

SUPPLEMENTAL MATERIAL

Supplemental Methods

Details of missing data in the baseline characteristics are shown in **Supplemental Table VII**. A total of 1539/1760 (87.4%) patients had no missing data in all variables. Inverse Probability Treatment Weighting (IPTW) were calculated according to the groups of CR-PCI, CR-CABG, IR-PCI, and IR-CABG, using the R package *twang*⁴⁹ by including the variables of demographic characteristics (age, sex, body mass index), clinical presentation (silent ischemia, stable angina, or unstable angina), coexisting medical conditions (diabetes, hypertension, dyslipidemia, current smoker, previous myocardial infarction, prior cerebrovascular disease, stroke, transient ischemic attack, carotid artery disease, peripheral vascular disease, chronic obstructive pulmonary disease, renal failure, left ventricular ejection fraction, EuroSCORE, disease type, anatomical SYNTAX score, number of lesions, any total occlusion, any bifurcation. IPTW values distributed in a range of 1.07 to 14.41, as shown in **the Supplemental Figure IV**. There was no case considered to have extreme IPTW value and none was trimmed⁵⁰.

To compensate for the potential insufficient covariate balance, with weighting for IPTW, the covariates of sex, diabetes, LVEF, EuroSCORE, Clinical presentation, Disease type, Anatomical SYNTAX score, Number of lesions, Any TO and Any bifurcation were also included in the cox regression model.

Supplemental Table I. Multivariate analysis for all-cause death at 10 years and at a maximum follow-up according to randomized treatments and completeness of revascularization in the overall, 3VD, or LMCAD cohort.

At 10 years	Overall		3VD		LMCAD	
	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value
CABG - CR	1.00 (Reference)	-	1.00 (Reference)	-	1.00 (Reference)	-
CABG - IR vs. CABG - CR	0.97 (0.71-1.34)	0.873	1.04 (0.67-1.60)	0.867	0.94 (0.57-1.53)	0.797
PCI - CR vs. CABG - CR	0.97 (0.72-1.31)	0.854	1.44 (0.96-2.16)	0.074	0.58 (0.36-0.93)	0.025
PCI - IR vs. CABG - CR	1.48 (1.15-1.91)	0.003	1.70 (1.20-2.42)	0.003	1.25 (0.85-1.83)	0.261
Age in year	1.07 (1.06-1.09)	<0.001	1.08 (1.06-1.10)	<0.001	1.07 (1.04-1.09)	<0.001
Female vs. Male	1.10 (0.87-1.39)	0.417	1.05 (0.76-1.45)	0.752	1.19 (0.84-1.68)	0.328
Body mass index in kg/m ²	1.02 (0.9996-1.05)	0.054	1.04 (1.01-1.07)	0.020	1.01 (0.98-1.04)	0.583
Medically treated diabetes	1.49 (1.19-1.85)	<0.001	1.57 (1.18-2.09)	0.002	1.31 (0.91-1.87)	0.144
Hypertension	0.98 (0.79-1.23)	0.889	1.13 (0.83-1.55)	0.436	0.83 (0.59-1.16)	0.267
Dyslipidemia	0.87 (0.68-1.10)	0.238	0.91 (0.66-1.25)	0.560	0.82 (0.57-1.18)	0.288
Current smoker	1.98 (1.52-2.59)	<0.001	2.05 (1.45-2.91)	<0.001	1.85 (1.19-2.86)	0.006
Previous MI	1.13 (0.90-1.42)	0.284	1.11 (0.82-1.49)	0.513	1.23 (0.86-1.75)	0.254
Prior CEVD	1.33 (1.03-1.71)	0.029	1.32 (0.94-1.86)	0.104	1.31 (0.88-1.95)	0.188
PVD	2.07 (1.59-2.71)	<0.001	2.21 (1.53-3.19)	<0.001	1.99 (1.32-2.99)	0.001
COPD	1.52 (1.12-2.07)	0.007	1.39 (0.91-2.13)	0.124	1.66 (1.03-2.68)	0.039
CKD	1.24 (0.96-1.59)	0.097	1.25 (0.90-1.75)	0.187	1.22 (0.82-1.81)	0.332
LVEF in %	0.99 (0.98-0.9992)	0.032	0.99 (0.98-1.002)	0.123	0.99 (0.98-1.004)	0.174
Unstable vs. stable angina	1.12 (0.90-1.39)	0.329	1.05 (0.78-1.41)	0.757	1.24 (0.88-1.73)	0.214
3VD vs. LMCAD	0.94 (0.76-1.16)	0.549	-	-	-	-
SYNTAX score per score	1.01 (0.996-1.01)	0.231	1.01 (0.997-1.02)	0.125	1.00 (0.99-1.01)	0.889

