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Chronic CAD/Stable Ischemic Heart Disease

LONG-TERM MORTALITY FOLLOWING CORONARY ARTERY BYPASS GRAFT SURGERY AND STENTING WITH DRUG-ELUTING STENTS

ACC Oral Contributions

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Abstract Category: 3. Chronic CAD/Stable Ischemic Heart Disease: Therapy

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Background: There are limited data on the difference in long-term survival between coronary artery bypass graft (CABG) surgery and stenting with drug-eluting stents (DES) in real-world practice. Earlier, we compared the difference in 18-month survival between the 2 procedures. In this study, we examined the difference in 5-year mortality.

Methods: The New York State's Cardiac Surgery Reporting System and Percutaneous Coronary Intervention Reporting System were used to identify 13,296 CABG patients and 20,181 DES patients who had multivessel coronary disease and underwent procedures between October 1, 2003 and December 31, 2005, and the National Death Index was used to determine the vital status of these patients until the end of 2008. The CABG patients were then matched on a 1:1 ratio on the number of diseased vessels, the involvement diseased proximal left anterior descending (LAD) artery, and the propensity of receiving CABG surgery (instead of stenting). Kaplan-Meier survival analysis and Cox proportional hazards regression modeling were conducted to compare the risk of 5-year mortality between the two procedures.

Results: The propensity matching yielded 8,070 pairs of CABG and stent patients. The standardized differences in the distributions of all baseline risk factors were less than 3%, which indicates that all risk factors were well balanced. The 5-year Kaplan-Meier survival rates were 80.2% for CABG surgery and 72.9% for stenting (hazard ratio = 0.74, 95% confidence interval: 0.68 to 0.81, $P < 0.001$). The hazard ratios were 0.65 ($P < 0.001$) for patients with 3-vessel disease with proximal LAD artery disease, 0.76 ($P < 0.001$) for 3-vessel disease with nonproximal LAD artery disease, 0.67 ($P < 0.001$) for patients with 2-vessel disease with proximal LAD artery disease, and 0.70 ($P = 0.005$) for 2-vessel disease with nonproximal LAD artery disease. There was no difference in risk of mortality between CABG surgery and stenting in patients with 2 diseased vessels without LAD artery disease (hazard ratio = 0.95, $P = 0.72$).

Conclusion: In multivessel coronary disease, CABG surgery is associated with lower risk of mortality in all patients except in patients without LAD artery disease.