

SUPPLEMENTAL MATERIAL

Table S1. Univariable logistic regression models for clinical characteristics with OR favoring ICH versus AIS/TIA (each row represents one model for one characteristic).

Univariable model	OR	95%-CI	p
female sex (versus male sex)	0.99	0.67; 1.45	0.95
age (per 10 years increase)	1.10	0.90; 1.37	0.350
NIHSS (per 1 point increase)	1.08	1.06; 1.11	<0.001
GCS (per 1 point decrease)	1.23	1.16; 1.30	<0.001
systolic blood pressure (per 10 mmHg increase)	1.20	1.12; 1.28	<0.001
diastolic blood pressure (per 10 mmHg increase)	1.28	1.15; 1.44	<0.001
eGFR (per 10 ml/min/1.73m ² decrease)	0.89	0.83; 0.95	<0.001
hypertension	1.32	0.78; 2.37	0.314
diabetes mellitus	0.72	0.44; 1.15	0.168
dyslipidemia	0.57	0.38; 0.84	0.004
atrial fibrillation	0.82	0.52; 1.30	0.388
heart failure	0.62	0.35; 1.03	0.065
prosthetic heart valve	0.59	0.26; 1.20	0.151
coronary artery disease	0.41	0.25; 0.67	<0.001
peripheral artery disease	0.67	0.33; 1.25	0.217
prior AIS/TIA	0.59	0.38; 0.89	0.011
prior ICH	4.37	2.16; 8.75	<0.001
prior gastrointestinal and/or other major bleeding	1.18	0.47; 2.63	0.704
CHA ₂ DS ₂ -VASc (per 1 point increase)	0.85	0.75; 0.95	0.005
HAS-BLED (per 1 point increase)	1.03	0.84; 1.26	0.750
DOAC (versus VKA)	1.00	0.68; 1.47	1.000
any additional antiplatelets	0.73	0.36; 1.33	0.311
concomitant statins	0.84	0.57; 1.23	0.368

AIS = acute ischemic stroke, CI = confidence interval, DOAC = direct oral anticoagulant, eGFR = estimated glomerular filtration rate, GCS = Glasgow Coma Scale, ICH = intracerebral hemorrhage, NIHSS = National Institute of Health Stroke Scale, OR = odds ratio, TIA = transient ischemic attack, VKA = vitamin K antagonist.

Table S2. Reduced multivariable model using Lasso regression for clinical characteristics with aOR favouring ICH versus AIS/TIA.

Variable	aOR	95%-CI	p
female sex (versus male sex)	eliminated		
age (per 10 years increase)	1.36	1.04; 1.78	0.026
systolic blood pressure (per 10 mmHg increase)	1.19	1.10; 1.28	<0.001
eGFR (per 10 ml/min/1.73m ² decrease)	0.82	0.74; 0.89	<0.001
hypertension	1.37	0.73; 2.58	0.322
diabetes mellitus	0.78	0.46; 1.32	0.348
dyslipidemia	0.55	0.34; 0.89	0.015
atrial fibrillation	eliminated		
heart failure	eliminated		
prosthetic heart valve	0.63	0.26; 1.53	0.312
coronary artery disease	0.48	0.27; 0.84	0.010
peripheral artery disease	eliminated		
prior AIS/TIA	0.52	0.32; 0.83	0.007
prior ICH	6.31	2.88; 13.82	<0.001
prior gastrointestinal and/or other major bleeding	2.07	0.81; 5.24	0.127
DOAC (versus VKA)	0.86	0.56; 1.33	0.508
any additional antiplatelets	eliminated		
concomitant statins	1.84	1.12; 3.02	0.016

AIS = acute ischemic stroke, aOR = adjusted odds ratio, CI = confidence interval, DOAC = direct oral anticoagulant, eGFR = estimated glomerular filtration rate, ICH = intracerebral hemorrhage, TIA = transient ischemic attack, VKA = vitamin K antagonist.

Table S3. Clinical characteristics stratified by type of index event and whether MRI was performed.