At a maximum follow-up	Overall		3VD		LMCAD	
	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value
CABG - CR	1.00 (Reference)	-	1.00 (Reference)	-	1.00 (Reference)	-
CABG - IR vs. CABG - CR	1.00 (0.75-1.34)	0.986	1.07 (0.73-1.56)	0.745	0.98 (0.62-1.54)	0.925
PCI - CR vs. CABG - CR	1.11 (0.85-1.44)	0.454	1.51 (1.06-2.14)	0.022	0.74 (0.49-1.11)	0.145
PCI - IR vs. CABG - CR	1.42 (1.13-1.80)	0.003	1.59 (1.16-2.18)	0.004	1.22 (0.85-1.75)	0.272
Age in year	1.08 (1.07-1.09)	<0.001	1.09 (1.07-1.11)	<0.001	1.07 (1.05-1.09)	<0.001
Female vs. Male	1.10 (0.89-1.35)	0.382	1.08 (0.81-1.43)	0.613	1.16 (0.84-1.58)	0.364
Body mass index in kg/m ²	1.02 (1.001-1.04)	0.040	1.04 (1.01-1.07)	0.014	1.01 (0.98-1.04)	0.494
Medically treated diabetes	1.57 (1.29-1.91)	<0.001	1.61 (1.25-2.08)	<0.001	1.44 (1.04-1.99)	0.029
Hypertension	1.01 (0.82-1.23)	0.933	1.10 (0.84-1.45)	0.487	0.91 (0.67-1.24)	0.546
Dyslipidemia	0.83 (0.67-1.02)	0.077	0.87 (0.65-1.15)	0.316	0.80 (0.57-1.12)	0.186
Current smoker	2.05 (1.61-2.61)	<0.001	2.08 (1.52-2.85)	<0.001	1.99 (1.34-2.96)	0.001
Previous MI	1.16 (0.94-1.42)	0.159	1.11 (0.85-1.45)	0.453	1.30 (0.94-1.79)	0.114
Prior CEVD	1.42 (1.13-1.78)	0.003	1.37 (1.01-1.86)	0.041	1.50 (1.05-2.14)	0.026
PVD	1.94 (1.52-2.49)	<0.001	2.12 (1.51-2.98)	<0.001	1.76 (1.20-2.57)	0.004
COPD	1.37 (1.02-1.83)	0.034	1.28 (0.86-1.90)	0.221	1.52 (0.96-2.39)	0.074
CKD	1.23 (0.98-1.54)	0.078	1.17 (0.86-1.58)	0.318	1.33 (0.92-1.90)	0.127

LVEF in %	0.99 (0.98-0.998)	0.015	0.99 (0.98-0.998)	0.017	0.99 (0.98-1.01)	0.393
Unstable vs. stable angina	1.09 (0.89-1.33)	0.393	1.02 (0.78-1.33)	0.868	1.22 (0.90-1.65)	0.209
3VD vs. LMCAD	0.95 (0.78-1.14)	0.569	-	-	-	-
SYNTAX score per score	1.004 (0.995-1.01)	0.364	1.01 (0.996-1.02)	0.166	1.00 (0.99-1.01)	0.914

The following covariates were included in the multivariate analyses based on a cox proportional hazard regression model: age, sex, body mass index (BMI), medically treated diabetes mellitus, hypertension, dyslipidemia, current smoking, previous MI, previous cerebrovascular disease, chronic kidney disease (CKD) (defined as creatinine clearance < 60 mL/min), chronic obstructive pulmonary disease (COPD), peripheral vascular disease (PVD), left ventricular ejection fraction (LVEF), clinical presentation (stable or unstable angina), disease type (3VD or LMCAD), and anatomical SYNTAX score.

Supplemental Table II. Crude and adjusted all-cause death at a maximum follow-up according to completeness of revascularization.

