

ONLINE SUPPLEMENT

Paper title: Thromboembolic, Bleeding, and Mortality Risks among Patients with Nonvalvular Atrial Fibrillation Treated with Dual Antiplatelet Therapy versus Oral Anticoagulants: A Population-Based Study

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Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study

ICD-9-CM codes	Descriptions
Atrial fibrillation	
427.3	Atrial fibrillation and flutter
Valvular heart diseases/replacement or hyperthyroidism	
242	Thyrotoxicosis with or without goitre
394.0	Mitral stenosis
Valvular heart surgery (procedure codes)	
35.20	Open and other replacement of unspecified heart valve
35.22	Open and other replacement of aortic valve
35.24	Open and other replacement of mitral valve
35.26	Open and other replacement of pulmonary valve
35.28	Open and other replacement of tricuspid valve
Transient atrial fibrillation	
Cardiac surgery (procedure codes)	
00.5	Other cardiovascular procedures
35	Operations on valves and septa of heart
36	Operations on vessels of heart
37	Other operations on heart and pericardium
Pericarditis	
391	Rheumatic fever with heart involvement
393	Chronic rheumatic pericarditis
420	Acute pericarditis
423.2	Constrictive pericarditis
036.41	Meningococcal pericarditis
074.21	Coxsackie pericarditis
093.81	Syphilitic pericarditis
098.83	Gonococcal pericarditis
Myocarditis	
130.3	Myocarditis due to toxoplasmosis
391.2	Acute rheumatic myocarditis
398.0	Rheumatic myocarditis
422	Acute myocarditis
429.0	Myocarditis, unspecified
032.82	Diphtheritic myocarditis
036.43	Meningococcal myocarditis
074.23	Coxsackie myocarditis
093.82	Syphilitic myocarditis
Pulmonary embolism	
415.1	Pulmonary embolism and infarction
Ischemic heart disease	
410-414	Ischemic heart disease

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Congestive Heart Failure	
398.91	Rheumatic heart failure (congestive)
402.01	Malignant hypertensive heart disease with heart failure
402.11	Benign hypertensive heart disease with heart failure
402.91	Unspecified hypertensive heart disease with heart failure
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
428	Heart failure
Hypertension	
401	Essential hypertension
402	Hypertensive heart disease
403	Hypertensive chronic kidney disease
404	Hypertensive heart and chronic kidney disease
405	Secondary hypertension
437.2	Hypertensive encephalopathy
Diabetes	
250	Diabetes mellitus
Ischaemic stroke	
433.01	Occlusion and stenosis of basilar artery with cerebral infarction
433.11	Occlusion and stenosis of carotid artery with cerebral infarction
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction
434	Occlusion of cerebral arteries
436	Acute, but ill-defined, cerebrovascular disease
437.0	Cerebral atherosclerosis
437.1	Other generalized ischemic cerebrovascular disease

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Transient ischaemic attack	
435	Transient cerebral ischemia
Systemic embolism	
444	Arterial embolism and thrombosis
445	Atheroembolism
Vascular disease	
410-414	Ischemic heart disease
443.8	Other specified peripheral vascular diseases
443.9	Peripheral vascular disease, unspecified
Myocardial infarction	
410	Acute myocardial infarction
412	Old myocardial infarction
Intracranial haemorrhage	
430	Subarachnoid haemorrhage
431	Intracerebral haemorrhage
432	Other and unspecified intracranial haemorrhage
Gastrointestinal bleeding	
531.0	Acute gastric ulcer with hemorrhage
531.2	Acute gastric ulcer with hemorrhage and perforation, without mention of obstruction
531.4	Chronic or unspecified gastric ulcer with hemorrhage
531.6	Chronic or unspecified gastric ulcer with hemorrhage and perforation
532.0	Acute duodenal ulcer with hemorrhage
532.2	Acute duodenal ulcer with hemorrhage and perforation
532.4	Chronic or unspecified duodenal ulcer with hemorrhage
532.6	Chronic or unspecified duodenal ulcer with hemorrhage and perforation
533.0	Acute peptic ulcer of unspecified site with hemorrhage
533.2	Acute peptic ulcer of unspecified site with hemorrhage and perforation
533.4	Chronic or unspecified peptic ulcer of unspecified site with hemorrhage
533.6	Chronic or unspecified peptic ulcer of unspecified site with hemorrhage and perforation
534.0	Acute gastrojejunal ulcer with hemorrhage
534.2	Acute gastrojejunal ulcer with hemorrhage and perforation, without mention of obstruction
534.4	Chronic or unspecified gastrojejunal ulcer with hemorrhage
534.6	Chronic or unspecified gastrojejunal ulcer with hemorrhage and perforation
535.01	Acute gastritis, with hemorrhage
535.11	Atrophic gastritis, with hemorrhage
535.21	Gastric mucosal hypertrophy, with hemorrhage
535.31	Alcoholic gastritis, with hemorrhage

