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CORRESPONDENCE

Letters to the Editor

Assessing Risk After Acute Myocardial Infarction

Mahmarian et al. (1) recently published the INSPIRE (AdenosINe Sestamibi SPECT Post-InfaRction Evaluation) trial, a prospective study comparing intensive medical therapy to revascularization in stable patients following ST-segment elevation myocardial infarction (STEMI) or non-STEMI with demonstrable ischemic burden on myocardial perfusion imaging (MPI). Medical therapy was shown to be equivalent to revascularization, decreasing the ischemic burden at 2 months assessed by repeat MPI. The 1-year clinical outcomes were also assessed, but the study was not powered to detect any differences, and, predictably, did not.

Thus, medical therapy in stable patients with reversible perfusion defects following an MI provided a short-term reduction in ischemic burden comparable to that of revascularization. However, although medical therapy may be comparable to revascularization for improving inducible ischemia—or, as pointed out in the accompanying editorial (2), "the heterogeneity of myocardial blood flow induced by adenosine"—this does *not* mean that the strategies are clinically equivalent. Inducible ischemia and clinical outcomes do not necessarily go hand-in-hand.

The MPI was used to demonstrate "high-risk" anatomy; however, the trial excluded patients at high clinical risk who might have benefited more from revascularization or patients who underwent primary or early percutaneous revascularization for their index event (a strategy many consider to be the treatment of choice). Despite a "high-risk" perfusion study (performed an average of 12 days after admission), patients in this study had already declared themselves as being at relatively low clinical risk.

Furthermore, maximal medical therapy (excluding antianginals) remains the standard of care for all patients with coronary disease. In this trial, the treatment arms were not matched regarding intensity of medical treatment. Patients in the medical-therapy arm were more likely to be on dual-antiplatelet therapy (aspirin/clopidogrel), lipid-lowering agents, and angiotensin-converting enzyme (ACE) inhibitors. Patients who underwent revascularization had the additional variable of less intensive medical treatment. Few, if any, interventional cardiologists would argue against the importance of intensive medical therapy post-revascularization.

What we have learned from Mahmarian et al. (1) is that intensive medical therapy has a greater impact on adenosine-induced ischemia than previously appreciated. However, important questions remain. The heterogeneous nature of the population is never fully accounted for, but there may be real differences between STEMI and NSTEMI patients. Additionally, 26 patients in the medical therapy group were revascularized, and 24 patients in the revascularization group were not; the reasons for this "crossover" are not explained, and therefore the intention-to-treat analysis is flawed.

The benefit of intensive medical therapy in patients following an MI remains indisputable. However, a policy shift away from early revascularization strategies in favor of MPI following an MI is not supported by the INSPIRE study. Before utilizing MPI, hard evidence supporting actual clinical benefit is needed.

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2. Gibbons RJ, Miller TD. Noninvasive risk stratification after myocardial infarction: new evidence, new questions. J Am Coll Cardiol 2006;48:2468–70.

Reply

We appreciate the opportunity to re-emphasize the clinical messages from the (INSPIRE) trial (1,2). Patients at very high clinical risk and those who had percutaneous coronary intervention (PCI) for acute ST-segment elevation myocardial infarction (MI) were excluded from INSPIRE because PCI is the preferred approach in these settings. The INSPIRE cohort still represents ~75% of acute myocardial infarction (AMI) patients today who do not receive acute PCI but who still are at substantial risk for subsequent events. In fact, 64% of our low Thrombolysis In Myocardial Infarction (TIMI) risk-score patients had intermediate- or high-risk scintigraphic characteristics resulting in a high 1-year event rate of ~15%.

The purpose of imaging is not only to stratify risk but also to determine in whom risk can be reduced. The low- and intermediate-risk groups in INSPIRE (which represented two-thirds of all enrolled patients) would have unlikely benefited from coronary revascularization owing to their low initial risk or lack of inducible ischemia, respectively. The INSPIRE results complement the findings from the OAT (Occluded Artery Trial) (3), which showed no advantage (and potential harm) from PCI and stenting of occluded arteries post-AMI in patients who lacked significant ischemia. Adenosine single-photon emission computed tomography (SPECT) is a practical initial imaging method to