SUPPLEMENTARY DATA

Investigator of Korea acute myocardial infarction registry-National Institutes of Health (KAMIR-NIH). Please also consult reference 14 of the main text.

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Table 1 of the supplementary data. Baseline clinical characteristics of AMI patients with a high ischemic risk after PSM

	IVUS-guided (n = 806)	Angiography-guided (n = 806)	*P*-value	SMD (%)
Demographic				
Age, years	65.5 ± 11.7	65.1 ± 11.9	0.490	3.44
Male sex	595 (73.8%)	598 (74.2%)	0.910	0.85
Body mass index	24.3 ± 3.6	24.2 ± 3.2	0.736	1.68
Killip class III	72 (8.9%)	66 (8.2%)	0.656	2.66
Clinical presentation			0.799	1.52
STEMI	314 (39.0%)	320 (39.7%)		
NSTEMI	492 (61.0%)	486 (60.3%)		
Cardiovascular risk factor				
Hypertension	479 (59.4%)	480 (59.6%)	1.000	0.25
Diabetes mellitus	458 (56.8%)	457 (56.7%)	1.000	0.25
Dyslipidemia	128 (15.9%)	121 (15.0%)	0.679	2.4
Current smoker	277 (34.4%)	296 (36.7%)	0.349	4.92
History of MI	66 (8.2%)	56 (6.9%)	0.397	4.69
History of PCI	45 (5.6%)	37 (4.6%)	0.428	4.52
History of CVA	58 (7.2%)	59 (7.3%)	1.000	0.48
Familial history	54 (6.7%)	60 (7.4%)	0.627	2.9
EF ≤50%	296 (36.7%)	301 (37.3%)	0.837	1.28
eGFR, mL/min/1.73 m^2	80.0 ± 50.3	79.7 ± 42.0	0.895	0.66
CKD (eGFR ≤60)	314 (39.0%)	337 (41.8%)	0.264	5.81
Medication at discharge				
DAPT				
Aspirin	806 (100.0%)	806 (100.0%)	1.000	0
$P2Y_{12}$ inhibitor	804 (99.8%)	801 (99.4%)	0.449	5.66
Clopidogrel	647 (80.3%)	625 (77.5%)		
Prasugrel	58 (7.2%)	94 (11.7%)		
Ticagrelor	208 (25.8%)	182 (22.6%)		
RAAS inhibitor	645 (80.0%)	651 (80.8%)	0.754	1.87
Beta-blocker	666 (82.6%)	670 (83.1%)	0.843	1.32
Statin	758 (94.0%)	756 (93.8%)	0.917	1.04

Values are presented as mean ± SD or n (%). CKD, chronic kidney disease; CVA, cerebrovascular accident; DAPT, dual antiplatelet therapy; eGFR, estimated glomerular filtration rate; IVUS, intravascular ultrasound; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; PSM, propensity score matching; RAAS, renin-angiotensin-aldosterone system; STEMI, ST-elevation myocardial infarction.

Table 2 of the supplementary data. Lesion and procedural characteristics of AMI patients with a high ischemic risk after PSM

	IVUS-guided (n = 806)	Angiography-guided (n = 806)	*P*-value	SMD (%)
Lesion characteristic				
Type of vessel disease			.273	3.32
One-vessel disease	234 (29.0)	259 (32.1)		
Two-vessel disease	369 (45.8)	339 (42.1)		
Three-vessel disease	203 (25.2)	208 (25.8)		
Culprit vessel			.072	1.99
LM	102 (12.7)	72 (8.9)		
LAD	382 (47.4)	419 (52.0)		
LCX	104 (12.9)	104 (12.9)		
RCA	218 (27.0)	211 (26.2)		
ACC/AHA B2/C lesion	695 (86.2)	677 (84.0)	.234	6.27
3 vessels treated	45 (5.6)	57 (7.1)	.26	6.11
≥ 3 lesions treated	55 (6.8)	64 (7.9)	.446	4.27
Procedural characteristic				
Trans-radial approach	310 (38.5)	308 (38.2)	.959	0.51
Glycoprotein IIb/IIIa inhibitor	134 (16.6)	139 (17.2)	.791	1.65
Thrombus aspiration	148 (18.4)	156 (19.4)	.656	2.54
Stent type			.472	1.98
Biolimus	76 (9.4)	91 (11.3)		
Everolimus	450 (55.8)	430 (53.3)		
Zotarolimus	205 (25.4)	197 (24.4)		
Sirolimus	35 (4.3)	36 (4.5)		
Novolimus	40 (5.0)	52 (6.5)		
Stent diameter	3.2 ± 0.5	3.2 ± 0.4	.695	1.95
Total stent length	36.5 ± 19.6	35.4 ± 19.0	.279	5.39
> 60 mm	124 (15.4)	105 (13.0)	.199	6.75
Total number of stents	2.0 ± 1.1	2.0 ± 1.1	.831	1.06
≥ 3 stents	232 (28.8)	232 (28.8)	1.000	0