	Crude incidence					Adjusted HR (95% CI)				Overall
	CABG – CR	CABG – IR	PCI – CR	PCI – IR	Log-rank	CABG - CR	CABG - IR	PCI - CR	PCI - IR	
	(n= 550)	(n= 320)	(n= 386)	(n= 504)	P-value					P-value
Overall	33.3 (156)	33.2 (95)	36.3 (111)	41.1 (187)	0.002	1.00 (reference)	1.00 (0.75-1.34)	1.11 (0.85-1.44)	1.42 (1.13-1.80)	0.011
3VD	31.5 (79)	29.4 (61)	35.4 (68)	41.6 (115)	0.004	1.00 (reference)	1.07 (0.73-1.56)	1.51 (1.06-2.14)	1.59 (1.16-2.18)	0.008
LMCAD	35.4 (77)	43.3 (34)	37.9 (43)	40.4 (72)	0.074	1.00 (reference)	0.98 (0.62-1.54)	0.74 (0.49-1.11)	1.22 (0.85-1.75)	0.133

Data are presented as percentage (number of deaths).

CABG: coronary artery bypass grafting; CI: confidence interval; CR: complete revascularization; HR: hazard ratio; IR: incomplete revascularization; MI: myocardial infarction; PCI: percutaneous coronary intervention.

Supplemental Table III. Crude and IPTW adjusted all-cause death at 10 years according to randomized treatments and completeness of revascularization.

	Crude incidence					IPTW Adjusted HR (95% CI)				Overall P-value
	CABG – CR	CABG – IR	PCI – CR	PCI – IR	Log-rank	CABG - CR	CABG - IR	PCI - CR	PCI - IR	
	(n= 550)	(n= 320)	(n= 386)	(n= 504)	P-value					
Overall	23.8 (127)	24.3 (75)	22.2 (82)	33.5 (164)	<0.001	1.00 (reference)	0.94 (0.67-1.33)	0.92 (0.66-1.28)	1.46 (1.11-1.90)	<0.001
3VD	20.3 (60)	21.7 (47)	24.3 (52)	32.9 (100)	0.001	1.00 (reference)	0.96 (0.60-1.52)	1.60 (1.06-2.42)	1.82 (1.25-2.64)	0.002
LMCAD	28.0 (67)	30.7 (28)	19.2 (30)	34.3 (64)	0.010	1.00 (reference)	0.91 (0.52-1.58)	0.41 (0.24-0.70)	1.07 (0.72-1.58)	0.012

Data are presented as percentage (number of deaths).

CABG: coronary artery bypass grafting; CI: confidence interval; CR: complete revascularization; HR: hazard ratio; IPTW: Inverse Probability

Treatment Weighting; IR: incomplete revascularization; MI: myocardial infarction; PCI: percutaneous coronary intervention.

Supplemental Table IV. Crude and IPTW adjusted all-cause death at a maximum follow-up according to completeness of revascularization.

	Crude incidence					IPTW Adjusted HR (95% CI)				Overall
	CABG – CR	CABG – IR	PCI – CR	PCI – IR	Log-rank	CABG - CR	CABG - IR	PCI - CR	PCI - IR	
	(n= 550)	(n= 320)	(n= 386)	(n= 504)	P-value					P-value
Overall	33.3 (156)	33.2 (95)	36.3 (111)	41.1 (187)	0.002	1.00 (reference)	0.97 (0.72-1.32)	1.03 (0.77-1.36)	1.42 (1.12-1.81)	0.019
3VD	31.5 (79)	29.4 (61)	35.4 (68)	41.6 (115)	0.004	1.00 (reference)	0.99 (0.67-1.46)	1.69 (1.18-2.40)	1.75 (1.26-2.42)	0.001
LMCAD	35.4 (77)	43.3 (34)	37.9 (43)	40.4 (72)	0.074	1.00 (reference)	0.97 (0.59-1.60)	0.51 (0.33-0.80)	1.05 (0.73-1.52)	0.572

Data are presented as percentage (number of deaths).

CABG: coronary artery bypass grafting; CI: confidence interval; CR: complete revascularization; HR: hazard ratio; IPTW: Inverse Probability

Treatment Weighting; IR: incomplete revascularization; MI: myocardial infarction; PCI: percutaneous coronary intervention.

Supplemental Table V. Multivariate analysis for all-cause death at 10 years and at a maximum follow-up according to the residual SYNTAX score (rSS) in the overall, 3VD, or LMCAD cohort.

