

**EFFECTIVENESS OF A SECOND ARTERIAL CONDUIT FOR MULTI VESSEL CORONARY BYPASS: A STATE-WIDE ANALYSIS OF 60,897 PATIENTS**

Moderated Poster Contributions

Acute and Stable Ischemic Heart Disease Moderated Poster Theater, Poster Hall, Hall C
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Background: Whether a second arterial conduit improves outcomes after multi vessel coronary artery bypass grafting (CABG) remains unclear, and some believe equipoise exists. Consequently, arterial conduits other than the left internal mammary artery are seldom used in the United States.

Methods: We compared propensity score matched cohorts who underwent primary, isolated multi vessel CABG at 127 hospitals in California between 2006 and 2011 with an internal mammary artery (IMA), and who either: A) received an additional IMA or radial artery as a second conduit (N=5,988); or B) received veins for remaining conduits (N=54,909). The primary outcome was all-cause mortality; secondary outcomes included the competing risks of repeat revascularization, myocardial infarction, and stroke. Follow-up ended December 31, 2013. We also compared outcomes of recipients of a second IMA (N=1,607) with matched recipients of a radial artery (N=4,381) as a second conduit.

Results: Second arterial conduit use decreased from 10.9% in 2006 to 9.1% in 2011 ($P<0.001$). However, receipt of a second arterial conduit significantly improved survival (HR 0.81, 95% CI 0.74-0.89, $P<0.001$) and freedom from major adverse cardiovascular events (HR 0.81, 95% CI 0.76-0.85, $P<0.001$) over the 8-year study period. A second arterial conduit reduced the cumulative incidence of the competing risks of repeat revascularization (HR 0.81, 95% CI 0.75-0.87, $P<0.001$) and myocardial infarction (HR 0.80, 95% CI 0.72-0.89, $P<0.001$), but not stroke. The age above which patients no longer benefitted from a second arterial conduit was 73 years. In a comparison of arterial conduits, overall survival ($P=0.83$) and freedom from major adverse cardiovascular events ($P=0.43$) were equivalent between recipients of a second IMA or a radial artery.

Conclusions: The use of a second arterial conduit in patients undergoing multi vessel CABG at a mix of community and academic practices was associated with improved survival and lower risks of repeat revascularization and myocardial infarction. This benefit may extend to those >70 years old. The equipoise between venous and arterial conduits as secondary grafts for CABG should be reconsidered.