



Current One-Year Clinical Outcomes of Percutaneous Coronary Intervention and Coronary Artery Bypass Grafting. The CARE (Coronary Artery Revascularization) Study



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Abstract

Introduction: Many randomized trials have compared coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI). However, results of these trials in select patients may not accurately reflect current clinical practice using drug-eluting stents and off-pump CABG. We undertook a registry of coronary revascularization to determine clinical outcomes of current techniques.

Methods: All patients undergoing isolated coronary revascularization in 8 community-based hospitals were prospectively enrolled in a centralized database. Pre-, intra-, and post-procedural characteristics were captured and peri-procedural outcomes and medications were recorded. Follow up was obtained at 12 months by patient and physician contact and utilizing the National Death Index.

Results: There were 4352 patients enrolled, of which 3108 (71.2%) underwent PCI and 1253 (28.8%) CABG. At least one drug-eluting stent was used in 2353/3108 (75.7%) of the patients undergoing PCI. Off-pump CABG was performed in 577/1253 (45.9%) of the surgical cases. The patients treated with PCI and CABG were very similar with no statistical differences in gender, age, race, renal failure and diabetes. The PCI group had a higher ejection fraction (53.1% vs 50.12%; p<0.001). The PCI group had statistically higher rates of previous PCI, previous valve procedures and CABG.

