



ICTUS ISCHEMICO NEI PAZIENTI CON NOTA FIBRILLAZIONE ATRIALE

CORRELAZIONE TRA SEVERITÀ DELL'EVENTO E TERAPIA ANTITROMBOTICA PRECEDENTE



BACKGROUND

- Atrial fibrillation (AF) is the main cause of ischemic stroke.
- Compared with patients with ischemic stroke without AF, those with AF exhibit high stroke severity and poor outcomes.
- For patients with AF, an oral anticoagulant (OAC) is an effective medication for reducing stroke risk.
- However, in the real world, several patients with AF are still not prescribed OACs due to various reasons.

Initial Stroke Severity in Patients With Atrial Fibrillation According to Antithrombotic Therapy Before Ischemic Stroke

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METHODS

- Data from the nationwide multicenter stroke registry
- 6786 patients with acute ischemic stroke (AIS) with known AF before stroke admission across 39 hospitals between June 2008 and December 2018.
- Data on antithrombotic medication use (no antithrombotic/antiplatelet/anticoagulant) preceding AIS.
- Initial stroke severity was measured using the National Institutes of Health Stroke Scale, and in-hospital outcome was determined by modified Rankin Scale score at discharge.

BASELINE CHARACTERISTICS

Variables	None	Antiplatelets	Anticoagulants	P Value*
N	2304	2701	1781	
Preadmission factors				
Age group				0.004
<40	10 (0.4)	9 (0.3)	8 (0.4)	
40–49	59 (2.6)	38 (1.4)	47 (2.6)	
50–59	221 (9.6)	206 (7.6)	162 (9.1)	
60–69	483 (21.0)	623 (23.1)	386 (21.7)	
70–79	864 (37.5)	1073 (39.7)	716 (40.2)	
≥80	667 (28.9)	752 (27.8)	462 (25.9)	
Mean±SD	72.8±11.0	73.1±10.0	72.3±10.5	0.027
Female	1167 (50.7)	1327 (49.1)	966 (54.2)	0.003
Pre-mRS				
				0.129
0	1752 (76.0)	2107 (78.0)	1379 (77.5)	
1	155 (6.7)	169 (6.3)	138 (7.8)	
2	107 (4.6)	133 (4.9)	79 (4.4)	
3	106 (4.6)	131 (4.9)	80 (4.5)	
4	92 (4.0)	83 (3.1)	53 (3.0)	
5	92 (4.0)	78 (2.9)	51 (2.9)	
Hypertension	1634 (70.9)	2291 (84.8)	1399 (78.6)	<0.001
Diabetes mellitus	654 (28.4)	840 (31.1)	591 (33.2)	0.004
Congestive heart failure	2 (0.1)	5 (0.2)	4 (0.2)	0.512
Hyperlipidemia	504 (21.9)	1091 (40.4)	657 (36.9)	<0.001
Chronic kidney disease†	1236 (53.6)	1528 (56.6)	983 (55.2)	0.116
Peripheral arterial disease	13 (0.6)	20 (0.7)	25 (1.4)	0.011
TIA	28 (1.2)	54 (2.0)	61 (3.4)	<0.001
Anemia†	747 (32.4)	839 (31.1)	628 (35.3)	0.013
Severe renal disease†	238 (10.3)	297 (11.0)	176 (9.9)	0.472

