Response to Letter Regarding Article, “Bilateral Internal Mammary Artery Grafting Enhances Survival in Diabetic Patients: A 30-Year Follow-Up of Propensity Score-Matched Cohorts”

We thank Drs Habib and Schwann for their careful and insightful review of our article demonstrating the long-term survival advantage of bilateral (BIMA) over single internal mammary artery in diabetics undergoing surgical revascularization. As the commentators note, there may well be a difference between insulin-dependent and non–insulin-dependent diabetics in clinical outcome. Indeed, recent results of the Synergy between PCI with Taxus and Cardiac Surgery (SYNTAX) trial show that percutaneous coronary intervention patients with insulin-dependent diabetes suffered a cardiac death rate of 12.5% compared with 4.5% with coronary artery bypass surgery, whereas the differences for patients requiring only oral hypoglycemic agents were more modest, 11.5% versus 8.4%. It is therefore likely that insulin dependence represents a more severe form of the disease, which likely manifests a more severe form of cardiovascular sequellae. From a vascular perspective, the survival advantage of BIMA grafting would likely be more profound. However, the clinical question must also address whether or not the additional morbid burden of diabetes mellitus truncates the potential survival advantage of BIMA grafting. Although Puskas et al’s recent work corroborates very closely our findings in a more recent surgical experience, their data also did not permit them to distinguish between insulin- and non–insulin-dependent diabetics. The commentators’ reference to their work recently presented at the European Association of CardioThoracic Surgery meeting is appreciated, but not directly relevant to this topic, because the second arterial graft in their work was a radial artery, which has a markedly different clinical and physiological behavior than that of an in situ internal mammary artery. In fact, the commentators’ findings may even serve to emphasize the importance of internal mammary artery usage in diabetic patients. In short, despite reasonable speculation either way, the absence of data does not permit us to make any a priori assumptions regarding the application of our findings to these 2 subsets of diabetic patients.

The commentators are certainly correct that the age-based subgroups in our Figure 2 are from propensity-matched groups but are not themselves specifically risk-adjusted. Unfortunately, the limitations of sample size did not permit effective or meaningful multiple propensity matching algorithms to address this issue. However, the important information that can reasonably be gleaned from the data available is that age >65 years per se should not be considered a contraindication to BIMA grafting in diabetic patients. This finding corroborates our experience with the general surgical population.

The concluding statement is based on the observation that the difference in survival between diabetic and non-diabetic patients in our population was very similar to the difference in survival between single internal mammary artery and BIMA diabetic patients. Unfortunately, as the commentators point out, BIMA grafting is no panacea for the devastating impact of diabetes mellitus on patient survival. However, in diabetic patients with advanced coronary artery disease referred for surgical revascularization, our data support the conclusion that BIMA versus single internal mammary artery grafting not only offers a survival advantage but also helps to ameliorate the negative impact of diabetes on long-term survival.

Disclosures

None.

References


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