Characteristic	AIS/TIA with MRI (n = 477)	AIS/TIA without MRI (n = 128)	ICH with MRI (n = 37)	ICH without MRI (n = 92)
female sex [n (%)]	198 (41.5)	57 (44.5)	16 (43.2)	38 (41.3)
age in years [median (IQR)]	82 (75 - 86)	82 (75 - 87)	79 (76 - 83)	82 (77 - 87)
NIHSS [median (IQR)]	3 (1 - 8)	7 (2 - 18)	7 (3 - 13)	17 (6 - 22)
GCS [median (IQR)]	15 (14 - 15)	15 (13 - 15)	15 (14 - 15)	13 (9 - 14)
systolic blood pressure in mmHg [mean (SD)]	150 (25)	146 (27)	159 (25)	165 (33)
diastolic blood pressure in mmHg [mean (SD)]	83 (16)	81 (18)	87 (15)	91 (17)
eGFR in ml/min/1.73m ² [median (IQR)]	56.6 (42.8 - 76.2)	52.5 (34.3 - 67.5)	77.8 (56.7 - 89.7)	61.0 (44.7 - 82.8)
concomitant medication				
VKA [n (%)]	205 (43.0)	67 (52.3)	13 (35.1)	45 (48.9)
DOAC [n (%)]	272 (57.0)	61 (47.7)	24 (64.9)	47 (51.1)
any additional antiplatelets [n (%)]	56 (11.7)	19 (14.8)	0 (0)	12 (13.0)
additional dual antiplatelets [n (%)]	2 (0.4)	1 (0.8)	0 (0)	0 (0)
concomitant statins [n (%)]	216 (45.3)	54 (42.2)	16 (43.2)	36 (39.1)
medical history				
hypertension [n (%)]	397 (83.2)	107 (83.6)	34 (91.9)	78 (84.8)
diabetes mellitus [n (%)]	112 (23.5)	34 (26.6)	6 (16.2)	18 (19.6)
dyslipidemia [n (%)]	229 (48.0)	55 (43.0)	14 (37.8)	29 (31.5)
atrial fibrillation [n (%)]	373 (78.2)	112 (87.5)	32 (86.5)	67 (72.8)
heart failure [n (%)]	80 (16.8)	46 (35.9)	4 (10.8)	14 (15.2)
prosthetic heart valve [n (%)]	48 (10.1)	13 (10.2)	0 (0.0)	8 (8.7)
coronary artery disease [n (%)]	145 (30.4)	49 (38.3)	5 (13.5)	16 (17.4)
peripheral artery disease [n (%)]	54 (11.3)	20 (15.6)	3 (8.1)	8 (8.7)
prior AIS/TIA [n (%)]	193 (40.5)	47 (36.7)	5 (13.5)	31 (33.7)
prior ICH [n (%)]	13 (2.7)	6 (4.7)	3 (8.1)	13 (14.1)
prior gastrointestinal and/or other major bleeding [n (%)]	21 (4.4)	7 (5.5)	2 (5.4)	5 (5.4)
CHA ₂ DS ₂ -VASc score [median (IQR)]	5 (4 - 6)	5 (4 - 6)	4 (3 - 5)	4 (3 - 6)
HAS-BLED score [median (IQR)]	2 (1 - 3)	2 (2 - 3)	2 (1 - 2)	2 (2 - 3)

AIS = acute ischemic stroke, DOAC = direct oral anticoagulant, eGFR = estimated glomerular filtration rate, GCS = Glasgow Coma Scale, ICH = intracerebral hemorrhage, IQR = interquartile range, MRI = magnetic resonance imaging, NIHSS = National Institute of Health Stroke Scale, SD = standard deviation, TIA = transient ischemic attack, VKA = vitamin K antagonist.

