

Introduction

Although DOACs are more effective and safer than warfarin (1), for patients in the US without prescription insurance coverage, the out-of-pocket costs with DOACs are significantly higher, which could impact the choice between DOACs and warfarin. We hypothesized that outpatient practice (OP) with specialized pharmacists in anticoagulation clinics (ACs) who assist patients in routine monitoring, providing information on prescription coverage, and reviewing the cost implications of various anticoagulants are more likely to initiate patients on warfarin compared to OP without ACs.

Objectives/aims: To compare the initial choice of oral anticoagulant therapy for patients with AF in OP with ACs to patients in OP without ACs.

Methods

Study Population and Design: A cohort study in patients with incident AF and without a mechanical heart valve and initiated on anticoagulation therapy between January 1, 2019, and October 31, 2022, at the University of Florida Health Physicians (UFHP) Practice Sites

Exposures: Patients newly diagnosed with AF in OP with ACs versus similar patients in OP without ACs

Main Outcomes: Within 365 days of an index AF diagnosis and started on anticoagulation therapy, the outcome of interest is whether the patient is initiated on warfarin or a DOAC

Statistical Analysis: We used a generalized linear model with a log link function to determine the relative risk and adjusted for CHA₂DS₂-VASC score, insurance type, and year of AF diagnosis

