Supplementary data

eTable 1. Baseline characteristics of the overall OAC-ICH cohort.

Characteristics (RETRACE I & II)	Overall cohort (n=2504)
Age† (yrs)	76 (71-81)
Female sex*	1083 (43.3%)
Pre-mRS†[a]	0 (0-2)
Prior medical history	
Hypertension*	2162 (86.3%)
Diabetes Mellitus*	739 (29.5%)
Ischemic stroke*	671 (26.8%)
Congestive heart failure*	479 (19.1%)
Abnormal kidney function*	609 (24.3%)
Abnormal liver function*	70 (2.8%)
Antithrombotic therapy	
Vitamin K antagonist*	2314 (92.4%)
Non-vitamin K antagonist oral anticoagulants*	190 (7.6%)
Additional antiplatelet medication*	290 (11.6%)
OAC - Scores	
$CHADS_2$[b]	
mean†	2.5 (±1.3)
median‡	2 (2-3)
HAS-BLED[c]	
mean†	2.7 (±1.1)
median‡	3 (2-3)
On admission status	
Glasgow coma scale‡[d]	13 (8-15)
ICH Score‡[e]	1 (0-3)
Imaging	
Deep ICH*	1143 (45.6%)
Lobar ICH*	923 (36.9%)
Cerebellar ICH*	264 (10.5%)
Brainstem ICH*	100 (4.0%)
Primary IVH*	74 (3.0%)
ICH volume‡ (cm^3)	18.0 (6.2-46.6)
Intraventricular hemorrhage*	1173 (46.8%)
Coagulation parameters	
PTT‡ (s)	40 (34-47)
INR‡	2.63 (2.10-3.37)
In-hospital measures	
Early care limitation (<24 hours) *	383 (15.3%)
Hematoma evacuation*	332 (13.3%)
Mechanical ventilation*	983 (39.3%)
Length of stay‡ (days)	10 (4-17)

* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile); Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage; IVH, Intraventricular hemorrhage; PTT, partial thromboplastin time; INR, international normalized ratio, SD, standard deviation; IQR, Interquartile range. [a] modified Rankin Scale range,0-6, from no disability to death.[b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism. [c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation. [d] Glasgow coma scale range, 3-15, from deep coma to alert. [e] ICH score range, 0-6, from low to high risk of short-term mortality.

eTable 2. Baseline characteristics of patients excluded from outcome analyses.

Characteristics	Early care limitations (n=18)	In-hospital death <72 hours (n=11)
Age† (yrs)	76 (66-82)	74 (66-77)
Female sex*	9 (50.0%)	6 (54.4%)
Pre-mRS†[a]	1 (0-2)	1 (0-2)
Prior medical history		
Hypertension*	17 (94.4%)	10 (90.9%)
Diabetes Mellitus*	4 (22.2%)	3 (27.3%)
Ischemic stroke*	3 (16.7%)	1 (9.1%)
Congestive heart failure*	4 (22.2%)	4 (36.4%)
Abnormal kidney function*	5 (27.8%)	6 (54.5%)
Additional antiplatelet medication*	3 (16.7%)	1 (9.1%)
Mechanical heart valve		
Aortic valve*	10 (55.6%)	6 (54.5%)
Mitral valve*	6 (33.3%)	5 (45.5%)
Both locations*	2 (11.1%)	0 (0.0%)
OAC - Scores		
$CHADS_2$[b]		
mean†	2.3 (±0.7)	2.3 (±1.2)
median‡	2 (2-3)	2 (2-3)
HAS-BLED[c]		
mean†	2.8 (±0.9)	3.0 (±0.5)
median‡	3 (2-4)	3 (3-3)
On admission status		
Glasgow coma scale‡[d]	4 (3-10)	7 (3-13)
ICH Score‡[e]	3 (2-3)	2 (2-3)
Imaging		
Deep ICH*	7 (38.9%)	3 (27.3%)
Lobar ICH*	10 (55.6%)	8 (72.7%)
Cerebellar ICH*	0 (0.0%)	0 (0.0%)
Brainstem ICH*	1 (5.6%)	0 (0.0%)
ICH volume‡ (cm^3)	104.2 (60.3-150.8)	36.9 (15.2-68.2)
Intraventricular hemorrhage*	13 (72.2%)	5 (45.5%)
Hematoma enlargement*[f]	N/A	8 (72.7%)
Coagulation parameters		
PTT‡ (s)	44 (38-70)	41 (38-46)
INR‡	3.83 (2.40-5.15)	2.79 (2.22-3.60)
In-hospital measures		
Hematoma evacuation*	0 (0.0%)	2 (18.2%)
Mechanical ventilation*	4 (22.2%)	5 (45.5%)
Anticoagulation management		
No anticoagulant treatment*	N/A	5 (45.5%)
Thrombosis prophylaxis*	N/A	3 (27.3%)
Therapeutic anticoagulation*	N/A	3 (27.3%)
In-hospital mortality*	18 (100.0%)	11 (100.0%)
Length of stay‡ (days)	1 (1-2)	1 (1-2)

* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile); Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage; IVH, Intraventricular hemorrhage; PTT, partial thromboplastin time; INR, international normalized ratio, SD, standard deviation; IQR, Interquartile range. [a] pre-modified Rankin Scale range,0-5, from no disability to severe disability. [b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism. [c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation. [d] Glasgow coma scale range, 3-15, from deep coma to alertness. [e] ICH score range, 0-6, from low to high risk of short-term mortality. [f] Hematoma enlargement was defined as increase of volume >33% on follow-up (24±12h) imaging.

eTable 3A. Trichotomous comparison (treatment strategies) of baseline characteristics.

