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SUPPLEMENTAL APPENDIX

Incidence and pattern of urgent revascularization in acute coronary syndromes treated with ticagrelor or prasugrel

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This online supplement contains the following items:

Supplemental Table 1. Clinical outcomes as per assigned antiplatelet therapy.

Characteristic	Ticagrelor (N=1,676)	Prasugrel (N=1,701)	Hazard Ratio (95% CI)	p value
Composite of death, myocardial infarction, or stroke – no. (%)	162 (9.8)	120 (7.1)	1.41 [1.11-1.80]	0.005
Death from any cause	79 (4.8)	64 (3.8)	1.28 [0.92-1.77]	0.147
Cardiovascular	54	52		
Noncardiovascular	25	12		
Myocardial Infarction	88 (5.3)	55 (3.3)	1.67 [1.19-2.34]	0.003
Type 1	45	31		
Type 2	3	3		
Type 4a	19	10		
Type 4b	20	11		
Type 5	1	0		
ST-elevation myocardial infarction	29	12		
Stroke	16 (1.0)	14 (0.8)	1.20 [0.58-2.46]	0.621
Ischemic	11	12		
Hemorrhagic	5	2		
Definite or probable stent thrombosis	25 (1.5)	20 (1.2)	1.28 [0.71-2.30]	0.413
Definite stent thrombosis	21 (1.3)	12 (0.7)	1.81 [0.89-3.68]	0.101
BARC type 3 to 5 bleeding	100 (6.0)	95 (5.6)	1.08 [0.82-1.43]	0.586
BARC 3a	52	48		
BARC 3b	33	37		
BARC 3c	6	2		
BARC 4	2	4		
BARC 5a	1	0		
BARC 5b	6	4		

Data are number of events with Kaplan-Meier estimates (%) or cumulative incidence (%) after accounting for competing risk at 12-month follow-up. BARC type 3 to 5 bleeding was evaluated in the intention-to-treat population. BARC=Bleeding Academic Research Consortium; CI=confidence interval.

Supplemental Table 2. Drug therapy at discharge and subsequent antithrombotic medications after discontinuation of assigned antiplatelet therapy.

Characteristic*	All (N=3,372)	Ticagrelor (N=1,673)	Prasugrel (N=1,699)	p value
Final diagnosis of acute coronary syndrome– no. (%)	3,364 (99.8)	1,669 (99.8)	1,695 (99.8)	>0.999
Unstable angina	261/3,364 (7.8)	132/1,669 (7.9)	129/1,695 (7.6)	
NSTEMI	1,509/3,364 (44.9)	747/1,669 (44.8)	762/1,695 (45.0)	
STEMI	1,594/3,364 (47.4)	790/1,669 (47.3)	804/1,695 (47.4)	
Therapy at discharge – no. (%) †				
Aspirin	3,260/3,317 (98.3)	1,610/1,642 (98.1)	1,650/1,675 (98.5)	0.380
Ticagrelor	1,538/3,317 (46.4)	1,527/1,642 (93.0)	11/1,675 (0.7)	<0.001
Prasugrel	1,562/3,317 (47.1)	19/1,642 (1.2)	1,543/1,675 (92.1)	<0.001
Clopidogrel	183/3,317 (5.5)	75/1,642 (4.6)	108/1,675 (6.5)	0.022
Oral anticoagulant drugs	146/3,317 (4.4)	67/1,642 (4.1)	79/1,675 (4.7)	0.419
Beta blocking agents	2,875/3,317 (86.7)	1,430/1,642 (87.1)	1,445/1,675 (86.3)	0.520
ACE inhibitor/ARB	2,889/3,317 (87.1)	1,417/1,642 (86.3)	1,472/1,675 (87.9)	0.191
Statin	3,161/3,317 (95.3)	1,564/1,642 (95.2)	1,597/1,675 (95.3)	0.964
Characteristic**	All (N=396)	Ticagrelor (N=218)	Prasugrel (N=178)	p value
Therapy after discontinuation of study drug				
Ticagrelor ††	13 (3.3)	0 (0.0)	13 (7.3)	<0.001
*Prasugrel ****	35 (8.8)	35 (16.1)	0 (0.0)	<0.001
Clopidogrel	216 (54.5)	115 (52.8)	101 (56.7)	0.489
Oral anticoagulation	78 (19.7)	38 (17.4)	40 (22.5)	0.259
None of the aforementioned medication	111 (28.0)	59 (27.1)	52 (29.2)	0.718

