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Utilization and clinical outcomes of direct oral anticoagulants in real-world settings: Evidence from a global federated research network in Europe

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INTRODUCTION

- Direct oral anticoagulants (DOACs) are globally the first-line prevention against thromboembolism in patients with atrial fibrillation (AF)[1]
- The number of individuals diagnosed with AF is projected to increase over the next several decades[2-4]; however, there are no randomized clinical trials that directly compare the efficacy and safety of the 4 DOACs in these patients[5]
- This retrospective cohort study evaluated patient characteristics and clinical outcomes associated with DOAC use in real-world European clinical practice

METHODS

- Adults (≥18 years of age) with AF initiating edoxaban, apixaban, dabigatran, or rivaroxaban between January 1, 2016, and December 31, 2022, were identified from TriNetX EMEA (Europe and the Middle East) electronic medical records
  - TriNetX is a global federated health research network encompassing 52 healthcare organizations, including those in the United Kingdom, Germany, Italy, Spain, and Belgium
- The earliest DOAC prescription identified for each patient is defined as their index prescription, with the prescription date deemed as the index date
- Patients with mitral stenosis, valve replacement, deep vein thrombosis, or pulmonary embolism prior to the index date or prior DOAC or vitamin K antagonist use were excluded
- Baseline characteristics and outcome incidence rates were reported descriptively across DOAC cohorts
- Incidence rate ratios (IRRs) and 95% confidence intervals (CIs) of edoxaban vs the other 3 DOACs were estimated for effectiveness (systemic embolism/ischemic stroke) and safety (any major bleeding) outcomes

RESULTS

- Overall, 77,813 patients were identified (edoxaban, 14,743; apixaban, 42,414; dabigatran, 5,003; rivaroxaban, 15,653; **Figure 1**)
- Baseline demographics and clinical characteristics are shown in **Table 1**
  - Baseline characteristics were similar across DOACs (mean age, 73.7 years; 42.2% female)
- The incidence rate of ischemic stroke/systemic embolism per 100 person-years was numerically lower for edoxaban (3.1) vs apixaban (3.8) or dabigatran (4.7), but not vs rivaroxaban (2.8; **Table 2**)
- For any major bleeding, the incidence rate per 100 person-years was numerically lower for edoxaban (3.6) vs apixaban (3.8) or rivaroxaban (3.8), but not vs dabigatran (3.2; **Table 2**)
- The IRRs (95% CI) for ischemic stroke/systemic embolism significantly favored edoxaban vs apixaban (0.82 [0.75–0.88]; P <0.001) or dabigatran (0.67 [0.59–0.75]; P <0.001), but not vs rivaroxaban (1.11 [1.00–1.22]; P <0.05; **Figure 2**)
- The IRRs (95% CI) for any major bleeding were similar between edoxaban vs apixaban (0.93 [0.86–1.00]; P = 0.04), dabigatran (1.11 [0.98–1.27]; P = 0.11), and rivaroxaban (0.95 [0.87–1.04]; P = 0.25; **Figure 2**)

CONCLUSIONS

In this large, real-world European cohort of patients with AF, differences in effectiveness outcomes were observed between edoxaban and apixaban or dabigatran, whereas safety outcomes were generally comparable across DOACs

Given the observational design of this study, further treatment comparisons with adjustment for potential confounding factors are needed to confirm these findings

In Europe, **patients with AF receiving edoxaban had lower incidence rates of ischemic stroke/ systemic embolism than those on apixaban or dabigatran**; a similar incidence rate of any major bleeding was observed across all 4 DOACs

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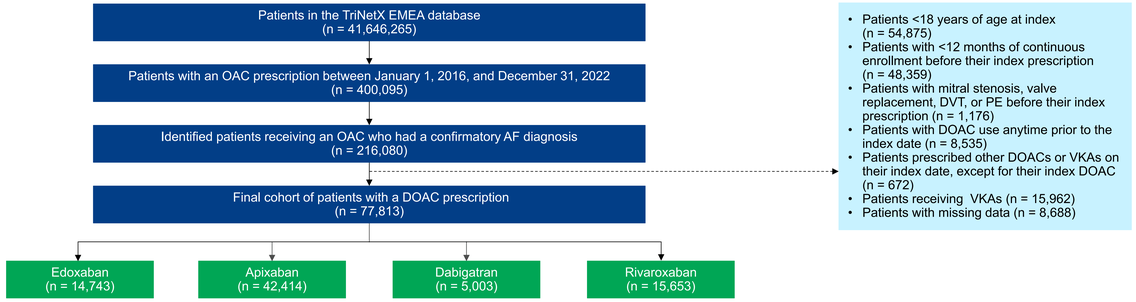
FIGURES

Figure 1. Patient selection



Data from the TriNetX EMEA database were included for patients from the United Kingdom, Belgium, Italy, Germany, and Spain.
AF, atrial fibrillation; DOAC, direct oral anticoagulant; DVT, deep vein thrombosis; EMEA, Europe and the Middle East; OAC, oral anticoagulant; PE, pulmonary embolism; VKA, vitamin K antagonist.

