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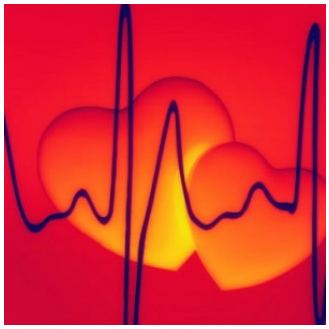
Initial Noninvasive Testing for CAD Diagnosis



The use of coronary computed tomography angiography (CTA) to evaluate suspected coronary artery disease (CAD) is associated with greater use of preventive cardiac medications and invasive cardiac procedures, including coronary revascularisation, compared with functional testing. These findings are from a new Danish study published in Journal of the American College of Cardiology.

See Also: Prognostic Value of Non-invasive Cardiac Exams in CAD Patients

In patients with symptoms suggestive of CAD, noninvasive cardiac testing is the initial step in establishing a diagnosis and guiding further management. Often, these patients undergo either an anatomical test (coronary CTA) or a functional test (exercise electrocardiography or nuclear stress testing). As the comparative effectiveness of these test options is not well established, the choice of initial testing strategy is affected by physician preference and test availability.

Researchers hypothesised that the choice between functional and anatomical noninvasive cardiac testing would lead to differences in subsequent patient management and also affect long-term outcomes. For this study, they reviewed data of patients enrolled in a Danish nationwide register who underwent initial noninvasive cardiac testing with either CTA or functional testing from 2009 to 2015. Further use of noninvasive testing, invasive procedures, medications, and medical costs within 120 days were evaluated. Risks of long-term mortality and myocardial infarction (MI) were analysed using adjusted Cox proportional hazard models.

A total of 86,705 patients underwent either functional testing (n = 53,744, mean age 57.4 years, 49% males) or coronary CTA (n = 32,961, mean age 57.4 years, 45% males), and were followed for a median of 3.6 years. Patients undergoing coronary CTA were more likely to initiate treatment with a statins and aspirin, to undergo invasive coronary angiography, and to undergo coronary revascularisation than patients having initial functional testing. Researchers found these differences in management led to 39% higher costs within 120 days in the coronary CTA group ($995 vs. $718).

In addition, rates of adverse events and death were low in the coronary CTA group; but after adjustment, coronary CTA was associated with a 29% reduction in risk of MI, with comparable all-cause mortality.

"As the initial noninvasive cardiac test itself is unlikely to have any direct effect on long-term prognosis, the difference in long-term risk of MI is most likely attributable to differences in downstream patient management," the authors write. "The study design does not, however, allow us to identify the specific elements of patient management that contributed to differences in long-term outcomes."

The clinical effectiveness, and cost-effectiveness, of visualising coronary anatomy noninvasively with coronary CTA, rather than performing functional testing, deserves further study, the authors concluded.

Source: Journal of the American College of Cardiology
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