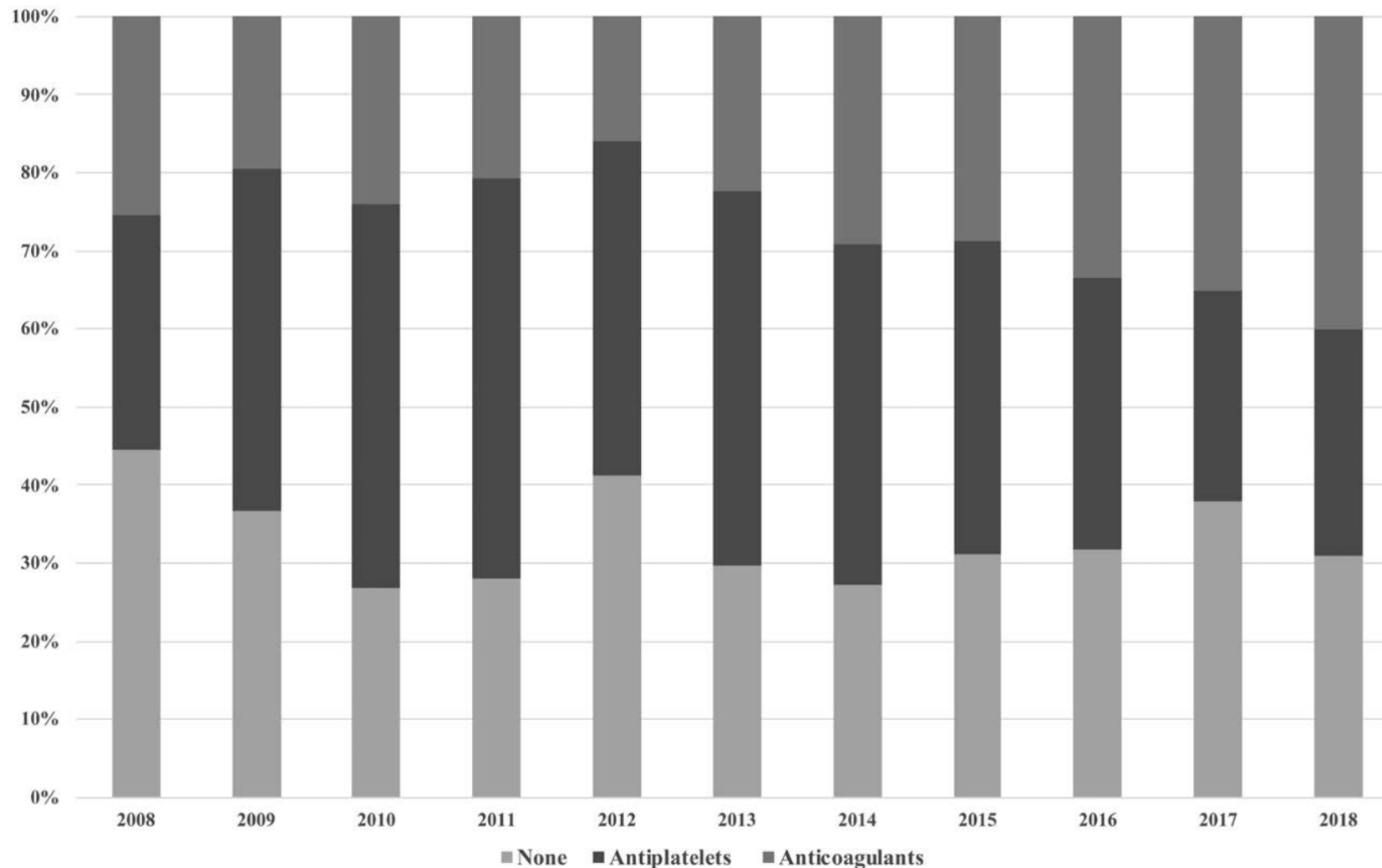
BASELINE CHARACTERISTICS

Variables	None	Antiplatelets	Anticoagulants	P Value*
CHA ₂ DS ₂ -VASc score				<0.001
0	105 (4.6)	64 (2.4)	58 (3.3)	
1	330 (14.3)	316 (11.7)	208 (11.7)	
2	461 (20.0)	521 (19.3)	359 (20.2)	
3	607 (26.3)	764 (28.3)	485 (27.2)	
4	609 (26.4)	786 (29.1)	472 (26.5)	
5	191 (8.3)	247 (9.1)	194 (10.9)	
6	1 (0.0)	3 (0.1)	5 (0.3)	
Mean±SD	2.8±1.3	3.0±1.2	3.0±1.3	<0.001
Median (IQR)	3 (2–4)	3 (2–4)	3 (2–4)	<0.001
ATRIA score				<0.001
0	319 (13.8)	209 (7.7)	186 (10.4)	
1	580 (25.2)	871 (32.2)	477 (26.8)	
2	143 (6.2)	89 (3.3)	55 (3.1)	
3	506 (22.0)	636 (23.5)	442 (24.8)	
4	161 (7.0)	222 (8.2)	187 (10.5)	
5	104 (4.5)	53 (2.0)	52 (2.9)	
6	347 (15.1)	428 (15.8)	265 (14.9)	
7	23 (1.0)	43 (1.6)	23 (1.3)	
8	19 (0.8)	12 (0.4)	23 (1.3)	
9	102 (4.4)	138 (5.1)	71 (4.0)	
Mean±SD	3.0±2.4	3.1±2.4	3.1±2.4	0.241
Median (IQR)	3 (1–5)	3 (1–4)	3 (1–4)	0.060
Treatment, acute thrombolytic				<0.001
No	1584 (70.2)	1829 (68.9)	1281 (72.4)	
IV tPA	321 (14.2)	416 (15.7)	182 (10.3)	
IA	149 (6.6)	171 (6.4)	184 (10.4)	
IV tPA+IA	202 (9.0)	239 (9.0)	123 (6.9)	

