Treatment of Left Main and MultiVessel Disease: PCI vs. CABG

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Relevant Disclosures

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Revascularization Options for Extensive CAD Patient 3 hrs after CABG Patient 3 hours after PCI





- Most pts prefer PCI over CABG for revascularization
- The principle of autonomy dictates that this choice must be respected!

The fundamental question: In whom are the advantages of CABG so profound that we should strongly recommend that pts go through the considerable discomfort and prolonged recovery that surgery entails?

Death and Stroke: The 2 most important outcomes for patients PCI vs. CABG for Left Main Disease

Are Mortality and Stroke Different?



4 Randomized Trials of PCI with DES vs. CABG (n=4,394) **Primary Endpoint: All-cause Mortality**



Sabatine MS et al. Lancet 2021;398:2247-57

4 Randomized Trials of PCI with DES vs. CABG (n=4,394) **Two Trials with 10-Year Mortality Data**



Sabatine MS et al. Lancet 2021;398:2247-57

4 Randomized Trials of PCI with DES vs. CABG (n=4,394) 5-Year Mortality Analysis: Subgroups

		01		<u>HR (95% CI)</u>	P _{interaction}
Age ≥65 year	s (N=2496)			1.23 (0.99-1.51)	0.09
Age <65 year	rs (N=1898)			0.84 (0.57-1.24)	
Male (N=337	1)			1.06 (0.86-1.31)	0.60
Female (N=1	023)		-	1.18 (0.82-1.71)	
Diabetes (N=	1104)			1.11 (0.82-1.52)	0.87
No Diabetes	(N=3289)			1.08 (0.86-1.36)	
LVEF <50% (N	1=499)			1.01 (0.67-1.53)	0.84
LVEF <u>></u> 50% (N	1=3562)			1.04 (0.84-1.29)	
eGFR <60 mL	/min/1.73m² (N=531)			1.30 (0.89-1.89)	0.23
eGFR <u>></u> 60 mL	/min/1.73m² (N=2568)			0.98 (0.75-1.27)	
SYNTAX score	e <u><</u> 22 (N=1778)			1.06 (0.77-1.48)	0.48
SYNTAX score	e 23-32 (N=1627)			0.98 (0.73-1.30)	
SYNTAX score	e <u>≥</u> 33 (N=953)			1.30 (0.92-1.84)	
Left main on	ly (N=705)		-	1.39 (0.82-2.36)	0.11
Left main + 1	vessel (N=1367)			0.79 (0.57-1.11)	
Left main + 2	vessels (N=1375)			1.34 (0.96-1.86)	
Left main + ≥	3 vessels (N=907)			1.14 (0.78-1.66)	
0.25	PCI better	1.0	CABG better	90. G	4.0

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4 Randomized Trials of PCI with DES vs. CABG (n=4,394) **CV Mortality and SYNTAX Score: Spline analysis**



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4 Randomized Trials of Left Main PCI with DES vs. CABG (n=4,394) Stroke



Sabatine MS et al. Lancet 2021;398:2247-57

Death and Stroke: The 2 most important outcomes for patients PCI vs. CABG for Multivessel Disease

Are Mortality and Stroke Different?



PCI vs CABG in Multivessel Disease

Individual-patient-data pooled-analysis, 8 RCTs, 7,040 pts



Head SJ et al. Lancet 2018;391:939-48

PCI vs CABG in Multivessel Disease

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Renal dysfunction

Atrial fibrillation/arrhythmias

Vascular complications

Major bleeding/transfusions

Rehospitalizations

Cognitive decline

Depression

Time to recovery

Patients Want to Live Longer and Live Better!



QOL! Encapsulates all non-fatal outcomes



PCI vs. CABG for Left Main and MVD

Is Quality of Life Different?



SYNTAX

1800 pts with 3VD/LMD Randomized to PCI with First Generation Taxus DES vs CABG

Formal Quality-of-Life Study



Abdallah MS et al. JACC 2017;69:2039–50

EXCEL

1905 pts with Left Main Disease Randomized to PCI with Second Generation Xience DES vs CABG

Formal Quality-of-Life Study



SAQ – Physical Limitations



LM PCI vs CABG: An evidence-based reconciliation

- For many pts with left LMCAD, the choice between PCI and CABG will be agreed upon by all specialists.
- E.g.: CABG may be strongly preferred by the heart team if extensive non-left main-related CAD is present (high SYNTAX score), and PCI may be strongly preferred if multiple clinical comorbidities are present (e.g. prior stroke, lung disease, frailty).
- For other pts in whom revascularization can be safely completed with both procedures (i.e. <u>equipoise is</u> <u>present</u>) there will be substantial and comparable long-term improvements in survival and QOL after both PCI and CABG.
- In such cases, patient preferences regarding the early vs. late trade-offs of the procedures (safety of PCI with more rapid recovery vs. durability of CABG) should inform clinical decision-making.



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