



Beyond anticoagulation: Limitations of oral anticoagulants in preventing stroke recurrence in atrial fibrillation

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BACKGROUND AND AIMS

Despite the widespread use of oral anticoagulants (OACs), acute ischemic stroke (AIS) remains a significant risk for patients with atrial fibrillation (AF). The real-world effectiveness of OACs in preventing recurrent strokes, particularly following an initial stroke of cardioembolic origin, continues to be a major challenge. This study evaluates the efficacy of OACs in secondary stroke prevention and investigates the influence of anticoagulation type and quality on recurrence risk.

RESULTS

Recurrence rates were similar between OAC-treated and anticoagulation-naïve patients after adjusting for confounders (19.10% vs. 17.95%, $p=0.870$). Among anticoagulated patients, neither anticoagulation type nor quality alone significantly influenced recurrence risk. However, their interaction was statistically significant ($p=0.049$), suggesting that the effectiveness of anticoagulation in preventing strokes is strongly affected by treatment quality.

Figure 2. Proportion of previous cardioembolic strokes in 128 AIS-AF patients

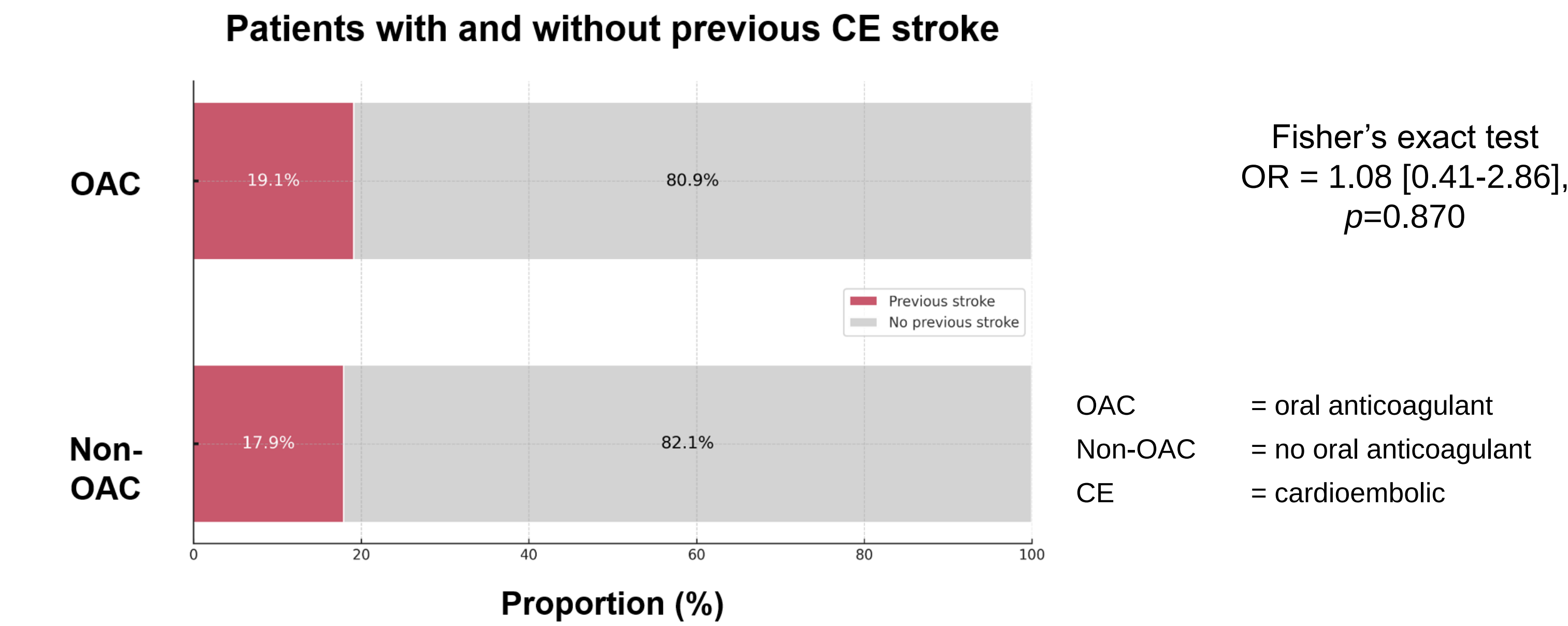


Table 1. Outcomes of the 89 OAC AIS-AF patients stratified by type of anticoagulation

