Mortality after Multivessel Revascularization Involving the Proximal Left Anterior Descending Artery

Supplementary Appendix

1

Supplementary Figure Legends

Online Figure 1. Calibration Plot of the SYNTAX score II 2020 for all-cause mortality in patients with or without involvement of P-LAD lesion

Triangles represent five quintiles of patients with mean predicted probability and mean observed all-cause mortality rate with 95% confidence interval. The diagonal blue lines represent perfect calibration. The red lines and gray area indicate flexible calibration curves and their 95% confidence intervals, respectively. The distribution of patients is indicated with spike at the bottom of the graph, stratified by outcomes (deaths above the x-axis and survivors below the x-axis).

Online Figure 2. Calibration plot showing the observed versus predicted treatment benefit in patients with P-LAD (A) and without P-LAD (B).

The percentages red (A) or blue (B) figuring in the illustration are the absolute risk differences in all-cause death at 10 years between CABG and PCI in each quarter for the patients with and without P-LAD lesion, respectively. Vertical dashed lines represent quartiles of the predicted treatment benefit of CABG over PCI, and the small circles and solid lines represent mean values of the absolute risk differences between CABG and PCI in each quartile and their 95% confidence intervals, respectively. The red or blue curves are calibration plots of the model in each group. The diagonal lines represent perfect calibration.

Online Figure 3. Kaplan-Meier plots showing the observed versus predicted treatment benefit of CABG over PCI according to the SYNTAX score II 2020 in predicted benefit quarters in patients with or without P-LAD

There were the trends that the beneficial effects of CABG over PCI were more amplified in higher quartile groups according to predicted benefit by the SYNTAX score II 2020 among patients with or without P-LAD lesion.
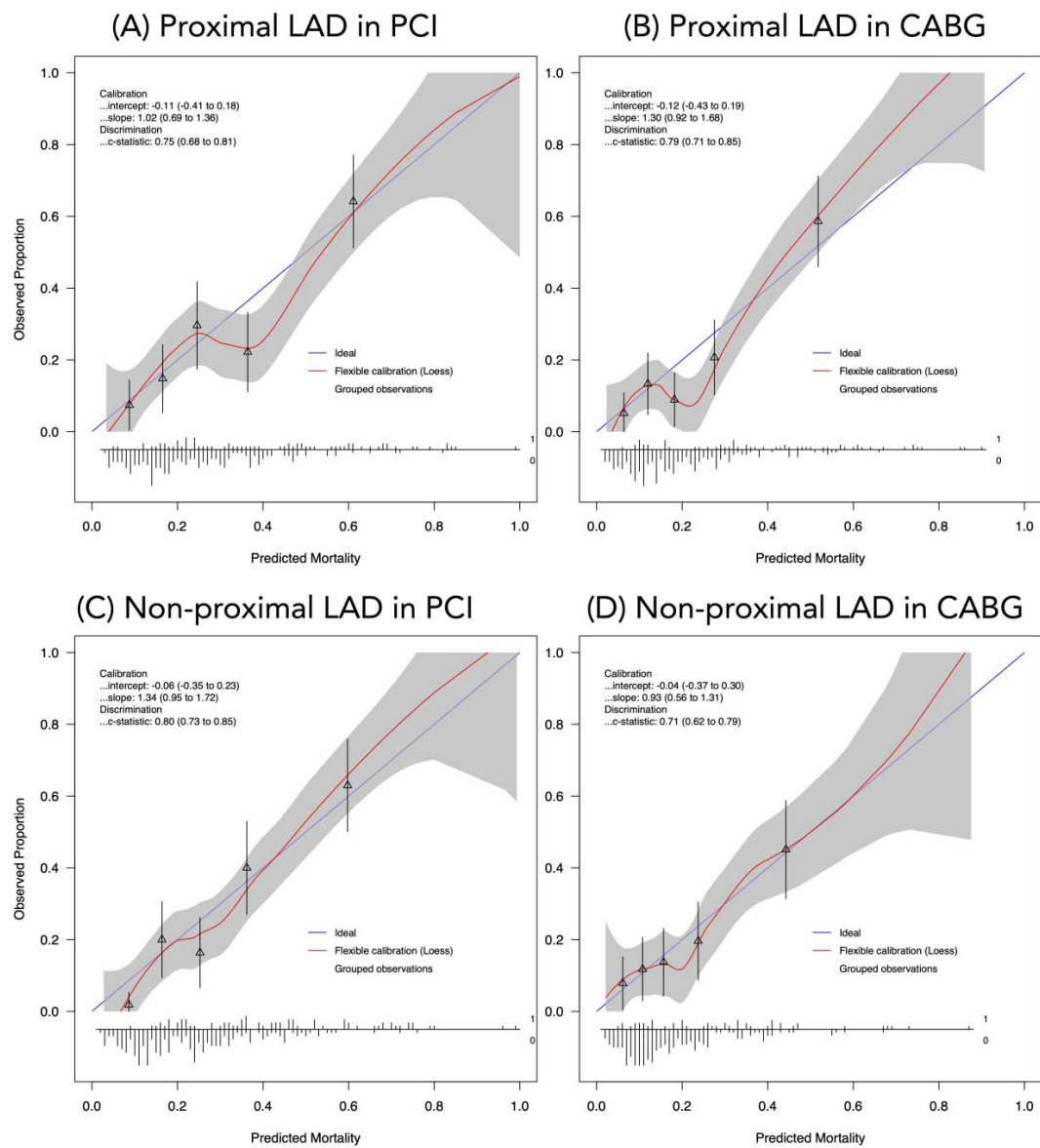
Online Figure 4. Individual plots of predicted mortality after PCI or CABG by the SYNTAX score II 2020 and observed mortality at 10 years in patients with proximal LAD lesion.

