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Invited Commentary

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Should Percutaneous Coronary Intervention Be Considered for Left Main Coronary Artery Disease?

Insights from a Bayesian Reanalysis of the EXCEL Trial

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In this issue of JAMA Internal Medicine, Brophy presents a Bayesian analysis of randomized clinical trials comparing revascularization strategies for treatment of left main coronary artery disease (LMCAD). This article is important because of the recent publication of the 5-year results of the EXCEL (Evaluation of XIENCE Versus Coronary Artery Bypass Surgery for Effectiveness of Left Main Revascularization) trial comparing percutaneous coronary intervention (PCI) with coronary artery bypass grafting (CABG) in patients with LMCAD of low or intermediate anatomical complexity.² The EXCEL trial has ignited a firestorm of controversy. The investigators concluded that there was no significant difference between PCI and CABG in the primary outcome of death or myocardial infarction (MI) or stroke (major adverse cardiac events, MACEs) (difference, 2.8%; 95% CI, -0.9% to 6.5%), even though the odds ratio for mortality was 38% higher in the PCI arm (difference, 3.1%; 95% CI, 0.2%-6.1%).² This conclusion highlights the perils of misinterpreting differences that do not reach statistical significance. The 95% CI estimate of the difference in MACE rates between PCI and CABG ranges from 0.9% absolute reduction to 6.5% increase with PCI. Thus, to state that EXCEL showed these interventions were comparable is misleading

because it discounts altogether the clinically relevant effect size and a 95% CI that lies mostly above 0%. Absence of evidence is not evidence of absence.