Supplement for BNP Level Predicts Major Bleeding Events in Patients with Heart Failure After Percutaneous Coronary Intervention

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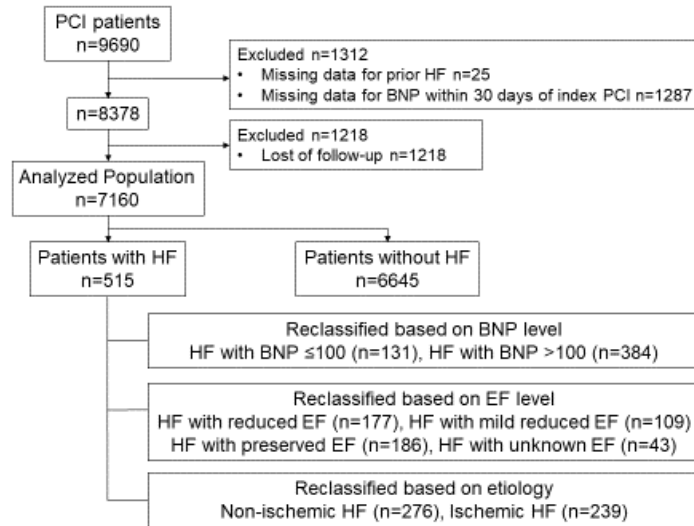## CONTENTS

Supplemental Figure 1. Study flowchart of CLIDAS.

CLIDAS, Clinical Deep Data Accumulation System; PCI, percutaneous coronary

intervention; HF, heart failure; EF, ejection fraction
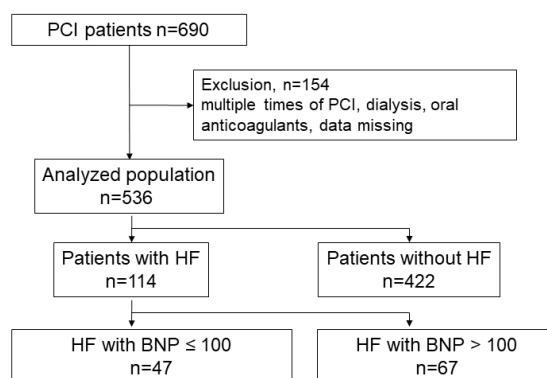
Supplemental Figure 2. Study flowchart of T-TAS

T-TAS, Total Thrombus-Formation Analysis System; HF, heart failure; BNP, B-type

natriuretic peptide
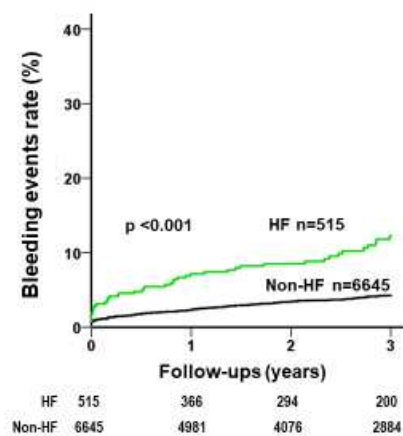
Supplemental Figure 3. Kaplan–Meier estimates of bleeding events (GUSTO

severe/moderate) between the HF and non-HF groups

GUSTO, Global Use of Streptokinase and t-PA for Occluded Coronary Arteries; HF,

heart failure;