The case number is according to the order of treatment benefit predicted by the SYNTAX score II 2020, where higher number indicates higher predicted survival benefit of CABG over PCI. Blue and Red solid lines indicate predicted 10-year mortality risks after PCI and CABG, respectively, whereas Blue and Red dashed lines indicate observed 10-year mortality rates after PCI and CABG, respectively.

Online Figure 5. Individual plots of predicted mortality after PCI or CABG by the SYNTAX score II 2020 and observed mortality at 10 years in patients without proximal LAD lesion.

The case number is according to the order of treatment benefit predicted by the SYNTAX score II 2020, where higher number indicates higher predicted survival benefit of CABG over PCI. Blue and Red solid lines indicate predicted 10-year mortality risks after PCI and CABG, respectively, whereas Blue and Red dashed lines indicate observed 10-year mortality rates after PCI and CABG, respectively.
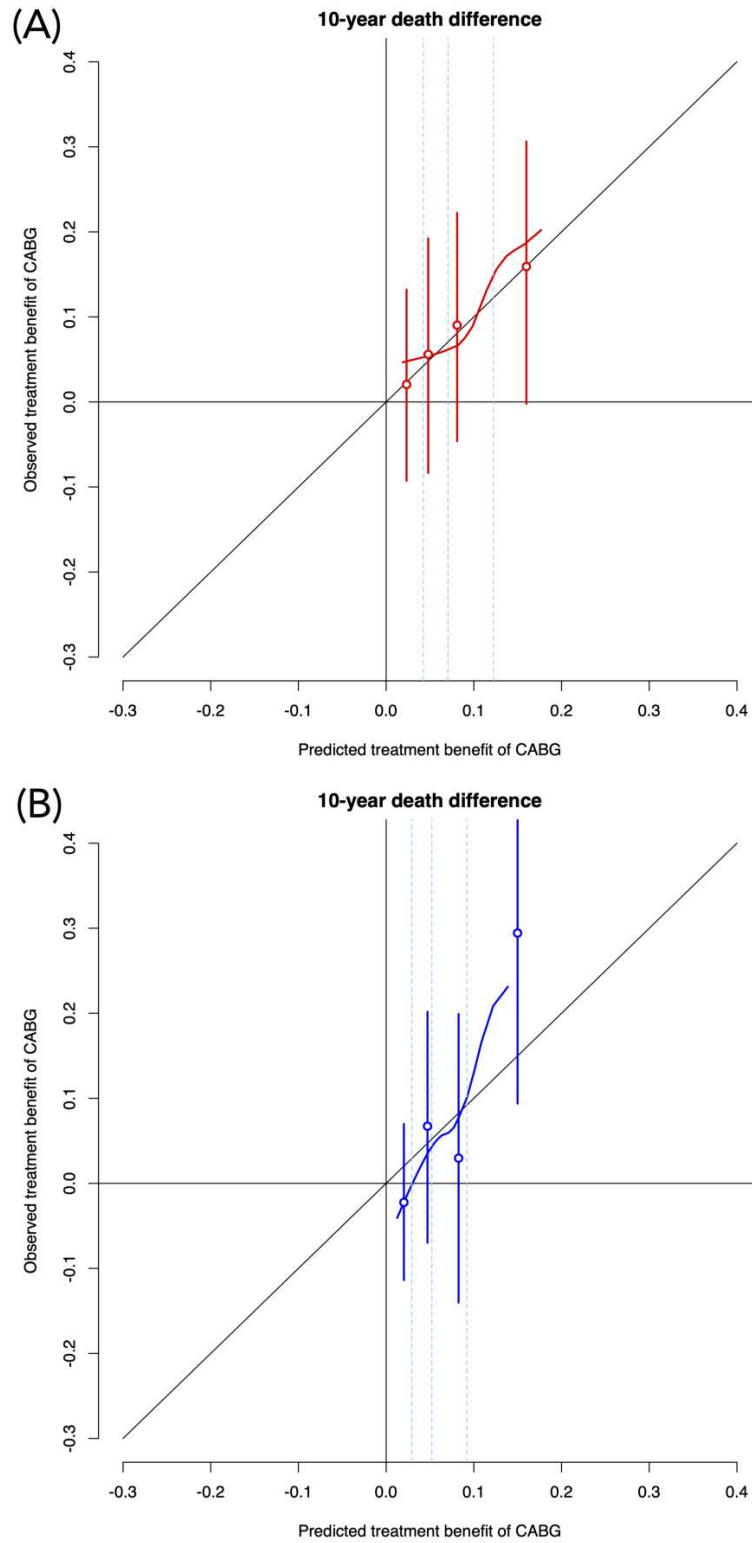
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Heart

Online Figure 1.

(A) Proximal LAD in PCI

Calibration
...intercept: -0.11 (-0.41 to 0.18)
...slope: 1.02 (0.69 to 1.36)
Discrimination
...c-statistic: 0.75 (0.68 to 0.81)

(B) Proximal LAD in CABG

Calibration
...intercept: -0.12 (-0.43 to 0.19)
...slope: 1.30 (0.92 to 1.68)
Discrimination
...c-statistic: 0.79 (0.71 to 0.85)

(C) Non-proximal LAD in PCI

Calibration
...intercept: -0.06 (-0.35 to 0.23)
...slope: 1.34 (0.95 to 1.72)
Discrimination
...c-statistic: 0.80 (0.73 to 0.85)

(D) Non-proximal LAD in CABG

Calibration
...intercept: -0.04 (-0.37 to 0.30)
...slope: 0.93 (0.56 to 1.31)
Discrimination
...c-statistic: 0.71 (0.62 to 0.79)

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Online Figure 2

(A)

10-year death difference

(B)

