Dissolution is not the solution

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With the emergence of coronary artery bypass graft surgery (CABG) in the late 1960s, the management of coronary artery disease (CAD) was ushered into a new era. The 3 major randomized control trials conducted in the 1970s¹⁻³ established the superiority of CABG over medical therapy in angina relief and survival and led to the establishment of guidelines for CABG as the preferred procedure for patients with left main coronary stenosis of $\geq 50\%$ and those with 3-vessel CAD and more so, when associated with depressed left ventricular function. With the introduction of percutaneous coronary balloon angioplasty in 1977 by Gruntzig⁴ and the subsequent development of stent technology, percutaneous coronary intervention (PCI) became an alternative approach for the treatment of CAD. Drug-eluting stents (DES), in large part, overcame the shortcomings of the bare metal stents for stent restenosis and narrowed the gap between CABG and PCI for repeat revascularization.⁵

Continued efforts by the industry to improve on the designs of the first-generation DES, and by extension, their long-term performance, led to the introduction of the second-generation DES. As is customary, most of the clinical research trials on newer devices are funded by the industry, with the risk of bias favoring the new devices. The network meta-analysis by Benedetto and colleagues⁶ in this issue of the *Journal* is a systematic review of 9 randomized control trials on the second-generation DES compared with CABG and first-generation DES in the treatment of unprotected left main coronary stenosis. The authors have methodically outlined the strengths and weaknesses of each trial included. Their detailed analyses and graphic description of the results support their conclusion that the second-generation DES, and specially, the biodegradable biolimus-eluting stents, have not fulfilled the promise of better outcomes compared with CABG or the first-generation DES for unprotected left main coronary stenosis.

In the contemporary practice, the management of ischemic heart disease mandates a patient-centered approach by a heart team consisting of a cardiologist and a cardiac surgeon.^{7,8} This in turn means that PCI and CABG should be considered as complementary and not

competitive, as seen in a recent publication on stand-alone coronary intervention centers with no on-site cardiac surgery.⁹ After all, CABG stands out as one of the few surgical procedures in which the indications for surgery have remained unchanged over the last 4 decades, with most left main stenoses and 3-vessel CAD having a class I indication in the latest guidelines.⁸ I commend the authors for their important contribution.

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Second-generation drug-eluting stents not doing well.

Central Message

Coronary artery bypass grafting remains a class I indication for left main and 3-vessel coronary artery disease.

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