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Gastrointestinal bleeding [continued]	
535.41	Other specified gastritis, with hemorrhage
535.51	Unspecified gastritis and gastroduodenitis, with hemorrhage
535.61	Duodenitis, with hemorrhage
535.71	Eosinophilic gastritis, with hemorrhage
562.02	Diverticulosis of small intestine with hemorrhage
562.03	Diverticulitis of small intestine with haemorrhage
562.12	Diverticulosis of colon with haemorrhage
562.13	Diverticulitis of colon with haemorrhage
569.3	Hemorrhage of rectum and anus
569.85	Angiodysplasia of intestine with haemorrhage
569.86	Dieulafoy lesion (hemorrhagic) of intestine
578.0	Hematemesis
578.1	Melena
578.9	Hemorrhage of gastrointestinal tract, unspecified
Other bleeding	
423.0	Hemopericardium
459.0	Haemorrhage NOS
593.81	Vascular disorders of kidney
599.7	Haematuria
623.8	Other specified noninflammatory disorders of vagina
626.2	Excessive menstruation
626.6	Metrorrhagia
719.1	Hemarthrosis
784.7	Epistaxis
784.8	Haemorrhage from throat
786.3	Haemoptysis
Renal disease	
403	Hypertensive chronic kidney disease
404	Hypertensive heart and chronic kidney disease
580	Acute glomerulonephritis
581	Nephrotic syndrome
582	Chronic glomerulonephritis
583	Nephritis and nephropathy not specified as acute or chronic
584	Acute kidney failure
585	Chronic kidney disease (ckd)
586	Renal failure unspecified
590.0	Chronic pyelonephritis
753.1	Cystic kidney disease

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Charlson comorbidity index	
Myocardial infarction	
410	Acute myocardial infarction
412	Old myocardial infarction
Congestive Heart Failure	
398.91	Rheumatic heart failure (congestive)
402.01	Malignant hypertensive heart disease with heart failure
402.11	Benign hypertensive heart disease with heart failure
402.91	Unspecified hypertensive heart disease with heart failure
404.01	
	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease
404.91	
	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
428	Heart failure
Peripheral vascular disease	
441	Aortic aneurysm and dissection
443.9	Peripheral vascular disease, unspecified
785.4	Gangrene
V43.4	Blood vessel replaced by other means
Cerebrovascular disease	
430-438	Cerebrovascular disease
Chronic obstructive pulmonary disease	
490-496	Chronic Obstructive Pulmonary Disease and Allied Conditions
500	Coal workers' pneumoconiosis
501	Asbestosis
502	Pneumoconiosis due to other silica or silicates
503	Pneumoconiosis due to other inorganic dust
504	Pneumonopathy due to inhalation of other dust
505	Pneumoconiosis, unspecified
506.4	Respiratory conditions due to chemical fumes and vapors

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Charlson comorbidity index [continued]	
Dementia	
290	Dementias
Paralysis	
342	Hemiplegia and hemiparesis
344.1	Paraplegia
Diabetes without chronic complication	
250.0	Diabetes mellitus without mention of complication
250.1	Diabetes with ketoacidosis
250.2	Diabetes with hyperosmolarity
250.3	Diabetes with other coma
250.7	Diabetes with peripheral circulatory disorders
Diabetes with chronic complication	
250.4	Diabetes with renal manifestations
250.5	Diabetes with ophthalmic manifestations
250.6	Diabetes with neurological manifestations
Chronic renal failure	
582	Chronic glomerulonephritis
583.0	Nephritis and nephropathy, not specified as acute or chronic, with lesion of proliferative glomerulonephritis
583.1	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranous glomerulonephritis
583.2	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranoproliferative glomerulonephritis
583.4	Nephritis and nephropathy, not specified as acute or chronic, with lesion of rapidly progressive glomerulonephritis
583.6	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal cortical necrosis
583.7	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal medullary necrosis
585	Chronic kidney disease (ckd)
586	Renal failure, unspecified
588	Disorders resulting from impaired renal function
Various cirrhodites	
571.2	Alcoholic cirrhosis of liver
571.4	Chronic hepatitis
571.5	Cirrhosis of liver without mention of alcohol
571.6	Biliary cirrhosis

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-9-CM codes	Descriptions
Charlson comorbidity index [continued]	
Moderate-severe liver disease	
456.0	Esophageal varices with bleeding
456.1	Esophageal varices without bleeding
456.2	Esophageal varices in diseases classified elsewhere
572.2	Hepatic encephalopathy
572.3	Portal hypertension
572.4	Hepatorenal syndrome
572.8	Other sequelae of chronic liver disease
Ulcers	
531	Gastric ulcer
532	Duodenal ulcer
533	Peptic ulcer site unspecified
534	Gastrojejunal ulcer
Rheumatoid arthritis and other inflammatory polyarthropathies	
710.0	Systemic lupus erythematosus
710.1	Systemic sclerosis
710.4	Polymyositis
714.0	Rheumatoid arthritis
714.1	Felty's syndrome
714.2	Other rheumatoid arthritis with visceral or systemic involvement
714.81	Rheumatoid lung
725	Polymyalgia rheumatica
Acquired Immune Deficiency Syndrome	
042	Human immunodeficiency virus [HIV] disease
Malignancy	
140-149	Malignant neoplasm of lip, oral cavity, and pharynx
150-159	Malignant neoplasm of digestive organs and peritoneum
160-165	Malignant neoplasm of respiratory and intrathoracic organs
170-172, 174-176	Malignant neoplasm of bone, connective tissue, and breast
179-189	Malignant neoplasm of genitourinary organs
190-195	Malignant neoplasm of other sites
200-208	Malignant neoplasm of lymphatic and hematopoietic tissue
Metastatic solid tumour	
196	Secondary and unspecified malignant neoplasm of lymph nodes
197	Secondary malignant neoplasm of respiratory and digestive systems
198	Secondary malignant neoplasm of other specified sites
199	Malignant neoplasm without specification of site