Characteristics	No anticoagulant therapy (n=16)	VTE prophylaxis (n=55)	Therapeutic anticoagulation (n=66)	*p*-value [1]
Age† (yrs)	66 (59-77)	71 (62-78)	69 (60-73)	0.27
Female sex*	5 (31.3%)	21 (38.2%)	21 (31.8%)	0.74
Pre-mRS†[a]	0 (0-1)	0 (0-1)	0 (0-1)	0.90
Prior medical history				
Hypertension*	12 (75.0%)	45 (81.8%)	56 (84.8%)	0.64
Diabetes Mellitus*	4 (25.0%)	18 (32.7%)	17 (25.8%)	0.66
Ischemic stroke*	2 (12.5%)	12 (21.8%)	12 (18.2%)	0.69
Congestive heart failure*	4 (25.0%)	10 (18.2%)	14 (21.2%)	0.82
Abnormal kidney function*	3 (18.8%)	17 (30.9%)	26 (39.4%)	0.25
Abnormal liver function*	0 (0.0%)	4 (7.3%)	5 (7.6%)	0.79
Additional antiplatelet medication*	4 (25.0%)	5 (9.1%)	7 (10.6%)	0.21
Mechanical heart valve				
Aortic valve*	11 (68.8%)	40 (72.7%)	39 (59.1%)	0.57
Mitral valve*	4 (25.0%)	11 (20.0%)	22 (33.3%)	
Both locations*	1 (6.3%)	4 (7.3%)	5 (7.6%)	
OAC - Scores				
$CHADS_2$[b]				
mean†	1.8 (±1.3)	2.1 (±1.4)	2.1 (±1.2)	
median‡	2 (1-3)	2 (1-3)	2 (1-3)	0.85
High-Risk* (≥2)	10 (62.5%)	34 (61.8%)	39 (59.1%)	0.94
HAS-BLED[c]				
mean†	2.1 (±1.2)	2.6 (±1.3)	2.6 (±1.1)	
median‡	2 (1-3)	2 (2-4)	3 (2-3)	0.19
High-Risk* (≥3)	5 (31.3%)	24 (43.6%)	37 (56.6%)	0.14
On admission status				
Glasgow coma scale‡[d]	13 (4-15)	12 (5-15)	14 (13-15)	0.01§
ICH Score‡[e]	2 (0-3)	1 (1-3)	1 (0-2)	0.02§
Imaging				
Deep ICH*	8 (50.0%)	20 (36.4%)	29 (43.9%)	0.54
Lobar ICH*	7 (43.8%)	27 (49.1%)	27 (40.9%)	0.66
Cerebellar ICH*	1 (6.3%)	5 (9.1%)	6 (9.1%)	1.00
Brainstem ICH*	0 (0.0%)	1 (1.8%)	2 (3.0%)	1.00
Primary IVH*	0 (0.0%)	2 (3.6%)	2 (3.0%)	1.00
ICH volume‡ (cm^3)	36.1 (11.4-66.1)	22.3 (10.7-61.5)	14.7 (6.0-38.1)	0.04§
Intraventricular hemorrhage*	8 (50.0%)	24 (43.6%)	26 (39.4%)	0.66
Follow-up ICH volume‡ (cm^3)	56.8 (15.1-80.1)	26.1 (15.3-71.4)	17.1 (8.2-45.4)	0.01§
Coagulation parameters				
PTT‡ (s)	40 (32-50)	40 (35-49)	44 (37-55)	0.22
INR‡	2.64 (2.03-3.21)	2.68 (2.16-3.44)	2.76 (2.43-3.51)	0.44
1st INR after reversal‡	1.31 (1.19-1.58)	1.28 (1.15-1.47)	1.33 (1.17-1.56)	0.52
INR after 24h‡	1.30 (1.19-1.40)	1.26 (1.18-1.39)	1.27 (1.21-1.38)	0.42
INR after 48h‡	1.25 (1.18-1.50)	1.23 (1.13-1.37)	1.27 (1.17-1.38)	0.32
INR after 72h‡	1.39 (1.14-1.48)	1.22 (1.12-1.46)	1.25 (1.18-1.40)	0.40
Outcome analysis				
Hemorrhagic complication*[f]	2 (12.5%)	2 (3.6%)	17 (25.8%)	<0.01
Intracranial*	2 (12.5%)	2 (3.6%)	12 (18.2%)	0.03§
Extracranial*	0 (0.0%)	0 (0.0%)	5 (7.6%)	0.08
Thromboembolic complication*[g]	2 (12.5%)	5 (9.1%)	1 (1.5%)	0.05
Intracranial*	2 (12.5%)	3 (5.5%)	1 (1.5%)	0.10
Extracranial*	0 (0.0%)	2 (3.6%)	0 (0.0%)	0.38
Composite endpoint*[h]	4 (25.0%)	7 (12.7%)	18 (27.3%)	0.14

eTable 3B. Post-hoc tests on parameters showing relevant inter-group differences (p<0.1).

