after a negative test result between modalities and to adjust for population event risk and proportion of patients with CAD.

In 165 studies (122,721 patients) included in the analysis, pooled AERs after negative test results differed significantly between modalities ranging from 0.32% for CCTA to 1.66% for SE, $P < 0.001$. However, the AER after a negative test result was positively correlated ($r = 0.726$, $P < 0.001$) with population event risk. Adjusting for population event risk and proportion of patients with CAD resulted in more similar event rates after a negative test result.

This meta-analysis is the first study comparing the prognostic value of negative non-invasive cardiac investigations in patients with suspected or known CAD, the authors say.

Source: [European Heart Journal - Cardiovascular Imaging](#)
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