

**SUPPLEMENTARY DATA**

**Table 1 of the supplementary data.** Standard mean deviations between the thrombus aspiration and the no thrombus aspiration groups, before and after inverse probability weighting matching

Variables	Unadjusted	Adjusted
Age	-27.4	-5.6
Male	-0.2	-0.3
Body mass index	44.2	4.2
Hypertension	3.7	-2.2
Diabetes mellitus	-1.0	-1.5
Previous history of chronic kidney disease	-3.9	-3.1
Previous history of myocardial infarction	-7.8	-3.3
Previous history of PCI	1.8	-0.6
Previous history of CABG	-3.0	-2.3
Previous history of stroke	-17.2	-2.7
Left ventricular ejection fraction under 30%	-4.4	1.2
Peak troponin I	21.5	5.6
Creatinine	-2.3	-2.0
Pre-PCI SYNTAX score tertiles	-18.2	-6.3
Post-PCI SYNTAX score tertiles	-33.4	-11.8
Number of involved vessels	-37.5	-8.0
Pre-PCI thrombus grade	43.7	-1.5
Final TIMI flow	-11.5	1.7

CABG, coronary artery bypass graft; PCI, percutaneous coronary intervention; PCI With Taxus and Cardiac Surgery; SYNTAX, Synergy Between TIMI, Thrombolysis in Myocardial Infarction.

**Table 2 of the supplementary data.** Comparison of baseline clinical characteristics and in-hospital management according to thrombus burden

	Grade I-IV (n = 207)	Grade V (n = 368)	P
<b>Demographics</b>			
Age, y	68.7 ± 12.4	64.8 ± 12.7	< .001
Male	162 (78.3)	272 (73.9%)	.288
Body mass index	23.7 ± 3.7	24.0 ± 3.2	.387
<b>Cardiovascular risk factors</b>			
Hypertension	123 (59.4)	183 (49.7%)	.032
Diabetes mellitus	74 (35.7)	106 (28.8%)	.103
Current smoking	66 (31.9)	154 (41.8%)	.023
Chronic kidney disease	19 (9.2)	19 (5.2%)	.092
Previous myocardial infarction	30 (14.5)	38 (10.3%)	.177
Previous PCI	26 (12.6)	39 (10.6%)	.564
Previous CABG	2 (1.0)	4 (1.1%)	.999
Previous history of stroke	22 (10.6)	20 (5.4%)	.033
<b>Clinical presentation</b>			
Type of MI			.001
STEMI	141 (68.1)	298 (81.0%)	
NSTEMI	66 (31.9%)	70 (19.0%)	
Undergoing CPR	41 (19.8%)	79 (21.5%)	.716
Mean blood pressure, mmHg	54.1 ± 21.2	55.2 ± 21.5	.557
LV ejection fraction at presentation, %	39.6 ± 15.3	37.4 ± 15.6	.142
Creatinine, mg/dL	1.5 ± 1.4	1.3 ± 0.9	.059
Lactic acid at presentation, mg/dL	4.9 [2.8, 8.1]	6.0 [3.0, 10.1]	.069
Peak troponin I, ng/mL	22.8 [2.9, 62.8]	23.2 [2.0, 95.5]	.940
<b>In-hospital management</b>			
Requiring IABP	62 (30.0%)	106 (28.8%)	.845
Requiring ECMO	66 (31.9%)	134 (36.4%)	.316
Requiring RRT	35 (16.9%)	61 (16.6%)	.999

CABG, coronary artery bypass graft; CPR, cardiopulmonary resuscitation; ECMO, extracorporeal membrane oxygenator; IABP, intra-aortic balloon pump; LVEF, left ventricular ejection fraction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; RRT renal-replacement therapy; STEMI, ST-elevation myocardial infarction.

Values are expressed as median [1st interquartile, 3rd interquartile], mean ± standard

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deviation, or No. (%).

**Table 3 of the supplementary data.** Comparison of baseline angiographic and procedural characteristics according to thrombus burden