Parameters	*p*-value for post-hoc tests [2]		
	VTE prophylaxis *versus* Therapeutic anticoagulation	No anticoagulant therapy *versus* Therapeutic anticoagulation	**No anticoagulant therapy *versus* VTE prophylaxis**
Glasgow coma scale‡[d]	0.01§	0.08	**0.98**
ICH Score‡[e]	0.01§	0.06	**0.75**
ICH volume‡ (cm^3)	0.05§	0.03§	**0.75**
Follow-up ICH volume‡ (cm^3)	0.01§	0.02§	**0.66**
Hemorrhagic complication*	<0.01	0.34	**0.22**
Intracranial*	0.01§	1.00	**0.22**

* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile);
[1] Compared using Kruskal Wallis H-Test, Pearson's chi-squared test or Freeman-Halton extension of the Fisher exact probability test, as appropriate.
[2] Post-hoc tests were calculated using Mann-Whitney U test, Pearson's chi-squared test or Fisher's exact test. Both Analyses (Table 4A & B) were corrected for multiple comparisons using the Holm's sequential Bonferroni procedure.
§ Not significant after Holm's sequential Bonferroni correction.
Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage; PTT, partial thromboplastin time; INR, international normalized ratio; SD, standard deviation; IQR, Interquartile range.
[a] pre-modified Rankin Scale range,0-5, from no disability to severe disability.
[b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism.
[c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation.
[d] Glasgow coma scale range, 3-15, from deep coma to alertness.
[e] ICH score range, 0-6, from low to high risk of short-term mortality
[f] Hemorrhagic complications were defined as any intracranial hemorrhage, i.e. new ICH distant from the initial hematoma, any delayed hematoma enlargement >33% occurring beyond the 72h quarantine period, and new subarachnoid or sub-/epidural hemorrhage, or any major extracranial hemorrhage (i.e. acute decrease (<24h) in hemoglobin ≥3 g/dL, transfusion ≥2 units packed red blood cells, bleeding in critical site: intraspinal, intraocular, peri-cardial, articular, retroperitoneal, or fatal bleeding).
[g] Thromboembolic complications included ischemic stroke (unrelated to intracranial interventions scored upon serial follow-up imaging), or extracranial thromboembolic complications, i.e. systemic embolism, myocardial infarction (ST-elevated myocardial infarction (STEMI) and non-STEMI with troponin elevation > 99th percentile upper reference limit), valve thrombosis (evaluated through routine echocardiography or computed tomography), or symptomatic pulmonary embolism.
[h] The composite endpoint consists of both hemorrhagic or thromboembolic complications.

eTable 4. Comparison of potential confounders in TA-patients according to anticoagulation agent using VKA versus heparins.

	Vitamin K oral anticoagulation (n=13)	Therapeutic Heparinization (n=53)	*p*-value
Age† (yrs)	61 (54-67)	70 (62-75)	0.04§
Gender* (♀)	4 (30.8%)	17 (32.1%)	1.00
Pre-mRS†[a]	0 (0-2)	0 (0-1)	0.69
Prior medical history			
Hypertension*	10 (76.9%)	46 (86.8%)	0.40
Diabetes Mellitus*	3 (23.1%)	14 (26.4%)	1.00
Ischemic stroke*	3 (23.1%)	9 (17.0%)	0.69
Congestive heart failure*	2 (15.4%)	12 (22.6%)	0.72
Abnormal kidney function*	6 (46.2%)	20 (37.7%)	0.58
Abnormal liver function*	0 (0.0%)	5 (9.4%)	0.57
Additional antiplatelet use*	0 (0.0%)	7 (13.2%)	0.33
Mechanical heart valve			
Aortic valve*	6 (46.2%)	33 (62.3%)	0.29
Mitral valve*	6 (46.2%)	16 (30.2%)	0.33
Both locations*	1 (7.7%)	4 (7.5%)	1.00
OAC - Scores			
$CHADS_2$[b]			
mean†	1.9 (±1.2)	2.1 (±1.2)	
median‡	1 (1-3)	2 (1-3)	0.60
High-Risk* (≥2)	6 (46.2%)	33 (62.3%)	0.29
HAS-BLED[c]			
mean†	2.5 (±1.5)	2.6 (±1.0)	
median‡	3 (2-3)	2 (2-3)	0.71
High-Risk* (≥3)	7 (53.8%)	30 (56.6%)	0.86
On admission status			
Glasgow coma scale‡[d]	13 (8-15)	14 (13-15)	0.27
ICH Score‡[e]	1 (0-3)	1 (0-2)	0.56
Imaging			
Deep ICH*	6 (46.2%)	23 (43.4%)	0.86
Lobar ICH*	5 (38.5%)	22 (41.5%)	0.84
Cerebellar ICH*	1 (7.7%)	5 (9.4%)	1.00
Brainstem ICH*	1 (7.7%)	1 (1.9%)	0.36
Primary IVH*	0 (0.0%)	2 (3.8%)	1.00
ICH volume‡ (cm^3)	13.7 (4.8-27.5)	14.9 (6.1-38.9)	0.60
Intraventricular hemorrhage*	6 (46.2%)	20 (37.7%)	0.58
Coagulation parameters			
PTT‡ (s)	40 (31-56)	45 (37-55)	0.41
INR‡	2.86 (2.55-3.81)	2.70 (2.38-3.51)	0.50
1st INR after reversal‡[f]	1.39 (1.15-1.82)	1.33 (1.17-1.54)	0.45
INR after 24h‡	1.26 (1.17-1.39)	1.27 (1.21-1.37)	0.62
INR after 48h‡	1.27 (1.22-1.35)	1.27 (1.16-1.41)	0.91
INR after 72h‡	1.26 (1.23-1.45)	1.25 (1.15-1.39)	0.39
Outcome analysis			
Hemorrhagic complication*	3 (23.1%)	14 (26.4%)	1.00
Intracranial*	3 (23.1%)	9 (17.0%)	0.69
Extracranial*	0 (0.0%)	5 (9.4%)	0.57
Thromboembolic complication*	1 (7.7%)	0 (0.0%)	0.20
Intracranial*	1 (7.7%)	0 (0.0%)	0.20
Extracranial*	0 (0.0%)	0 (0.0%)	1.00

* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile); Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage; IVH, Intraventricular hemorrhage; PTT, partial thromboplastin time; INR, international normalized ratio, SD, standard deviation; IQR, Interquartile range. [a] modified Rankin Scale range,0-6, from no disability to death. [b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism. [c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation. [d] Glasgow coma scale range, 3-15, from deep coma to alertness. [e] ICH score range, 0-6, from low to high risk of short-term mortality. [f] Indicates first value of in-hospital monitoring; if appropriate after reversal treatment. P-value in bold represents significance after Holm's sequential Bonferroni procedure.

eTable 5. Comparison of potential confounders in TA-patients with intracranial hemorrhagic complications *versus* TA-patients without intracranial hemorrhagic complications.

Characteristics	Ø Intracranial hemorrhagic complication (n=54)	Intracranial hemorrhagic complication (n=12)	*p*-value
Age† (yrs)	69 (61-75)	69 (59-73)	0.57
Female sex*	15 (27.8%)	6 (50.0%)	0.18
Pre-mRS†[a]	0 (0-1)	0 (0-3)	0.30
Prior medical history			
Hypertension*	46 (85.2%)	10 (83.3%)	1.00
Diabetes Mellitus*	13 (24.1%)	4 (33.3%)	0.49
Ischemic stroke*	12 (22.2%)	0 (0.0%)	0.10
Congestive heart failure*	11 (20.4%)	3 (25.0%)	0.71
Abnormal kidney function*	21 (38.9%)	5 (41.7%)	1.00
Abnormal liver function*	3 (5.6%)	2 (16.7%)	0.22
Additional antiplatelet medication*	7 (13.2%)	0 (0.0%)	0.33
Mechanical heart valve			
Aortic valve*	31 (57.4%)	8 (66.7%)	0.75
Mitral valve*	19 (35.2%)	3 (25.0%)	0.74
Both locations*	4 (7.4%)	1 (8.3%)	1.00
OAC - Scores			
$CHADS_2$[b]			
mean†	2.1 (±1.2)	1.7 (±1.1)	
median‡	2 (1-3)	2 (1-2)	0.27
High-Risk* (≥2)	33 (61.1%)	6 (50.0%)	0.35
HAS-BLED[c]			
mean†	2.6 (±1.1)	2.4 (±0.8)	
median‡	3 (2-3)	2 (2-3)	0.42
High-Risk* (≥3)	32 (59.3%)	5 (41.7%)	0.27
On admission status			
Glasgow coma scale‡[d]	14 (13-15)	15 (13-15)	0.30
ICH Score‡[e]	1 (0-2)	1 (0-1)	0.24
Imaging			
Deep ICH*	25 (46.3%)	4 (33.3%)	0.41
Lobar ICH*	22 (40.7%)	5 (41.7%)	1.00
Cerebellar ICH*	5 (9.3%)	1 (8.3%)	1.00
Brainstem ICH*	1 (1.9%)	1 (8.3%)	0.33
Primary IVH*	1 (1.9%)	1 (8.3%)	0.33
ICH volume‡ (cm^3)	19.6 (6.6-39.1)	6.8 (3.6-14.6)	0.07
Intraventricular hemorrhage*	21 (38.9%)	5 (41.7%)	1.00
Follow-up ICH volume‡ (cm^3)	24.6 (8.9-48.9)	10.9 (3.8-14.6)	0.04§

* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile); § Not significant after Holm's sequential Bonferroni correction. Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage. [a] pre-modified Rankin Scale range,0-5, from no disability to severe disability. [b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism. [c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation. [d] Glasgow Coma Scale range, 3-15, from deep coma to alertness. [e] ICH score range, 0-6, from low to high risk of short-term mortality.

eTable 6. Baseline characteristics of propensity score matched MHV-patients.