Values are presented as mean ± SD or n (%). ACC, American College of Cardiology; AHA, American Heart Association; DES, drug-eluting stent; IVUS, intravascular ultrasound; LAD, left anterior descending artery; LCX, left circumflex artery; LM, left main; PSM, propensity score matching; RCA, right coronary artery.

Table 3 of the supplementary data. Baseline clinical characteristics of AMI Patients without a high ischemic risk

	Crude population		
	IVUS-guided (N = 982)	**Angiography-guided (N = 3,838)**	***P*-value**
Demographic			
Age, years	59.9 ± 12.0	60.9 ± 12.4	.015
Male sex	818 (83.3)	3057 (79.7)	.012
Body mass index (kg/m^2)	24.1 ± 3.2	24.2 ± 3.2	.404
Killip class 3	35 (3.6)	151 (3.9)	.657
Clinical presentation			
STEMI	498 (50.7)	2150 (56.0)	.003
NSTEMI	484 (49.3)	1688 (44.0)	
Cardiovascular risk factor			
Hypertension	344 (35.0)	1531 (39.9)	.006
Dyslipidemia	86 (8.8)	415 (10.8)	.068
Current smoker	483 (49.2)	1786 (46.5)	.147
History of MI	38 (3.9)	142 (3.7)	.876
History of PCI	24 (2.4)	105 (2.7)	.693
History of CVA	26 (2.6)	150 (3.9)	.074
Familial history	73 (7.4)	308 (8.0)	.585
EF ≤ 50%	299 (30.4)	1291 (33.6)	.063
eGFR, mL/min/1.73 m^2	98.7 ± 30.5	102.2 ± 42.4	.003
Medication at discharge			
DAPT			
Aspirin	981 (99.9)	3836 (99.9)	1.000
$P2Y_{12}$ inhibitor	975 (99.3)	3829 (99.8)	.044
Clopidogrel	690 (70.3)	2844 (74.1)	.017
Prasugrel	99 (10.1)	629 (16.4)	< .001
Ticagrelor	336 (34.2)	971 (25.3)	< .001
RAS inhibitor	790 (80.4)	3216 (83.8)	.014
Beta-blocker	817 (83.2)	3362 (87.6)	< .001
Statin	963 (98.1)	3679 (95.9)	.001

Values are presented as mean ± SD or n (%). CVA, cerebrovascular accident; DAPT, dual antiplatelet therapy; eGFR, estimated glomerular filtration rate; IVUS, intravascular ultrasound; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; PS, propensity score; RAS, renin-angiotensin system; SMD, standard mean difference; STEMI, ST-elevation myocardial infarction.

Table 4 of the supplementary data. Lesion and procedural characteristics of AMI patients without a high ischemic risk