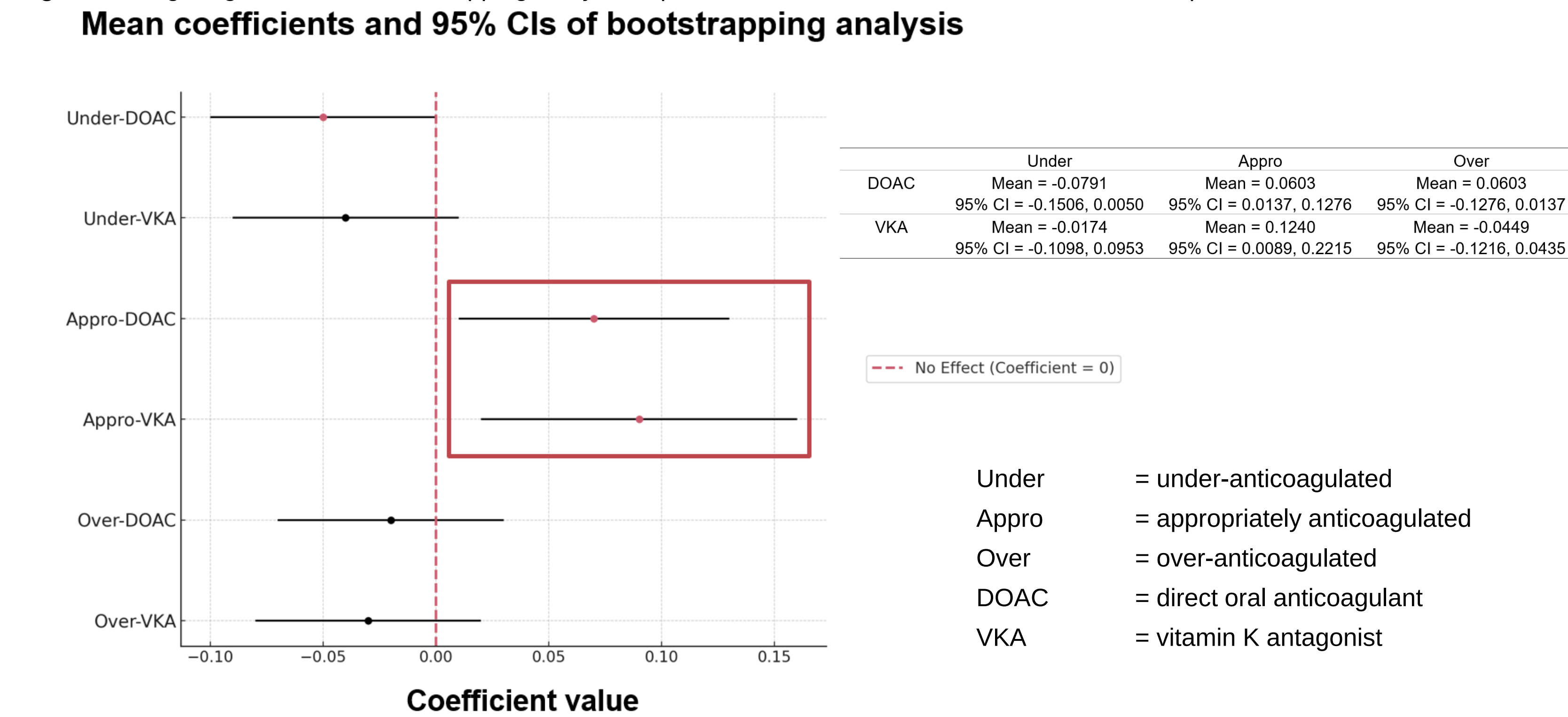
	DOAC (n=66)	VKA (n=23)	p-value/OR [95% CI]
Functional and safety outcome			
90-day mRS, median (IQR)	5 (0-6) n=60	3 (0-6) n=22	$p=0.379$
Mortality at 90 days, n (%)	23 (34.9%)	7 (30.4%)	OR = 1.23 [0.47-3.24], $p=0.683$
ICH, n (%)	3 (4.6%)	3 (13.0%)	OR = 0.32 [0.06-1.66], $p=0.176$
Previous CE stroke, n (%)	13 (19.7%)	4 (17.4%)	OR = 1.17 [0.34-4.05], $p=0.800$
Time between strokes, years, median (IQR)	6 (1-27)	5 (3-19)	$p=0.741$
AF known before previous CE stroke, n (%)	4 (6.1%)	3 (13.0%)	OR = 0.43 [0.10-1.91], $p=0.267$

Table 2. Outcomes of the 89 OAC AIS-AF patients stratified by quality of anticoagulation.

	Under (n=34)	Appro (n=48)	Over (n=7)	p-value
Functional and safety outcome				
90-day mRS, median (IQR)	5 (0-6) n=33	5 (0-6) n=43	1.5 (0-6) n=6	$p=0.349$
Mortality at 90 days, n (%)	12 (35.3%)	17 (35.4%)	1 (14.3%)	$p=0.536$
ICH, n (%)	3 (8.8%)	3 (6.3%)	0 (0.0%)	$p=0.692$
Previous CE stroke, n (%)	5 (14.7%)	9 (18.8%)	3 (42.9%)	$p=0.231$
Time between strokes, years, median (IQR)	6 (3-26)	5 (1-27)	6 (2-6)	$p=0.592$
AF known before previous CE stroke, n (%)	4 (80.0%)	3 (33.3%)	0 (0.0%)	$p=0.067$

mRS = modified Rankin Scale, ICH = intracranial hemorrhage, AF = atrial fibrillation, CE = cardioembolic