Characteristics	Ø Therapeutic anticoagulation (n=58)	Therapeutic anticoagulation (n=48)	p-value
Age† (yrs)	69 (60-77)	69 (59-74)	0.41
Female sex*	21 (36.2%)	16 (33.3%)	0.76
Pre-mRS†[a]	0 (0-1)	0 (0-2)	0.88
Prior medical history			
Hypertension*	46 (79.3%)	39 (81.2%)	0.80
Diabetes Mellitus*	17 (29.3%)	13 (27.1%)	0.80
Ischemic stroke*	11 (19.0%)	10 (20.8%)	0.81
Congestive heart failure*	11 (19.0%)	10 (20.8%)	0.81
Abnormal kidney function*	15 (25.9%)	16 (33.3%)	0.40
Abnormal liver function*	4 (6.9%)	3 (6.2%)	1.00
Additional antiplatelet use*	7 (12.1%)	6 (12.8%)	1.00
Mechanical heart valve			
Aortic valve*	39 (67.2%)	28 (58.3%)	0.34
Mitral valve*	14 (24.1%)	17 (35.4%)	0.20
Both locations*	5 (8.6%)	3 (6.2%)	0.73
OAC - Scores			
$CHADS_2$[b]			
mean†	2.0 (±1.3)	2.1 (±1.3)	
median‡	2 (1-3)	2 (1-3)	1.00
High-Risk* (≥2)	36 (62.1%)	26 (54.2%)	0.41
HAS-BLED[c]			
mean†	2.4 (±1.2)	2.5 (±1.1)	
median‡	2 (1-3)	3 (2-3)	0.40
High-Risk* (≥3)	23 (39.7%)	26 (54.2%)	0.14
On admission status			
Glasgow coma scale‡[d]	13 (8-15)	13 (11-15)	0.26
ICH Score‡[e]	1 (0-3)	1 (0-2)	0.28
Imaging			
Deep ICH*	23 (39.7%)	20 (41.7%)	0.83
Lobar ICH*	26 (44.8%)	19 (39.6%)	0.59
Cerebellar ICH*	6 (10.3%)	6 (12.5%)	0.73
Brainstem ICH*	1 (1.7%)	1 (2.1%)	1.00
Primary IVH*	2 (3.4%)	2 (4.2%)	1.00
ICH volume‡ (cm^3)	20.5 (9.8-45.4)	19.6 (6.7-39.9)	0.70
Intraventricular hemorrhage*	24 (43.6%)	19 (39.6%)	0.84
Coagulation parameters			
PTT‡ (s)	39 (33-48)	44 (37-56)	0.06
INR‡	2.64 (2.13-3.31)	2.90 (2.48-3.62)	0.06
1st INR after reversal‡	1.28 (1.16-1.50)	1.30 (1.15-1.54)	0.90
INR after 24h‡	1.26 (1.18-1.39)	1.30 (1.21-1.38)	0.12
INR after 48h‡	1.23 (1.15-1.40)	1.32 (1.18-1.39)	0.25
INR after 72h‡	1.24 (1.14-1.46)	1.29 (1.20-1.46)	0.56

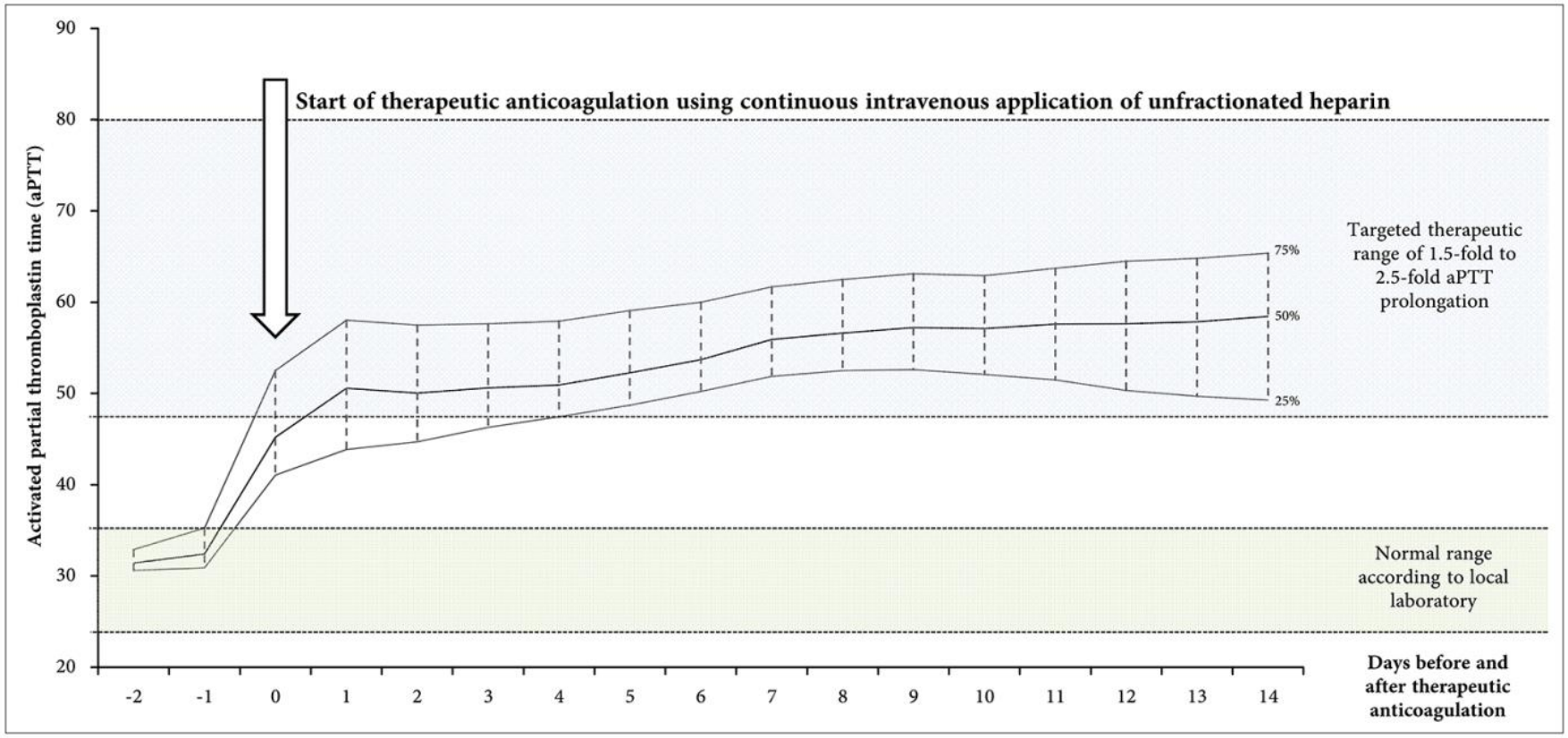
* n (%); † mean (±SD); ‡ median (IQR; 25th-75th percentile); Abbreviations: mRS, modified Rankin Scale; ICH, intracerebral hemorrhage; IVH, Intraventricular hemorrhage; PTT, partial thromboplastin time; INR, international normalized ratio. [a] pre-modified Rankin Scale range, 0-5, from no disability to severe disability. [b] $CHADS_2$ score range, 0-6, from low to high risk of thromboembolism. [c] HAS-BLED score range, 0-9, from low to high risk of bleeding under oral anticoagulation. [d] Glasgow Coma Scale range, 3-15, from deep coma to alertness. [e] ICH score range, 0-6, from low to high risk of short-term mortality. Patients were matched according to propensity scores calculated from age, Glasgow Coma Scale and hematoma volume using the parallel, balanced, variable ratio (1:many) nearest-neighbour approach (caliper 0.1).