Supplemental Table 1. International Classification of Diseases codes (ICD) codes used in the study (continued)

ICD-10-CM codes	Descriptions
Vascular death	
I11	Hypertensive heart disease
I13	Hypertensive heart and renal disease
I20-I25	Ischemic heart diseases
I26-I28	Pulmonary heart disease and diseases of pulmonary circulation
I30-I52	Other forms of heart disease
I60-I69	Cerebrovascular diseases
I70-I79	Diseases of arteries, arterioles and capillaries
R570	Cardiogenic shock

Non-vascular death

All codes that do not represent vascular deaths and are not R99 (Ill-defined and unknown cause of mortality)

Abbreviations: ICD-9-CM: International Classification of Diseases codes, 9th Revision, Clinical Modification; ICD-10-CM: International Classification of Diseases codes, 10th Revision, Clinical Modification.

Supplemental Table 2. Odds ratios for choosing dual antiplatelet therapy over warfarin and dabigatran in propensity score modelling

	DAPT (n=672)	Warfarin (N=5246)	Dabigatran (n=2602)	Odds ratio for DAPT over warfarin [†]	Odds ratio for DAPT over dabigatran [‡]
Age, mean ± SD	74.8 ± 12.6	71.3 ± 12.0	73.9 ± 10.3	1.02 (1.01-1.03)*	1.00 (0.99-1.01)
Female	305 (45.4)	2534 (48.3)	1350 (51.9)	0.74 (0.62-0.88)*	0.73 (0.59-0.89)*
Baseline medical conditions					
Charlson comorbidity index, mean ± SD	1.9 ± 1.8	1.4 ± 1.4	1.2 ± 1.3	1.02 (0.95-1.10)	1.12 (1.02-1.23)*
Congestive heart failure	223 (33.2)	1419 (27.0)	453 (17.4)	1.10 (0.89-1.37)	1.76 (1.36-2.27)*
Hypertension	383 (57.0)	2546 (48.5)	1357 (52.2)	1.10 (0.91-1.33)	1.02 (0.82-1.26)
Diabetes mellitus	180 (26.8)	1053 (20.1)	582 (22.4)	1.18 (0.94-1.48)	0.97 (0.74-1.26)
Prior ischemic stroke/TIA/SE	218 (32.4)	1603 (30.6)	872 (33.5)	0.70 (0.56-0.87)*	0.60 (0.46-0.77)*
Vascular disease	38 (5.7)	58 (1.1)	18 (0.7)	3.81 (2.36-6.14)*	5.67 (2.94-10.9)*
Intracranial hemorrhage	30 (4.5)	343 (6.5)	64 (2.5)	1.42 (0.91-2.22)	1.74 (1.04-2.89)*
Gastrointestinal bleeding	72 (10.7)	374 (7.1)	154 (5.9)	0.94 (0.70-1.27)	0.93 (0.65-1.33)
Other bleeding	65 (9.7)	447 (8.5)	188 (7.2)	1.18 (0.87-1.60)	0.88 (0.62-1.26)
Renal disease	108 (16.1)	2182 (41.6)	104 (4.0)	1.12 (0.85-1.50)	2.25 (1.55-3.25)*
Recent drug use					
ACE inhibitor or ARB	301 (44.8)	2182 (41.6)	1115 (42.9)	0.89 (0.73-1.07)	0.79 (0.64-0.98)*
Beta-blocker	350 (52.1)	2821 (53.8)	1524 (58.6)	0.88 (0.74-1.05)	0.85 (0.69-1.03)
Amiodarone	106 (15.8)	667 (12.7)	236 (9.1)	1.05 (0.82-1.35)	1.42 (1.06-1.91)*
Dronedarone	5 (0.7)	29 (0.6)	23 (0.9)	1.50 (0.55-4.09)	1.11 (0.41-3.03)
NSAIDs	29 (4.3)	310 (5.9)	138 (5.3)	0.57 (0.37-0.86)*	0.61 (0.38-0.97)*
H2RAs	382 (56.8)	2806 (53.5)	1539 (59.1)	1.60 (1.33-1.93)*	1.38 (1.12-1.70)*
PPIs	353 (52.5)	919 (17.5)	501 (19.3)	4.72 (3.90-5.72)*	4.42 (3.57-5.48)*
Statins	313 (46.6)	1796 (34.2)	1196 (46.0)	1.52 (1.26-1.83)*	1.24 (1.01-1.54)*
SSRIs	21 (3.1)	112 (2.1)	69 (2.7)	1.08 (0.64-1.83)	0.89 (0.49-1.61)

Abbreviations: DAPT, dual antiplatelet therapy with aspirin plus clopidogrel; SD, standard deviation; TIA, transient ischemic attack; SE, systemic embolism; ACE, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; NSAIDs, nonsteroidal anti-inflammatory drugs; H2RAs, histamine-2 receptor antagonists; PPIs, proton pump inhibitors; SSRIs, selective serotonin reuptake inhibitors. *p<0.05; †, ‡ Estimated using logistic regression models among: †DAPT users and warfarin users; and ‡DAPT users and dabigatran users. The dependent variable in each logistic regression was dual antiplatelet therapy (yes/no) and the covariates were the observed patient characteristics.