Results

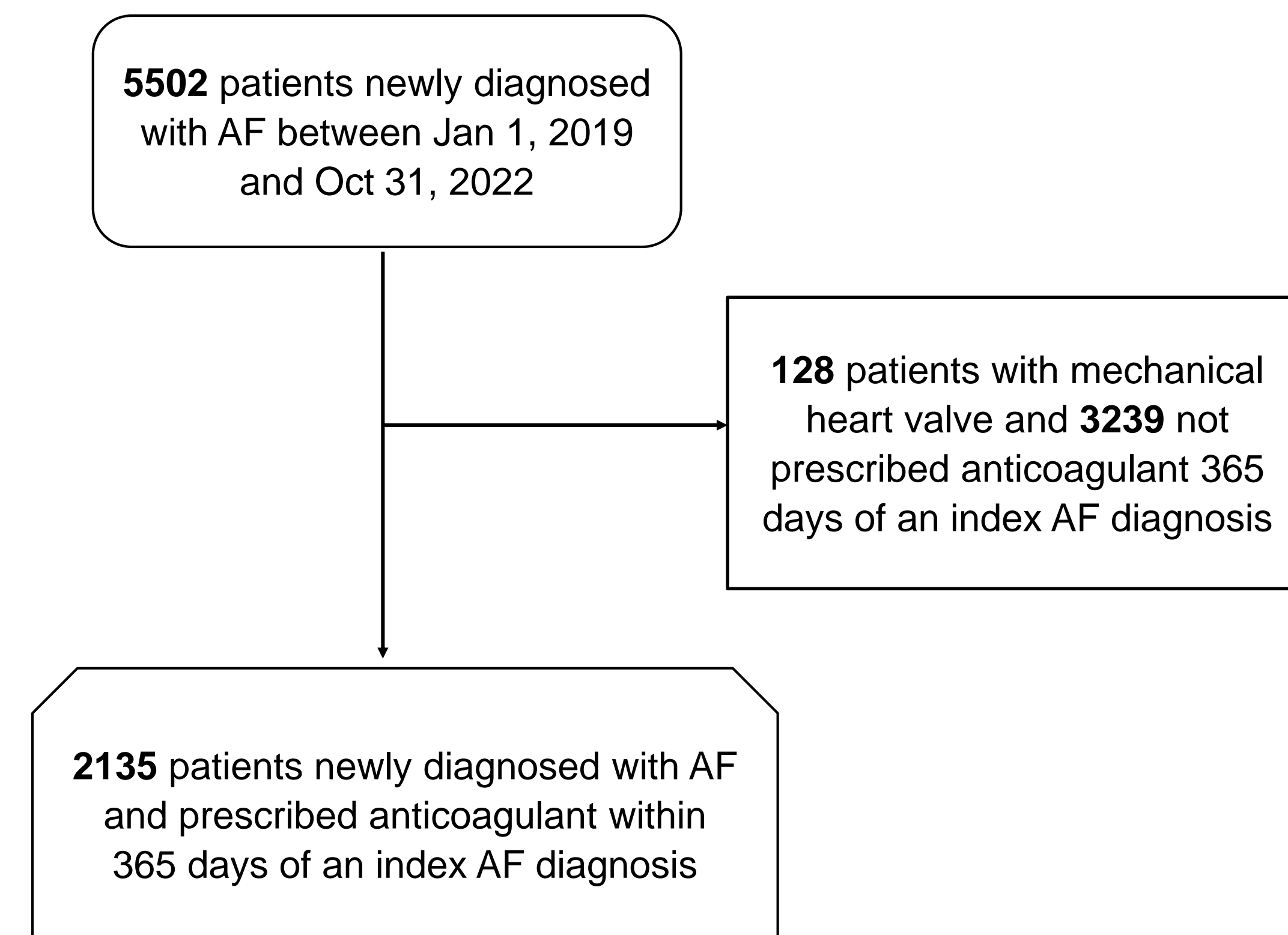


Figure 1: Flow Chart

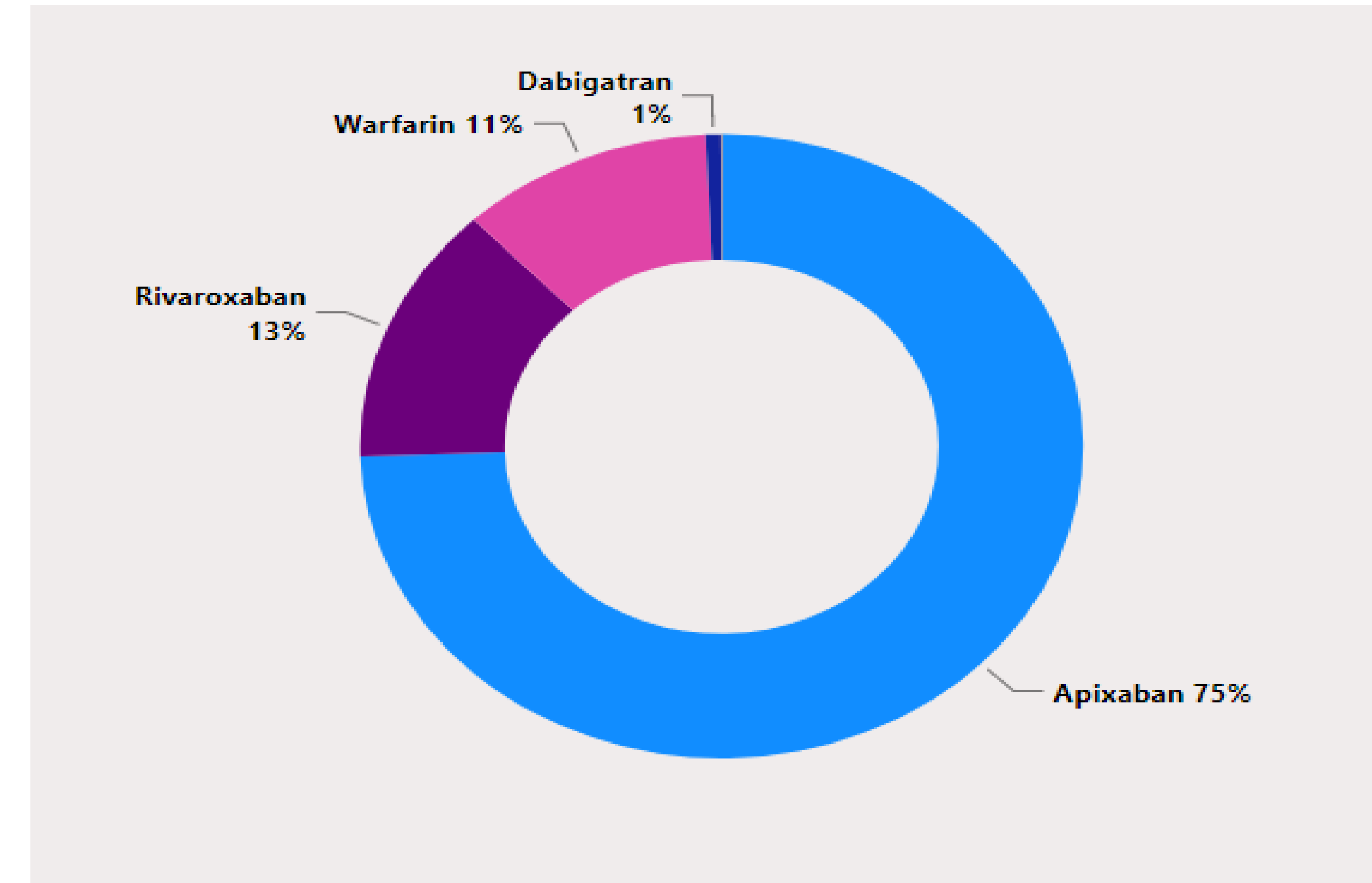


Figure 2: Types of Anticoagulants Prescribed to Patients with AF

Table 1: Characteristics of patients with AF and initiated on anticoagulant

	Patients initiated on warfarin	Patients initiated on DOAC
Overall (%)	242 (11%)	1893 (89%)
Type of Outpatient Practice (%)		
With Anticoagulant Clinic	60 (25%)	250 (13%)
Without Anticoagulant Clinic	182 (75%)	1643 (87%)
Sex (%)		
Female	120 (50%)	837 (44%)
Age (SD)	66 (±15)	70 (±12)
Race (%)		
Black or African American	35 (15%)	196 (10%)
White	194 (80%)	1594 (84%)
Others	13 (5%)	102 (6%)
Comorbidities (%)		
Hypertension	205 (85%)	1597 (83%)
Congestive Heart Failure	134 (55%)	825 (44%)
Stroke	56 (23%)	303 (16%)
CKD	70 (29%)	457 (24%)
Diabetes	80 (33%)	591 (31%)
Vascular Disease	79 (33%)	419 (22%)
Type Anticoagulant Prescribed		
Warfarin	242 (100%)	-
Apixaban	-	1591 (84%)
Dabigatran	-	14 (1%)
Edoxaban	-	1 (0%)
Rivaroxaban	-	287 (15%)
Health Insurance		
Commercial/Managed Care	35 (15%)	305 (16%)
Govt Administered	191 (79%)	1524 (80%)
Other	3 (1%)	12 (1%)
Self-Pay	13 (5%)	52 (3%)
Year		
2019	85 (35%)	396 (21%)
2020	62 (26%)	474 (25%)
2021	54 (22%)	602 (32%)
2022	41 (17%)	421 (22%)

Figure 3: Trends of proportion of patients initiated on anticoagulant (warfarin vs. DOAC)