	Crude population		
	IVUS-guided (N = 982)	**Angiography-guided (N = 3,838)**	***P*-value**
Lesion characteristic			
Type of vessel disease			.129
1-vessel disease	574 (58.5)	2370 (61.8)	
2-vessel disease	302 (30.8)	1061 (27.6)	
Th3ree-vessel disease	106 (10.8)	407 (10.6)	
Culprit vessel			< .001
LAD	565 (57.5)	1962 (51.1)	
LCX	170 (17.3)	689 (18.0)	
RCA	247 (25.2)	1187 (30.9)	
ACC/AHA B2/C lesion	838 (85.3)	3340 (87.0)	.181
Procedural characteristic			
Trans-radial approach	475 (48.4)	1538 (40.1)	< .001
Glycoprotein IIb/IIIa inhibitor	207 (21.1)	586 (15.3)	< .001
Thrombus aspiration	256 (26.1)	1066 (27.8)	.303
Stent type			< .001
Biolimus	132 (13.4)	684 (17.8)	
Everolimus	523 (53.3)	1875 (48.9)	
Zotarolimus	230 (23.4)	895 (23.3)	
Sirolimus	47 (4.8)	116 (3.0)	
Novolimus	50 (5.1)	268 (7.0)	
Stent diameter	3.2 ± 0.5	3.1 ± 0.4	< .001
Total stent length	27.4 ± 10.3	26.5 ± 9.5	.009
Total stent number	1.2 ± 0.4	1.2 ± 0.4	.039

Values are presented as mean ± SD or n (%). ACC, American College of Cardiology; AHA, American Heart Association; DES, drug-eluting stent; IVUS, intravascular ultrasound; LAD, left anterior descending artery; LCX, left circumflex artery; LM, left main; RCA, right coronary artery.

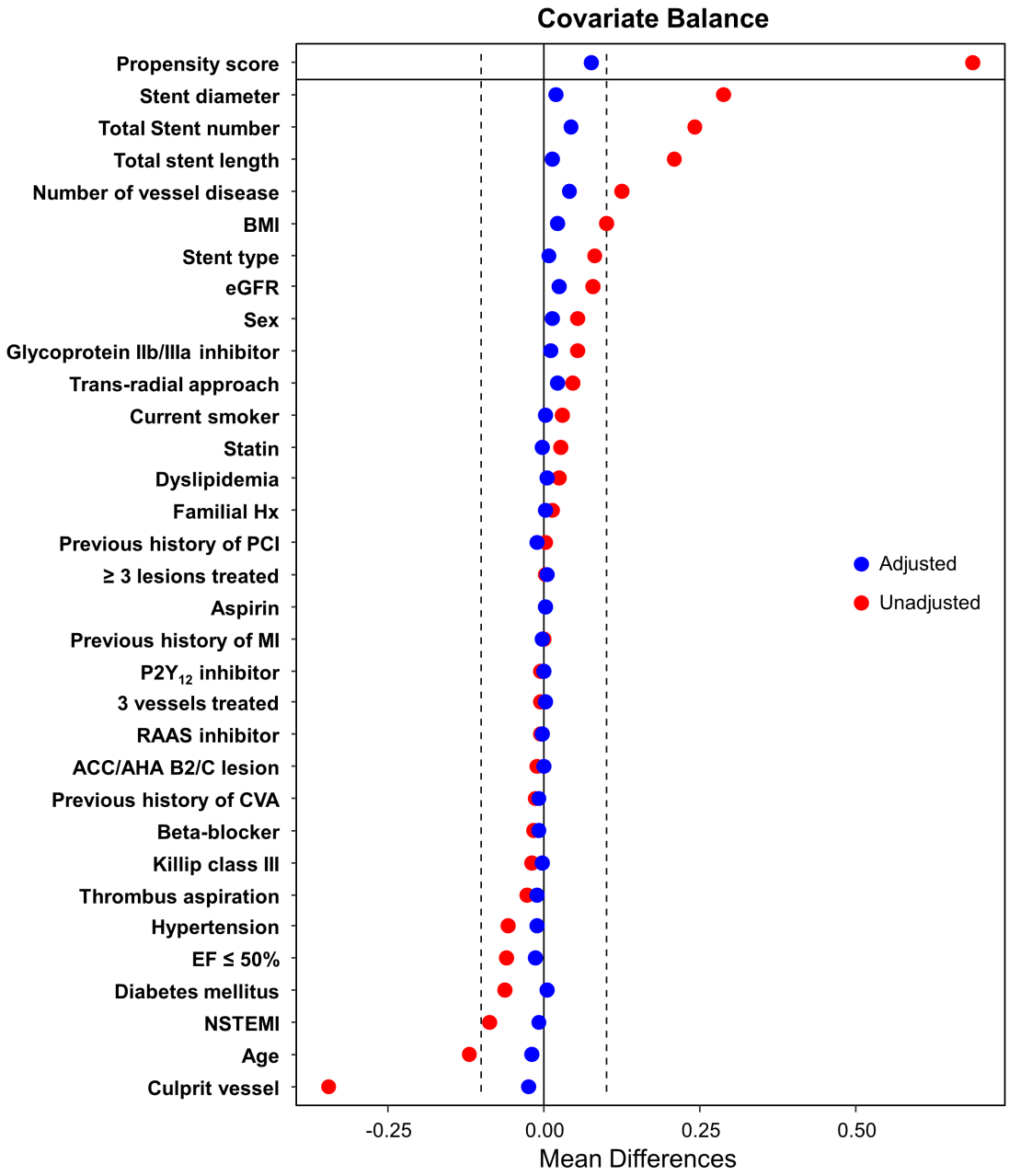
Table 5 of the supplementary data. Comparison of 3-Year outcomes in AMI patients without a high ischemic risk