Supplemental Table 3. Baseline characteristics of warfarin users versus dual antiplatelet therapy users before and after propensity score matching

	Before PS matching			After PS matching		
	Warfarin (N=5246)	DAPT (N=672)	Standardized Difference*	Warfarin (N=1241)	DAPT (N=669)	Standardized difference*
Age, mean \pm SD	71.3 \pm 12.0	74.8 \pm 12.6	-0.28	74.2 \pm 10.9	74.7 \pm 12.6	-0.04
Female	2534 (48.3)	305 (45.4)	0.06	572 (46.1)	304 (45.4)	0.01
Baseline medical conditions						
CHADS ₂ , mean \pm SD	2.0 \pm 1.5	2.4 \pm 1.6	-0.25	2.3 \pm 1.5	2.4 \pm 1.6	-0.06
CHA ₂ DS ₂ -VASc, mean \pm SD	3.2 \pm 1.8	3.7 \pm 2.0	-0.24	3.6 \pm 1.8	3.7 \pm 2.0	-0.04
Charlson comorbidity index, mean \pm SD	1.4 \pm 1.4	1.9 \pm 1.8	-0.34	1.8 \pm 1.7	1.9 \pm 1.8	-0.09
Congestive heart failure	1419 (27.0)	223 (33.2)	-0.13	403 (32.5)	221 (33.0)	-0.01
Hypertension	2546 (48.5)	383 (57.0)	-0.17	691 (55.7)	381 (57.0)	-0.03
Diabetes mellitus	1053 (20.1)	180 (26.8)	-0.16	297 (23.9)	180 (26.9)	-0.07
Prior ischemic stroke/TIA/SE	1603 (30.6)	218 (32.4)	-0.04	402 (32.4)	217 (32.4)	<0.001
Vascular disease	58 (1.1)	38 (5.7)	-0.25	46 (3.7)	37 (5.5)	-0.09
Intracranial hemorrhage	148 (2.8)	30 (4.5)	-0.09	48 (3.9)	30 (4.5)	-0.03
Gastrointestinal bleeding	343 (6.5)	72 (10.7)	-0.15	126 (10.2)	72 (10.8)	-0.02
Other bleeding	374 (7.1)	65 (9.7)	-0.09	110 (8.9)	65 (9.7)	-0.03
Renal disease	447 (8.5)	108 (16.1)	-0.23	173 (13.9)	107 (16.0)	-0.06
Recent drug use						
ACE inhibitor or ARB	2182 (41.6)	301 (44.8)	-0.06	565 (45.5)	300 (44.8)	0.01
Beta-blocker	2821 (53.8)	350 (52.1)	0.03	650 (52.4)	349 (52.2)	0.004
Amiodarone	667 (12.7)	106 (15.8)	-0.09	189 (15.2)	104 (15.5)	-0.009
Dronedarone	29 (0.6)	5 (0.7)	-0.02	13 (1.0)	5 (0.7)	0.03
NSAIDs	310 (5.9)	29 (4.3)	0.07	73 (5.9)	29 (4.3)	0.07
H2RAs	2806 (53.5)	382 (56.8)	-0.07	692 (55.8)	380 (56.8)	-0.02
PPIs	919 (17.5)	353 (52.5)	-0.79	633 (51.0)	350 (52.3)	-0.03
Statins	1796 (34.2)	313 (46.6)	-0.25	571 (46.0)	311 (46.5)	-0.01
SSRIs	112 (2.1)	21 (3.1)	-0.06	38 (3.1)	21 (3.1)	-0.004

Abbreviations: DAPT, dual antiplatelet therapy with aspirin plus clopidogrel; PS, propensity score; SD, standard deviation; CHADS₂, congestive heart failure, hypertension, age \geq 75 years, diabetes mellitus, prior stroke/transient ischemic attack/systemic embolism (doubled); CHA₂DS₂-VASc, congestive heart failure, hypertension, age \geq 75 years (doubled), diabetes mellitus, age 65–74 years, prior stroke/transient ischemic attack/systemic embolism (doubled), vascular disease, and sex category (female); TIA, transient ischemic attack; SE, systemic embolism; ACE, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; NSAIDs, nonsteroidal anti-inflammatory drugs; H2RAs, histamine-2 receptor antagonists; PPIs, proton pump inhibitors; SSRIs, selective serotonin reuptake inhibitors. *Standardised difference is the mean difference in warfarin group versus dual antiplatelet therapy group divided by the pooled standard deviation.

