randomized controlled trials should be that DES are associated with increased mortality (17 deaths of 113 DES and 4 deaths of 89 bare-metal stents; p = 0.027). This is in contradiction to the main conclusion of this manuscript that "DES use was associated with improved mortality." It is hard, if not impossible, to justify such a conclusion even if it is supported by nonrandomized cohort trials data when the randomized controlled trials data are contradictory. I believe the message to the readers from this manuscript is misleading, therefore, I believe the entire manuscript should be rewritten with the correct analysis and conclusions.

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Reply

We would like to thank the authors of the letters for their interest in our paper (1). We agree that the RRISC (Reduction of Restenosis In Saphenous vein grafts with Cypher sirolimus-eluting stent) and DELAYED RRISC (Death and Events at Long-term follow-up AnalYsis: Extended Duration of the Reduction of Restenosis In Saphenous vein grafts with Cypher stent) trials included the same patients (2,3). On the basis of the pre-specified criteria for the meta-analysis, we included all published trials on the use of drug-eluting stents (DES) versus bare-metal stents (BMS) in vein graft percutaneous coronary intervention (PCI). Because the included studies were weighted on the basis of study size, and because this particular study was small in size (only 75 patients), we did not anticipate any significant impact of this strategy on the overall conclusions. We analyzed the data with and without inclusion of the short-term RRISC data and found no significant differences in the conclusions. Drug-eluting stent use was associated with reduced mortality when early and delayed RRISC data were included (odds ratio [OR]: 0.72; 95% confidence interval [CI]: 0.58 to 0.89), and there was no significant difference when the early RRISC data were excluded (OR: 0.72; 95% CI: 0.58 to 0.89) (Fig. 1A). Similarly, DES use—including early RRISC data—led to reduced target vessel revascularization (OR: 0.56; 95% CI: 0.40 to 0.77). Excluding these data, there was no significant change in the estimated benefit of DES on target vessel revascularization (OR: 0.58; 95% CI: 0.42 to 0.77) (Fig. 1B). Identical conclusions were made when other adverse outcomes were analyzed with and without inclusion of early RRISC events.

Despite the statistically significant reduction in mortality associated with DES in our overall analysis, we clearly stated in the discussion that this is possibly caused by selection bias. We emphasized that this finding was primarily noted in the cohort trials and not in randomized trials, hence reinforcing the notion that it might have been driven by interventional operators selecting healthier patients to implant DES. We referenced the work by Shishehbor et al. (4), who made similar observations. Because of that concern, we opted not to state that mortality benefit in our final conclusions paragraph in the published paper (1). The meta-analysis of the body of literature supports the fact that DES use in vein graft PCI is safe and not associated with increased risk of adverse events or mortality, despite the limitations and as noted in the conclusions paragraph. This remains our conclusion and that of others who performed similar meta-analyses (5–9).

We agree with the criticism of the multiplicity of meta-analyses performed on the same subject. We believe this is the effect of the publication and peer-review process as it works today. It is likely that—given the time it takes from writing the manuscript to submission, review, and response to editorial revisions—most of these manuscripts were making their way through the process at different journals at the same time, thus making it difficult to know that each of these papers was in press. As stated, this can be avoided with the creation of a central repository of systematic reviews and meta-analyses for authors to submit to as well as be aware of similar projects in development. Given the number of independent journals dedicated to cardiology and its subspecialties, this might not be an easy task.

