

A Propensity Score Matched Comparative Analysis of 4 Different Drug Eluting Stents Versus Bare Metal Stents

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Background: Drug eluting stents (DES) have different properties, which could influence their efficacy and safety.

Methods: From a consecutive cohort of 6583 patients undergoing PCI at our institution between 1/4/2004 and 31/12/2008, we identified 2179 patients who were treated using a single type of DES (Sirolimus, Paclitaxel, Zotarolimus and Everolimus eluting stents). By using propensity score matching, we created four cohorts of matched BMS-treated patients and those DES patients. We compared total mortality, myocardial infarction (MI), repeat target vessel revascularization (TVR) and event-free survival up to 1 year in each of these cohorts.

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). Cumulative 6 month and 1 year event rates are presented in the table.

	BMS	Sirolimus	BMS	Paclitaxel	BMS	Zotarolimus	BMS	Everolimus
n	1381	1381	325	325	445	445	218	218
6 month death	4.13%	1.09%	2.77%	2.46%	4.49%	5.39%	4.58%	1.38%
1 year death	5.94%	2.33%	4.37%	3.74%	6.37%	7.7%	5.1%	1.94%
		p<0.001		p=0.69		p=0.33		p=0.065
6m death/MI/TVR	10.93%	4.2%	8.31%	4.92%	11.69%	10.11%	9.63%	4.13%
1y death/MI/TVR	15.02%	6.98%	12.15%	8.12%	14.73%	14.49%	13.26%	5.27%
		p<0.001		p=0.28		p=0.56		p=0.005

Conclusions: We noted a difference in the clinical performance of the 4 types of DES, with apparently better outcomes in patients treated with Sirolimus and Everolimus eluting stents