Supplemental Table 4. Baseline characteristics of dabigatran users versus dual antiplatelet therapy users before and after propensity score matching

	Before PS matching			After PS matching		
	Dabigatran (N=2602)	DAPT (N=672)	Standardized Difference*	Dabigatran (N=964)	DAPT (N=560)	Standardized difference*
Age, mean \pm SD	73.9 \pm 10.3	74.8 \pm 12.6	-0.08	74.4 \pm 10.3	74.7 \pm 12.5	-0.03
Female	1350 (51.9)	305 (45.4)	0.13	469 (48.7)	259 (46.3)	0.05
Baseline medical conditions						
CHADS ₂ , mean \pm SD	2.1 \pm 1.4	2.4 \pm 1.6	-0.19	2.3 \pm 1.5	2.3 \pm 1.6	-0.05
CHA ₂ DS ₂ -VASc, mean \pm SD	3.4 \pm 1.7	3.7 \pm 2.0	-0.12	3.6 \pm 1.8	3.6 \pm 2.0	-0.01
Charlson comorbidity index, mean \pm SD	1.2 \pm 1.3	1.9 \pm 1.8	-0.45	1.5 \pm 1.4	1.7 \pm 1.6	-0.09
Congestive heart failure	453 (17.4)	223 (33.2)	-0.37	260 (27.0)	165 (29.5)	-0.06
Hypertension	1357 (52.2)	383 (57.0)	-0.10	524 (54.4)	312 (55.7)	-0.03
Diabetes mellitus	582 (22.4)	180 (26.8)	-0.10	230 (23.9)	137 (24.5)	-0.01
Prior ischemic stroke/TIA/SE	872 (33.5)	218 (32.4)	0.02	324 (33.6)	188 (33.6)	<0.001
Vascular disease	18 (0.7)	38 (5.7)	-0.29	18 (1.9)	18 (3.2)	-0.09
Intracranial hemorrhage	64 (2.5)	30 (4.5)	-0.11	34 (3.5)	22 (3.9)	-0.02
Gastrointestinal bleeding	154 (5.9)	72 (10.7)	-0.17	80 (8.3)	51 (9.1)	-0.03
Other bleeding	188 (7.2)	65 (9.7)	-0.09	84 (8.7)	52 (9.3)	-0.02
Renal disease	104 (4.0)	108 (16.1)	-0.41	80 (8.3)	56 (10.0)	-0.06
Recent drug use						
ACE inhibitor or ARB	1115 (42.9)	301 (44.8)	-0.04	435 (45.1)	248 (44.3)	0.02
Beta-blocker	1524 (58.6)	350 (52.1)	0.13	514 (53.3)	296 (52.9)	0.01
Amiodarone	236 (9.1)	106 (15.8)	-0.20	128 (13.3)	75 (13.4)	-0.003
Dronedarone	23 (0.9)	5 (0.7)	0.02	10 (1.0)	5 (0.9)	0.01
NSAIDs	138 (5.3)	29 (4.3)	0.05	44 (4.6)	25 (4.5)	0.005
H2RAs	1539 (59.1)	382 (56.8)	0.05	573 (59.4)	318 (56.8)	0.05
PPIs	501 (19.3)	353 (52.5)	-0.74	405 (42.0)	264 (47.1)	-0.10
Statins	1196 (46.0)	313 (46.6)	-0.01	468 (48.5)	269 (48.0)	0.01
SSRIs	69 (2.7)	21 (3.1)	-0.03	26 (2.7)	14 (2.5)	0.01

Abbreviations: DAPT, dual antiplatelet therapy with aspirin plus clopidogrel; PS, propensity score; SD, standard deviation; CHADS₂, congestive heart failure, hypertension, age \geq 75 years, diabetes mellitus, prior stroke/transient ischemic attack/systemic embolism (doubled); CHA₂DS₂-VASc, congestive heart failure, hypertension, age \geq 75 years (doubled), diabetes mellitus, age 65–74 years, prior stroke/transient ischemic attack/systemic embolism (doubled), vascular disease, and sex category (female); TIA, transient ischemic attack; SE, systemic embolism; ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; NSAIDs, nonsteroidal anti-inflammatory drugs; H2RAs, histamine-2 receptor antagonists; PPIs, proton pump inhibitors; SSRIs, selective serotonin reuptake inhibitors. *Standardised difference is the mean difference in dabigatran group versus dual antiplatelet therapy group divided by the pooled standard deviation.

Supplemental Table 5. Effectiveness and safety outcomes before propensity score matching

	Warfarin vs DAPT			Dabigatran vs DAPT		
	Warfarin (N=5,246)	DAPT (N=672)	IRR (95% CI)	Dabigatran (N=2,602)	DAPT (N=672)	IRR (95% CI)
Composite of ischemic stroke, systemic embolism, and death	625 (8.2)	44 (33.1)	0.25 (0.18-0.34)*	228 (6.7)	44 (33.1)	0.20 (0.15-0.28)*
Ischemic stroke and/or systemic embolism	409 (5.4)	21 (15.8)	0.34 (0.22-0.53)*	158 (4.6)	21 (15.8)	0.29 (0.19-0.46)*
Death	255 (3.1)	24 (17.6)	0.18 (0.12-0.27)*	88 (2.5)	24 (17.6)	0.14 (0.09-0.22)*
Vascular death [†]	76 (0.9)	10 (7.4)	0.13 (0.06-0.24)*	18 (0.5)	10 (7.4)	0.07 (0.03-0.15)*
Non-vascular death [†]	127 (1.5)	11 (8.1)	0.19 (0.10-0.35)*	49 (1.4)	11 (8.1)	0.17 (0.09-0.33)*
Composite of intracranial hemorrhage and gastrointestinal bleeding	280 (3.4)	7 (5.1)	0.66 (0.31-1.40)	119 (3.3)	7 (5.1)	0.65 (0.30-1.39)
Intracranial hemorrhage	106 (1.3)	4 (2.9)	0.44 (0.16-1.18)	20 (0.6)	4 (2.9)	0.19 (0.07-0.56)*
Gastrointestinal bleeding	174 (2.1)	3 (2.2)	0.96 (0.31-2.99)	99 (2.8)	3 (2.2)	1.26 (0.40-3.96)
Net benefit						
Composite of ischemic stroke, systemic embolism, death, intracranial hemorrhage, and gastrointestinal bleeding	845 (11.1)	48 (36.1)	0.31 (0.23-0.41)*	326 (9.6)	48 (36.1)	0.27 (0.20-0.36)*