10-year death difference

4

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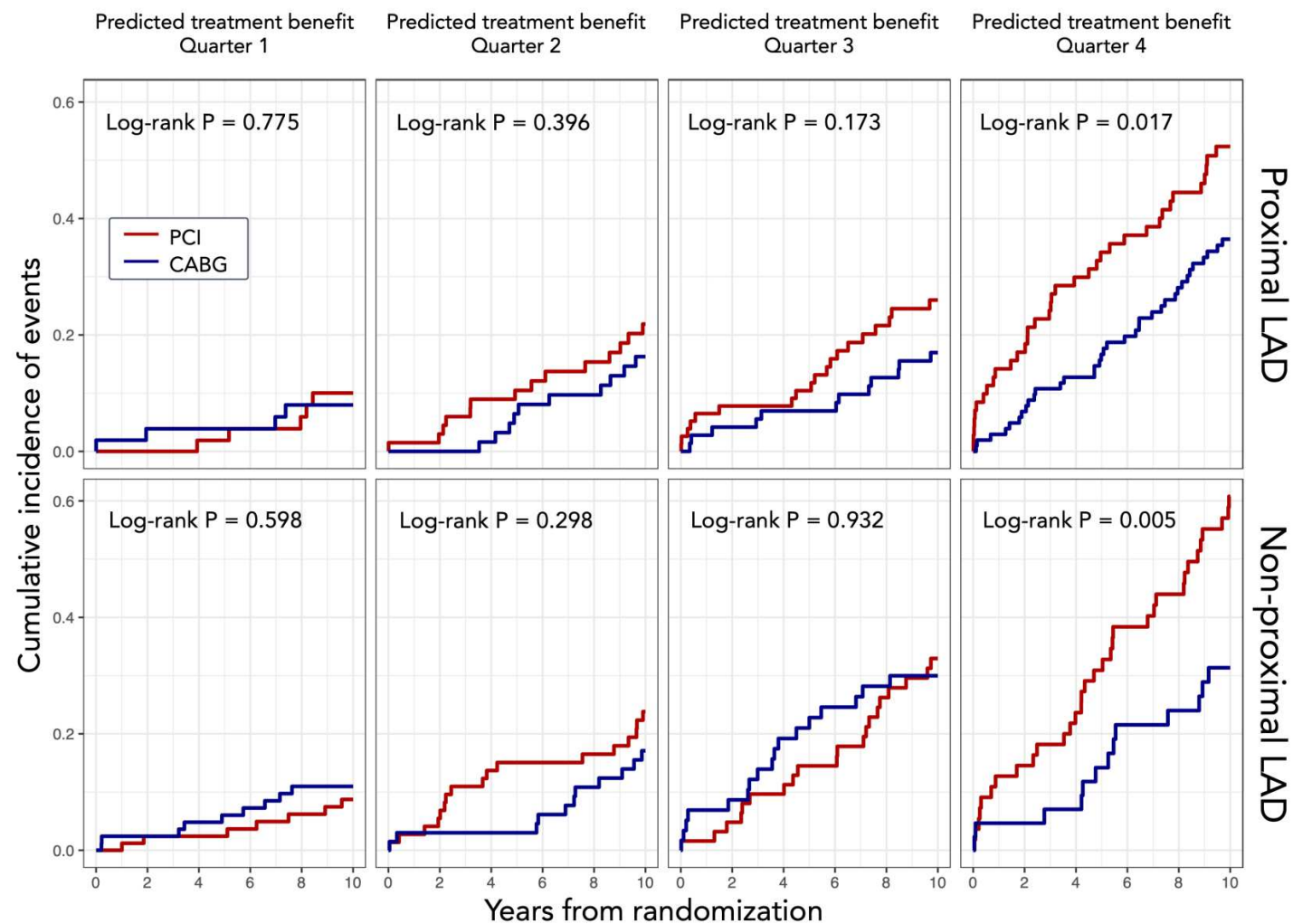