Data are shown as counts (%). * Not available for patients who withdrew consent before discharge. ** Percentages refer to patients who discontinued the study drugs during follow-up. † Shown for patients discharged alive, not available for patients who withdrew consent. †† Of 13 patients who switched from prasugrel to ticagrelor, 2 switched due to allergy, 8 due to decision of the attending physician, 1 due to Dyspnoea and 2 due to unspecific side effects to medication. *** Of 35 patients who switched from ticagrelor to prasugrel, 2 switched due to allergy, 2 due to bleeding, 1 due to Bradycardia, 8 due to decision of the attending physician, 17 due to Dyspnoea, 1 due to incompliance and 4 due to unspecific side effects to medication. ACE=angiotensin-converting enzyme; ARB=angiotensin receptor blocker; NSTEMI=non-ST-segment elevation myocardial infarction; STEMI=ST-segment elevation myocardial infarction.

Supplemental Table 3. Baseline, angiographic characteristics and drug therapy at discharge in patients treated conservatively as per assigned antiplatelet therapy.

	All (N=553)	Ticagrelor (N= 285)	Prasugrel (N= 268)	p value
Baseline characteristics				
Age (years)	64.5 ± 12.7	64.9 ± 12.8	64.2 ± 12.5	0.502
Sex				0.734
Women	230 (41.6)	121 (42.5)	109 (40.7)	
Men	323 (58.4)	164 (57.5)	159 (59.3)	
Diabetes	120 (21.7)	69 (24.2)	51 (19.0)	0.169
On insulin therapy	34 (6.2)	21 (7.4)	13 (4.9)	0.292
Current smoker	129/551 (23.4)	77/283 (27.2)	52 (19.4)	0.003
Arterial hypertension	419 (75.8)	213 (74.7)	206 (76.9)	0.628
Hypercholesterolemia	343/551 (62.3)	171/284 (60.2)	172/267 (64.4)	0.352
Prior myocardial infarction	95/552 (17.2)	41/284 (14.4)	54 (20.1)	0.096
Prior percutaneous coronary intervention	154 (27.8)	72 (25.3)	82 (30.6)	0.192
Prior coronary artery bypass grafting	41 (7.4)	19 (6.7)	22 (8.2)	0.597
Cardiogenic shock	2 (0.4)	1 (0.4)	1 (0.4)	1.000
Systolic blood pressure (mmHg)	144 ± 23.3	144 ± 23.5	144 ± 23.2	0.897
Diastolic blood pressure (mmHg)	81.1 ± 13.7	81.0 ± 14.5	81.1 ± 12.7	0.912
Heart rate (beats/min)	76.9 ± 16.8	77.3 ± 17.8	76.6 ± 15.7	0.631
Body mass index (kg/m²)	27.8 ± 4.8	27.6 ± 4.8	28.0 ± 4.8	0.351
Body weight < 60 kg	46/552 (8.3)	25/284 (8.8)	21 (7.8)	0.797
Creatinine (µmol/L)	88.2 ± 32.1	87.7 ± 30.7	88.7 ± 33.5	0.716
Diagnosis at admission				0.062
Unstable angina	209 (37.8)	99 (34.7)	110 (41.0)	
NSTEMI	268 (48.5)	138 (48.4)	130 (48.5)	
STEMI	76 (13.7)	48 (16.8)	28 (10.4)	
Coronary angiography	545 (98.6)	281 (98.6)	264 (98.5)	1.000
Ticagrelor loading	269 (48.6))	269 (94.4)	0 (0.0)	<0.001