	IVUS-guided PCI (n = 982)	Angiography-guided PCI (n = 3838)	Unadjusted		Multivariable-adjusted[b]		IPW-adjusted	
			HR (95%CI)	*P*-value	HR (95%CI)	*P*-value	HR (95%CI)	*P*-value
Target lesion failure[a]	30 (3.1)	165 (4.3)	0.71 (0.48–1.05)	.084	0.78 (0.52–1.15)	.203	0.73 (0.48–1.12)	.151
Cardiac death	15 (1.5)	107 (2.8)	0.55 (0.32–0.94)	.029	0.66 (0.38–1.13)	.131	0.68 (0.36–1.27)	.222
TV-MI	5 (0.5)	27 (0.7)	0.72 (0.28–1.88)	.505	0.73 (0.28–1.91)	.522	0.57 (0.21–1.52)	.260
ID-TLR	13 (1.3)	49 (1.3)	1.04 (0.56–1.91)	.909	1.04 (0.56–1.93)	.894	0.96 (0.52–1.80)	.907
MACE[c]	93 (9.5)	443 (11.5)	0.82 (0.65–1.02)	.075	0.86 (0.69–1.08)	.195	0.85 (0.67–1.08)	.193
All-cause death	27 (2.7)	176 (4.6)	0.59 (0.40–0.89)	.012	0.67 (0.45–1.01)	.057	0.65 (0.42–1.03)	.067
Any MI	20 (2.0)	70 (1.8)	1.11 (0.68–1.83)	.676	1.14 (0.69–1.88)	.603	1.06 (0.64–1.78)	.818
Any revascularization	64 (6.5)	256 (6.7)	0.98 (0.74–1.28)	.865	1.00 (0.76–1.32)	.998	1.01 (0.75–1.36)	.925
Definite/probable ST	3 (0.3)	25 (0.7)	0.47 (0.14–1.55)	.212	0.50 (0.15–1.67)	.260	0.56 (0.14–2.26)	.412

Values are presented as n (%) unless otherwise indicated. CI, confidence interval; CKD, chronic kidney disease; HR, hazard ratio; ID-TLR, ischemic-driven target lesion revascularization; IVUS, intravascular ultrasound; IPW, inverse probability weighting; LM, left main; LVEF, left ventricular ejection fraction; MACE, major adverse cardiovascular event; MI, myocardial infarction; PCI, percutaneous coronary intervention; ST, stent thrombosis; TLR, target lesion revascularization; TV-MI, target vessel myocardial infarction.

