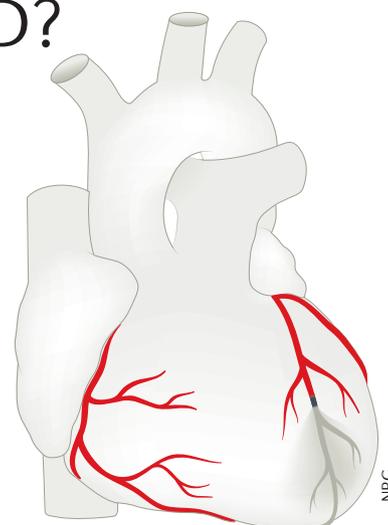


CORONARY ARTERY DISEASE

CABG surgery or PCI for left main CAD?

CABG surgery is the standard treatment for patients with left main coronary artery disease (CAD), but randomized trials have shown that percutaneous coronary intervention (PCI) with drug-eluting stents might be a suitable alternative for selected patients. Two new randomized clinical trials now show conflicting results: one trial found that PCI is noninferior to CABG surgery for the treatment of patients with left main CAD; the other trial shows that CABG surgery is superior to PCI. The end points and the drug-eluting stents used in the trials were different.



In the EXCEL trial, 1,905 patients with left main CAD and low or intermediate anatomical complexity (SYNTAX score ≤ 32) were randomly assigned to undergo CABG surgery or PCI with a fluoropolymer-based, cobalt–chromium, everolimus-eluting stent. The primary end point (a composite rate of death from any cause, stroke, or myocardial infarction) occurred in 15.4% of patients in the PCI group and 14.7% in the CABG surgery group at 3 years, a difference that was significant for noninferiority ($P = 0.02$), but not for superiority ($P = 0.98$). At 30 days, PCI was safer than CABG surgery, with a rate of the composite of death from any cause, stroke, or myocardial infarction of 4.9% in the PCI group and 7.9% in the CABG surgery group ($P = 0.008$ for superiority). The 30-day rates of large myocardial infarction, renal failure, major arrhythmias, bleeding and transfusion, infections, and other complications were lower in the PCI group. “PCI may be considered an acceptable or even preferred alternative to CABG surgery for selected patients with left main CAD,” explains Gregg W. Stone, lead investigator of the EXCEL trial.

In the NOBLE trial, 1,201 patients with left main CAD were randomly assigned to CABG surgery or PCI (11% of the patients received a first-generation drug-eluting stent and the rest a biolimus-eluting stent). The Kaplan–Meier 5-year estimate for the primary end point of major adverse cardiac or cerebrovascular events (MACCE), a composite of death from any cause, nonprocedural myocardial infarction, repeat coronary revascularization, or stroke, was higher for PCI than for CABG surgery (29% versus 19%). The hazard ratio was 1.48 (95% CI 1.11–1.96), which exceeded the limit for noninferiority and was significant for superiority of CABG surgery compared with PCI ($P = 0.0066$). Both groups had similar 5-year estimates for all-cause death, but 5-year estimates for nonprocedural myocardial infarction, repeat revascularization, and stroke were higher in the PCI group. PCI was inferior to CABG surgery irrespective of SYNTAX score.

Follow-up will continue to 5 years in the EXCEL trial, and to 5 years for MACCE and 10 years for all-cause mortality in the NOBLE trial.

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ORIGINAL ARTICLES Stone, G. W. et al. Everolimus-eluting stents or bypass surgery for left main coronary artery disease. *N. Engl. J. Med.* <http://dx.doi.org/10.1056/NEJMoa1610227> (2016) | Mäkikallio, T. et al. Percutaneous coronary angioplasty versus coronary artery bypass grafting in treatment of unprotected left main stenosis (NOBLE): a prospective, randomised, open-label, non-inferiority trial. *Lancet* [http://dx.doi.org/10.1016/S0140-6736\(16\)32052-9](http://dx.doi.org/10.1016/S0140-6736(16)32052-9) (2016)