Emergency department evaluation of patients with acute myocardial infarction. The addition of a lipid collection tube to an existing clinical/laboratory pathway for acquisition of baseline cardiac enzymes is an ideal collection method. Even though the presence of nonfasting triglyceride levels produced a 5% lower Friedewald LDL estimate, the calculation did correlate well with the gold standard of ultracentrifugation, as does measurement by the immunoseparation method. In other words, the Friedewald measurement provides the same specificity with slightly less sensitivity than the other methods: All patients who were eligible for treatment or who had an LDL level >100 were correctly classified, but 1 patient (2%) with LDL <100 was misclassified as not eligible for antilipemic intervention, based on the National Cholesterol Education Program guidelines.

The definition of the LDL cholesterol level at the time of an acute myocardial infarction provides physicians with an opportunity to address risk factor reduction during hospitalization rather than waiting 3 months after the event. This period of time may represent a window of opportunity for patient education about the role of elevated cholesterol and the provision of antilipemic therapy for secondary prevention of coronary artery disease. The initiation of antilipemic therapy for patients experiencing an acute myocardial infarction and who have an elevated LDL cholesterol has not yet been clearly defined, but a recent consensus committee suggested 4 to 6 weeks after the event.

The measurement of LDL cholesterol by any of the 3 methods described above identifies patients eligible for treatment with antilipemic interventions. Accumulating evidence suggests that aggressive lipid-lowering therapy reduces the number of recurrent events, improves cardiac and overall mortality and improves the regulation of coronary arterial tone in patients with atherosclerosis.18 It has also been demonstrated that beneficial effects can be seen as early as 3 months after the start of lipid-lowering therapy.9 Aggressive lipid lowering may prove to be a key part of therapy immediately after acute myocardial infarction.

In summary, we conclude that lipid screening can be introduced into the emergency department clinical pathway for evaluation and treatment of patients admitted for acute chest pain or myocardial infarction despite the nonfasting state of most such patients by use of any of 3 methods of LDL determination.

Assessment of Patients After Coronary Artery Bypass Grafting by Dobutamine Stress Echocardiography

Abdou Elhendy, MD, PhD, Marcel L. Geleijnse, MD, Jos. R.T.C Roelandt, MD, PhD, Jan H. Cornel, MD, Ron T. van Domburg, MSc, Medhat El-Refaee, MD, M. Mohsen Ibrahim, MD, Galal M. El-Said, MD, and Paolo M. Fioretti, MD, PhD

Detection of myocardial ischemia is the hallmark of noninvasive evaluation of graft function1-5 after coronary artery bypass grafting (CABG). Exercise electrocardiography was shown to have a limited accuracy in this clinical setting.3 Recent studies have demonstrated a high accuracy of exercise echocardiography for the detection of significant graft or progressive native coronary artery stenosis.3-5 However, an alternative stress modality is required for patients with limited exercise capacity.

The value of dobutamine stress echocardiography in the diagnosis and functional assessment of coronary artery disease has been established in various clinical indications.6-11 However, its role in the assessment of patients after CABG has not been stud-
Coronary artery bypass grafting is an effective intervention for symptomatic relief, prolonged survival, and improvement of left ventricular function.
in a particular subset of patients with coronary artery disease.\textsuperscript{14} However, myocardial perfusion after surgery may be compromised by late graft occlusion and progression of coronary artery disease in non-grafted or grafted coronary arteries distal to the bypass.\textsuperscript{15} Our study shows that dobutamine stress echocardiography is a moderately sensitive and highly specific technique for detection of vascular compromise in these patients. Sensitivity was relatively high in the presence of vascular compromise in >1 region. In individual vascular territories, sensitivity was not different in the presence or absence of myocardial infarction in the corresponding region. Despite the known effect of CABG on septal motion,\textsuperscript{16} only 1 of the 8 false-positive results involved the septum with abnormal wall motion at rest.

The sensitivity (78\%) and specificity (89\%) of dobutamine echocardiography are aligned with those of the largest exercise echocardiographic study (79\% and 82\%, respectively) in patients after CABG.\textsuperscript{3} Sensitivity and specificity of dobutamine echocardiography in our study are comparable to those reported in patients without CABG,\textsuperscript{6-10} denoting the absence of particular limitations in this population.

Localization of inducible wall motion abnormalities identified the area of vascular compromise in a high proportion of segments. Improvement of regional sensitivity and specificity by combining the right coronary artery and LCX territories can be explained by the vascular overlap previously described in these regions.\textsuperscript{4} Using the 2-segment model, an equal sensitivity was found in anterior (LAD) and posterior (right coronary artery and LCX) regions. There was a relatively low sensitivity for identifying multivessel disease on the basis of inducible abnormalities in >1 region (57\%), which is slightly lower than that of exercise echocardiography (69\%) reported by Kafka et al.\textsuperscript{3} This can be explained by vascular overlap and different threshold for ischemia in different vascular territories with the potential to reach an end point of the test (angina, electrocardiographic, or hemodynamic changes and maximal dobutamine dose) before the occurrence of ischemia in other territories. In patients with vascular compromise, peak heart rate was higher in patients with ischemia than without at echocardiography consistent with the previous findings on dobutamine\textsuperscript{12} and exercise echocardiography.\textsuperscript{18}

The limitations of this study are the relatively small number of patients and the inclusion of patients with previous myocardial infarction. Some patients were receiving medication, including 30\% who were receiving $\beta$ blockers, which may decrease the sensitivity of dobutamine stress echocardiography. Nevertheless, we have previously shown that administration of atropine enhances the sensitivity of dobutamine stress echocardiography, especially in patients receiving $\beta$ blockers.\textsuperscript{19} It is not known if the 50% diameter stenosis used to define a significant native artery stenosis would apply to bypass grafts to predict functional abnormalities as defined previously\textsuperscript{2-5} and in this study. However, we could not find a difference in sensitivity and specificity in myocardial regions with native or grafted arteries. A particular difficulty would arise in regions of vascular overlap between native and grafted arteries if a different cutoff point were used to define coronary stenosis in each artery.

In conclusion, dobutamine stress echocardiography is an accurate method for diagnosis of vascular compromise in patients after CABG and provides useful data for selection of patients for whom coronary angiography may be indicated.