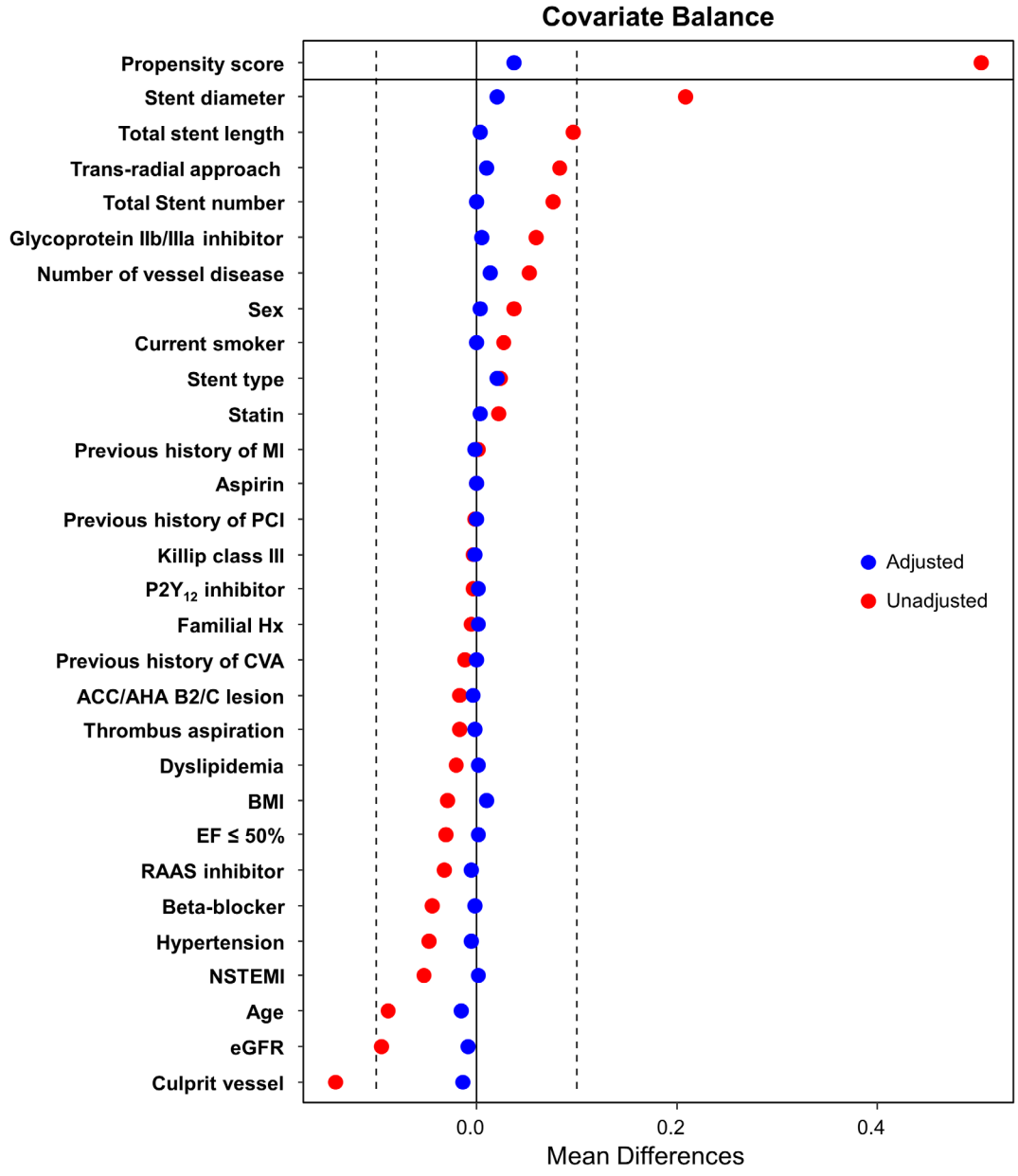
[a]Target lesion failure: a composite of cardiac death, target vessel MI, and ID-TLR.
[b]Adjusted variables: age, sex, Killip class 3, hypertension, diabetes, history of PCI, CVA, LVEF ≤50%, CKD, multivessel disease, LM PCI, procedural factors (trans-radial approach, stent length ≥ 35 mm, number of stents ≥ 2).
[c]MACE: a composite of all-cause death, MI, and any revascularization.

