

Contemporary Outcomes after Revascularization in Multivessel Coronary Artery Disease Stratified by Surgical Risk

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BACKGROUND

Outcomes following coronary artery bypass graft (CABG) surgery versus percutaneous coronary intervention (PCI) in patients with multivessel coronary artery disease (MVCAD) stratified by Society of Thoracic Surgeons (STS) risk scores in contemporary practice is not completely understood.

METHODS

This was a propensity-matched retrospective, observational analysis. Patients with MVCAD who underwent CABG or PCI between 2010 and 2018 and for whom data was available through the NCDR or STS Registries were included. The outcomes included survival, freedom from inpatient readmission and repeat revascularization.

RESULTS

Of the initial 6163 patients with MVCAD, the propensity-matched cohort included 844 in each group. Low risk STS (<4%) cohort included 712 and 701 patients for PCI and CABG respectively, intermediate risk cohort (4-8%) included 91 and 86, and high risk cohort (>8%) included 41 and 51. Figure 1 demonstrates the Kaplan-Meier curve 5-year freedom from mortality. Figure 2 shows the Kaplan-Meier curve for freedom from all cause readmission and freedom from revascularization. Table 1 shows outcomes stratified by surgical risk.

CONCLUSION

Among low-risk STS patients, CABG seems to offer a significant benefit over PCI with respect to mortality, readmission, and repeat revascularization. While the benefits of CABG over PCI in the intermediate- and high-risk STS groups were not as statistically significant, this may be due to fewer patients in those groups; nonetheless, the trends all suggested a benefit with CABG. Future studies are needed reflecting routine practice to assess how best to approach shared-decision making and informed consent when it comes to revascularization decisions in patients with multivessel coronary artery disease.

In a real world cohort, CABG outperformed PCI in terms of mortality, readmission and revascularization

Stratified by surgical risk

- Low risk: CABG>PCI
- Intermediate risk: mortality benefit with CABG
- High risk: No significant difference