Table S4. Logistic regression models for atherosclerosis assessment on CTA with (a)OR favoring ICH versus AIS/TIA (univariable unadjusted models [1A – 9A] and models adjusted for CHA₂DS₂-VASc and HAS-BLED [1B – 9B] for each CTA variable; each row represents one model for one CTA variable)

Model	(A) unadjusted estimates			(B) estimates adjusted for CHA ₂ DS ₂ -VASc and HAS-BLED		
	OR	95%-CI	p	aOR	95%-CI	p
Model 1: any atherosclerosis	0.62	0.38; 1.04	0.070	0.71	0.42; 1.22	0.206
Model 2: aortic arch	0.50	0.29; 0.83	0.006	0.54	0.31; 0.90	0.018
Model 3: common carotid artery	0.27	0.04; 0.89	0.030	0.29	0.05; 0.97	0.043
Model 3: internal carotid artery	0.45	0.29; 0.71	<0.001	0.48	0.30; 0.76	0.002
Model 3: internal carotid artery stenosis ≥50%	0.33	0.13; 0.68	0.002	0.32	0.13; 0.67	0.002
Model 6: carotid siphon	0.74	0.47; 1.16	0.182	0.81	0.51; 1.29	0.366
Model 7: middle cerebral artery, M1 segment	0.22	0.01; 1.08	0.065	0.22	0.01; 1.09	0.068
Model 8: vertebral artery	0.68	0.39; 1.15	0.153	0.71	0.40; 1.22	0.217
Model 9: basilar artery	0.65	0.15; 1.92	0.474	0.68	0.16; 2.05	0.531

AIS = acute ischemic stroke, (a)OR = adjusted odds ratio, CI = confidence interval, CTA = computed tomography angiography, ICH = intracerebral hemorrhage, TIA = transient ischemic attack.

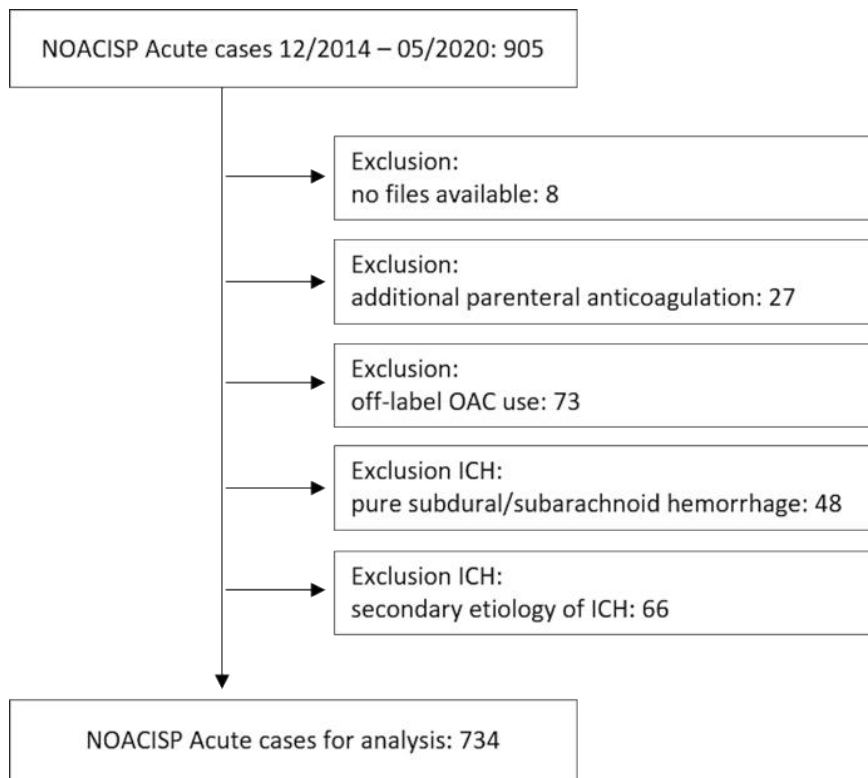
Table S5. Logistic regression models for the interaction of anticoagulant type (DOAC or VKA) with clinical, MRI and CTA characteristics on their association with event type (ICH versus AIS/TIA). For each anticoagulant subgroup the model-based odds ratio and 95% confidence interval for ICH versus AIS/TIA is presented, along with the p value for interaction. Each row represents one model for one clinical, MRI, or CTA characteristic.