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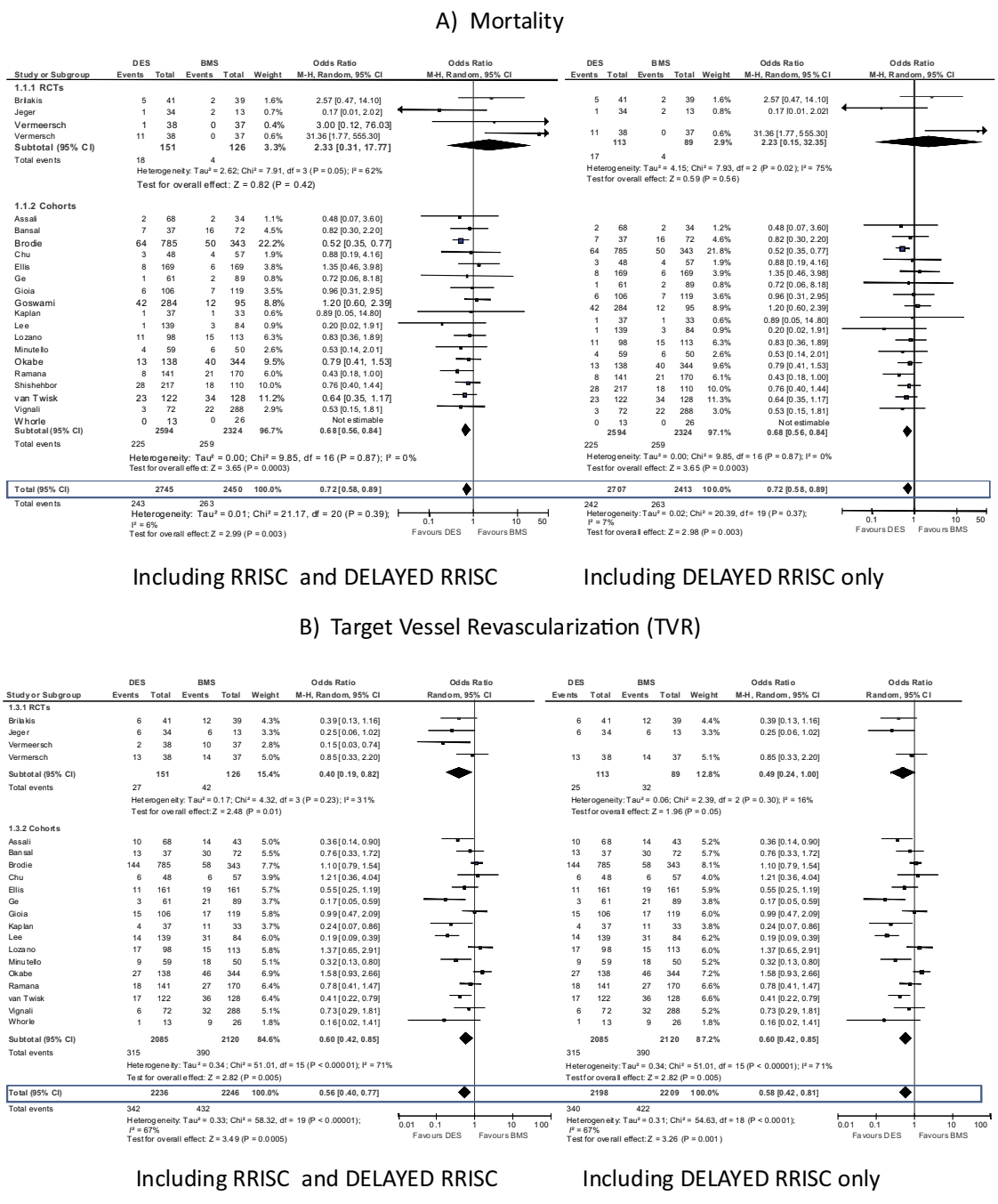

Figure 1. Forest Plot of Unadjusted ORs for Mortality and TVR in SVG PCI With DES Versus BMS

Forest plot of unadjusted odds ratio (ORs) (with 95% confidence intervals [CIs]) for **(A)** mortality and **(B)** TVR in saphenous vein graft (SVG) percutaneous coronary intervention (PCI) with drug-eluting stents (DES) versus bare-metal stents (BMS). The overall significant reduction in mortality or TVR associated with DES use was not affected by inclusion or exclusion of the early outcomes of the RRISC patients.

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Use of Cardiac Computed Tomography Prior to Percutaneous Coronary Sinus Device Placement for the Treatment of Mitral Regurgitation

We would like to congratulate Harnek et al. (1) for showing that percutaneous implantation of the Monarc device (Edwards Lifesciences, Irvine, California) in the coronary sinus is not only feasible but also effectively reduces mitral regurgitation. The investigators found that computed tomography (CT) documented the passage of the great cardiac vein (GCV) over an obtuse marginal artery in 55% of patients. The obtuse marginal artery was associated with angiographic coronary artery compression in 15 patients and with myocardial infarction in 2 patients. In contrast, the coronary sinus/great cardiac vein (CS/GCV) did not pass over a major obtuse marginal artery in 19 patients, none of whom developed coronary artery compression. This study demonstrates that coronary artery compression may occur in patients in whom the GCV passes over a coronary artery. Cardiothoracic surgeons have appreciated for years that surgical mitral valve annuloplasty may result in ischemia from injury to the adjacent left circumflex artery (LCX) (2,3).

The potential for external coronary artery compression when the CS/GCV runs over the obtuse marginal epicardial vessels emerged as the most important consideration for use of this device. The present study by Harnek et al. (1) shows that noninvasive screening with CT is able to identify those patients in whom the obtuse marginal vessels course under the CS/GCV and are therefore at risk for this complication. Accurate pre-procedural understanding of the CS/GCV anatomy as it relates to the mitral valve, specifically the posterior mitral leaflet and the LCX with its obtuse marginal (OM) branches, is vital for this approach to be efficient and successful. We previously developed a systematic method for describing the CS/GCV and LCX/OM relationship with cardiac CT data (4). We found that a large proportion of patients have the LCX/OM arterial distribution traveling under the CS/GCV, and we found that this relationship depends on coronary arterial dominance. In addition, we found that the first OM was under the CS/GCV in 26% to 61% of patients, depending on the coronary dominance, compared with the second OM that was under the CS/GCV in 13% to 28% of patients. It should also be noted that a posterolateral branch might also course under the CS in up to 53% of patients, and thus may also be a potential artery that could be jeopardized with a CS-based annuloplasty device.

Cardiac CT imaging of the CS/GCV using an organized method should be considered an excellent tool to evaluate the anatomic course of the coronary arteries in patients being evaluated for percutaneous CS devices. The potential benefits of a minimally invasive option to treat mitral regurgitation with percutaneous transvenous catheter-based deployment of such annuloplasty devices will need prospective studies to demonstrate that procedural and late complications can indeed be avoided by using an image guidance approach with cardiac CT.

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Reply

We thank Dr. Gopal and colleagues for their interest in our paper (1) and agree that computed tomography is an important imaging modality to screen patients at risk for coronary compression before