Values are expressed as number of cases (incidence per 100 patient-years). Abbreviations: DAPT, dual antiplatelet therapy with aspirin plus clopidogrel; IRR, incidence rate ratio; CI, confidence interval. *p<0.05. [†]Patients with unknown cause of death were censored and not classified as having an outcome.

Supplemental Table 6. Results of sensitivity analyses with 1% trimming of propensity score

	Dabigatran vs DAPT			Warfarin vs DAPT		
	Dabigatran (N=926)	DAPT (N=528)	IRR (95% CI)	Warfarin (N=1177)	DAPT (N=614)	IRR (95% CI)
Composite of ischemic stroke, systemic embolism, and death	91 (8.4)	29 (27.4)	0.39 (0.22-0.71)*	167 (12)	39 (32.6)	0.58 (0.36-0.97)*
Ischemic stroke/systemic embolism	61 (5.6)	16 (15.1)	0.69 (0.31-1.60)	96 (6.9)	18 (15)	0.85 (0.41-1.86)
Death	36 (3.1)	14 (13.0)	0.21 (0.09-0.50)*	81 (5.4)	22 (18.1)	0.35 (0.19-0.69)*
Vascular death [†]	8 (0.7)	6 (5.6)	0.08 (0.02-0.35)*	20 (1.3)	8 (6.6)	0.19 (0.05-0.72)*
Non-vascular death [†]	18 (1.5)	7 (6.5)	0.18 (0.05-0.68)*	48 (3.2)	11 (9.0)	0.44 (0.19-1.09)
Composite of intracranial hemorrhage and gastrointestinal bleeding	41 (3.5)	3 (2.8)	3.99 (0.94-27.7)	73 (4.8)	7 (5.8)	1.09 (0.39-3.64)
Intracranial hemorrhage	8 (0.7)	1 (0.9)	9.07 (0.42-973.9)	33 (2.2)	4 (3.3)	0.88 (0.22-5.04)
Gastrointestinal bleeding	33 (2.8)	2 (1.9)	2.92 (0.61-28.8)	40 (2.7)	3 (2.5)	1.37 (0.29-9.94)
Net benefit						
Composite of ischemic stroke, systemic embolism, death, intracranial hemorrhage, and gastrointestinal bleeding	124 (11.4)	31 (29.2)	0.56 (0.33-0.98)*	226 (16.3)	43 (35.9)	0.71 (0.45-1.14)

Values are expressed as number of cases (incidence per 100 patient-years). Abbreviations: DAPT, dual antiplatelet therapy with aspirin and clopidogrel; IRR, incidence rate ratio; CI, confidence interval. *p<0.05.

[†]Patients with unknown cause of death were censored and not classified as having an outcome

Supplemental Table 7. Results of post-hoc analyses that included patients who died within 7 days

