Why do clinicians withhold anticoagulation in patients with atrial fibrillation and CHA_2DS_2-VASc score ≥2?

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BACKGROUND

- Current guidelines recommend oral anticoagulation (OAC) to prevent stroke or systemic embolism in patients with atrial fibrillation (AF) at high thrombo-embolic risk of ≥2% per year (CHA_2DS_2-VASc score ≥2).
- Approximately 30-40% of eligible patients do not receive guideline-recommended OAC for reasons that are unclear.
- Non-use of OAC is associated with an increased risk of stroke or systemic embolism and poor outcomes.

PURPOSE

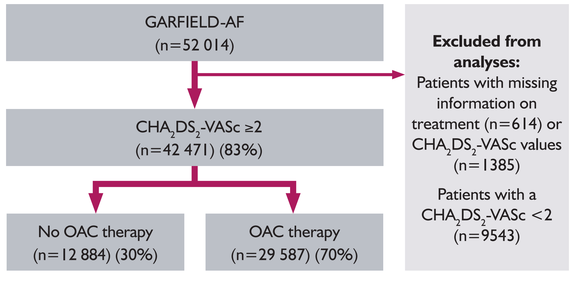
- To identify patient characteristics associated with non-use of OAC in AF patients with CHA_2DS_2-VASc score ≥2.
- To explore characteristics that influence physician's preferences regarding OAC prescribing in AF patients.

METHODS

- Global Anticoagulant Registry in the FIELD–Atrial Fibrillation (GARFIELD-AF) registry is an observational, prospective multicentre study of patients with newly diagnosed AF and ≥1 additional risk factors for stroke who were enrolled between Mar-2010 and Aug-2016. Baseline characteristics of these patients are described in Table 1.
- Predictors of OAC prescribing was evaluated using logistic regression in patients with a CHA_2DS_2-VASc score ≥2.
- The rates per 100 person-years of all-cause mortality, cardiovascular mortality, stroke or systemic embolism and major bleeding were compared according to OAC status. P values were calculated with a log-rank test (Table 2).
- Predictors of with-holding OAC (Table 3) were determined using the following variables: age, body mass index (BMI), sex, world region, type of AF, antiplatelet therapy, year of enrollment, smoking status, hypercholesterolemia, race, history of bleeding, dementia, cirrhosis, vascular disease, moderate or severe kidney disease, and alcohol use.
- An anonymous, web-based survey was distributed to physicians treating AF in the UK, Belgium, Canada, France, and Portugal (Figure 2).

RESULTS

Figure 1. *Study cohort*



OAC=oral anticoagulation

Table 1. *Selected baseline characteristics of patients from GARFIELD-AF*

Patient Characteristic		No OAC (n=12 884)	OAC (n=29 587)
Gender, n (%)	Male	6195 (29.4)	14 849 (70.6)
	Female	6689 (31.2)	14 738 (68.8)
Age at AF diagnosis (yrs)		72.0 (65.0, 79.0)	73.0 (67.0, 79.0)
BMI (kg/m2)		26.0 (24.0, 30.0)	27.0 (24.0, 31.0)
History of stroke (%)		60.0 (50.0, 65.0)	58.0 (50.0, 65.0)
Stroke, n (%)	No	11 774 (30.5)	26 796 (69.5)
	Yes	1032 (27.5)	2714 (72.5)
History of bleeding, n (%)	No	12 217 (29.7)	28 928 (70.3)
	Yes	579 (50.3)	571 (49.7)
Cirrhosis, n (%)	No	12 613 (30.3)	29 047 (69.7)
	Yes	95 (41.1)	136 (58.9)
Moderate to severe CKD, n (%)	No	11 473 (30.6)	25 986 (69.4)
	Yes	1411 (28.2)	3600 (71.8)
Dementia, n (%)	No	12 515 (30.1)	29 017 (69.9)
	Yes	287 (39.2)	446 (60.8)
Vascular disease, n (%)	No	11 931 (30.3)	27 394 (69.7)
	Yes	953 (30.3)	2193 (69.7)
Antiplatelet therapy, n (%)	No	4254 (15.6)	22 960 (84.4)
	Yes	8630 (56.6)	6627 (43.4)
HAS-BLED score		2.0 (1.0, 2.0)	1.0 (1.0, 2.0)

AF=atrial fibrillation, BMI=body mass index, CKD=chronic kidney disease, LVEF=left ventricular ejection fraction, OAC=oral anticoagulation.

