

Díaz Guzman J, *et al.* Epidemiology of atrial fibrillation-related ischemic stroke and its association with DOAC uptake in Spain: first national population-based study 2005 to 2018

SUPPLEMENTARY DATA

Table 1 of the supplementary data. ICD codes used for primary diagnosis of stroke

Stroke type	ICD-9	Definition	ICD-10	Definition
<i>Ischemic stroke</i>	435.x	Transient cerebral ischemia	G45.x	Transient cerebral ischemic attacks and related syndromes (excluding G45.3 and G45.4)
	433.x1	Occlusion and stenosis of precerebral arteries with cerebral infarction	I63.0	Cerebral infarction due to thrombosis of precerebral arteries
			I63.1	Cerebral infarction due to embolism of precerebral arteries
			I63.2	Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries
	434.x1	Occlusion of cerebral arteries with cerebral infarction	I63.3	Cerebral infarction due to thrombosis of cerebral arteries
			I63.4	Cerebral infarction due to embolism of cerebral arteries
			I63.5	Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries
			I63.8	Other cerebral infarction
			I63.9	Cerebral infarction, unspecified
<i>Hemorrhagic stroke</i>	430	Subarachnoid hemorrhage	I60	Subarachnoid hemorrhage
	431	Intracerebral hemorrhage	I61	Intracerebral hemorrhage
	432.x	Other and unspecified intracranial hemorrhage	I62	Other nontraumatic intracranial hemorrhage

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Other cerebrovascular diseases	433	(that are not .x1) occlusion and stenosis of precerebral arteries	I65	Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
	434	(that are not .x1) Occlusion of cerebral arteries	I66	Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction
	436	Acute but ill-defined cerebrovascular disease	I67	Other cerebrovascular diseases
	437	Other and ill-defined cerebrovascular disease	I68	Cerebrovascular disorders in diseases classified elsewhere
	438	Late effects of cerebrovascular disease	I69	Sequelae of cerebrovascular disease

ICD, International Classification of Diseases.

Table 2 of the supplementary data. ICD codes used for secondary diagnoses

ICD-9	Definition	ICD-10	Definition
427.3	Atrial fibrillation and flutter	I48.x	Atrial fibrillation and flutter
427.31			
427.32			
401.x	Essential (primary) hypertension	I10	Essential (primary) hypertension
		I16.x	Hypertensive crisis
272.x	Disorders of lipid metabolism	E78.x	Disorders of lipoprotein metabolism and other lipidemias
		E88.1	Lipodystrophy, not elsewhere classified
249.x	Secondary diabetes mellitus	E10.x	Type 1 diabetes mellitus
250.x	Diabetes mellitus	E11.x	Type 2 diabetes mellitus
		E13.x	Other specified diabetes mellitus
428.x	Heart failure	I50.x	Heart failure

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413.x	Angina pectoris	I20.x	Angina pectoris
410.x	Acute myocardial infarction	I21.x	Acute myocardial infarction
412	Old myocardial infarction	I22.x	Subsequent myocardial infarction
		I23.x	Certain current complications following acute myocardial infarction
411.x	Other acute and subacute forms of ischemic heart disease	I24.x	Other acute ischemic heart diseases
414.x	Other forms of chronic ischemic heart disease	I25.x	Chronic ischemic heart disease
425.x	Cardiomyopathy	I42.x	Cardiomyopathy
		I43	Cardiomyopathy in diseases classified elsewhere
429.9	Heart disease, unspecified	I51.9	Heart disease, unspecified

ICD, International Classification of Diseases.

Table 3 of the supplementary data. Crude incidence rates (per 10,000 person/y) of AF-related ischemic stroke

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Whole population</i>	All ages	2.78	3.01	3.14	3.37	3.43	3.60	3.60	3.80	3.88	3.88	3.97	3.88	4.15	4.29
	65-74	6.72	6.65	7.15	7.62	7.16	7.72	7.11	7.53	7.24	7.28	7.18	6.99	7.29	7.63
	75-84	21.29	22.23	22.63	23.77	24.32	24.53	24.12	25.19	25.57	24.46	24.92	24.13	25.08	24.80
	≥85	39.94	47.60	48.55	51.84	52.35	53.11	51.86	51.91	52.30	51.24	51.67	48.16	51.61	53.55
<i>Women</i>	All ages	3.19	3.51	3.65	3.87	4.00	4.16	4.12	4.33	4.36	4.36	4.37	4.25	4.52	4.66
	65-74	5.79	5.80	6.25	6.55	6.30	6.73	5.80	6.44	6.09	5.90	5.59	5.56	5.75	5.87
	75-84	20.86	22.02	22.57	23.14	23.97	24.19	23.56	24.74	24.58	23.69	23.76	22.75	23.78	23.54
	≥85	39.97	47.82	48.14	52.00	52.82	52.79	52.34	51.43	51.50	50.96	50.62	49.28	51.95	54.02
<i>Men</i>	All ages	2.36	2.49	2.61	2.86	2.84	3.03	3.10	3.25	3.38	3.37	3.55	3.47	3.76	3.90
	65-74	7.82	7.65	8.20	8.86	8.16	8.86	8.61	8.76	8.55	8.84	8.99	8.67	9.13	9.70
	75-84	21.93	22.55	22.70	24.69	24.81	25.02	24.90	25.83	26.95	25.53	26.52	26.34	27.34	26.98
	≥85	35.93	42.55	44.78	46.63	46.52	49.14	46.44	48.62	49.60	47.63	49.16	46.11	51.78	53.39

AF, atrial fibrillation.