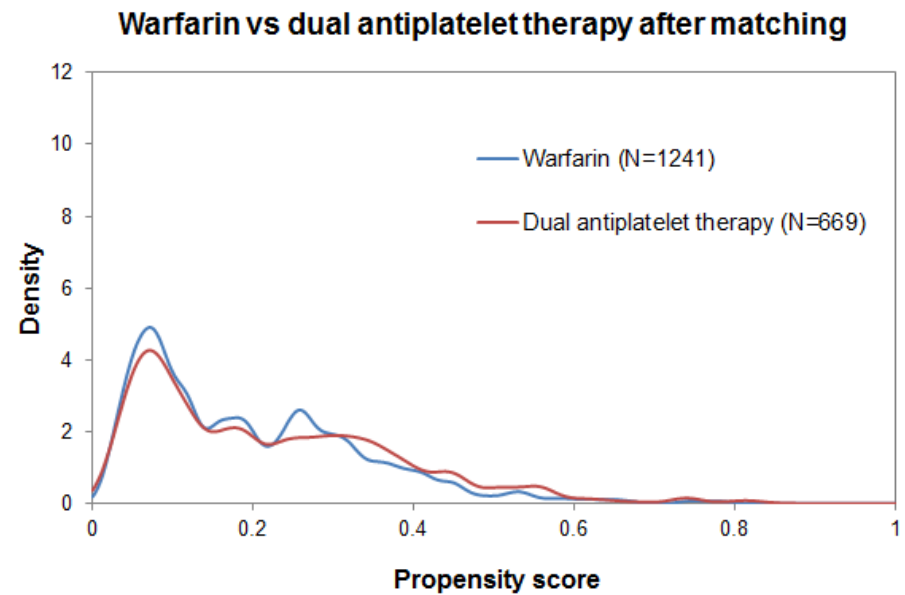
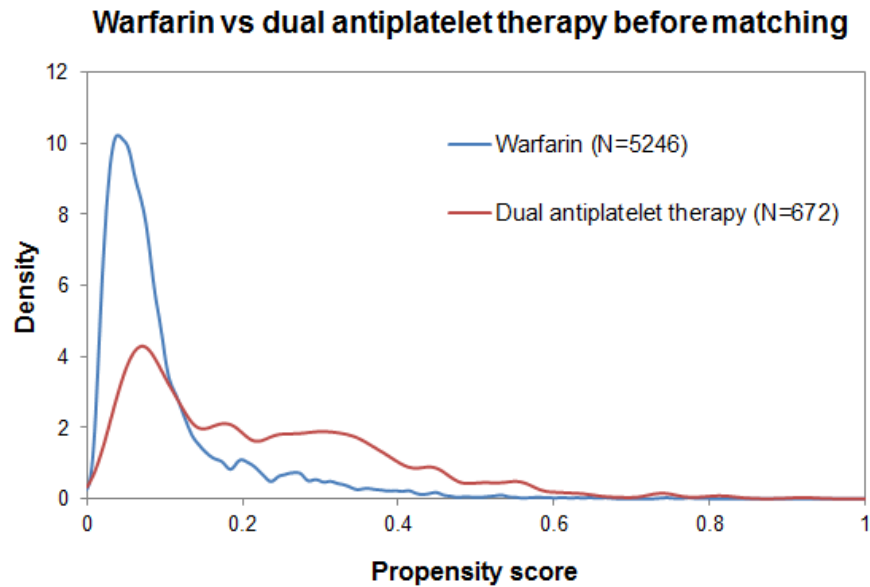
	Warfarin vs DAPT			Dabigatran vs DAPT		
	Warfarin (N=1,261)	DAPT (N=688)	IRR (95% CI)	Dabigatran (N=972)	DAPT (N=573)	IRR (95% CI)
Composite of ischemic stroke, systemic embolism, and death	163 (11.1)	63 (47.9)	0.34 (0.23-0.52)*	100 (8.9)	45 (40.9)	0.15 (0.09-0.24)*
Ischemic stroke and/or systemic embolism	93 (6.3)	22 (16.7)	0.86 (0.45-1.70)	63 (5.6)	20 (18.2)	0.25 (0.12-0.52)*
Death	78 (5)	43 (31.9)	0.18 (0.11-0.30)*	43 (3.6)	27 (24.1)	0.10 (0.05-0.20)*
Vascular death	22 (1.4)	20 (14.9)	0.05 (0.02-0.13)*	7 (0.6)	15 (13.4)	0.03 (0.01-0.09)*
Non-vascular death	40 (2.5)	19 (14.1)	0.30 (0.14-0.67)*	27 (2.3)	11 (9.8)	0.17 (0.07-0.46)*
Composite of intracranial hemorrhage and gastrointestinal bleeding	62 (3.9)	7 (5.2)	0.80 (0.30-2.50)	45 (3.8)	6 (5.3)	1.79 (0.52-7.36)
Intracranial hemorrhage	22 (1.4)	4 (3)	0.63 (0.12-4.22)	9 (0.8)	3 (2.7)	0.50 (0.07-5.11)
Gastrointestinal bleeding	40 (2.5)	3 (2.2)	0.93 (0.26-5.13)	36 (3)	3 (2.7)	3.84 (0.71-33.82)
Net benefit						
Composite of ischemic stroke, systemic embolism, death, intracranial hemorrhage, and gastrointestinal bleeding	213 (14.5)	67 (50.9)	0.38 (0.26-0.55)*	137 (12.2)	48 (43.6)	0.24 (0.15-0.38)*

Values are expressed as number of cases (incidence per 100 patient-years). Abbreviations: DAPT, dual antiplatelet therapy; IRR, incidence rate ratio; CI, confidence interval. *p<0.05.