eTable 7. Analyses of primary and secondary outcomes comparing propensity score matched MHV-patients according to treatment exposure.

	No. of patients	No. of outcome events	*P* Value [1]	No. of patient days	Incidence rate per 100 patient days [95%CI]	CML estimate of Rate Ratio [95%CI]	*P* Value [2]
Hemorrhagic complication							
TA	48	13	**<0.01**	338	3.85 [2.05-6.58]	8.02 [2.73-28.54]	**<0.01**
no TA	58	4		834	0.48 [0.13-1.23]		
Thromboembolic complication							
TA	48	1	0.07	338	0.30 [0.00-1.65]	0.35 [0.02-2.28]	0.35
no TA	58	7		834	0.84 [0.34-1.73]		
Composite endpoint							
TA	48	14	0.22	338	4.14 [2.26-6.95]	3.14 [1.41-7.12]	**<0.01**
no TA	58	11		834	1.32 [0.66-2.36]		

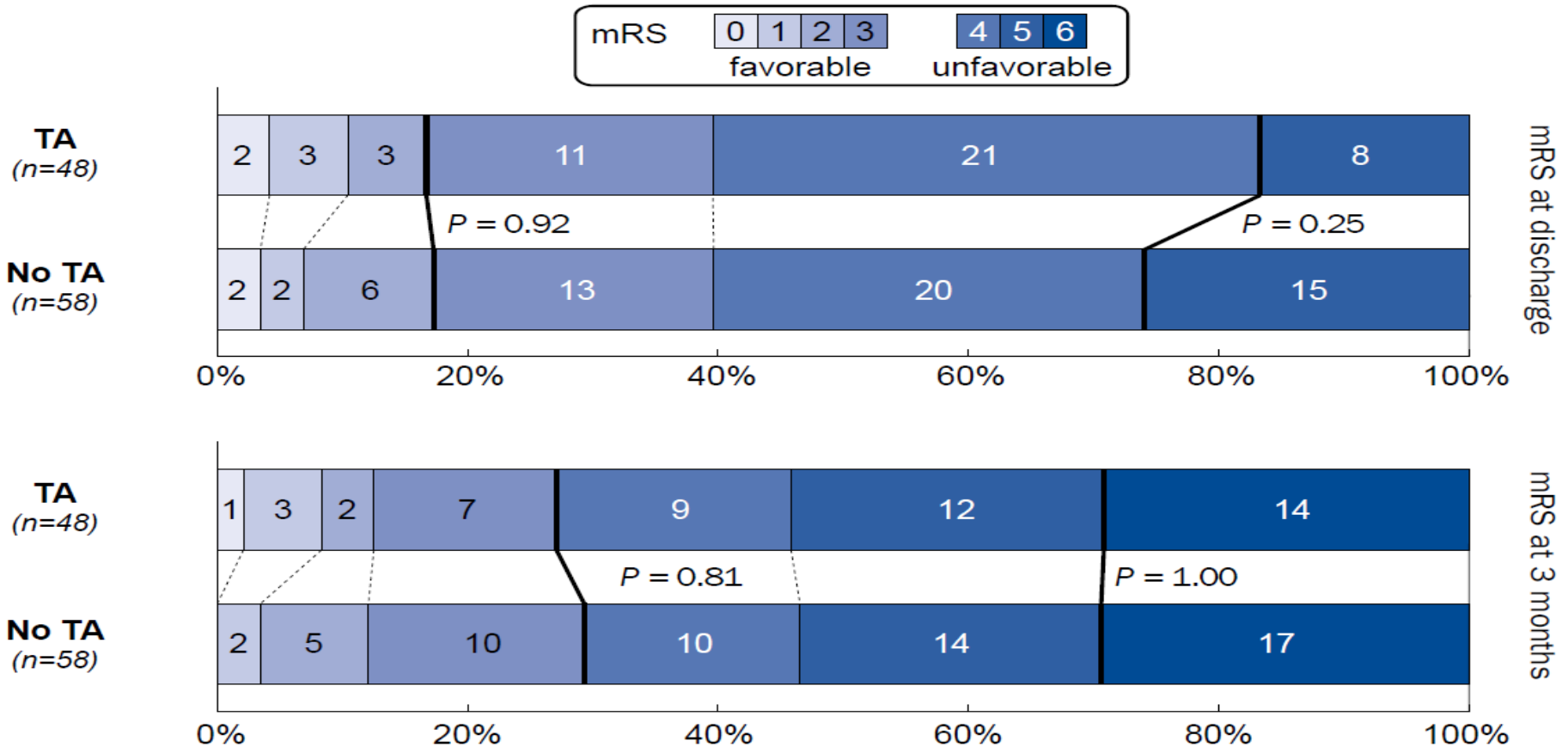
[1] Compared using Pearson's chi-squared or Fisher Exact test as appropriate. [2] Compared using Mid-P exact test. Significant p-values are presented in bold. For definitions of hemorrhagic and thromboembolic complications please see methods. Abbreviations: No, number; CI, confidence interval; TA, i.e. either restarted therapeutic anticoagulation using VKA (scored on first day with INR levels ≥ 1.5), continuous or subcutaneous heparinization (targeting a therapeutic range of aPTT extended by 1.5-2.5) and or full weight adjusted dosing of LMWH (targeting 0.5 to 1.0 anti-Xa units/mL); no TA, i.e. either no antithrombotic medication received during hospital stay or administration of heparins (unfractionated heparin, low molecular weight heparins [LMWH]) in prophylactic dosing for prevention of venous thromboembolism (VTE); CML, conditional maximum likelihood.