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Prasugrel loading	56 (10.1)	0 (0.0)	56 (20.9)	<0.001
Angiographic characteristics				
Access site				0.260
Femoral artery	332 (60.0)	164 (57.5)	168 (62.7)	
Radial artery	210 (38.0)	114 (40.0)	96 (35.8)	
Other	3 (0.5)	3 (1.1)	0 (0.0)	
No coronary angiography	8 (1.5)	4 (1.4)	4 (1.5)	
Number of diseased coronary arteries				0.220
No obstructive coronary artery disease	330/545 (60.6)	169/281 (60.1)	161/264 (61.0)	
One-vessel disease	76/545 (13.9)	44/281 (15.7)	32/264 (12.1)	
Two-vessel disease	59/545 (10.8)	24/281 (8.5)	35/264 (13.3)	
Three-vessel disease	80/545 (14.7)	44/281 (15.7)	36/264 (13.6)	
Multivessel disease	139/545 (25.5)	68/281 (24.2)	71/264 (26.9)	0.533
Left ventricular ejection fraction	55.3 ± 10.9	55.1 ± 11.1	55.6 ± 10.7	0.595
Drug therapy at discharge*				
Final diagnosis of acute coronary syndrome– no. (%)				0.739
Unstable angina	81/196 (41.3)	46/114 (40.4)	35/82 (42.7)	
NSTEMI	97/196 (49.5)	56/114 (49.1)	41/82 (50.0)	
STEMI	18/196 (9.2)	12/114 (10.5)	6/82 (7.3)	
Therapy at discharge – no. (%) †				
Aspirin	405/552 (73.4)	211 (74.0)	194/267 (72.7)	0.788
Ticagrelor	59/552 (10.7)	58 (20.4)	1/267 (0.4)	<0.001
Prasugrel	45/552 (8.2)	0 (0.0)	45/267 (16.9)	<0.001
Clopidogrel	19/552 (3.4)	12 (4.2)	7/267 (2.6)	0.430
Oral anticoagulant drugs	34/552 (6.2)	15 (5.3)	19/267 (7.1)	0.467
Beta blocking agents	344/552 (62.3)	172 (60.4)	172/267 (64.4)	0.369
ACE inhibitor/ARB	403/552 (73.0)	207 (72.6)	196/267 (73.4)	0.913
Statin	402/552 (72.8)	201 (70.5)	201/267 (75.3)	0.246

Data are shown as mean ± standard deviation or counts (%). Completeness of continuous data: body-mass index was not available in 1 patient in the ticagrelor group; left ventricular ejection fraction was not available for 18 patients (10 in the ticagrelor group and 8 in the prasugrel group). The remaining continuous data were complete. * Not available for patients who withdrew consent or didn't survive the hospital stay before discharge. ACE=angiotensin-converting enzyme; ARB=angiotensin receptor blocker; NSTEMI=non-ST-segment elevation myocardial infarction; STEMI=ST-segment elevation myocardial infarction.

Supplemental Table 4. Clinical outcomes in patients treated conservatively as per assigned antiplatelet therapy.

Characteristic	Ticagrelor (N=285)	Prasugrel (N=268)	Hazard Ratio (95% CI)	p value
Urgent revascularization	8 (2.9)	9 (3.5)	0.79 [0.30-2.06]	0.625
Composite of death, myocardial infarction, or stroke – no. (%)	17 (6.1)	12 (4.6)	1.30 [0.63-2.81]	0.460
Death from any cause	8 (2.9)	6 (2.3)	1.25 [0.43-3.66]	0.682
Myocardial Infarction	7 (2.5)	5 (1.9)	1.31 [0.41-4.20]	0.650
Stroke	3 (1.1)	2 (0.8)	1.35 [0.23-8.09]	0.741
BARC type 3 to 5 bleeding	5 (1.8)	9 (3.4)	0.52 [0.17-1.55]	0.241

Data are number of events with Kaplan-Meier estimates (%) or cumulative incidence (%) after accounting for competing risk at 12-month follow-up. BARC type 3 to 5 bleeding was evaluated in the intention-to-treat population. BARC=Bleeding Academic Research Consortium; CI=confidence interval.

Supplemental Table 5. Clinical outcomes in patients as per assigned antiplatelet therapy using on-treatment analysis.