Figure 1 of the supplementary data. Covariate balance between IVUS-guided and angiography-guided PCI in high ischemic risk



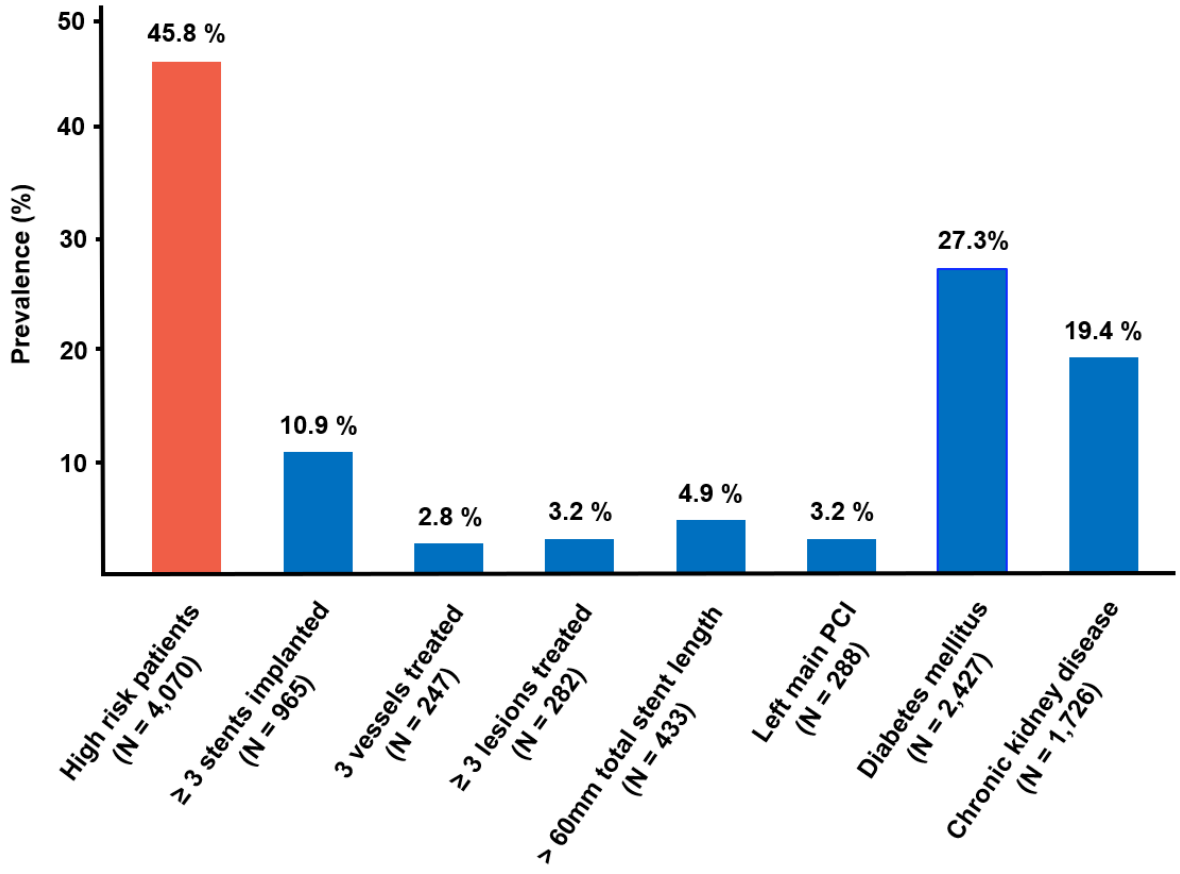
ACC/AHA, American College of Cardiology/American Heart Association; BMI, body mass index; CVA, cerebrovascular accident; EF, ejection fraction; eGFR, estimated glomerular filtration rate; IPW, inverse probability weighting; IVUS, intravascular ultrasound; MI, myocardial infarction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; RAAS, renin-angiotensin-aldosterone system.

Figure 2 of the supplementary data. Covariate balance between IVUS-Guided and angiography-guided PCI in non-high ischemic risk



ACC/AHA, American College of Cardiology/American Heart Association; CVA, cerebrovascular accident; EF, ejection fraction; eGFR, estimated glomerular filtration rate; IPW, inverse probability weighting; IVUS, intravascular ultrasound; MI, myocardial infarction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; RAAS, renin-angiotensin-aldosterone system.

Figure 3 of the supplementary data. Components of high ischemic risk



PCI, percutaneous coronary intervention.