At 10 years	Overall		3VD		LMCAD	
	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value
rSS = 0	1.00 (Reference)	-	1.00 (Reference)	-	1.00 (Reference)	-
0 < rSS < 4 vs. rSS = 0	1.44 (0.88-2.36)	0.148	0.90 (0.47-1.70)	0.741	4.86 (2.07-11.41)	<0.001
4 < rSS < 8 vs. rSS = 0	1.16 (0.68-1.98)	0.582	0.61 (0.28-1.30)	0.198	2.75 (1.19-6.36)	0.018
8 < rSS vs. rSS = 0	3.40 (2.13-5.43)	<0.001	2.98 (1.63-5.45)	<0.001	4.20 (1.81-9.74)	0.001
Age in year	1.06 (1.03-1.08)	<0.001	1.06 (1.03-1.10)	<0.001	1.05 (1.003-1.09)	0.035
Female vs. Male	1.13 (0.77-1.68)	0.530	0.77 (0.41-1.43)	0.409	1.74 (0.95-3.20)	0.072
Body mass index in kg/m ²	1.01 (0.97-1.05)	0.755	1.02 (0.97-1.08)	0.434	1.01 (0.96-1.07)	0.667
Medically treated diabetes	1.42 (0.97-2.08)	0.074	1.46 (0.87-2.43)	0.148	1.97 (1.01-3.81)	0.046
Hypertension	0.77 (0.52-1.14)	0.198	0.97 (0.56-1.66)	0.904	0.46 (0.24-0.88)	0.018
Dyslipidemia	1.13 (0.74-1.72)	0.565	1.03 (0.59-1.79)	0.921	1.02 (0.50-2.08)	0.958
Current smoker	2.37 (1.51-3.73)	<0.001	2.58 (1.36-4.87)	0.004	1.75 (0.86-3.56)	0.123
Previous MI	1.02 (0.69-1.50)	0.940	1.05 (0.64-1.74)	0.838	0.72 (0.35-1.45)	0.353
Prior CEVD	1.82 (1.18-2.82)	0.007	1.54 (0.86-2.78)	0.150	1.75 (0.88-3.47)	0.111
PVD	2.17 (1.35-3.49)	0.001	1.99 (0.96-4.12)	0.063	3.38 (1.58-7.26)	0.002
COPD	1.29 (0.74-2.27)	0.372	1.52 (0.70-3.29)	0.292	1.07 (0.44-2.62)	0.880
CKD	1.75 (1.14-2.67)	0.010	1.66 (0.93-2.94)	0.084	2.15 (1.02-4.53)	0.044
LVEF in %	0.99 (0.97-1.002)	0.084	0.98 (0.97-1.004)	0.116	0.99 (0.96-1.01)	0.387
Unstable vs. stable angina	1.23 (0.84-1.80)	0.290	1.57 (0.97-2.55)	0.066	0.95 (0.47-1.92)	0.885
3VD vs. LMCAD	1.35 (0.93-1.95)	0.113	-	-	-	-
SYNTAX score per score	1.01 (0.995-1.03)	0.167	1.03 (1.01-1.06)	0.018	1.00 (0.98-1.02)	0.948

At a maximum follow-up	Overall		3VD		LMCAD	
	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value	Adjusted HR (95% CI)	p-value
rSS = 0	1.00 (Reference)	-	1.00 (Reference)	-	1.00 (Reference)	-
0 < rSS < 4 vs. rSS = 0	1.10 (0.70-1.74)	0.680	0.72 (0.40-1.30)	0.280	3.36 (1.55-7.30)	0.002
4 < rSS < 8 vs. rSS = 0	0.92 (0.56-1.50)	0.728	0.55 (0.27-1.09)	0.084	1.80 (0.82-3.93)	0.141
8 < rSS vs. rSS = 0	2.59 (1.68-3.99)	<0.001	2.31 (1.32-4.04)	0.003	3.29 (1.54-7.00)	0.002
Age in year	1.06 (1.04-1.09)	<0.001	1.07 (1.04-1.10)	<0.001	1.06 (1.02-1.10)	0.006
Female vs. Male	1.09 (0.76-1.57)	0.641	0.79 (0.45-1.39)	0.407	1.54 (0.87-2.73)	0.134
Body mass index in kg/m ²	1.01 (0.98-1.05)	0.439	1.03 (0.98-1.08)	0.210	1.02 (0.96-1.07)	0.554
Medically treated diabetes	1.50 (1.05-2.13)	0.025	1.46 (0.91-2.33)	0.115	2.08 (1.13-3.83)	0.018
Hypertension	0.85 (0.59-1.23)	0.384	1.11 (0.67-1.85)	0.684	0.52 (0.29-0.94)	0.031
Dyslipidemia	0.94 (0.64-1.37)	0.743	0.86 (0.52-1.41)	0.540	0.90 (0.48-1.71)	0.747
Current smoker	2.42 (1.60-3.67)	<0.001	2.52 (1.41-4.52)	0.002	1.94 (1.01-3.75)	0.048
Previous MI	1.04 (0.72-1.49)	0.849	1.06 (0.66-1.68)	0.814	0.76 (0.40-1.46)	0.413
Prior CEVD	1.81 (1.20-2.73)	0.004	1.34 (0.77-2.34)	0.305	2.09 (1.10-3.95)	0.024
PVD	2.05 (1.30-3.23)	0.002	1.98 (1.003-3.9)	0.049	2.89 (1.39-6.01)	0.004
COPD	1.13 (0.66-1.95)	0.648	1.42 (0.67-3.01)	0.366	0.95 (0.40-2.25)	0.912
CKD	1.67 (1.12-2.48)	0.012	1.61 (0.94-2.75)	0.080	2.06 (1.03-4.12)	0.040