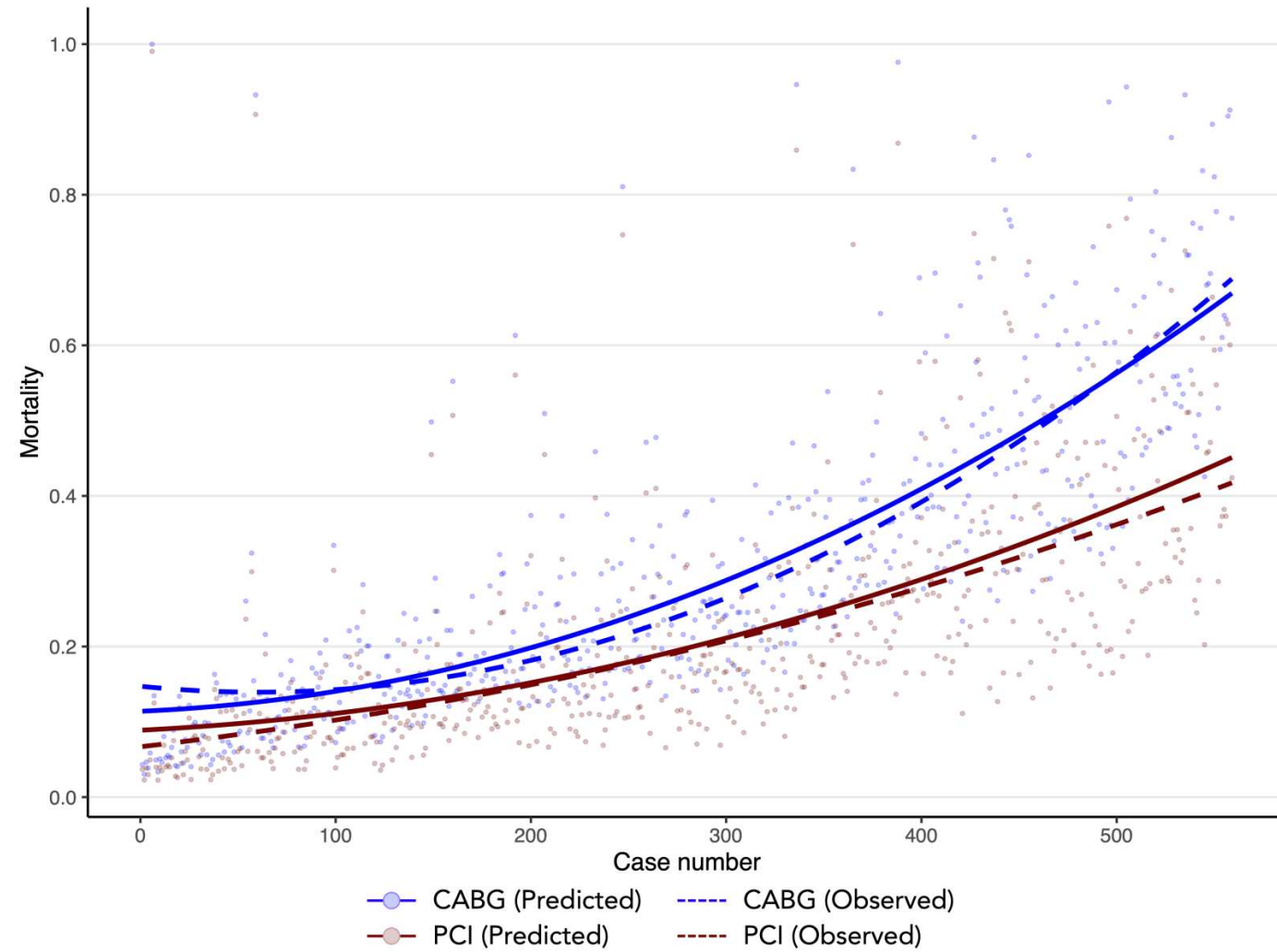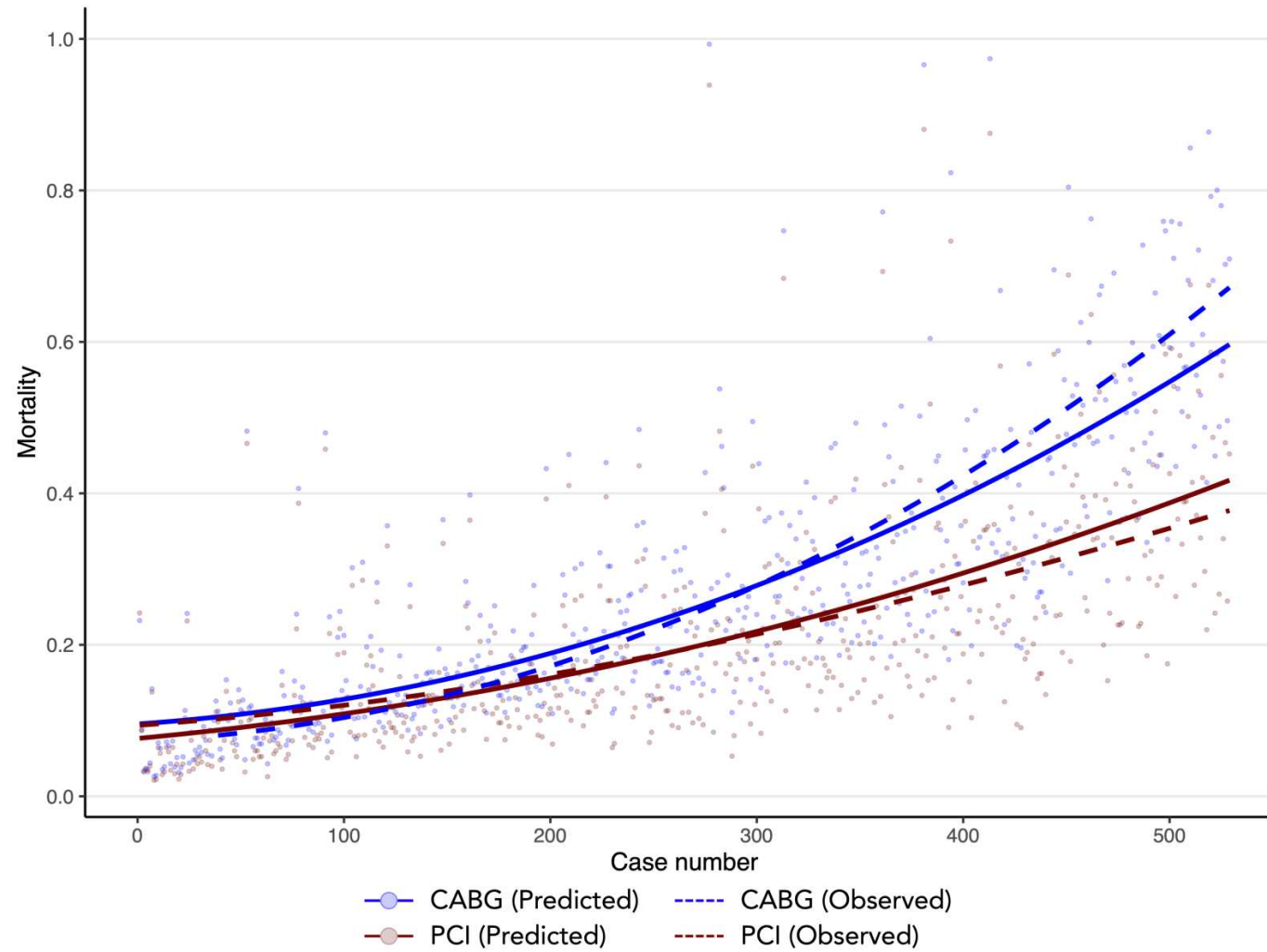*Heart*

