**FILLING IN THE GAPS IN THE TREATMENT OF LEFT MAIN DISEASE**

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PCI with drug eluting stents (DES) has emerged as an alternative for left main (LM) disease. Randomized clinical trials (RCT) of PCI vs coronary artery surgery (CABG) in stable patients have shown that at 1-3 year follow-up, PCI and CABG are comparable for the combined outcome of death, MI, and stroke with target vessel revascularization being higher with PCI. With 4-year follow-up, the lower Syntax score terciles showed similar outcomes for major combined outcomes. In the highest tercile, however, PCI showed a trend to worsened survival. Less clear is whether the trend was related to PCI per se or an increased frequency of incomplete revascularization. There is agreement-though no RCT- that intravascular ultrasound (IVUS) should be used to optimize stent deployment. In the intermediate angiographic lesion, a non-angiographic modality is recommended to determine if revascularization is required. Fractional flow reserve (FFR) and probably IVUS can differentiate patients who may be safely deferred from revascularization. LM bifurcation stenting increases the restenosis risk without an increased risk of death/MI vs ostial/shaft lesions. The preferred method of treating the bifurcation lesion is one stent when possible. Finally, it should be emphasized that current RCT are confined to stable CAD patients with relatively preserved ventricular function. LM ACS patients with cardiogenic shock have a high mortality however treated. If the PCI patient survives the in-hospital period, long-term outcome is relatively good, with 50-70% survival at one year.