LVEF in %	0.99 (0.97-1.001)	0.059	0.98 (0.97-1.0002)	0.053	0.99 (0.97-1.02)	0.485
Unstable vs. stable angina	1.13 (0.79-1.62)	0.499	1.35 (0.86-2.13)	0.194	0.96 (0.51-1.83)	0.912
3VD vs. LMCAD	1.28 (0.91-1.80)	0.162	-	-	-	-
SYNTAX score per score	1.01 (0.99-1.02)	0.300	1.03 (1.003-1.05)	0.026	1.00 (0.98-1.02)	0.781

The following covariates were included in the multivariate analyses based on a cox proportional hazard regression model: age, sex, body mass index (BMI), medically treated diabetes mellitus, hypertension, dyslipidemia, current smoking, previous MI, previous cerebrovascular disease, chronic kidney disease (CKD) (defined as creatinine clearance < 60 mL/min), chronic obstructive pulmonary disease (COPD), peripheral vascular disease (PVD), left ventricular ejection fraction (LVEF), clinical presentation (stable or unstable angina), disease type (3VD or LMCAD), and anatomical SYNTAX score.

Supplemental Table VI. Crude and adjusted all-cause death at a maximum follow-up according to the rSS.

	Crude incidence				Log-rank P-value	Adjusted HR (95% CI)				Overall P-value
	rSS= 0	0< rSS≤ 4	4< rSS≤ 8	8< rSS		rSS= 0	0< rSS≤ 4	4< rSS≤ 8	8< rSS	
Overall	36.3 (111)	34.1 (52)	36.2 (56)	54.4 (79)	<0.001	1.00 (reference)	1.10 (0.70-1.74)	0.92 (0.56-1.50)	2.59 (1.68-3.99)	<0.001
3VD	35.4 (68)	37.0 (33)	33.3 (31)	57.0 (51)	<0.001	1.00 (reference)	0.72 (0.40-1.30)	0.55 (0.27-1.09)	2.31 (1.32-4.04)	<0.001
LMCAD	37.9 (43)	31.5 (19)	40.8 (25)	50.3 (28)	0.004	1.00 (reference)	3.36 (1.55-7.30)	1.80 (0.82-3.93)	3.29 (1.54-7.00)	0.003

Data are presented as percentage (number of deaths).

CI: confidence interval; HR: hazard ratio; LMCAD: left main coronary artery disease; PCI: percutaneous coronary intervention; rSS: residual SYNTAX score; 3VD: three-vessel disease.

Supplemental Table VII. Distribution of the missing data in the propensity score matching analysis.

Missing data	N	Missing Count	Percent
Body mass index	1759	1	0.1
Age (year)	1760	0	0
Anatomical SYNTAX score	1751	9	0.5
Left ventricular ejection fraction	1760	0	0
Euro SCORE	1760	0	0
Number of lesions	1749	11	0.6
Male	1760	0	0
Medically treated diabetes	1760	0	0
Hypertension	1760	0	0
Dyslipidemia	1745	15	0.9
Current smoker	1755	5	0.3
Previous myocardial infarction	1740	20	1.1
Prior cerebrovascular disease	1751	9	0.5
Previous stroke	1751	9	0.5
Previous transient ischemic attack	1750	10	0.6
Previous carotid artery disease	1760	0	0
Peripheral vascular disease	1760	0	0
Chronic obstructive pulmonary disease	1760	0	0
Chronic kidney disease	1760	0	0
Clinical presentation	1760	0	0
Disease type	1759	1	0.1
Any total occlusion	1749	11	0.6
Any bifurcation	1749	11	0.6
Total complete case number	1527	233	13.2

Supplemental Figure Legend

Supplemental Figure I. Adjusted Kaplan-Meier curves for the secondary endpoint of all-cause death at a maximum follow-up of 12.9 years according to randomized treatments of CABG (blue) or PCI (red) and completeness of revascularization. (A) overall population; (B) 3VD cohort; (C) LMCAD cohort.