Table 1. Patient baseline demographics and characteristics by DOAC treatment

	Edoxaban (n = 14,743)	Apixaban (n = 42,414)	Dabigatran (n = 5,003)	Rivaroxaban (n = 15,653)
Demographics				
Age, years, mean ± SD	73.7 ± 9.74	74.1 ± 9.47	71.1 ± 10.8	73.3 ± 9.87
≤64 years	2,423 (16.4)	6,357 (15.0)	1,183 (23.6)	2,605 (16.6)
65–74 years	4,262 (28.9)	11,789 (27.8)	1,543 (30.8)	4,566 (29.2)
≥75 years	8,058 (54.7)	24,268 (57.2)	2,277 (45.5)	8,482 (54.2)
Sex, female	6,330 (42.9)	18,300 (43.1)	1,755 (35.1)	6,420 (41.0)
Clinical characteristics				
Hypertension	4,623 (31.4)	16,501 (38.9)	1,608 (32.1)	5,473 (35.0)
Diabetes mellitus	2,286 (15.5)	8,149 (19.2)	734 (14.7)	2,776 (17.7)
Vascular disease	2,208 (15.0)	7,709 (18.2)	674 (13.5)	2,586 (16.5)
Coronary artery disease	1,642 (11.1)	5,679 (13.4)	476 (9.5)	1,867 (11.9)
Peripheral artery disease	809 (5.5)	2,938 (6.9)	270 (5.4)	1,021 (6.5)
Stroke/transient ischemic attack	1,018 (6.9)	3,266 (7.7)	439 (8.8)	569 (3.6)
Bleeding predisposition	446 (3.0)	1,734 (4.1)	174 (3.5)	480 (3.1)
Congestive heart failure	2,070 (14.0)	8,002 (18.9)	658 (13.2)	2,940 (18.8)
Cerebral vascular disease	1,462 (9.9)	5,094 (12.0)	614 (12.3)	1,173 (7.5)
Dementia	707 (4.8)	2,283 (5.4)	161 (3.2)	805 (5.1)
Chronic pulmonary disease	2,053 (13.9)	7,265 (17.1)	555 (11.1)	2,394 (15.3)
Rheumatic disease	331 (2.2)	1,246 (2.9)	74 (1.5)	391 (2.5)
Chronic renal disease	143 (1.0)	807 (1.9)	39 (0.8)	204 (1.3)
Cancer	1,280 (8.7)	3,992 (9.4)	374 (7.5)	1,365 (8.7)
Medications				
Antiplatelet	4,000 (27.1)	10,952 (25.8)	1,103 (22.0)	3,517 (22.5)
NSAID	733 (5.0)	2,079 (4.9)	136 (2.7)	569 (3.6)
Proton pump inhibitor	7,438 (50.5)	20,275 (47.8)	2,740 (54.8)	8,170 (52.2)
ACEI/ARB	7,070 (48.0)	17,999 (42.4)	2,119 (42.4)	7,157 (45.7)
Amiodarone	1,382 (9.4)	3,661 (8.6)	628 (12.6)	1,763 (11.3)
Beta-blocker	10,142 (68.8)	26,740 (63.0)	2,934 (58.6)	9,910 (63.3)
Statin	7,305 (49.5)	19,968 (47.1)	2,034 (40.7)	7,056 (45.1)

Data are shown as n (%) unless otherwise noted.
ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; DOAC, direct oral anticoagulant; NSAID, nonsteroidal anti-inflammatory drug; SD, standard deviation.

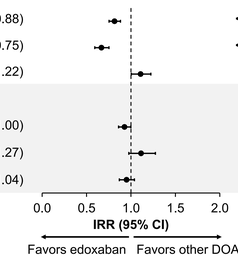
Table 2. Incidence rates of clinical outcomes for all 4 DOACs

	Edoxaban (n = 14,743)	Apixaban (n = 42,414)	Dabigatran (n = 5,003)	Rivaroxaban (n = 15,653)
Effectiveness	3.1	3.8	4.7	2.8
Ischemic stroke	2.7	3.4	4.3	2.2
Systemic embolism	0.4	0.4	0.4	0.6
Safety (any MB)	3.6	3.8	3.2	3.8
Major GI bleeding	2.7	2.9	2.2	2.9
ICH	0.7	0.7	0.9	0.7
Other MB	0.2	0.2	0.1	0.2

Incidence rates are shown per 100 person-years.
DOAC, direct oral anticoagulant; GI, gastrointestinal; ICH, intracranial hemorrhage; MB, major bleeding.

Figure 2. Clinical outcome IRRs: Edoxaban vs other DOACs

	IRR (95% CI)	*P*-value
Effectiveness: IS/SE		
Edoxaban vs apixaban	0.82 (0.75–0.88)	**<0.0001**
Edoxaban vs dabigatran	0.67 (0.59–0.75)	**<0.0001**
Edoxaban vs rivaroxaban	1.11 (1.00–1.22)	**<0.05**
Safety: Any MB		
Edoxaban vs apixaban	0.93 (0.86–1.00)	**0.04**
Edoxaban vs dabigatran	1.11 (0.98–1.27)	0.1
Edoxaban vs rivaroxaban	0.95 (0.87–1.04)	0.3



Bolded values indicate P <0.05.
CI, confidence interval; DOAC, direct oral anticoagulant; IRR, incidence rate ratio; IS, ischemic stroke; MB, major bleeding; SE, systemic embolism.

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REFERENCES

1. Van Gelder IC, et al. *Euro Heart J.* 2024;45:3314-414. **2.** Rodríguez-García J, et al. *Euro J Int Med.* 2026;145:106683. **3.** Di Carlo A, et al. *Europace.* 2019;21:1468-75. **4.** Krijthe BP, et al. *Eur Heart J.* 2013;34(35):2746-51. **5.** Joglar JA, et al. *Circulation.* 2024;149(1):e1-e156.

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DISCLOSURES

AV, **JI**, and **SG** are employees of IQVIA. **RW**, **DD**, and **XY** are employees of Daiichi Sankyo.