Letter by Hakeem et al Regarding Article, “Drug-Eluting or Bare Metal Stents for the Treatment of Saphenous Vein Graft Disease: A Bayesian Meta-Analysis”

To the Editor:

We read with interest the meta-analysis by Paradis et al1 on the use of drug-eluting stents (DES) versus bare-metal stents (BMS) for saphenous vein graft lesions. The authors included 25 studies with 5755 patients and demonstrated that DES were superior in reducing major adverse cardiac events primarily driven by lower revascularization rates by almost 45%. This meta-analysis comes in the midst of 9 other meta-analyses published thus far on the same subject in a little more than 1 year’s time, whereas the number of studies addressing this issue have remained more or less the same. The results of all 10 meta-analyses have been in close agreement: DES reduce the risk of major adverse cardiac events predominantly driven by a lower target lesion revascularization. Seven of the 10 meta-analyses demonstrated a relative risk reduction in death, ranging from 18% to 20%, whereas some, but not others, demonstrated a reduction in the risk of future myocardial infarction by as much as 32%. The reduction in myocardial infarction and death have been exclusively demonstrated in observational studies that have contributed >90% of the included data.

It can be argued that the meta-analysis performed by Paradis et al1 does not add new information to the current body of data provided by other meta-analyses. Twenty-nine studies have compared DES and BMS for saphenous vein graft lesions,2,3 involving a maximum of 7994 patients. Other meta-analyses have included more sophisticated statistical analyses, including sensitivity analysis and meta-regression with meticulous evaluation of publication bias, which appears to be lacking in the current report.

This issue of “redundant” meta-analyses has been raised by a few.4,5 Do we really need 10 meta-analyses in well-reputed journals to elucidate an important finding? Do these really consolidate the evidence base, or are they just a waste of reviewers’ and readers’ time and published pages?4,5 Importantly, what is the implication for the clinician or the investigator? Although this phenomenon has been attributed to the rapid growth in the number of cardiology journals (multiple groups trying to answer the same question and rapid-review turnaround times), streamlining the process in which meta-analyses are proposed, funded, executed, and reviewed could help to alleviate this issue. As a first step, investigators planning systematic reviews/meta-analyses (perhaps mandated by journal editors) would need to register their protocol in a central database, such as the Cochrane reviews or ClinicalTrials.gov.5 At least 1 of the invited reviewers should have a strong background about the statistical know-how of meta-analyses and their shortcomings. Editors potentially could share a database for articles that have been accepted. Meta-analyses should be evaluated for strict compliance to the guideline framework provided by PRISMA (formerly QUORUM) and at the least, have some form of quality assessment of included studies for heterogeneity, publication bias, sensitivity analysis, and meta-regression.

Disclosures

None.

Abdul Hakeem, MD
Imran Arif, MD
Massoud A. Leesar, MD
Division of Cardiovascular Diseases
University of Cincinnati College of Medicine
Cincinnati, OH

References