FIGURE 1

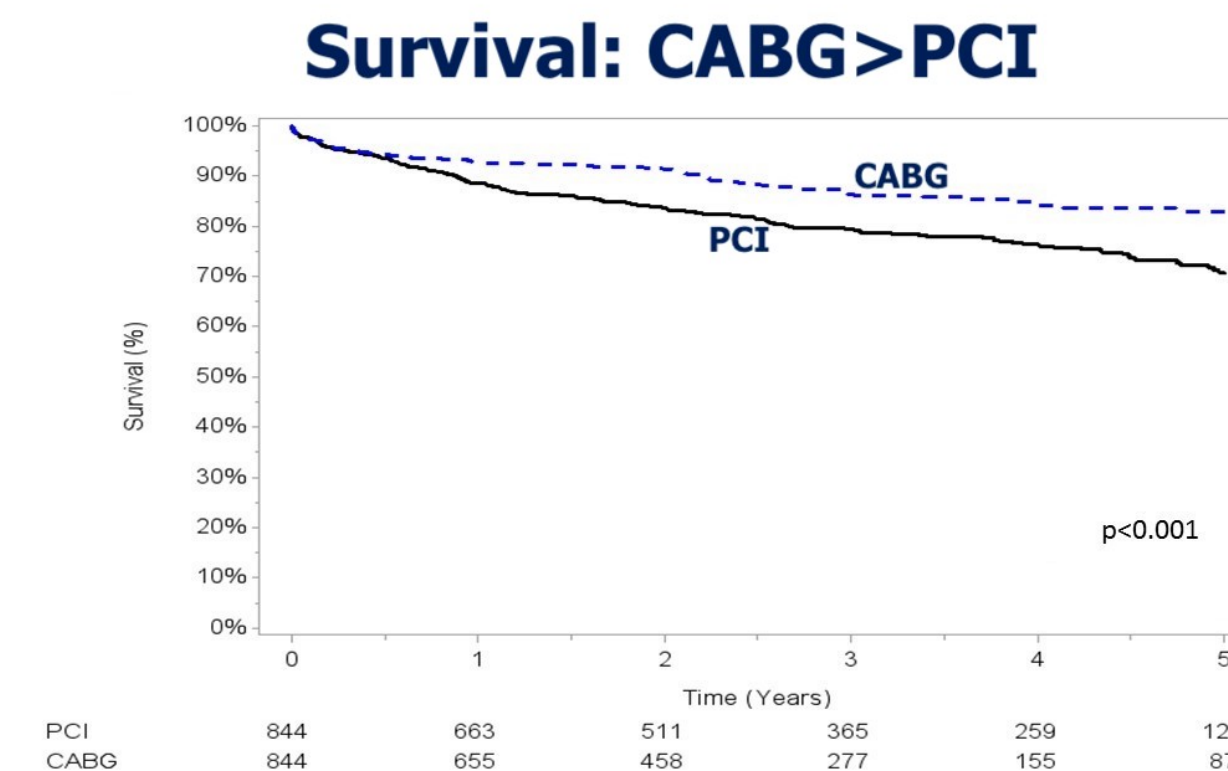


FIGURE 2

Readmission

Revascularization

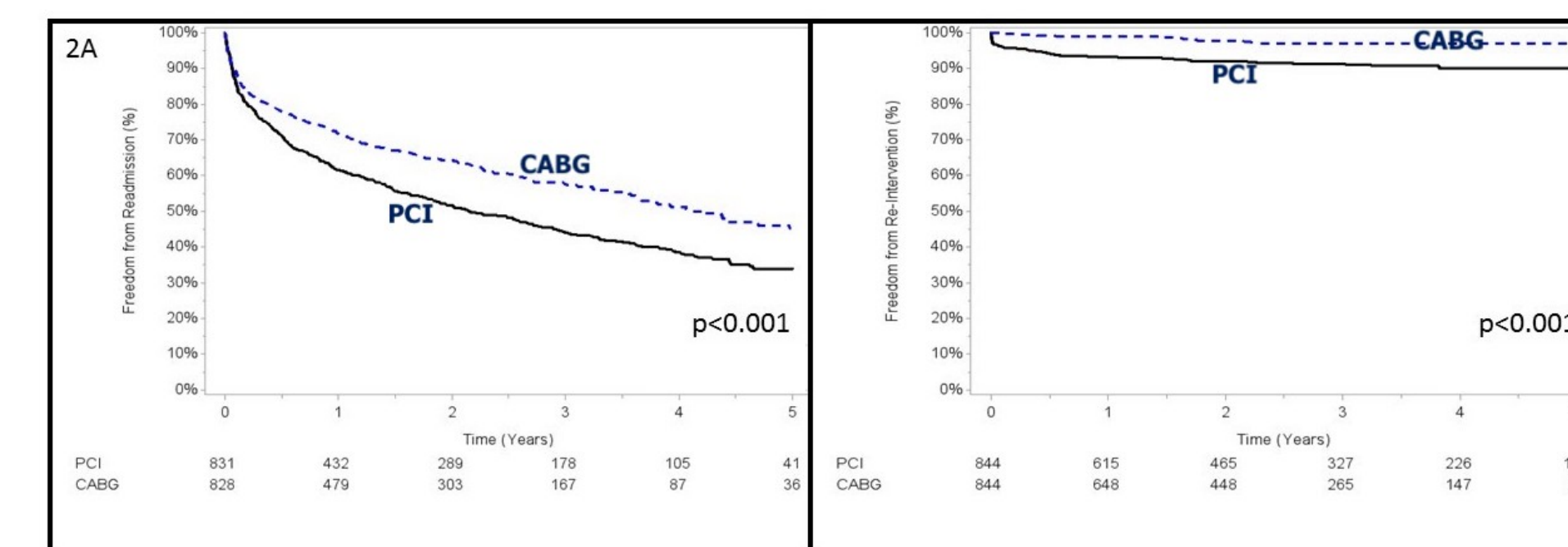


TABLE 1

5-Year Events	Low-Risk STS (<4%)			Intermediate-Risk STS (4-8%)			High-Risk STS (>8%)		
	PCI Cohort	CABG Cohort	Chi-Sq P-Value	PCI Cohort	CABG Cohort	Chi Sq P-Value	PCI Cohort	CABG Cohort	Chi Sq P-Value
Alive	598	646	<0.0001	48	65	0.002	16	27	0.212
Dead	114	55		43	21		25	24	
No Readmission	347	461	<0.0001	39	39	0.764	21	24	0.834
Readmission	365	240		52	47		20	27	
No Repeat Revascularization	649	685	<0.0001	87	85	0.369	39	51	0.196
Repeat Revascularization	63	16		4	1		2	0	

DISCLOSURE INFORMATION

None.