eFigure 1. aPTT levels after start of i.v. unfractionated heparin treatment and during hospital stay.



The aPTT levels are presented as median (IQR) for all patients with laboratory data available at the specific day after treatment initiation with intravenous unfractionated heparin treatment.

eFigure 2. Functional outcome and mortality at discharge and 3 months for the ps-matched cohort.



The distribution of mortality and functional outcome is displayed using the modified Rankin Scale (mRS). Each score on the mRS is separated by dashed lines. Thick lines separate the proportion of patients with favorable (mRS 0-3) and unfavorable (mRS 4-6) outcome as well as patients with and without mortality. Abbreviations: ps, propensity score; TA, i.e. either restarted therapeutic anticoagulation using VKA (scored on first day with INR levels ≥ 1.5), continuous or subcutaneous heparinization (targeting a therapeutic range of aPTT extended by 1.5-2.5) and or full weight adjusted dosing of LMWH (targeting 0.5 to 1.0 anti-Xa units/mL); no TA, i.e. either no antithrombotic medication received during hospital stay or administration of heparins (unfractionated heparin, low molecular weight heparins [LMWH]) in prophylactic dosing for prevention of venous thromboembolism (VTE).

eTable 8. Analysis of primary and secondary outcomes comparing patients according to valve position.

	No. of patients	No. of outcome events	*P* Value [1]	No. of patient days	Incidence rate per 100 patient days [95%CI]	CML estimate of Rate Ratio [95%CI]	*P* Value [2]
Hemorrhagic complication							
Aortic valve	90	13	0.69	1138	1.14 [0.61-1.95]	0.73 [0.30-1.86]	0.49
Mitral valve or both	47	8		513	1.56 [0.67-3.07]		
Thromboembolic complication							
Aortic valve	90	6	0.71	1138	0.53 [0.19-1.15]	1.35 [0.29-9.74]	0.76
Mitral valve or both	47	2		513	0.39 [0.04-1.41]		
Composite endpoint							
Aortic valve	90	19	1.00	1138	1.67 [1.01-2.61]	0.86 [0.40-1.92]	0.68
Mitral valve or both	47	10		513	1.95 [0.93-3.59]		

[1] Compared using Pearson's chi-squared or Fisher Exact test as appropriate. [2] Compared using Mid-P exact test. Significant p-values are presented in bold. For definitions of hemorrhagic and thromboembolic complications please see methods. Abbreviations: No, number; CI, confidence interval; CML, conditional maximum likelihood.

eTable 9. Analysis of primary and secondary outcomes comparing patients according to valve position and treatment exposure.

	No. of patients	No. of outcome events	*P* Value [1]	No. of patient days	Incidence rate per 100 patient days [95%CI]	CML estimate of Rate Ratio [95%CI]	*P* Value [2]
Hemorrhagic complication							
TA							
Aortic valve	39	10	1.00	327	3.06 [1.46-5.62]	0.68 [0.25-1.88]	0.43
Mitral valve or both	27	7		155	4.52 [1.81-9.31]		
no TA							
Aortic valve	51	3	1.00	811	0.37 [0.07-1.08]	1.32 [0.14-34.87]	0.87
Mitral valve or both	20	1		358	0.28 [0.00-1.55]		
Thromboembolic complication							
TA							
Aortic valve	39	0	0.41	327	0	N/A	N/A
Mitral valve or both	27	1		155	0.65 [0.01-3.59]		
no TA							
Aortic valve	51	6	0.66	811	0.74 [0.27-1.61]	2.65 [0.39-61.34]	0.39
Mitral valve or both	20	1		358	0.28 [0.00-1.41]		
Composite endpoint							
TA							
Aortic valve	39	10	0.72	327	3.06 [1.46-5.62]	0.59 [0.23-1.57]	0.28
Mitral valve or both	27	8		155	5.16 [2.22-10.17]		
no TA							
Aortic valve	51	9	0.50	811	1.11 [0.51-2.11]	1.99 [0.47-13.49]	0.40
Mitral valve or both	20	2		358	0.56 [0.06-2.02]		