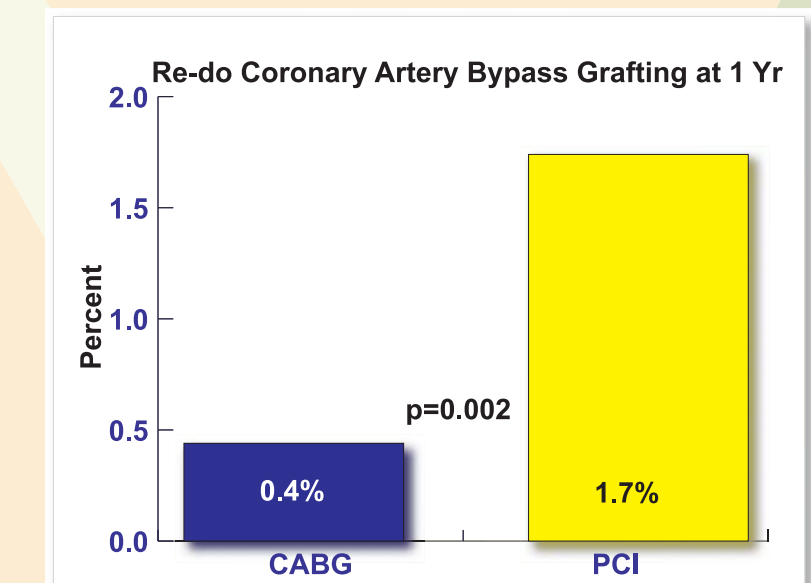
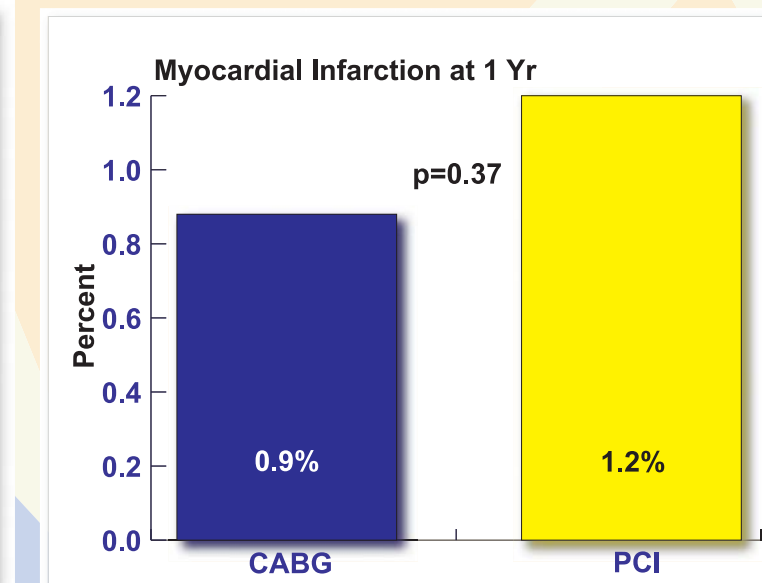
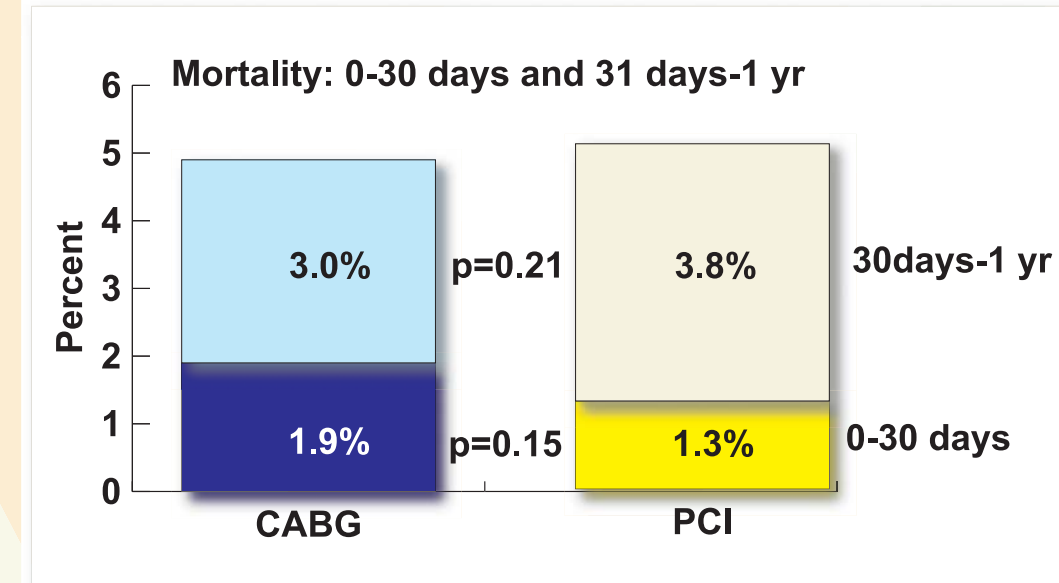
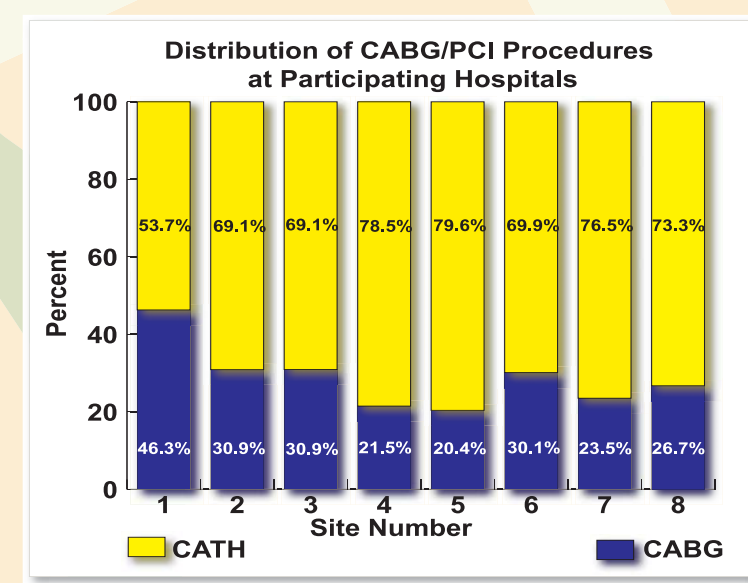
One year follow-up has been obtained on 83.5% (2594/3108) of the PCI, and 86.1% (1083/1253) CABG patients.

Conclusions: One year outcomes are generally good in both groups. Patients undergoing initial PCI have significantly higher rates of death after 30 days and target vessel revascularization than those undergoing CABG.

One Year Events	CABG	PCI	p-value
Cardiac Death Overall	2.1%	5.1%	0.23
0-30 days	2.2%	1.4%	0.04
31 days - 1 yr	2.0%	4.7%	0.00
MI	0.9%	1.1%	0.62
Repeat Target Vessel Revascularization	0.3%	1.5%	0.00
With CABG	2.5%	5.6%	0.00
MACE (Major Adverse Cardio Events)	11.6%	19.2%	<0.001

Introduction

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Methods

- Prospective study of all patients undergoing isolated coronary revascularization
- Collaborative effort of 8 community-based hospitals
- Pre-, intra-, and post-procedural characteristics captured
- Periprocedural outcomes and medications recorded
- Long-term follow up was obtained at 6, 12 months by patient and physician contact and utilizing the National Death Index
- MACE Events recorded include Cardiac (or unknown) Mortality, Myocardial Infarction, and Revascularization

