However, the annual event rate rose after the first 3 years, indicating that in patients with persistent or recurrent stable chest pain syndrome and initially negative stress testing, repeated DCMR diagnostic procedures might be warranted.

Furthermore, early revascularization either by PCI or CABG both improved clinical outcome only in patients with inducible WMA by DCMR, whereas patients who underwent revascularization in the absence of inducible ischemia showed no significant benefit from invasive treatment. This is in agreement with recent randomized multicenter trials, where only patients with ischemia benefited from invasive procedures (11,12).

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Letters to the Editor

Long-Term Survival of Young Patients With Coronary Artery Disease Is Best Realized Through Surgical Revascularization With Mammary Arteries

In a recent issue of the Journal, Flather et al. (1) reported a subgroup analysis of individual patient data from 10 randomized trials comparing percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) for multivessel coronary disease. Their analysis showed that there was a significant treatment by age interaction for 10-year mortality (p < 0.001). Strikingly enough, in the youngest group of patients (≤56.2 years of age), there was no difference in mortality (hazard ratio [HR] for PCI: 1.23; 95% CI: 0.95 to 1.59), whereas the HR shifted toward a significant benefit of CABG over PCI in older patients (≥65.2 years of age) (HR: 0.79; 95% CI: 0.67 to 0.94).

Although the data from these trials are compelling, the trials were not performed according to the “all-comers” design, and it is therefore likely that there was a severe selection bias in the inclusion of patients. Young patients were probably those with low lesion complexity, and it is known that CABG does not offer a survival benefit in these patients (2). In contrast, even though the
results of this study suggested superiority of CABG over PCI in elderly patients, this is counterintuitive and these results may not be generalizable to the majority of patients requiring coronary revascularization. Those patients with a higher risk profile were likely to be excluded from randomization because of procedural risks associated with CABG (3). The advantage of PCI in the elderly patients could therefore not be identified in this pooled analysis.

Furthermore, long-term survival of young patients with more complex coronary artery disease is best realized through surgical revascularization with a left internal mammary artery (IMA) to the left anterior descending artery and additional arterial grafts (preferably the right IMA) to other major coronaries. This will optimize long-term survival due to excellent graft patency (4), which is critical, especially in young patients with a relatively long life expectancy (5). Young patients who undergo PCI will have a high risk of multiple repeat revascularizations and are susceptible to the associated procedural risks.

The ancillary benefit of PCI over CABG is its lesser invasiveness and shorter initial hospitalization (6). However, in younger, fitter patients, CABG is appealing because of low complication rates, short lengths of stay, and little time needed to resume normal activities of daily living. The benefit of PCI over CABG in younger patients may therefore be small, whereas long-term efficacy is clearly superior in the majority of young patients; the treatment of choice should therefore be CABG.

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Prognostic Value of Multidetector Coronary Computed Tomography Angiography

Cho et al. (1) should be commended for their recent attempt to answer an important question in an ongoing debate on the prognostic value of coronary computed tomography angiography (CCTA). In their retrospective cohort study from a single center, they concluded that CCTA provided improved discrimination for future major adverse cardiovascular events over the exercise stress test (1). However, it should be noted that:

1. Results of the current study were predominantly based on a clinician-driven outcome—revascularization, which is more amenable to change and should be interpreted with great caution. The difference in prognostic value of the exercise stress test and CCTA (for both negative and positive tests) failed to achieve statistical significance for more relevant clinical outcomes—cardiac death and nonfatal myocardial infarction. Thus, the CCTA-based approach led to a higher rate of revascularization, but it remains unclear whether the CCTA-guided therapeutic decision-making process led to improvement in outcomes in terms of hard clinical endpoints.

2. The researchers censored the outcomes by excluding revascularizations that occurred <90 days after the index test to avoid a confounding effect of CCTA driving the study endpoint. However, such selective removal of patients creates treatment selection bias and results in greater observed risk reduction among patients with obstructions as compared with those without obstructions.

Despite the high radiation exposure, higher cost, unproven clinical benefits, and inability to provide useful clinical information in the settings of high heart rate, coronary calcification, and obesity—which are rampant among patients with coronary artery disease (2)—should we really advocate CCTA as a first-line test for more than 5 million Americans who present to the emergency department every year with chest pain (3)?

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