Characteristic	Ticagrelor (N=285)	Prasugrel (N=268)	Hazard Ratio (95% CI)	p value
Urgent revascularization	108 (6.8)	84 (5.2)	1.34 [1.01-1.78]	0.044
Urgent target vessel revascularization	50 (3.2)	48 (3.0)	1.08 [0.73-1.61]	0.694
Urgent non-target vessel revascularization	63 (4.0)	38 (2.4)	1.73 [1.16-2.59]	0.008

Data are number of events with cumulative incidence (%) after accounting for competing risk at 12-month follow-up.
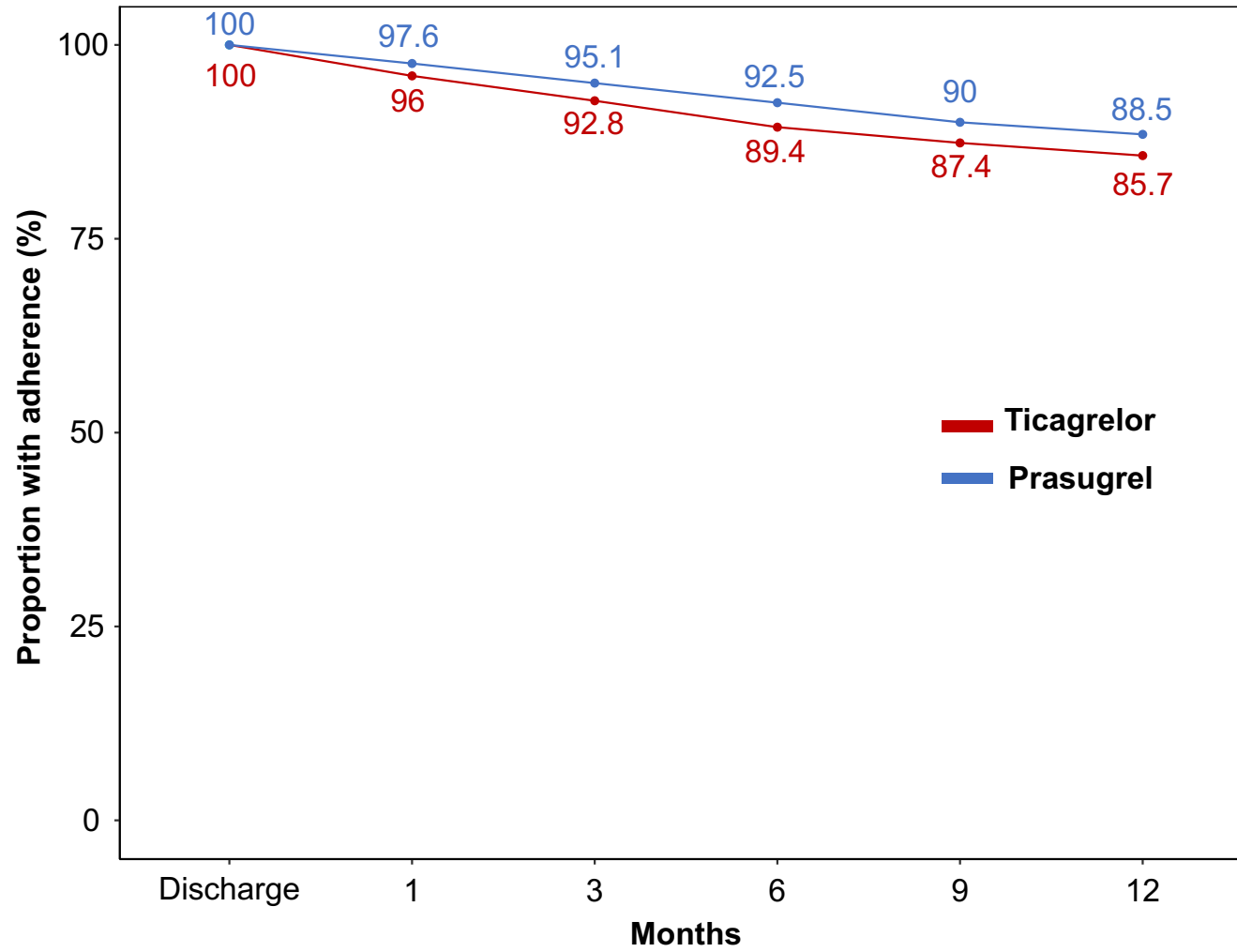
Supplemental Figure 1. Compliance with the assigned antiplatelet therapy at different time points of the follow-up.
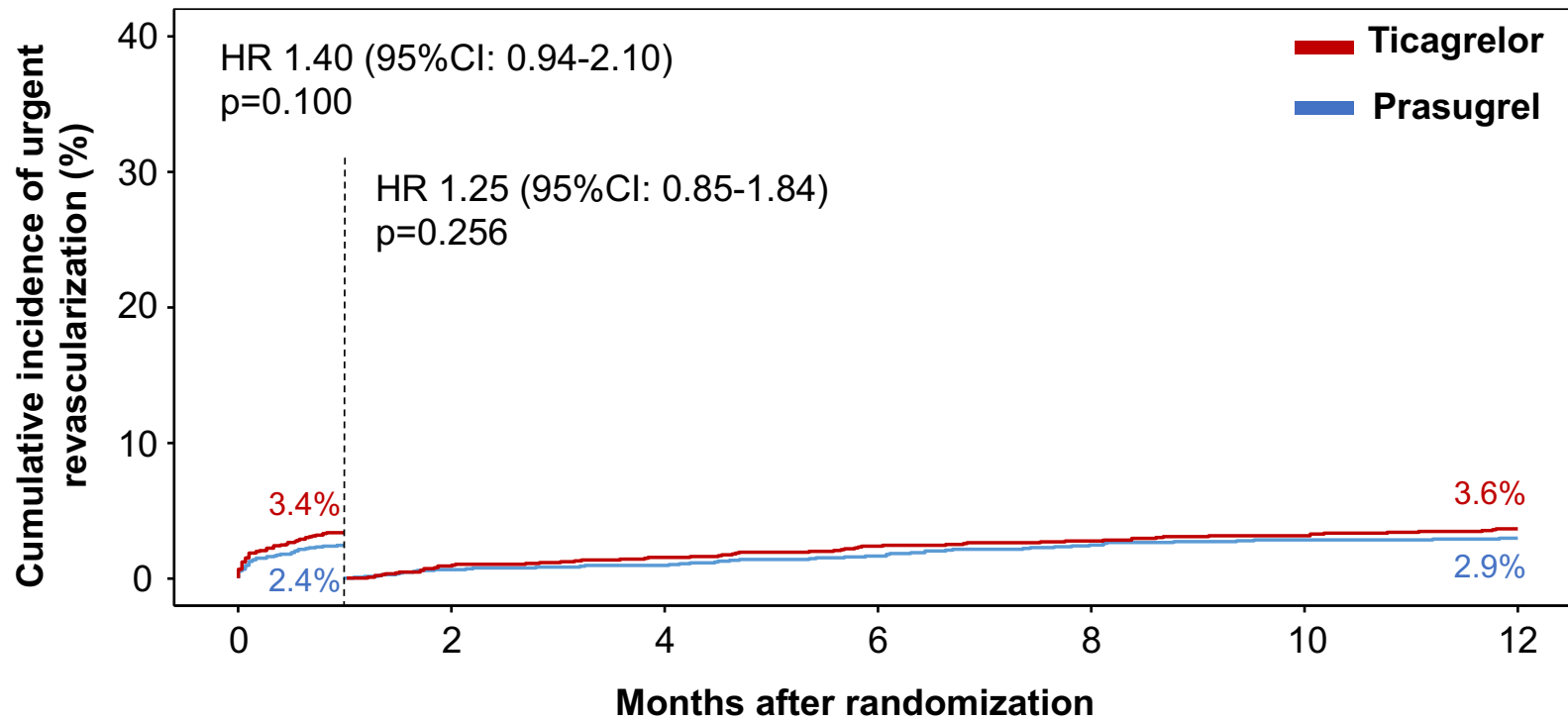
Supplemental Figure 2. One-month landmark analysis of urgent revascularization following PCI.

CI=confidence interval; HR=hazard ratio.