

A Propensity Score Matched Comparative Analysis of Major Clinical Outcomes Using Drug-Eluting Stents Versus Bare Metal Stents

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Background: Concerns still exist about the long-term safety of drug eluting stents (DES) during routine clinical practice among large population cohorts.

Methods: We report the outcomes of a consecutive cohort of 6583 patients undergoing PCI at our institution between 1/4/2004 and 31/12/2008. We compared total mortality, myocardial infarction (MI), repeat target vessel revascularization (TVR) and coronary bypass operation (CABG) rates and event-free survival in 4398 propensity score matched patients, of whom 2199 were treated using drug eluting stents (DES group) and 2199 were treated using bare metal stents (BMS group). Follow up time was 6 months to 5.18 years (mean 3 years and median 3.25 years).

Results: Propensity score matching balanced well all pre-PCI and procedural variables (age, gender, diabetes mellitus, hypertension, prior heart failure, known moderate to severe LV dysfunction, smoking, dementia, malignancy, prior anticoagulation, hemoglobin, Platelet count, creatinine, prior CABG, PCI for ST elevation MI, PCI for MI or ACS, severe state, number of vessel disease, territories and lesions treated, stent size). After matching, patients in the DES group still had a higher rate of proximal LAD treated and a use of more/longer stents. The cumulative 5 year mortality was 12.85% in the DES group vs. 14.14% in the BMS group ($p=0.001$). Use of DES reduced the occurrence of MI (5.17% vs. 5.83% $p=0.046$), of clinically driven TVR (9.76% vs. 12.28%, $p<0.001$), of CABG (2.13% vs. 3.99% $p=0.001$) and of the composite endpoint of death/MI/TVR (23.38% vs. 26.07%; $p<0.001$), as shown in the figures.

Conclusions: Our risk-adjusted, propensity score matched event-free survival analysis would indicate a prognostic advantage for DES utilization which sustains to 5 years following PCI.