	Grade I-IV (n = 207)	Grade V (n = 368)	P
<b>Angiographic characteristics</b>			
<i>Multivessel disease</i>	172 (83.1)	262 (71.2)	.002
<i>Number of involved vessels</i>			.003
1-vessel	35 (16.9)	106 (28.8)	
2-vessels	94 (45.4)	159 (43.2)	
3-vessels	78 (37.7)	103 (28.0)	
<i>Infarct-related artery</i>			.289
Left anterior descending	88 (42.5)	150 (40.8)	
Left circumflex	18 (8.7)	40 (10.9)	
Right coronary	70 (33.8)	140 (38.0)	
Left main	31 (15.0)	38 (10.3)	
<i>Site of thrombus</i>			.219
Left anterior descending	86 (41.5)	155 (42.1)	
Left circumflex	17 (8.2)	36 (9.8)	
Right coronary	72 (34.8)	141 (38.3)	
Left main	32 (15.5)	36 (9.8)	
<i>Thrombus grade</i>			< .001
I	8 (3.9)	0 (0.0)	
II	8 (3.9)	0 (0.0)	
III	50 (24.2)	0 (0.0)	
IV	141 (68.1)	0 (0.0)	
V	0 (0.0)	368 (100.0)	
<i>Preprocedural TIMI flow</i>			< .001
0	0 (0.0)	368 (100.0)	
1	56 (27.0)	0 (0.0)	
2	57 (27.5)	0 (0.0)	
3	94 (45.4)	0 (0.0)	
<i>Preprocedural SYNTAX score</i>	20.0 [12.0, 28.0]	23.5 [16.0, 30.5]	< .001
<i>Classification by tertiles</i>			< .001
Low (< 16)	89 (43.0)	105 (28.5)	
Intermediate (16-22)	45 (21.7)	72 (19.6)	
High (> 22)	73 (35.3)	191 (51.9)	
<i>Postprocedural SYNTAX score</i>	4.0 [0.0, 11.0]	3.0 [0.0, 9.0]	.034

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Classification by tertiles			.592
Low (< 16)	179 (86.5)	328 (89.1)	
Intermediate (16-22)	12 (5.8)	19 (5.2)	
High (> 22)	16 (7.7)	21 (5.7)	
<b>Procedural characteristics</b>			
<i>Transradial approach</i>	38 (18.4)	63 (17.1)	.795
<i>Amount of contrast used (mL)</i>	163.0 [120.0, 210.0]	157.0 [120.0, 200.0]	.710
<i>Use of thrombus aspiration</i>	55 (26.6)	177 (48.1)	< .001
<i>Use of glycoprotein IIb/IIIa inhibitor</i>	33 (15.9)	101 (27.4)	.002
<i>Final TIMI flow</i>			.005
0-2	21 (10.1)	81 (22.0)	
3	186 (89.9)	287 (78.0)	
<i>No reflow</i>	16 (7.7)	22 (6.0)	.524

SYNTAX, Synergy Between PCI With Taxus and Cardiac Surgery; TIMI, Thrombolysis in Myocardial Infarction.

Values are expressed as median [first interquartile, third interquartile], mean  $\pm$  standard deviation, or No. (%).

**Table 4 of the supplementary data.** Baseline clinical characteristics and in-hospital management of patients with grade V thrombus.

	Thrombus aspiration (n = 177)	No thrombus aspiration (n = 191)	P
Age (years)	64.1 ± 12.4	65.4 ± 12.9	.324
Male	131 (74.0)	141 (73.8)	.999
Body mass index	24.7 ± 3.1	23.3 ± 3.1	< .001
Hypertension	95 (53.7)	88 (46.1)	.176
Diabetes mellitus	54 (30.5)	52 (27.2)	.562
Current smoking	79 (44.6)	75 (39.3)	.349
Chronic kidney disease	12 (6.8)	7 (3.7)	.266
Previous myocardial infarction	18 (10.2)	20 (10.5)	.999
Previous PCI	18 (10.2)	21 (11.0)	.930
Previous CABG	2 (1.1)	2 (1.0)	.999
Previous history of stroke	7 (4.0)	13 (6.8)	.329
Type of MI			.169
STEMI	149 (84.2)	149 (78.0)	
NSTEMI	28 (15.8)	42 (22.0)	
CPR	33 (18.6)	46 (24.1)	.253
Mean blood pressure, mmHg	58.6 ± 20.6	52.2 ± 21.9	.004
LVEF at presentation, %	37.9 ± 16.6	36.9 ± 14.7	.576
Creatinine, mg/dL	1.3 ± 1.0	1.3 ± 0.9	.617
Lactic acid at presentation, mg/dL	5.4 [3.2, 9.3]	6.7 [3.0, 10.5]	.543
Peak troponin I, ng/mL	10.3 [0.5, 80.7]	38.2 [5.8, 100.0]	.007
Requiring IABP insertion	57 (32.2)	49 (25.7)	.204
Requiring ECMO insertion	68 (38.4)	66 (34.6)	.509
Requiring RRT	27 (15.3)	34 (17.8)	.606

CPR, cardiopulmonary resuscitation; ECMO, extracorporeal membrane oxygenator; IABP, intra-aortic balloon on pump; LVEF, left ventricular ejection fraction; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; RRT, renal-replacement therapy; STEMI, ST-elevation myocardial infarction.

