

## Updated Meta-Analysis of LM Trials

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About 5% of patients undergoing percutaneous coronary intervention (PCI) are found to have significant unprotected left main coronary artery (LMCA) disease.<sup>1</sup> Coronary artery bypass grafting (CABG) has been the preferred revascularization modality based on the abundance of cumulated data demonstrating the safety and better long-term clinical outcomes than PCI<sup>2</sup> and thus current guidelines recommend CABG as a class I indication for the unprotected LMCA disease.<sup>3,4</sup> However, PCI is now becoming a preferentially used method of PCI for LMCA disease and tremendous development of drug-eluting stents (DES) technology has dramatically reduced the rates of repeat revascularization in mid- to long-term follow up. Although clinical trials comparing PCI and CABG for unprotected LMCA disease have revealed similar rates of adverse cardiac events between the two strategies, previous meta-analyses of LMCA disease have been limited by the inclusion of observational studies.<sup>5,6</sup>

Recently, the results of additional multicenter randomized trials were published and several investigators performed an update of systematic review and meta-analysis of randomized trials comparing clinical outcomes of PCI using DES with CABG in these patients.<sup>7,8</sup> Nerlekar et al., in their meta-analysis of randomized trials comparing DES PCI and CABG in LMCA disease, found that the rates of the safety composite outcomes were similar between DES PCI and CABG in patients with low surgical risk.<sup>8</sup> They also found that CABG was associated with a reduction in the rates of the efficacy composite outcomes. In terms of individual clinical end points, they did not find significant difference in the rates of all-cause death, MI, or stroke between PCI using DES and CABG. However, they found significantly lower rates of repeat revascularization in patients undergoing CABG. Practically, clinical outcomes of unprotected LMCA PCI can be improved when these procedures are performed by experienced physicians in high PCI volume centers.<sup>9</sup> However, the decision of revascularization methods should be determined by both physician and patient who are fully informed of the risks and potential benefits of each option provided by a multidisciplinary heart team.<sup>10</sup>

PCI using DES and CABG are similarly safe revascularization strategies for patients with significant unprotected LMCA disease, especially when surgical risk is low. However, CABG is more effective method of revascularization reducing the need of repeat revascularization based on the updated meta-analyses of randomized trials.

**Key Words:** left main coronary artery disease, percutaneous coronary intervention, bypass grafting

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