

## Online Supplement

### **CABG Versus PCI: Greater Benefit in Long-Term Outcomes With Multiple Arterial Bypass Grafting**

**Short Title:** Optimal Revascularization of Multivessel CAD

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**Table S-1.** Selected patient demographic, co-morbidity and operative/procedural data compared shown for BMS-PCI and SA-CABG matched pairs subcohorts.

Patient Factor	Propensity Matched Cohorts			
	SA-CABG (N=1058)		BMS-PCI (N=1058)	
Categorical Variables	Count	%	Count	%
male	682 <sub>a</sub>	64.5%	687 <sub>a</sub>	64.9%
BMI Category				
<18	285 <sub>a</sub>	26.9%	296 <sub>a</sub>	28.0%
18-24.99	452 <sub>a</sub>	42.7%	433 <sub>a</sub>	40.9%
25-29.99	218 <sub>a</sub>	20.6%	230 <sub>a</sub>	21.7%
30-34.99	73 <sub>a</sub>	6.9%	68 <sub>a</sub>	6.4%
25-29.99	24 <sub>a</sub>	2.3%	21 <sub>a</sub>	2.0%
>40	6 <sub>a</sub>	.6%	10 <sub>a</sub>	.9%
Obese	315 <sub>a</sub>	29.8%	319 <sub>a</sub>	30.2%
CCS Classification				
1.0	18 <sub>a</sub>	1.7%	27 <sub>a</sub>	2.6%
2.0	90 <sub>a</sub>	8.5%	99 <sub>a</sub>	9.4%
3.0	527 <sub>a</sub>	49.8%	514 <sub>a</sub>	48.6%
4.0	423 <sub>a</sub>	40.0%	418 <sub>a</sub>	39.5%
Previous MI	516 <sub>a</sub>	48.8%	486 <sub>a</sub>	45.9%
Hypertension	782 <sub>a</sub>	73.9%	653 <sub>b</sub>	61.7%
COPD	133 <sub>a</sub>	12.6%	128 <sub>a</sub>	12.1%
DIABETES	381 <sub>a</sub>	36.0%	390 <sub>a</sub>	36.9%
Congestive Heart Failure	141 <sub>a</sub>	13.3%	142 <sub>a</sub>	13.4%
Creatinine > 2.5 mg/dL	34 <sub>a</sub>	3.2%	32 <sub>a</sub>	3.0%
Renal Dialysis	22 <sub>a</sub>	2.1%	23 <sub>a</sub>	2.2%
Three Vessel Disease	763 <sub>a</sub>	72.1%	766 <sub>a</sub>	72.4%
Two Vessel Disease	295 <sub>a</sub>	27.9%	292 <sub>a</sub>	27.6%
Left Main Disease	340 <sub>a</sub>	32.1%	68 <sub>b</sub>	6.4%
Off-pump CABG	44 <sub>a</sub>	4.2%		
<b><u>Outcomes</u></b>				
In-hospital death	5 <sub>a</sub>	.5%	12 <sub>a</sub>	1.1%
Reintervention	121 <sub>a</sub>	11.4%	409 <sub>b</sub>	38.7%
<b>Continuous Variables</b>				
	Mean	SD	Mean	SD
Age (yrs)	68.10 <sub>a</sub>	9.21	68.29 <sub>a</sub>	11.92
Height (cm)	166.11 <sub>a</sub>	9.75	166.04 <sub>a</sub>	9.80
Weight (kg)	77.55 <sub>a</sub>	15.70	77.23 <sub>a</sub>	16.61
BMI (Kg/m <sup>2</sup> )	28.08 <sub>a</sub>	5.08	27.96 <sub>a</sub>	5.33
BSA (m <sup>2</sup> )	1.88 <sub>a</sub>	.22	1.88 <sub>a</sub>	.23
Ejection Fraction (%)	49.60 <sub>a</sub>	12.85	49.92 <sub>a</sub>	12.92

Note: Values in the same row and subtable not sharing the same subscript are significantly different at  $p < .05$  in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.<sup>1</sup>

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable Using the Bonferroni correction.
2. This category is not used in comparisons because its column proportion is equal to zero or one.