Values are expressed as median [first interquartile, third interquartile], mean ± standard deviation, or No. (%).

**Table 5 of the supplementary data.** Baseline angiographic and procedural characteristics of grade V thrombus.

	Thrombus aspiration (n = 177)	No thrombus aspiration (n = 191)	P
<i>Multivessel disease</i>	116 (65.5)	146 (76.4)	.028
<i>Number of involved vessels</i>			.007
1-vessel	61 (34.5)	45 (23.6)	
2-vessels	79 (44.6)	80 (41.9)	
3-vessels	37 (20.9)	66 (34.6)	
<i>Infarct-related artery</i>			.162
Left anterior descending	65 (36.7)	85 (44.5)	
Left circumflex	16 (9.0)	24 (12.6)	
Right coronary	77 (43.5)	63 (33.0)	
Left main	19 (10.7)	19 (9.9)	
<i>Site of thrombus</i>			.208
Left anterior descending	68 (38.4)	87 (45.5)	
Left circumflex	14 (7.9)	22 (11.5)	
Right coronary	76 (42.9)	65 (34.0)	
Left main	19 (10.7)	17 (8.9)	
<i>Preprocedural SYNTAX score</i>	21.5 [14.0, 28.5]	24.5 [19.0, 32.2]	.001
<i>Classification by tertiles</i>			.006
Low (<16)	63 (35.6)	42 (22.0)	
Intermediate (16-22)	36 (20.3)	36 (18.8)	
High (>22)	78 (44.1)	113 (59.2)	
<i>Postprocedural SYNTAX score</i>	1.0 [0.0, 6.0]	4.0 [0.0, 10.0]	.005
<i>Classification by tertiles</i>			.038
Low (< 16)	165 (93.2)	163 (85.3)	
Intermediate (16-22)	7 (4.0)	12 (6.3)	
High (> 22)	5 (2.8)	16 (8.4)	
<i>Transradial approach</i>	33 (18.6)	30 (15.7)	.543
<i>Amount of contrast used (mL)</i>	182.1 ± 71.2	144.5 ± 54.7	.015
<i>Use of glycoprotein IIb/IIIa inhibitor</i>	74 (41.8)	27 (14.1)	< .001
<i>Final TIMI flow</i>			.397
0-2	43 (24.3)	38 (19.9)	
3	134 (75.7)	153 (80.1)	
<i>No reflow</i>	10 (5.6)	12 (6.3)	.971

SYNTAX, Synergy Between PCI With Taxus and Cardiac Surgery; TIMI, Thrombolysis in Myocardial Infarction.

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**Table 6 of the supplementary data.** Subgroup analysis of 6-month clinical outcomes based on thrombus burden, after propensity score matching and inverse probability weighted adjustment<sup>1</sup>

	Subgroup	Propensity score matching	P	IPW adjusted	P
All-cause death or heart failure rehospitalization	Overall	0.89 (0.64-1.25)	.501	0.78 (0.56-1.07)	.118
	Grade V	0.68 (0.46-0.99)	.046	0.70 (0.49-0.99)	.045
	Grade I-IV	1.22 (0.53-2.82)	.648	0.96 (0.50-1.85)	.909
All-cause death	Overall	0.92 (0.65-1.30)	.634	0.83 (0.60-1.14)	.250
	Grade V	0.73 (0.50-1.09)	.121	0.76 (0.53-1.10)	.152
	Grade I-IV	1.35 (0.57-3.20)	.504	0.95 (0.49-1.85)	.891
Cardiac death	Overall	1.01 (0.70-1.48)	.940	0.90 (0.64-1.27)	.548
	Grade V	0.80 (0.52-1.22)	.303	0.83 (0.56-1.22)	.346
	Grade I-IV	1.45 (0.55-3.81)	.447	1.05 (0.52-2.13)	.892
Heart failure Rehospitalization	Overall	0.68 (0.22-2.15)	.513	0.38 (0.12-1.20)	.100
	Grade V	0.40 (0.10-1.61)	.201	0.35 (0.10-1.26)	.107
	Grade I-IV	N/A <sup>2</sup>		0.40 (0.04-4.04)	.440