Model	DOAC subgroup		VKA subgroup		Pinteraction
	OR	95%-CI	OR	95%-CI	
female sex (versus male sex)	0.82	0.49; 1.38	1.24	0.69; 2.20	0.296
age (per 10 years increase)	0.95	0.72; 1.26	1.35	0.98; 1.91	0.107
systolic blood pressure (per 10 mmHg increase)	1.23	1.11; 1.36	1.17	1.06; 1.29	0.509
eGFR (per 10 ml/min/1.73m ² decrease)	0.86	0.78; 0.94	0.91	0.83; 1.01	0.391
hypertension	1.36	0.67; 3.08	1.27	0.59; 3.06	0.903
diabetes mellitus	0.45	0.21; 0.88	1.20	0.60; 2.30	0.050
dyslipidemia	0.60	0.34; 1.02	0.53	0.29; 0.94	0.763
atrial fibrillation	1.12	0.59; 2.31	0.60	0.33; 1.15	0.182
heart failure	0.95	0.45; 1.86	0.38	0.15; 0.83	0.099
prosthetic heart valve	0.94	0.14; 3.65	0.50	0.18; 1.15	0.506
coronary artery disease	0.50	0.25; 0.95	0.33	0.14; 0.66	0.398
peripheral artery disease	0.68	0.25; 1.55	0.66	0.22; 1.63	0.972
prior AIS/TIA	0.54	0.30; 0.93	0.66	0.35; 1.20	0.628
prior ICH	4.80	1.92; 11.87	3.81	1.21; 11.41	0.749
prior gastrointestinal and/or other major bleeding	1.09	0.24; 3.48	1.27	0.35; 3.66	0.859
any additional antiplatelets	0.63	0.21; 1.52	0.82	0.32; 1.84	0.681
concomitant statins	0.61	0.35; 1.03	1.21	0.69; 2.14	0.082
CMB presence (versus absence)	3.33	1.35; 9.40	2.02	0.64; 7.65	0.529
CMB location (versus no CMB)					
purely superficial	3.69	1.10; 12.37	1.88	0.45; 7.43	
purely deep	0.83	0.04; 5.12	1.68	0.08; 11.66	0.229
mixed location	6.46	2.32; 19.68	1.24	0.25; 5.25	
CMB count (per 1 CMB increase)	1.08	1.03; 1.13	1.03	0.95; 1.09	0.209
CMB count categorical (versus no CMB)					
n = 1 CMB	1.52	0.31; 6.01	1.62	0.22; 8.71	
n = 2-10 CMB	3.69	1.35; 11.10	1.96	0.50; 8.17	0.741
n >10 CMB	8.67	1.98;35.30	3.03	0.40; 16.92	
ARWMC scale 2-3 (versus ARWMC scale 0-1)	1.69	0.73; 4.15	2.29	0.72; 8.68	0.685
any atherosclerosis	0.53	0.27; 1.05	0.75	0.35; 1.72	0.494
aortic arch	0.44	0.19; 0.92	0.55	0.26; 1.09	0.695
common carotid artery	0.30	0.02; 1.49	0.24	0.01; 1.20	0.884
internal carotid artery	0.42	0.22; 0.78	0.48	0.25; 0.92	0.770

internal carotid artery stenosis $\geq 50\%$	0.28	0.07; 0.80	0.37	0.11; 0.98	0.726
carotid siphon	0.74	0.40; 1.37	0.72	0.37; 1.40	0.950
vertebral artery	0.93	0.44; 1.85	0.46	0.18; 1.02	0.206
basilar artery	0.46	0.02; 2.40	0.83	0.13; 3.19	0.642

AIS = acute ischemic stroke, CI = confidence interval, CTA = computed tomography angiography, DOAC = direct oral anticoagulant, eGFR = estimated glomerular filtration rate, GCS = Glasgow Coma Scale, ICH = intracerebral hemorrhage, MRI = magnetic resonance imaging, NIHSS = National Institute of Health Stroke Scale, OR = odds ratio, TIA = transient ischemic attack, VKA = vitamin K antagonist, CMB = cerebral microbleeds, ARWMC = age-related white matter changes,

Figure S1. Eligibility flowchart.



The same patient might be excluded for multiple reasons. ICH = intracerebral hemorrhage, NOACISP = Novel Oral Anticoagulants In Stroke Patients, OAC = oral anticoagulant.