CABG: coronary artery bypass grafting; CR: complete revascularization; IR: incomplete revascularization; LMCAD: left main coronary artery disease; PCI: percutaneous coronary intervention; 3VD: three-vessel disease.

Supplemental Figure II. Adjusted Kaplan-Meier curves for the secondary endpoint of all-cause death at a maximum follow-up of 12.9 years according to the residual SYNTAX score (rSS) in PCI arm. (A) overall population; (B) 3VD cohort; (C) LMCAD cohort.

Abbreviations are as in **Supplemental Figure I**.

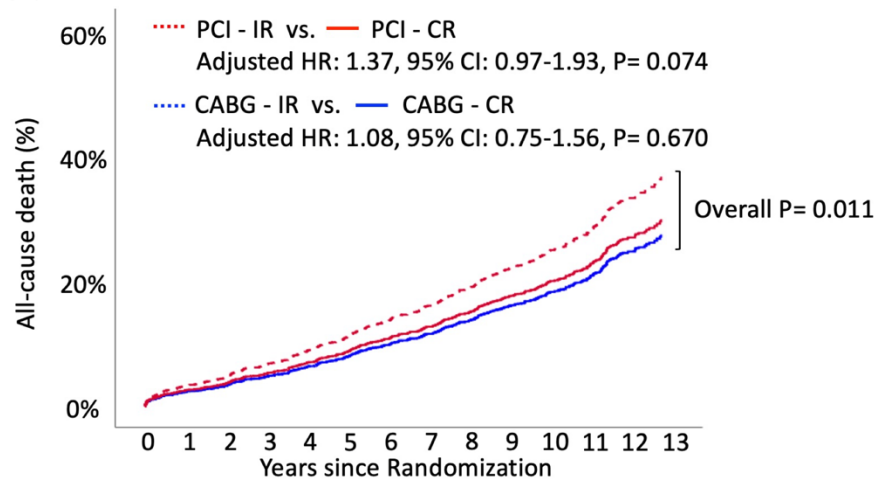
Supplemental Figure III. Absolute standardized difference for each covariate before and after the Inverse Probability Treatment Weighting (IPTW).

Supplemental Figure IV. Distribution of the Inverse Probability Treatment Weighting (IPTW).

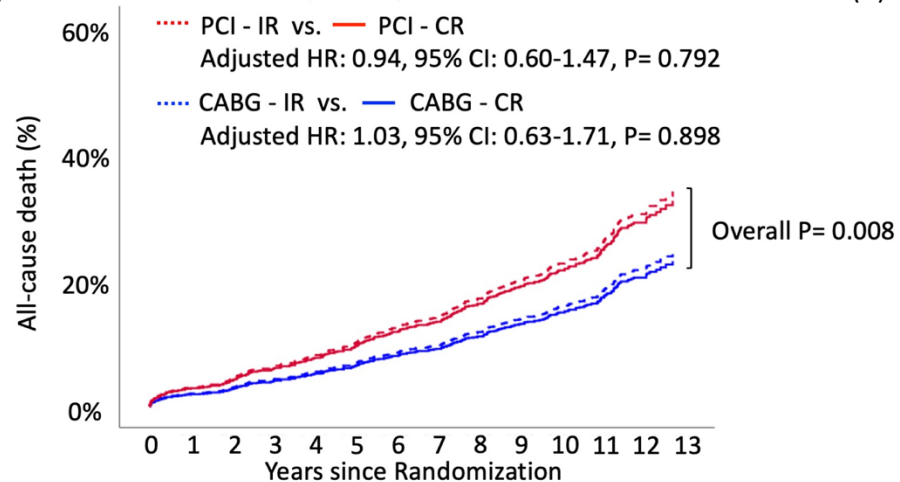
Abbreviations are as in **Supplemental Figure I**.

Supplemental Figure I.