**Table S-2.** Selected patient demographic, co-morbidity and operative/procedural data compared shown for BMS-PCI and MA-CABG matched pairs subcohorts.

Patient Factor	Propensity Matched Cohorts			
	MA-CABG (N=746)		BMS-PCI (N=746)	
Categorical Variables	Count	%	Count	%
male	548 <sub>a</sub>	73.5%	572 <sub>a</sub>	76.7%
BMI Category				
<18	171 <sub>a</sub>	22.9%	169 <sub>a</sub>	22.7%
18-24.99	301 <sub>a</sub>	40.3%	289 <sub>a</sub>	38.7%
25-29.99	168 <sub>a</sub>	22.5%	179 <sub>a</sub>	24.0%
30-34.99	74 <sub>a</sub>	9.9%	73 <sub>a</sub>	9.8%
25-29.99	28 <sub>a</sub>	3.8%	31 <sub>a</sub>	4.2%
>40	4 <sub>a</sub>	.5%	5 <sub>a</sub>	.7%
Obese	270 <sub>a</sub>	36.2%	283 <sub>a</sub>	37.9%
CCS Classification				
1.0	16 <sub>a</sub>	2.1%	18 <sub>a</sub>	2.4%
2.0	78 <sub>a</sub>	10.5%	91 <sub>a</sub>	12.2%
3.0	367 <sub>a</sub>	49.2%	356 <sub>a</sub>	47.7%
4.0	285 <sub>a</sub>	38.2%	281 <sub>a</sub>	37.7%
Previous MI	320 <sub>a</sub>	42.9%	312 <sub>a</sub>	41.8%
Hypertension	474 <sub>a</sub>	63.5%	464 <sub>a</sub>	62.2%
COPD	89 <sub>a</sub>	11.9%	82 <sub>a</sub>	11.0%
DIABETES	252 <sub>a</sub>	33.8%	263 <sub>a</sub>	35.3%
Congestive Heart Failure	53 <sub>a</sub>	7.1%	55 <sub>a</sub>	7.4%
Creatinine > 2.5 mg/dL	10 <sub>a</sub>	1.3%	11 <sub>a</sub>	1.5%
Renal Dialysis	5 <sub>a</sub>	.7%	8 <sub>a</sub>	1.1%
Three Vessel Disease	607 <sub>a</sub>	81.4%	608 <sub>a</sub>	81.5%
Two Vessel Disease	139 <sub>a</sub>	18.6%	138 <sub>a</sub>	18.5%
Left Main Disease	216 <sub>a</sub>	29.0%	44 <sub>b</sub>	5.9%
Off-pump CABG	21 <sub>a</sub>	2.8%		
<b><u>Outcomes</u></b>				
In-hospital death	2 <sub>a</sub>	.3%	8 <sub>a</sub>	1.1%
Reintervention	83 <sub>a</sub>	11.1%	298 <sub>b</sub>	39.9%
<b>Continuous Variables</b>	Mean	SD	Mean	SD
Age (yrs)	61.10 <sub>a</sub>	8.11	61.03 <sub>a</sub>	11.46
Height (cm)	168.45 <sub>a</sub>	10.26	168.72 <sub>a</sub>	9.61
Weight (kg)	82.14 <sub>a</sub>	16.64	82.73 <sub>a</sub>	17.69
BMI (Kg/m <sup>2</sup> )	28.95 <sub>a</sub>	5.40	29.05 <sub>a</sub>	5.66
BSA (m <sup>2</sup> )	1.95 <sub>a</sub>	.23	1.96 <sub>a</sub>	.24
Ejection Fraction (%)	51.33 <sub>a</sub>	12.12	51.19 <sub>a</sub>	12.05

Note: Values in the same row and subtable not sharing the same subscript are significantly different at  $p < .05$  in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.<sup>1</sup>

1. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable Using the Bonferroni correction.
2. This category is not used in comparisons because its column proportion is equal to zero or one.