Online Figure 3

Online Figure 4

Online Figure 5

Online Table 1. Baseline characteristics in randomized revascularization arms with or without involvement of proximal LAD lesion

	Proximal LAD			Non-proximal LAD		
	PCI N = 269	CABG N = 290	P value	PCI N = 274	CABG N = 255	P value
Mid LAD lesion	71.4 (192/269)	75.9 (220/290)	0.249	93.8 (257/274)	92.9 (237/255)	0.729
Apical LAD lesion	14.5 (39/269)	15.2 (44/290)	0.905	21.9 (60/274)	18.8 (48/255)	0.390
Age (year)	66 (58-72)	66 (59-72)	0.018	66 (60-73)	64 (57-72)	0.464
Sex			0.832			0.157
Male	80.7 (217/269)	79.7 (231/290)		77.7 (213/274)	82.7 (211/255)	
Female	19.3 (52/269)	20.3 (59/290)		22.3 (61/274)	17.3 (44/255)	
Body mass index (kg/m^2)	27 (25-30)	28 (25-30)	0.760	27 (25-31)	27 (25-31)	0.631
Diabetes	25.3 (68/269)	30.0 (87/290)	0.220	30.7 (84/274)	22.0 (56/255)	0.030
On insulin	9.7 (26/269)	12.8 (37/290)	0.285	12.8 (35/274)	8.6 (22/255)	0.160
Metabolic syndrome	47.2 (103/218)	50.4 (114/226)	0.508	50.4 (115/228)	48.7 (95/195)	0.770
Hypertension	69.1 (186/269)	63.1 (183/290)	0.153	71.2 (195/274)	67.5 (172/255)	0.396
Dyslipidemia	75.7 (202/267)	79.1 (227/287)	0.361	78.4 (211/269)	77.9 (197/253)	0.916
Current smoking	20.1 (54/269)	20.3 (59/290)	1.000	17.5 (48/274)	21.3 (54/254)	0.321
Previous MI	29.7 (79/266)	37.2 (107/288)	0.072	39.0 (105/269)	41.5 (105/253)	0.593
Previous cerebrovascular disease	13.0 (35/269)	15.0 (43/287)	0.542	11.7 (32/273)	15.4 (39/254)	0.251
Previous stroke	4.5 (12/269)	4.5 (13/288)	1.000	3.3 (9/272)	6.3 (16/254)	0.150
Previous TIA	3.0 (8/269)	5.2 (15/287)	0.206	5.5 (15/272)	6.3 (16/254)	0.715
Previous carotid artery disease	8.9 (24/269)	8.3 (24/290)	0.880	6.6 (18/274)	6.7 (17/255)	1.000
Peripheral vascular disease	8.6 (23/269)	9.3 (27/290)	0.769	8.0 (22/274)	11.0 (28/255)	0.298
COPD	7.1 (19/269)	8.6 (25/290)	0.532	8.4 (23/274)	10.2 (26/255)	0.549
Chronic kidney disease	18.0 (45/250)	21.4 (54/252)	0.370	20.6 (54/262)	16.3 (36/221)	0.242
Creatinine clearance (ml/min)	81 (66-104)	79 (62-100)	0.105	79 (63-100)	85 (67-106)	0.166
LVEF (%)	60 (52-68)	60 (50-65)	0.948	60 (53-65)	60 (50-65)	0.257