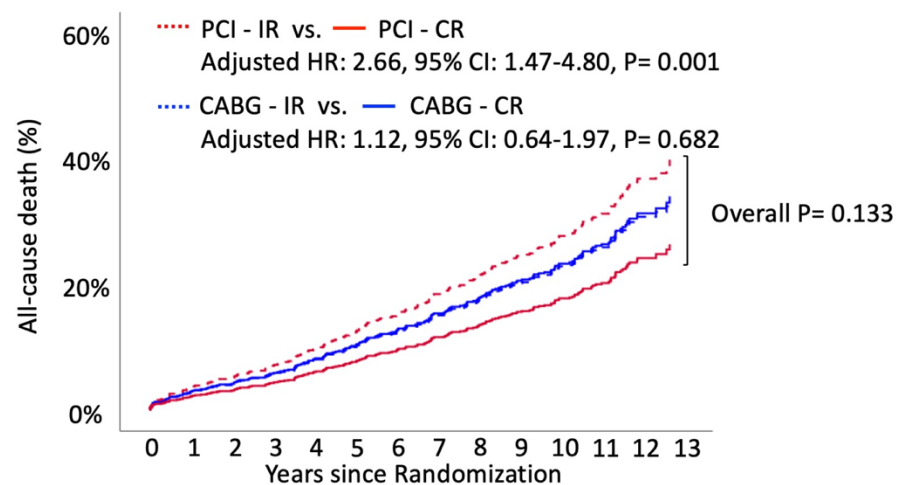
(A) Overall



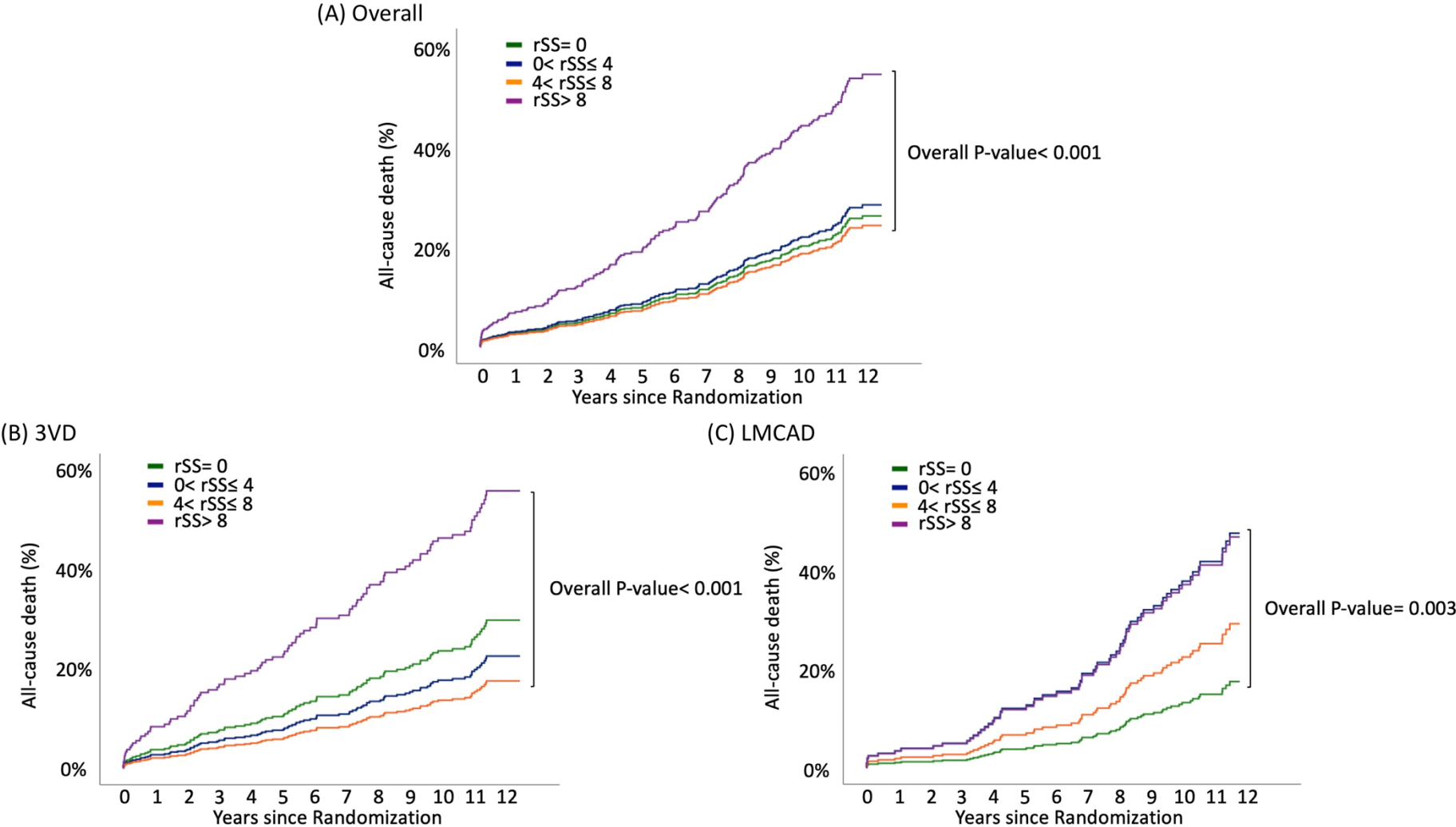
(B) 3VD