**Table S-3.** Selected patient demographic, co-morbidity and operative/procedural data compared shown for DES-PCI and SA-CABG matched pairs subcohorts.

Patient Factor	Propensity Matched Cohorts			
	SA-CABG (N=677)		DES-PCI (N=677)	
Categorical Variables	Count	%	Count	%
male	450 <sub>a</sub>	66.5%	449 <sub>a</sub>	66.3%
BMI Category				
<18	190 <sub>a</sub>	28.1%	182 <sub>a</sub>	26.9%
18-24.99	274 <sub>a</sub>	40.5%	268 <sub>a</sub>	39.6%
25-29.99	149 <sub>a</sub>	22.0%	173 <sub>a</sub>	25.6%
30-34.99	48 <sub>a</sub>	7.1%	40 <sub>a</sub>	5.9%
25-29.99	12 <sub>a</sub>	1.8%	11 <sub>a</sub>	1.6%
>40	4 <sub>a</sub>	.6%	3 <sub>a</sub>	.4%
Obese	209 <sub>a</sub>	30.9%	224 <sub>a</sub>	33.1%
CCS Classification				
1.0	10 <sub>a</sub>	1.5%	11 <sub>a</sub>	1.6%
2.0	87 <sub>a</sub>	12.9%	74 <sub>a</sub>	10.9%
3.0	499 <sub>a</sub>	73.7%	522 <sub>a</sub>	77.1%
4.0	81 <sub>a</sub>	12.0%	70 <sub>a</sub>	10.3%
Previous MI	273 <sub>a</sub>	40.3%	270 <sub>a</sub>	39.9%
Hypertension	502 <sub>a</sub>	74.2%	74 <sub>b</sub>	10.9%
COPD	69 <sub>a</sub>	10.2%	65 <sub>a</sub>	9.6%
DIABETES	272 <sub>a</sub>	40.2%	277 <sub>a</sub>	40.9%
Congestive Heart Failure	62 <sub>a</sub>	9.2%	70 <sub>a</sub>	10.3%
Creatinine > 2.5 mg/dL	25 <sub>a</sub>	3.7%	20 <sub>a</sub>	3.0%
Renal Dialysis	16 <sub>a</sub>	2.4%	13 <sub>a</sub>	1.9%
Three Vessel Disease	524 <sub>a</sub>	77.4%	526 <sub>a</sub>	77.7%
Two Vessel Disease	153 <sub>a</sub>	22.6%	151 <sub>a</sub>	22.3%
Left Main Disease	223 <sub>a</sub>	32.9%	61 <sub>b</sub>	9.0%
Off-pump CABG	28 <sub>a</sub>	4.1%		
<b><u>Outcomes</u></b>				
In-hospital death	3 <sub>a</sub>	.4%	4 <sub>a</sub>	.6%
Reintervention	79 <sub>a</sub>	11.7%	324 <sub>b</sub>	47.9%
<b>Continuous Variables</b>	Mean	SD	Mean	SD
Age (yrs)	68.03 <sub>a</sub>	9.14	68.50 <sub>a</sub>	12.44
Height (cm)	166.15 <sub>a</sub>	9.80	166.34 <sub>a</sub>	9.23
Weight (kg)	77.43 <sub>a</sub>	15.49	77.99 <sub>a</sub>	16.67
BMI (Kg/m <sup>2</sup> )	28.02 <sub>a</sub>	4.96	28.09 <sub>a</sub>	5.06
BSA (m <sup>2</sup> )	1.88 <sub>a</sub>	.22	1.89 <sub>a</sub>	.23
Ejection Fraction (%)	51.02 <sub>a</sub>	12.32	51.29 <sub>a</sub>	12.68

Note: Values in the same row and subtable not sharing the same subscript are significantly different at  $p < .05$  in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.<sup>1</sup>

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2. This category is not used in comparisons because its column proportion is equal to zero or one.

**Table S-4.** Selected patient demographic, co-morbidity and operative/procedural data compared shown for DES-PCI and MA-CABG matched pairs subcohorts.