Results

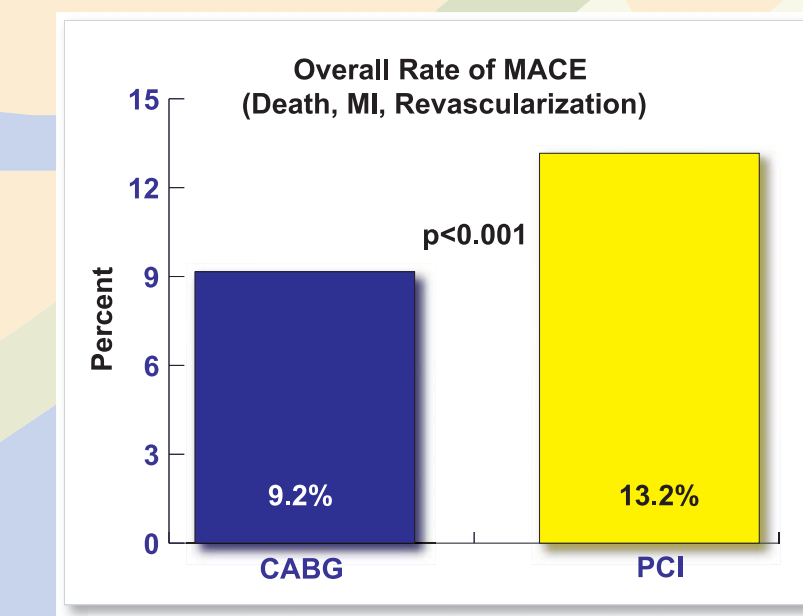
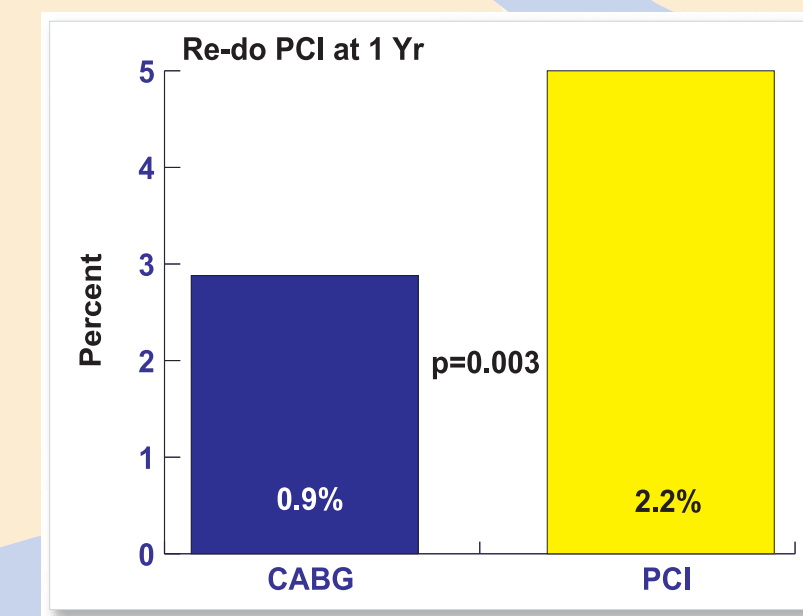
- Total enrollment = 4352 patients**
 - Patients having PCI = 3099 (71.2%)
 - Patients having CABG = 1253 (28.8%)
 - off-pump procedures 597/1253 (47.7%)
 - with CPB 656/1253 (52.4%)
- at least one drug-eluting stent was used in 2353/3099 (75.7%) of the PCI patients

One Year Follow-up

- CABG 90.6% (1135/1253)
- PCI 88.1% (2729/3099)

Demographics and Pre-op Risk Factors for Patients with 12 mo Follow-up

	CABG (1135)	PCI (2729)	p-value
Females	30.5%	31.2%	ns
Caucasians	83.9%	82.7%	ns
Renal Failure	4.9%	4.4%	ns
Previous MI	25.8%	26.4%	ns
Peripheral Vascular Disease	11.7%	8.8%	0.003
Hypercholesterolemia	54.1%	67.3%	<0.001
Cerebral Vascular Disease	10.5%	18.1%	<0.001
Previous CAB	5.0%	20.0%	<0.001
Previous PCI	17.9%	32.2%	<0.001
CHF	7.9%	7.6%	ns
Age (yrs)	63.5 ± 10.7	63.5 ± 12.4	ns
Ejection Fraction (%)	49.7 ± 12.1	52.8 ± 16.0	<0.001
Weight (kg)	87.1 ± 19.7	87.3 ± 19.5	ns



Conclusions

At one year patients treated with PCI show a statistically significant higher overall rate of MACE events than patients treated using CABG surgery.