

randomized patients with SIHD and moderate-to-severe ischemia on stress testing to an initial invasive strategy versus an initial conservative strategy. Patients with left main disease or an ejection fraction <35% were excluded from enrollment. As compared with a strategy of medical therapy alone, an invasive strategy including revascularization with PCI or CABG was not associated with improved outcomes (14).

Recommendation-Specific Supporting Text

1. The strongest evidence in the past decade to support revascularization with CABG in patients with left ventricular dysfunction and CAD appropriate for CABG has been the STICH (Surgical Treatment for Ischemic Heart Failure) trial (1,39,40), which randomized patients with left ventricular dysfunction (ejection fraction $\leq$ 35%) to either CABG with medical therapy or medical therapy alone. This study initially did not demonstrate a survival benefit for CABG over a median follow-up of 5 years (39), but a subsequent report from this trial evaluating long-term follow-up at 10 years reported a survival benefit of CABG compared with medical therapy alone (1,40). The use of myocardial viability studies in this study population demonstrated no relevance to study outcomes; however, this testing was not standardized (41). There are insufficient data to make recommendations for using PCI in this patient population.
2. Evidence for a survival advantage with CABG in patients with SIHD and moderate left ventricular dysfunction comes from subgroup analyses of patients enrolled in the Coronary Artery Surgery Study (3) and the Veterans Administration Coronary Artery Bypass Cooperative Study with LV dysfunction (42), as well as a meta-analysis (10) of the RCTs of CABG versus medical therapy. In these studies, patients with left ventricular dysfunction had a significant survival benefit with CABG, particularly patients with accompanying triple-vessel disease. Several registry studies have supported these findings (4-7,31-33). The use of PCI in this patient population requires more study.
3. The Veterans Administration Coronary Artery Bypass Surgery Cooperative Study randomized patients with SIHD to a strategy of CABG versus medical therapy (43). In this study, close to 15% of enrolled patients had significant left main disease (43). At 42 months' follow-up, CABG was associated with a significant survival benefit in the subgroup of patients with left main disease (11). Additionally, a meta-analysis of the RCTs comparing CABG with medical therapy supported these findings, with a 70% reduction in 5-year mortality rate with CABG versus medical therapy for the group of patients with left main disease (10). Subsequent studies have supported these findings (9,44-46).

Although the evidence to support revascularization with CABG is derived mainly from older RCTs, there are no new data to refute this evidence, as all of the contemporary clinical trials comparing revascularization with medical therapy have excluded patients with significant stenoses of the left main artery (14,24).

4. The evidence for a survival advantage for PCI over medical therapy in patients with left main CAD is inferential but plausible. Several registry studies have suggested a survival benefit of PCI over medical therapy in patients with left main CAD (47,48). A network meta-analysis of 19 studies found that the survival advantage for PCI over medical therapy in patients with left main CAD was identical to the survival advantage for CABG over medical therapy (9). Additionally, RCTs and meta-analyses of these trials evaluating outcomes of PCI versus CABG in patients with low-to-medium anatomic complexity of CAD and with left main disease that is equally suitable for surgical or percutaneous revascularization have reported similar survival with PCI and CABG (49-55).
5. The new Class 2b recommendation, which represents a downgrade from a Class 1 recommendation in the 2011 CABG guideline (56), reflects new evidence showing no advantage of CABG over medical therapy alone to improve survival in patients with 3-vessel CAD with preserved LV function and no LM disease. The older recommendation was based on evidence from registry studies (26,29,48,57), a meta-analysis (10), and a single RCT (13), all of which were completed >20 to 40 years ago before the development of newer surgical techniques or advances in medical therapy associated with improved prognosis (58,59). Newer evidence from the ISCHEMIA trial (14) and from meta-analyses, which incorporated (15,60-62) or did not incorporate (37) the ISCHEMIA results, as well as a more detailed review of earlier studies (63) supported this downgrade. After several hours of deliberation, the writing committee concluded that using CABG as a revascularization strategy versus medical therapy alone “may be reasonable” to improve survival in stable patients with 3-vessel CAD. The writing committee recognized that an adequately powered trial to test this hypothesis is unfeasible in the current era but proposed that revascularization confers other benefits to patients with multivessel CAD and SIHD. Accordingly, Section 7.3. highlights the advantages of revascularization over medical therapy for the prevention of cardiovascular events.
6. The writing committee reviewed newer evidence and concluded that the ability of PCI to improve survival, compared with medical therapy alone in patients with multivessel CAD, remains uncertain. The recommendation, which reflects a weaker endorsement for PCI