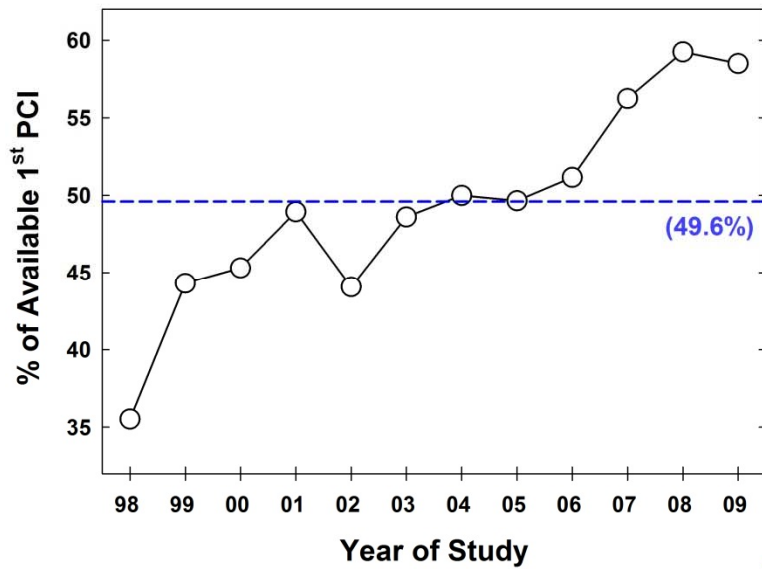
Patient Factor	Propensity Matched Cohorts			
	SA-CABG (N=546)		DES-PCI (N=546)	
Categorical Variables	Count	%	Count	%
male	413 <sub>a</sub>	75.6%	422 <sub>a</sub>	77.3%
BMI Category				
<18	127 <sub>a</sub>	23.3%	119 <sub>a</sub>	21.8%
18-24.99	210 <sub>a</sub>	38.5%	211 <sub>a</sub>	38.6%
25-29.99	133 <sub>a</sub>	24.4%	139 <sub>a</sub>	25.5%
30-34.99	53 <sub>a</sub>	9.7%	53 <sub>a</sub>	9.7%
25-29.99	20 <sub>a</sub>	3.7%	19 <sub>a</sub>	3.5%
>40	3 <sub>a</sub>	.5%	5 <sub>a</sub>	.9%
Obese	206 <sub>a</sub>	37.7%	211 <sub>a</sub>	38.6%
CCS Classification				
1.0	9 <sub>a</sub>	1.6%	9 <sub>a</sub>	1.6%
2.0	85 <sub>a</sub>	15.6%	71 <sub>a</sub>	13.0%
3.0	375 <sub>a</sub>	68.7%	402 <sub>a</sub>	73.6%
4.0	77 <sub>a</sub>	14.1%	64 <sub>a</sub>	11.7%
Previous MI	189 <sub>a</sub>	34.6%	184 <sub>a</sub>	33.7%
Hypertension	325 <sub>a</sub>	59.5%	52 <sub>b</sub>	9.5%
COPD	33 <sub>a</sub>	6.0%	46 <sub>a</sub>	8.4%
DIABETES	210 <sub>a</sub>	38.5%	202 <sub>a</sub>	37.0%
Congestive Heart Failure	30 <sub>a</sub>	5.5%	30 <sub>a</sub>	5.5%
Creatinine > 2.5 mg/dL	5 <sub>a</sub>	.9%	5 <sub>a</sub>	.9%
Renal Dialysis	3 <sub>a</sub>	.5%	4 <sub>a</sub>	.7%
Three Vessel Disease	455 <sub>a</sub>	83.3%	459 <sub>a</sub>	84.1%
Two Vessel Disease	91 <sub>a</sub>	16.7%	87 <sub>a</sub>	15.9%
Left Main Disease	160 <sub>a</sub>	29.3%	45 <sub>b</sub>	8.2%
Off-pump CABG	12 <sub>a</sub>	2.2%		
<b><u>Outcomes</u></b>				
In-hospital death	1 <sub>a</sub>	.2%	1 <sub>a</sub>	.2%
Reintervention	49 <sub>a</sub>	9.0%	274 <sub>b</sub>	50.2%
<b>Continuous Variables</b>	Mean	SD	Mean	SD
Age (yrs)	60.67 <sub>a</sub>	8.07	60.07 <sub>a</sub>	12.76
Height (cm)	168.38 <sub>a</sub>	10.20	168.40 <sub>a</sub>	9.08
Weight (kg)	82.18 <sub>a</sub>	17.35	82.63 <sub>a</sub>	18.04
BMI (Kg/m <sup>2</sup> )	28.95 <sub>a</sub>	5.44	29.05 <sub>a</sub>	5.61
BSA (m <sup>2</sup> )	1.95 <sub>a</sub>	.24	1.96 <sub>a</sub>	.24
Ejection Fraction (%)	53.32 <sub>a</sub>	11.60	53.74 <sub>a</sub>	11.42