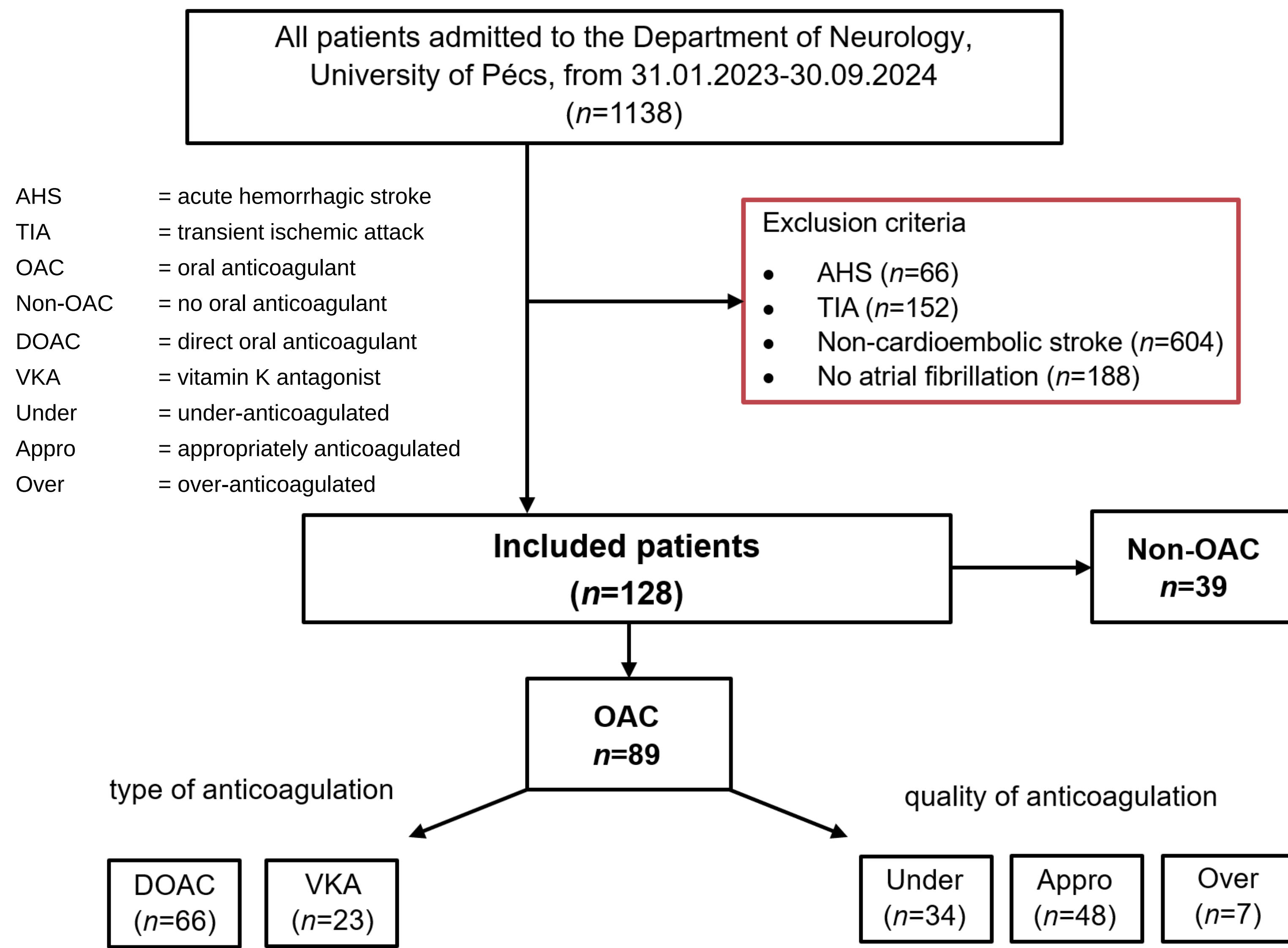
Figure 3. Ridge regression with bootstrapping analysis of predictors of recurrence risk of 89 OAC AIS-AF patients



METHODS

We analyzed data from 128 AF patients in the TINL STROKE-registry, admitted with cardioembolic stroke between 2023 and 2024. Patients were categorized by anticoagulation status at admission (OAC-users, $n=89$; anticoagulation-naïve, $n=39$). Recurrence rates were assessed using logistic regression models adjusted for confounders. Subgroup analyses explored the effects of anticoagulation type and quality.

Figure 1. Flowchart of patients included in the study



CONCLUSION

Although OACs are a cornerstone of stroke prevention in patients with AF, their efficacy in reducing recurrence depends on optimal management. These findings highlight that adequate anticoagulation, not just its use, is critical to minimize recurrence risk. To effectively prevent strokes in high-risk AF patients, future strategies must focus on standardized protocols, tailored monitoring, and individualized dosing regimens.

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