PREADMISSION ANTITHROMBOTIC THERAPY IN ORAL ANTICOAGULANT THERAPY CANDIDATES

Treatment	Years												P Value†
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total	
Anticoagulants	29 (25.0)	49 (19.4)	83 (25.0)	68 (19.1)	72 (16.6)	96 (22.2)	111 (28.1)	128 (27.6)	129 (32.7)	128 (34.9)	189 (40.6)	1,082 (27.0)	<0.001
NOAC	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	9 (2.1)	3 (0.8)	20 (4.3)	56 (14.2)	80 (21.8)	117 (25.1)	286 (7.1)	
Antiplatelets	35 (30.2)	114 (45.1)	163 (49.1)	186 (52.2)	190 (43.9)	204 (47.2)	181 (45.8)	187 (40.3)	142 (35.9)	104 (28.3)	143 (30.7)	1,649 (41.1)	<0.001
None	52 (44.8)	90 (35.6)	86 (25.9)	102 (28.7)	171 (39.5)	132 (30.6)	103 (26.1)	149 (32.1)	124 (31.4)	135 (36.8)	134 (28.8)	1,278 (31.9)	0.290
Total	116	253	332	356	433	432	395	464	395	367	466	4,009	

PREADMISSION ANTITHROMBOTIC THERAPY IN ORAL ANTICOAGULANT THERAPY CANDIDATES



SEVERITY OF NEUROLOGICAL DEFICIT AND FUNCTIONAL OUTCOMES BASED ON ANTITHROMBOTIC USE BEFORE STROKE EVENT

Variables	None	Antiplatelets	Anticoagulants	<i>P</i> Value*	<i>P</i> ^{a†}	<i>P</i> ^{b†}	<i>P</i> ^{c†}
N	2304	2701	1781				
Severity of neurological deficits							
NIHSS score at admission, median (IQR)	8 (3–15)	7 (2–15)	6 (2–14)	<0.001	<0.001	<0.001	0.776
NIHSS score at discharge, median (IQR)	4 (1–12)	3 (1–11)	3 (1–10)	<0.001	<0.001	<0.001	0.852
mRS score at discharge				<0.001	<0.001	<0.001	>0.999
Favorable (mRS score 0–2)	970 (42.8)	1,332 (50.9)	883 (50.6)				
Nonfavorable (mRS score 3–6)	1,294 (57.2)	1,287 (49.1)	862 (49.4)				
Mortality	167 (7.4)	157 (6.0)	133 (7.6)	0.062	0.159	>0.999	0.105

INDEPENDENT PREDICTORS OF MILD SEVERITY OF ISCHEMIC STROKE IN PATIENTS WITH ATRIAL FIBRILLATION

Risk Factors	Univariate Analysis		Multivariable Analysis*	
	Odds Ratio (95% CI)	P Value	Odds Ratio (95% CI)	P Value
Antithrombotics at admission				
None	Ref		Ref	
Antiplatelets	1.22 (1.09–1.37)	0.001	1.16 (1.03–1.31)	0.015
Anticoagulation	1.29 (1.14–1.47)	<0.001	1.25 (1.10–1.43)	0.008
Age, per 10 y	0.71 (0.68–0.75)	<0.001	0.81 (0.76–0.85)	<0.001
Female sex	0.52 (0.47–0.58)	<0.001	0.67 (0.60–0.77)	<0.001
Pre-mRS	0.73 (0.70–0.77)	<0.001	0.78 (0.74–0.81)	<0.001
Congestive heart failure	1.25 (0.38–4.11)	0.7107		
Chronic kidney disease	0.64 (0.58–0.71)	<0.001	0.98 (0.87–1.11)	0.780
Diabetes mellitus	1.00 (0.90–1.11)	0.955		
Hypertension	0.94 (0.84–1.06)	0.306		
Smoking	1.63 (1.46–1.83)	<0.001	1.09 (0.96–1.24)	0.193
Hyperlipidemia	1.31 (1.18–1.45)	<0.001	1.24 (1.11–1.38)	0.001
TIA	1.54 (1.10–2.14)	0.011	1.45 (1.02–2.04)	0.036
Anemia	0.60 (0.54–0.67)	<0.001	0.89 (0.79–1.01)	0.060
Severe renal disease	0.54 (0.45–0.64)	<0.001	0.83 (0.68–1.00)	0.050

LIMITATIONS

- Retrospective observational analysis.
- No data on the previous history of stroke (ischemic or hemorrhagic), except TIA, falling, and hemorrhagic complications, which could be a reason for not using antithrombotics.
- Unknown initial INR levels of patients taking anticoagulants and the doses of NOACs
- Missing values of NIHSS scores (2.1%) and mRS scores at discharge (2.3%).

CONCLUSIONS

- During the study period, there was an increase in pre-stroke OAC use, whereas antiplatelet use decreased in patients with AIS with AF.
- Although preceding OAC use increased after the introduction of NOACs in clinical practice, several patients with AIS with known AF did not take OACs.
- The preventive use of OACs in patients with AIS with AF was associated with a significant higher likelihood of a mild initial neurological deficit and favorable outcome at discharge.