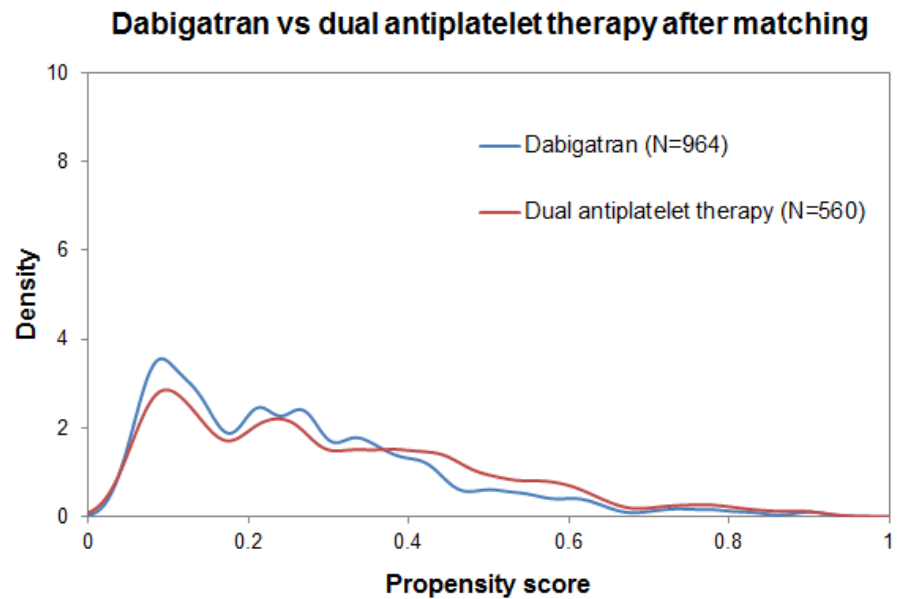
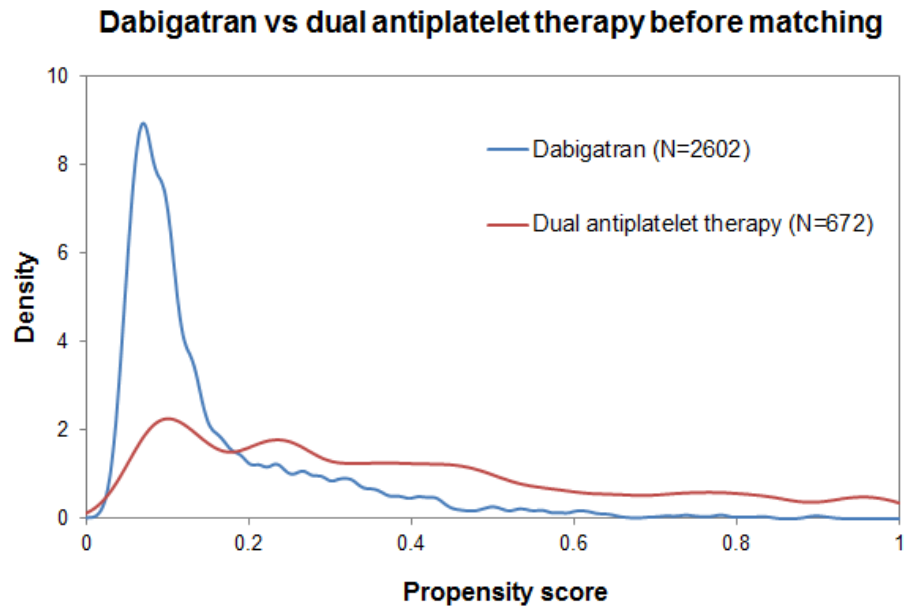
Supplemental Table 8. Results of post-hoc analyses that used Cox regression modelling after propensity score matching

	Warfarin vs DAPT			Dabigatran vs DAPT		
	Warfarin (N=1,241)	DAPT (N=669)	Hazard Ratio (95% CI)	Dabigatran (N=964)	DAPT (N=560)	Hazard Ratio (95% CI)
Composite of ischemic stroke, systemic embolism, and death	171 (11.9)	44 (33.2)	0.90 (0.58-1.40)	97 (8.5)	35 (31.1)	0.61 (0.37-1.01)
Ischemic stroke and/or systemic embolism	97 (6.7)	21(15.8)	1.24 (0.72-2.16)	63 (5.5)	19 (16.9)	1.00 (0.54-1.85)
Death	85 (5.5)	24 (17.7)	0.48 (0.23-0.99)*	41 (3.4)	17 (14.7)	0.23 (0.08-0.63)*
Vascular death	22 (1.4)	10 (7.4)	0.36 (0.09-1.47)	10 (0.8)	7 (6.1)	0.22 (0.05-1.08)
Non-vascular death	49 (3.1)	11 (8.1)	0.58 (0.23-1.44)	21 (1.7)	8 (6.9)	0.20 (0.04-0.94)*
Composite of intracranial hemorrhage and gastrointestinal bleeding	75 (4.8)	7 (5.2)	0.91 (0.32-2.58)	44 (3.6)	4 (3.5)	1.91 (0.61-6.00)
Intracranial hemorrhage	33 (2.1)	4 (2.9)	0.43 (0.07-2.66)	8 (0.7)	2 (1.7)	1.15 (0.19-7.06)
Gastrointestinal bleeding	42 (2.7)	3 (2.2)	1.36 (0.35-5.32)	36 (3.0)	2 (1.7)	2.61 (0.56-12.21)
Net benefit						
Composite of ischemic stroke, systemic embolism, death, intracranial hemorrhage, and gastrointestinal bleeding	232 (16.1)	48 (36.2)	0.96 (0.63-1.46)	132 (11.6)	37 (32.9)	0.72 (0.45-1.15)

Values are expressed as number of cases (incidence per 100 patient-years). Abbreviations: DAPT, dual antiplatelet therapy; CI, confidence interval. *p<0.05.



Supplemental Figure 1. Distribution of propensity scores for warfarin vs dual antiplatelet therapy. Propensity score was calculated using logistic regression in which dual antiplatelet therapy (yes/no) was the dependent variable and the observed patient characteristics were the covariates.



Supplemental Figure 2. Distribution of propensity scores for dabigatran vs dual antiplatelet therapy. Propensity score was calculated using logistic regression in which dual antiplatelet therapy (yes/no) was the dependent variable and the observed patient characteristics were the covariates.