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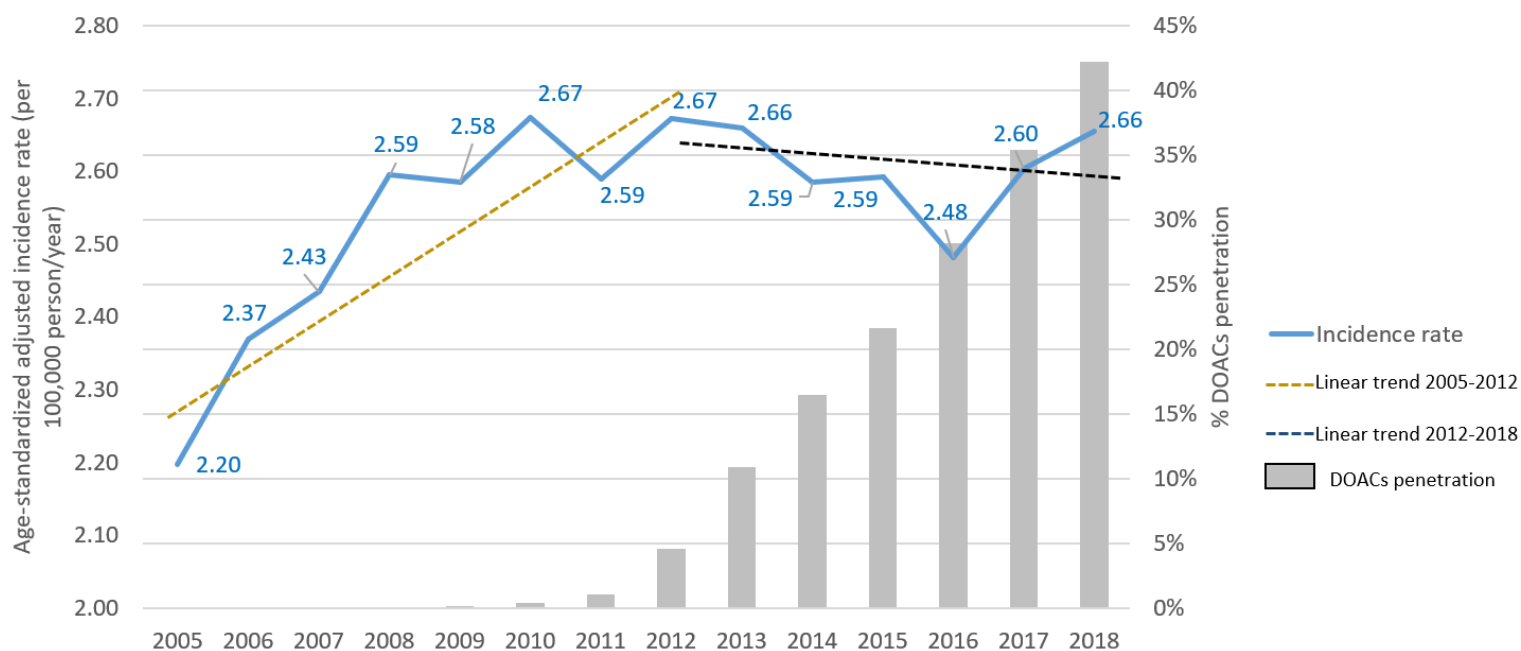
Table 4 of the supplementary data. IRR calculated with the crude IR for the period before (2012-2005) and after (2018-2012) DOAC penetration

		IRR 2012-2005 (95%CI)	IRR 2018-2012 (95%CI)
<i>General population</i>	All ages, y	1.37 (1.34-1.40)	1.13 (1.11-1.15)
	65-74	1.12 (1.06-1.18)	1.01 (0.96-1.07)
	75-84	1.18 (1.14-1.23)	0.98 (0.95-1.02)
	≥85	1.30 (1.24-1.36)	1.03 (1.00-1.07)
<i>Women</i>	All ages, y	1.36 (1.32-1.40)	1.08 (1.05-1.11)
	65-74	1.11 (1.03-1.20)	0.91 (0.84-0.98)
	75-84	1.19 (1.13-1.24)	0.95 (0.91-0.99)
	≥85	1.29 (1.22-1.36)	1.05 (1.01-1.10)
<i>Men</i>	All ages, y	1.38 (1.33-1.43)	1.20 (1.16-1.24)
	65-74	1.12 (1.04-1.21)	1.11 (1.04-1.18)
	75-84	1.18 (1.12-1.24)	1.04 (0.99-1.10)
	≥85	1.35 (1.24-1.47)	1.10 (1.03-1.17)

The IRRs were calculated by dividing the crude incidence rates of the 2 years of interest. CI, confidence interval; IR, incidence rate; IRR, incidence rate ratio.

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Figure 1 of the supplementary data. Trend in the incidence rate of AF-related ischemic stroke in the general population and percentage of DOAC uptake



In 2016, the ICD coding switched from ICD-9 to ICD-10. This switch caused an incorrect registration of some diagnosis and an underestimation of the total number of diagnoses. Incidence rates from 2016 and 2017 should be interpreted with caution (especially 2016). Abbreviations: AF, atrial fibrillation; DOACs, direct oral anticoagulants.