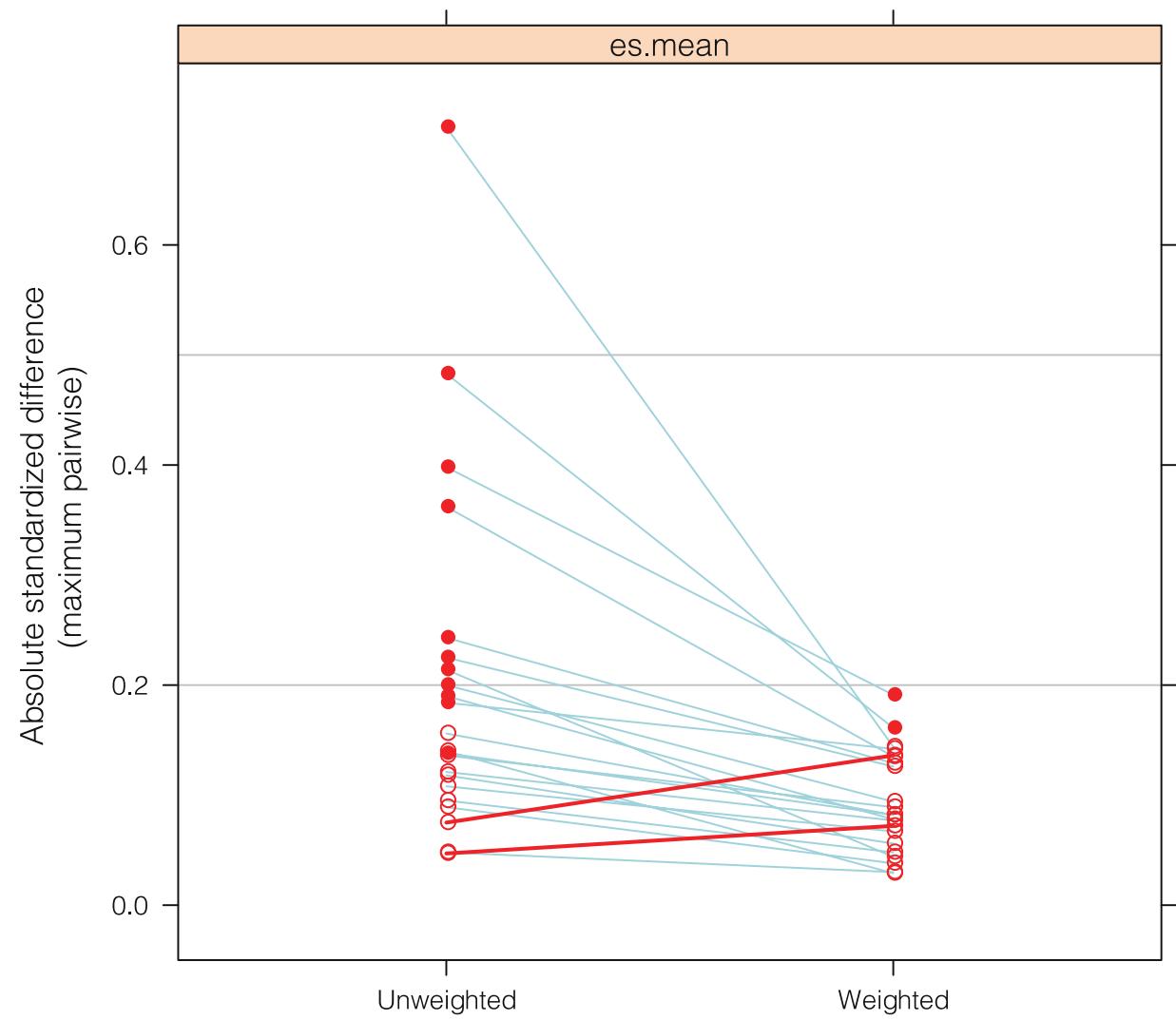
(C) LMCAD



Supplemental Figure II.



Supplemental Figure III.



Supplemental Figure IV.