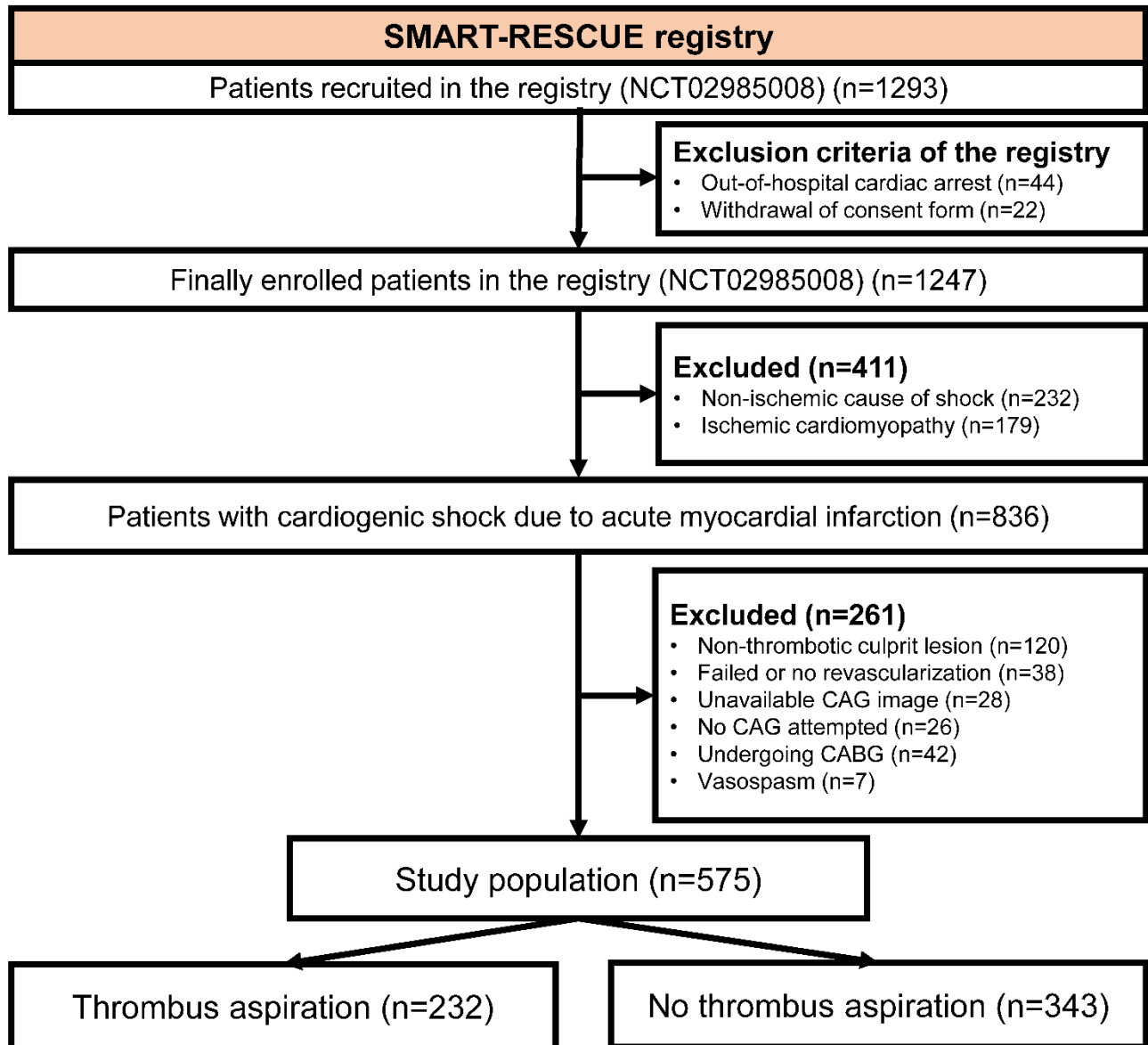
IPW, inverse probability weighted.

<sup>1</sup>The no thrombus aspiration group was used as reference. Variables used in multivariable analysis included use of thrombus aspiration, age over 70, diabetes mellitus, left ventricular ejection fraction < 30%, type of myocardial infarction, presence of multivessel disease, baseline creatinine value, use of mechanical support system, pre- and post-PCI SYNTAX score tertiles.

<sup>2</sup>Hazard ratio was not calculated due to low incidence of the events.

**Figure 1 of the supplementary data.** Study flow.

CABG, coronary artery bypass graft; PCI, percutaneous coronary intervention; CAG, coronary angiography.



**Figure 2 of the supplementary data.** Landmark analysis of 6-month death or heart failure rehospitalization, with 30-day reference point.

In all patients, death or heart failure rehospitalization was not significantly different before the 30-day point. After the 30-day point, it became more frequent in the no TA group. The difference was significant before the 30-day point, being higher in the no TA group than the TA group, and then became nonsignificant patients with high thrombus burden **(A)**. In those with low thrombus burden, the difference between the TA and the no TA group was nonsignificant, both before and after the 30-day point **(B)**. TA, thrombus aspiration.

