

this time point may not be attributed to duration of clopidogrel therapy.

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Living Up to the PROMISE

Is There an Ultimate Winner?

We read with great interest the review by Marwick et al. (1) discussing the potential role of coronary computed tomography angiography (CCTA) in the current paradigm of chest pain evaluation following the PROMISE (Prospective Multicenter Imaging Study for Evaluation of Chest Pain) trial. On the basis of the existing evidence, the authors argue that CCTA can serve as an effective gatekeeper to invasive angiography. The PROMISE trial is interpreted by many as an “equivocal” study without any obvious “winner” because neither of the testing strategies (anatomic vs. physiological) resulted in improved outcome. But are there any advantages that would favor any particular modality? We strongly argue that

stress echocardiography emerged as the ultimate “winner.”

It is well known that the negative predictive value of CCTA for coronary disease in low- and low-intermediate-risk patients is high. But the clinically meaningful outcome benefit of CCTA versus physiological modalities has not yet been convincingly demonstrated. On the other hand, CCTA is associated with contrast and radiation exposure in these younger patients. Low-dose radiation-related risks have been recently confirmed by both a longitudinal study and protein and genetic biomarker changes (2). Stress echocardiography is efficient, inexpensive, and safe. In the PROMISE trial, the cumulative radiation exposure up to 90 days after randomization was markedly lower among patients undergoing stress echocardiography as compared with CCTA (1.3 vs. 12.6 mSv; $p < 0.001$) (1,3). Moreover, in younger patients, noncoronary causes of chest symptoms (such as hypertrophic cardiomyopathy with latent obstruction, valve disease, and pulmonary hypertension) are relatively common, and these can be properly evaluated by stress echocardiography. Finally, incidental noncardiac findings on CCTA may provoke unnecessary anxiety and lead to further testing.

In high-risk (older) patients with a higher prevalence of coronary disease, CCTA results in “incidental” coronary findings, as described by Marwick et al. (1). The main advantage of stress echocardiography in these settings is correlation of stress test findings with patient symptoms, because routine revascularization in stable coronary disease offers no outcome benefit. A prior finding of higher revascularization rates with CCTA compared with patients undergoing physiological testing was confirmed in the PROMISE trial (6.2% vs. 3.2% within 90 days; $p < 0.001$) (4).

In the current stage, with rapidly increasing options for noninvasive imaging, one should make an argument that a modality with the best balance of versatility, accuracy, safety, and cost effectiveness should prevail. The accumulating evidence so far argues in favor of stress echocardiography.

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