Table 2. *Outcomes in 42 318 patients from GARFIELD-AF*

Outcome	Number of Events	Rate (95% CI)*	p-value
All-cause mortality			
No OAC	1166	5.33 (5.03 – 5.64)	<0.0001
OAC	2001	3.93 (3.76 – 4.11)	
Cardiovascular mortality			
No OAC	404	1.85 (1.67 – 2.03)	<0.0001
OAC	712	1.40 (1.30 – 1.50)	
Stroke or systemic embolism			
No OAC	347	1.61 (1.45 – 1.78)	<0.0001
OAC	559	1.11 (1.02 – 1.20)	
Major bleeding			
No OAC	116	0.53 (0.44 – 0.64)	<0.0001
OAC	420	0.83 (0.75 – 0.91)	

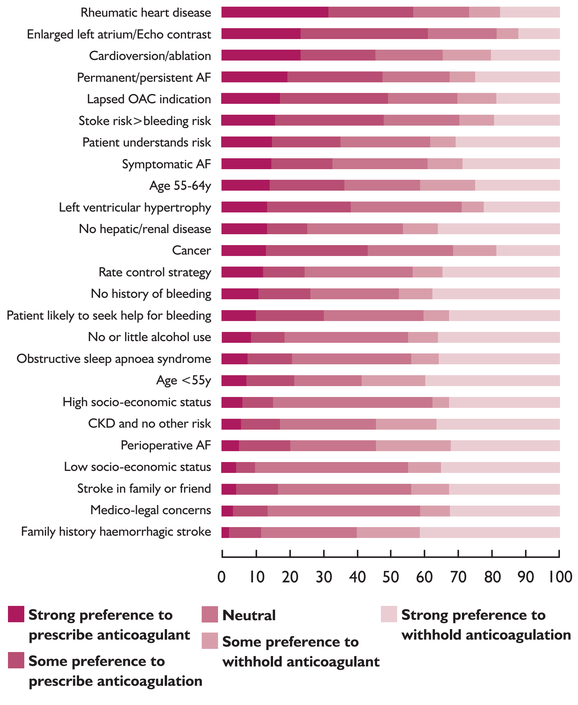
CI=confidence interval, OAC=oral anticoagulation, OR=odds ratio.
*Rate is per 100 person years

Table 3. *Predictors of withholding OAC (based on findings from GARFIELD-AF)*

Effect	P-value	OR (95% CI)
Age*	0.1031	1.01 (0.99 – 1.03)
BMI*	0.0032	0.96 (0.94 – 0.99)
Female	0.0006	1.11 (1.04 – 1.18)
Hypertension	0.0064	0.90 (0.84 – 0.97)
History of bleeding	<0.0001	2.52 (2.17 – 2.92)
Antiplatelet therapy	<0.0001	14.96 (14.11 – 15.85)
Hypercholesterolemia	<0.0001	0.71 (0.67 – 0.75)
Light alcohol use vs abstinent	<0.0001	0.88 (0.82 – 0.93)
Dementia	0.0002	1.42 (1.18 – 1.71)
Cirrhosis	0.0002	1.87 (1.34 – 2.60)
Vascular disease	<0.0001	0.66 (0.62 – 0.71)
Moderate or severe CKD	0.4966	1.06 (0.90 – 1.23)
Persistent vs paroxysmal		0.70 (0.64 – 0.77)
Permanent vs paroxysmal		0.60 (0.55 – 0.66)

BMI=body mass index, CI=confidence interval, CKD=chronic kidney disease, OR=odds ratio.
*The OR for Age is for 10 year increments. The OR for BMI is for 5 kg/m2 increments. Region, year of enrollment and race were also significant contributors (each p<= 0.002).

Figure 2. *Physician survey results (n=229): reasons to treat vs withhold OAC*



CONCLUSIONS

- Type of AF, antiplatelet therapy and history of bleeding were the strongest predictors of OAC non-use.
- OAC non-use was associated with higher rates of all-cause mortality, cardiovascular mortality and stroke or systemic embolism.
- These results emphasise the need to better understand decision-making to increase the proportion of patients who are treated with OAC.

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DECLARATION OF INTEREST

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TRI Thrombosis Research Institute

www.garfieldregistry.org

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AF Garfield global anticoagulant registry in the field