[1] Compared using Pearson's chi-squared or Fisher Exact test as appropriate. [2] Compared using Mid-P exact test. Significant p-values are presented in bold. For definitions of hemorrhagic and thromboembolic complications please see methods. Abbreviations: No, number; CI, confidence interval; TA, i.e. either restarted therapeutic anticoagulation using VKA (scored on first day with INR levels ≥ 1.5), continuous or subcutaneous heparinization (targeting a therapeutic range of aPTT extended by 1.5-2.5) and or full weight adjusted dosing of LMWH (targeting 0.5 to 1.0 anti-Xa units/mL); no TA, i.e. either no antithrombotic medication received during hospital stay or administration of heparins (unfractionated heparin, low molecular weight heparins [LMWH]) in prophylactic dosing for prevention of venous thromboembolism (VTE); CML, conditional maximum likelihood.

eTable 10: Analysis of primary and secondary outcomes comparing patients with sinus rhythm *versus* atrial fibrillation.

	No. of patients	No. of outcome events	*P* Value [1]	No. of patient days	Incidence rate per 100 patient days [95%CI]	CML estimate of Rate Ratio [95%CI]	*P* Value [2]
Hemorrhagic complication							
MHV and sinus rhythm	99	12	0.09	1279	0.94 [0.48-1.64]	0.38 [0.16-0.96]	**0.04**
MHV and atrial fibrillation	38	9		372	2.42 [1.10-4.59]		
Thromboembolic complication							
MHV and sinus rhythm	99	4	0.22	1279	0.31 [0.08-0.80]	0.29 [0.07-1.29]	0.09
MHV and atrial fibrillation	38	4		372	1.01 [0.29-2.75]		
Composite endpoint							
MHV and sinus rhythm	99	16	**0.02**	1279	1.25 [0.71-2.03]	0.36 [0.17-0.76]	**<0.01**
MHV and atrial fibrillation	38	13		372	3.50 [1.86-5.98]		

[1] Compared using Pearson's chi-squared or Fisher Exact test as appropriate. [2] Compared using Mid-P exact test. Significant p-values are presented in bold. For definitions of hemorrhagic and thromboembolic complications please see methods. Abbreviations: No, number; CI, confidence interval; CML, conditional maximum likelihood; MHV, mechanical heart valve.

eTable 11. Analysis of primary and secondary outcomes comparing patients with sinus rhythm *versus* atrial fibrillation according to treatment exposure.

	No. of patients	No. of outcome events	*P* Value [1]	No. of patient days	Incidence rate per 100 patient days [95%CI]	CML estimate of Rate Ratio [95%CI]	*P* Value [2]
Hemorrhagic complication							
TA							
MHV and sinus rhythm	49	11	0.34	372	2.96 [1.47-5.29]	0.54 [0.20-1.58]	0.24
MHV and atrial fibrillation	17	6		110	5.46 [1.99-11.87]		
no TA							
MHV and sinus rhythm	50	1	0.07	907	0.11 [0.00-1.20]	0.10 [0.00-0.90]	**0.04**
MHV and atrial fibrillation	21	3		262	1.15 [0.23-3.35]		
Thromboembolic complication							
TA							
MHV and sinus rhythm	49	1	1.00	372	0.27 [0.00-1.50]	N/A	N/A
MHV and atrial fibrillation	17	0		110	0		
no TA							
MHV and sinus rhythm	50	3	0.18	907	0.33 [0.07-0.97]	0.22 [0.04-1.05]	0.06
MHV and atrial fibrillation	21	4		262	1.53 [0.41-3.91]		
Composite endpoint							
TA							
MHV and sinus rhythm	49	12	0.53	372	3.23 [1.67-5.64]	0.59 [0.22-1.71]	0.31
MHV and atrial fibrillation	17	6		110	5.46 [1.99-11.87]		
no TA							
MHV and sinus rhythm	50	4	**0.01**	907	0.44 [0.12-1.13]	0.17 [0.04-0.57]	**<0.01**
MHV and atrial fibrillation	21	7		262	2.67 [1.07-5.51]		

[1] Compared using Pearson's chi-squared or Fisher Exact test as appropriate. [2] Compared using Mid-P exact test. Significant p-values are presented in bold. For definitions of hemorrhagic and thromboembolic complications please see methods. Abbreviations: No, number; CI, confidence interval; TA, i.e. either restarted therapeutic anticoagulation using VKA (scored on first day with INR levels ≥ 1.5), continuous or subcutaneous heparinization (targeting a therapeutic range of aPTT extended by 1.5-2.5) and or full weight adjusted dosing of LMWH (targeting 0.5 to 1.0 anti-Xa units/mL); no TA, i.e. either no antithrombotic medication received during hospital stay or administration of heparins (unfractionated heparin, low molecular weight heparins [LMWH]) in prophylactic dosing for prevention of venous thromboembolism (VTE); CML, conditional maximum likelihood; MHV, mechanical heart valve.