EFFECT OF RADIAL ARTERY OR SAPHENOUS VEIN CONDUIT AS A SECOND GRAFT ON LATE CLINICAL OUTCOME AFTER CORONARY ARTERY BYPASS GRAFTING SURGERY **To the Editor:**

We read with great interest the article by Zacharias and colleagues¹ regarding late outcomes after radial artery (RA) versus saphenous vein (SV) grafting during reoperative coronary artery bypass surgery. We do not support their statement that RA versus SV grafting at reoperation was associated with a late survival benefit analogous to what had been previously reported by the same group² when the RA was used as a second arterial conduit in primary coronary artery bypass grafting (CABG) surgery.

In that article² data analysis was performed on a retrospective observational CABG series. The cumulative 0- to 6-year survival was better for patients with RA conduits versus propensity-matched patients with SVs as a second conduit (925 patients in each group). It might be reasonable to assume that angiographic graft patency influenced survival. However, the angiographic RA conduit's patency (1.8 ± 1.4 years to redo angiographic analysis) was 68.2%, which is statistically not better ($P = .11$) than the SV graft patency rate (63.3%). The authors pointed out that patency comparison derived from the subcohort of restudied patients who received both

RA and SV conduits, in which each patient served as his or her own control subject, has shown significantly better RA graft patency (SV graft angiographic failure rate of 41% vs 23.9% observed for RA conduits, $P = .039$)).² Although we are discussing a second conduit of choice in a CABG cohort with an internal thoracic artery to the left anterior descending coronary artery (LAD), each patient can serve as his or her own control subject only if tested conduits (RA or SV) were randomly assigned to graft either the circumflex or the right coronary territory. Furthermore, target vessel stenoses, diameters, and territories of runoff (area of distribution) should be similar and determined in inclusion criteria. Although the authors are proponents of arterial grafting, we assumed that RA conduits were placed to the next best target other than the LAD. If RA conduits were all applied to the largest non-LAD target, the cross-sectional area of their runoff circulation would have been larger than that of the SV grafts performed, which could therefore be expected to fail more readily than the RA grafts. Furthermore, when the SV grafts are used only to the second-best target, patency is 90% at 5 years on optional angiograms and 80% at 9 years in the protocol-directed angiograms (prospective, randomized, single-center trial).³ Achouh and associates⁴ have recently reported a similar angiographic patency rate at 10 years after CABG surgery for both conduits (83% of RA conduits vs 81% of SV grafts).

Hayward and coworkers⁵ concluded that use of the RA or SV for the second conduit during primary CABG did not significantly influence clinical outcome at 6 years. There was no significant difference in absolute survival in the RA group versus that seen in the SV group (similar number of patients, 16 deaths in each group, 4 deaths were cardiac in cause in the RA group vs 2 deaths in SV group). Unfortunately, the cause of death is unknown in the patient population of Zacharias

and colleagues,¹ and thus the death rate might be independent of cardiac factors.

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Reply to the Editor:

My coauthors and I reviewed the letter by Nezic and colleagues¹ related to our recent article in the Journal.² Although we appreciate their opinion, we were surprised that the letter at issue¹ did not discuss our article² per se. Rather, it used our recent article as a springboard to jump back to a 2004 article from our group,³ making essentially the same point as in several previous letters that have discussed other articles comparing the effects on late coronary bypass surgery (CABG) outcomes of use of radial artery (RA) versus saphenous vein (SV) as a second grafting conduit. We stand by our statement that the survival benefit observed with RA versus SV grafting

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