Supplemental Table.1 Baseline patient characteristics

	Patients without HF N = 6,645	Patients with HF N = 515	p-value
Age	71 (64, 78)	75 (66, 80)	<0.001
Male	5,183 (78%)	367 (71%)	<0.001
BMI	23.9 (21.8, 26.3)	23.1 (20.6, 25.6)	<0.001
SBP at discharge	118 (106, 130)	115 (100, 128)	<0.001
DBP at discharge	64 (58, 72)	60 (54, 68)	<0.001
PR at discharge	67 (60, 75)	70 (62, 78)	<0.001
ACS	3,086 (46%)	143 (28%)	<0.001
Hypertension	5,508 (83%)	457 (89%)	<0.001
Dyslipidemia	5,224 (79%)	383 (74%)	0.02
Diabetes	2,806 (42%)	294 (57%)	<0.001
Smoking	1,367 (21%)	91 (18%)	0.24
missing data	3,056 (46%)	241 (47%)	
CKD (eGFR <60)	2,917 (47%)	379 (76%)	<0.001
missing data	417 (6%)	14 (3%)	
eGFR	62 (48, 74)	44 (21, 60)	<0.001
Hemodialysis	372 (5.6%)	76 (15%)	<0.001
Family_history_of_CVD	1,409 (21%)	92 (18%)	0.039
missing data	1,279 (19%)	91 (18%)	
Malignancy	610 (9.6%)	62 (13%)	0.022
Previous_MI	951 (14%)	143 (28%)	<0.001
Previous_PCI	1,322 (20%)	161 (31%)	<0.001
Previous_CABG	331 (5.0%)	82 (16%)	<0.001
Previous_Stroke	759 (11%)	80 (16%)	0.005
Atrial_Fibrillation	272 (4.1%)	68 (13%)	<0.001
Peripheral_artery_disease	518 (8.7%)	70 (15%)	<0.001
Culprit lesion			
RCA	3,386 (54%)	282 (59%)	0.034
LAD	4,567 (73%)	360 (76%)	0.24
LCX	2,733 (44%)	242 (51%)	0.003
LMT	492 (7.9%)	52 (11%)	0.019
missing data	415 (6.2%)	40 (7.8%)	
MVD	3,378 (51%)	299 (58%)	0.002
BNP	51 (21, 134)	231 (98, 504)	<0.001
HF with BNP over 100	0 (0%)	384 (75%)	<0.001
EF	61 (51, 67)	45 (32, 56)	<0.001
missing data	1,175 (18%)	43 (8.3%)	
EF category			<0.001
<40	532 (9.7%)	177 (38%)	
≧50	4,211 (77%)	186 (39%)	
40-49	727 (13%)	109 (23%)	
Anticoagulant	791 (12%)	144 (28%)	<0.001
DOAC	308 (4.6%)	60 (12%)	<0.001
Warfarin	501 (7.5%)	87 (17%)	<0.001
DAPT	5,683 (86%)	427 (83%)	0.11
Aspirin	6,152 (93%)	471 (92%)	0.35
P2Y12 inhibitor	6,047 (91%)	456 (89%)	0.063
PPI	5,456 (82%)	425 (83%)	0.81

Data are mean±SD, or *n* (%). Data for this parameter were measured at admission.

Supplemental material

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BMI indicates body mass index, SBP; systolic blood pressure, DBP; diastolic blood pressure, PR; pulse rate, ACS; acute coronary syndrome, CKD; chronic kidney disease, eGFR; estimated glomerular filtration rate, CVD; coronary vessel disease, MI, myocardial infarction, PCI; percutaneous coronary intervention, CABG; coronary artery bypass grafting RCA; right coronary artery, LAD; left anterior descending artery, LCX; left circumflex artery, LMT; left main trunk, MVD; multi vessel disease, BNP; B-type natriuretic peptide, EF; ejection fraction, DOAC; direct oral anticoagulants, DAPT; dual antiplatelet therapy, PPI; Proton pump inhibitor.

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Supplemental Table 2. Types of bleeding events during 3-year follow-up in patients with

and without HF

	Non-HF N=6645	HF N=515	p value
Bleeding events **(GUSTO severe/moderate)**	227 (3.4)	49 (9.5)	<0.001
ICH	53 (0.8)	12 (2.3)	0.002
GI bleeding	93 (1.4)	23 (4.5)	<0.001
Puncture site	47 (0.7)	8 (1.6)	0.058
Trauma	2 (0.03)	0 (0)	>0.99
Other	32 (0.5)	6 (1.2)	0.052

HF indicates heart failure, ICH; intracerebral hemorrhage and GI; gastrointestinal.

Supplemental Table 3. Types of bleeding events during 3-year follow-up according to severity of HF

	Non-HF N=6645	HF with BNP ≤100 N=131	HF with BNP >100 N=384	p value for trend
Bleeding events (GUSTO severe/moderate)	227 (3.4)	9 (6.9)	40 (10.4)	<0.001
ICH	53 (0.8)	2 (1.5)	10 (2.6)	<0.001
GI bleeding	93 (1.4)	4 (3.1)	19 (4.9)	<0.001
Puncture site	47 (0.7)	2 (1.5)	6 (1.6)	0.039
Trauma	2 (0.1)	0 (0)	0 (0)	0.703
Other	32 (0.5)	1 (0.8)	5 (1.3)	0.03

HF indicates heart failure, BNP; B-type natriuretic peptide, ICH; intracerebral hemorrhage and GI; gastrointestinal.