currently unknown as definitions for MI have recently evolved from a creatine kinase-based enzyme rise to a troponin-based rise. Use of beta-blockers in patients with left ventricular (LV) impairment is also strongly supported by numerous controlled trials, and these patients should certainly receive beta-blockers post-CABG. We agree that use of beta-blockers in patients without prior MI (ST-segment or non–ST-segment elevation) or LV impairment is more debatable.

We also believe there is sufficient evidence to warrant the use of ACEI in most patients following CABG. In the Heart Outcomes Prevention Evaluation (HOPE) trial, use of the ACEI ramipril improved outcomes in patients with diabetes or known vascular disease but without LV dysfunction (3); approximately 25% of the participants had previously undergone CABG. The small study evaluating quinapril post-CABG showed no effect of the ACEI on the primary end point of change in exercise endurance or incidence of ischemia on Holter monitor (4); however, fewer patients receiving quinapril experienced ischemic events compared with placebo (3.5% vs. 15%; $p = 0.02$), suggesting benefit to those receiving quinapril. Current research suggests that ACEI act as vascular protective agents, and as such most patients undergoing CABG for coronary disease are likely to benefit and should be prescribed them.

We agree that aspirin and statins should be used post-CABG. However, we also believe that ACEI should also be routinely used where possible; use of beta-blockers should also be strongly recommended especially in patients with a history of MI and/or LV impairment.

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Okrainec et al. (1) meticulously reviewed available data from randomized studies of medical treatment for postcoronary artery bypass graft (CABG) patients. Their recommendations should influence medical practice until further information comes forth in the future.

Patients undergoing CABG at varying intervals after an acute myocardial infarction (MI) are an important subgroup. They are also an important subgroup undergoing percutaneous coronary interventions. The efficacy of beta-blockers (2) and angiotensin-converting enzyme (ACE) inhibitors (3) for secondary prevention after an MI is established. No randomized controlled study has addressed the issue of their usefulness in post-MI patients who have undergone CABG. In the absence of evidence to the contrary, it is prudent to assume that these agents will not lose their efficacy after a post-MI patient undergoes CABG. Therefore, it needs to be stated explicitly that, whereas there is little evidence to suggest that beta-blockers and ACE inhibitors should be used *routinely* after CABG, they should be used after CABG if the patient had a prior MI. When future studies are planned, distinguishing this subgroup will be important.

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REPLY

We appreciate the interest in our study (1) expressed by Dr. Chacko and Dr. Osman and colleagues. We agree that there is substantial evidence supporting the use of beta-blockers and angiotensin-converting enzyme (ACE) inhibitors among patients with coronary artery disease (CAD) and other co-morbid conditions. We also agree that a large proportion of post-coronary artery bypass graft (CABG) patients should therefore receive these agents including those with a history of myocardial infarction (MI), those with a low ejection fraction, and those with congestive heart failure. However, the routine use of these agents in all patients post-CABG is not currently supported by large randomized controlled trials (RCTs).

Few studies have examined the routine use of beta-blockers in post-CABG patients. In a single RCT, no significant differences were found in clinical end points including repeat revascularization, unstable angina, nonfatal MI, or death at two-year follow-up (2). Because many patients undergoing CABG are completely revascularized, the benefits of prescribing beta-blockers in patients without specific co-morbid conditions may be limited. Until large