2 Year Comparative Analysis of 5 Different Drug Eluting 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 7662 patients undergoing PCI at our institution between 1/4/2004 and 31/12/2009, we identified 2869 patients who were treated using a single type of DES (Sirolimus, Paclitaxel, Zotarolimus , new generation Zotarolimus and Everolimus eluting stents). By using propensity score matching, we created five 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 2 years 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 1 year and 2 year event rates are presented in the table.

Conclusions: We noted a difference in the clinical performance of the 5 types of DES, with apparently better outcomes in patients treated with Sirolimus and Everolimus eluting stents, sustained at 2 years.

	BMS	Sirolimus	BMS	Paclitaxel	BMS	Zotarolimus	BMS	Zotarol. R	BMS	Everolimus
n	1389	1389	345	345	464	464	83	83	369	369
6 m death	4.97%	1.08%	3.19%	2.32%	5.60%	5.39%	10.84%	2.41%	3.52%	0.81%
1 y death	6.64%	2.31%	4.71%	3.48%	6.72%	7.76%	12.53%	2.41%	5.41%	1.11%
2 y death	8.04%	3.40%	6.06%	4.39%	8.41%	9.29%	12.53%	2.41%	7.15%	1.90%
		p<0.001		p=NS		p=NS		p=NS		p=0.001
6 m death MI TVR	10.87%	3.67%	7.54%	4.64%	12.93%	10.56%	14.46%	6.02%	7.59%	2.98%
1 y death MI TVR	15.44%	6.42%	11.17%	6.97%	16.28%	14.66%	17.85%	6.02%	12.15%	5.40%
2 y death MI TVR	18.10%	8.54%	12.52%	9.07%	20.14%	16.63%	17.85%	6.02%	14.20%	6.99%
		p<0.001		p=0.014		p=NS		p=NS		p<0.001