8

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Congestive heart failure	4.1 (11/268)	6.3 (18/286)	0.260	4.4 (12/272)	5.2 (13/250)	0.687
Clinical presentation						
Silent ischemia	14.1 (38/269)	12.1 (35/290)	0.530	13.1 (36/274)	16.1 (41/255)	0.388
Stable angina	59.1 (159/269)	63.1 (183/290)	0.341	58.4 (160/274)	53.3 (136/255)	0.255
Unstable angina	26.8 (72/269)	24.8 (72/290)	0.629	28.5 (78/274)	30.6 (78/255)	0.634
EuroSCORE	3 (2-5)	4 (2-5)	0.252	4 (2-5)	3 (2-5)	0.180
Parsonnet SCORE	6 (3-12)	6 (3-12)	0.043	6 (4-13)	6 (3-10)	0.722
Disease type			0.422			0.753
2VD (No LMCAD)	3.7 (10/269)	5.2 (15/290)		2.2 (6/274)	1.6 (4/255)	
3VD (No LMCAD)	96.3 (259/269)	94.8 (275/290)		97.8 (268/274)	98.4 (251/255)	
Number of lesions	5 (4-6)	5 (4-6)	0.853	5 (4-6)	5 (4-6)	0.278
SYNTAX score	30 (23-36)	30 (25-39)	0.863	24 (18-31)	24 (18-30)	0.099
SYNTAX score tercile						
Low	22.3 (60/269)	19.3 (56/290)	0.405	44.2 (121/274)	45.1 (115/255)	0.861
Intermediate	41.3 (111/269)	38.6 (112/290)	0.546	35.0 (96/274)	37.6 (96/255)	0.587
High	36.4 (98/269)	42.1 (122/290)	0.194	20.8 (57/274)	17.3 (44/255)	0.320
Predicted 10-year mortality rates by SS II 2020 (%)	24.5 (14.9-39.5)	17.8 (10.8-29.9)	<0.001	24.7 (14.2-40.0)	15.5 (9.8-26.2)	<0.001
Any total occlusion	29.7 (80/269)	27.9 (81/290)	0.642	29.2 (80/274)	27.5 (70/255)	0.700
Any bifurcation	77.3 (208/269)	78.3 (227/290)	0.839	71.5 (196/274)	71.0 (181/255)	0.924
Number of stents	5 (4-6)	-	-	5 (4-6)	-	-
Total stent length per patient	92 (68-120)	-	-	92 (68-124)	-	-
Off pump CABG	-	14.1 (39/277)	-	-	13.9 (33/237)	-
Number of total conduits	-	3 (2-3)	-	-	3 (2-3)	-
Number of arterial conduits	-	1 (1-2)	-	-	1 (1-2)	-
Number of venous conduits	-	1 (1-2)	-	-	1 (1-2)	-
Complete revascularization	53.0 (142/268)	58.7 (165/281)	0.197	50.5 (138/273)	55.7 (136/244)	0.252

9

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Heart

Medication at discharge						
Any antiplatelet therapy						
Aspirin	94.8 (254/268)	87.9 (247/281)	0.006	96.3 (263/273)	85.2 (208/244)	<0.001
Thienopyridine	96.3 (258/268)	19.2 (54/281)	<0.001	97.1 (265/273)	21.7 (53/244)	<0.001
Statin	84.0 (225/268)	74.0 (208/281)	0.005	87.9 (240/273)	73.8 (180/244)	<0.001
Beta blocker	81.7 (219/268)	79.7 (224/281)	0.589	80.2 (219/273)	78.3 (191/244)	0.589
ACEI	56.7 (152/268)	43.8 (123/281)	0.003	59.0 (161/273)	48.0 (117/244)	0.013
ARB	12.3 (33/268)	6.4 (18/281)	0.019	10.6 (29/273)	6.6 (16/244)	0.119

Data are presented as median (interquartile range) or percentage (number).

PCI: percutaneous coronary intervention; CABG: coronary artery bypass graft; MI: myocardial infarction; LVEF: left ventricular ejection fraction; LMCAD: left main coronary artery disease; 3VD: three vessel disease; 2VD: two vessel disease; SYNTAX: Synergy between PCI with Taxus and Cardiac Surgery; ACEI: angiotensin-converting-enzyme inhibitors; ARB: angiotensin II receptor blocker.

10