Note: Values in the same row and subtable not sharing the same subscript are significantly different at  $p < .05$  in the two-sided test of equality for column proportions. Cells with no subscript are not included in the test. Tests assume equal variances.<sup>1</sup>

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2. This category is not used in comparisons because its column proportion is equal to zero or one.

## Increased Study Eligibility\* Among Available PCI Patients



1998-2009  
**1<sup>st</sup> Intervention = PCI**  
 9242 Pts available  
**5488 Pts eligible (49.6%)**

PCI Study Pts  
 2207 BMS  
 +  
2381 DES  
**4588**

\* Study Eligible = Appropriate for CABG

Figure S-1

**Distribution of BMS vs. DES Procedures  
over 12-year Study Period  
(4588 Total PCIs)**

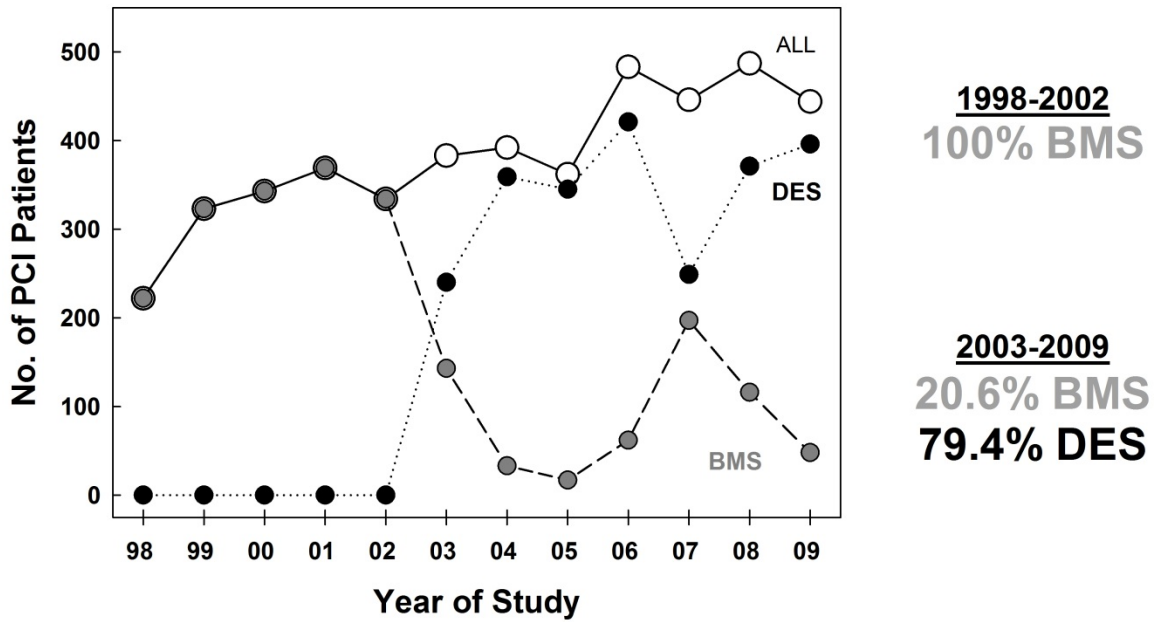


Figure S-2