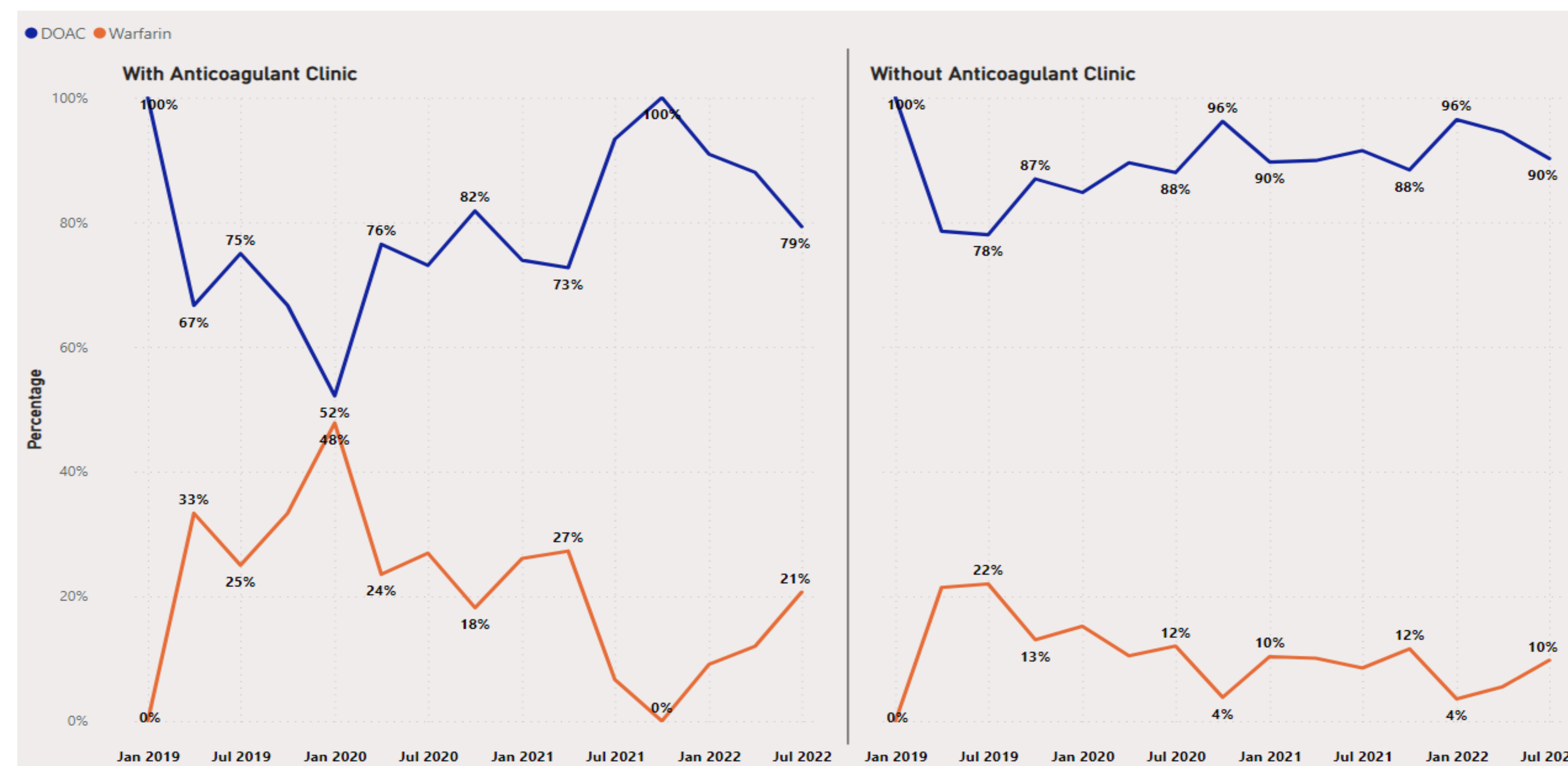


Table 2: Relative Risk of initiation on warfarin in OP with AC compared to clinics without

Initiation on Warfarin (vs. DOAC) in outpatient practice with AC	Unadjusted Relative Risk		Adjusted Relative Risk	
	RR (95% CI)	P value	RR (95% CI)	P value
	1.94 (1.49-2.53)	<0.0001	1.80 (1.38 – 2.35)	<0.0001

Discussion

- From 2019 to 2022, the trends of warfarin prescription among patients with AF have been declining
- More than 75% of patients with AF initiated on therapy were prescribed apixaban
- The quality of warfarin management and other services, such as reviewing the patient's out-of-pocket expenses given their prescription drug and insurance coverage provided in anticoagulation clinics, impact the choice between warfarin and DOAC
- Given the 2019 AHA/ACC/HRS(2) recommendation on the use of DOACs over warfarin, future analyses are necessary to understand this discrepancy and its impact on prescription abandonment

Limitations

- We did not consider other clinical scenarios where warfarin could be preferred over DOAC (3)
- Generalizability to other healthcare settings

Conclusion

The findings suggest that services such as routine patient management and reviewing prescription coverage provided by specialized pharmacists are significantly associated with warfarin vs. DOAC treatment initiation.

References

- Carnicelli AP, Hong H, Connolly SJ, Eikelboom J, Giugliano RP, Morrow DA, Patel MR, Wallentin L, Alexander JH, Cecilia Bahit M, Benz AP. Direct oral anticoagulants versus warfarin in patients with atrial fibrillation: patient-level network meta-analysis of randomized clinical trials with interaction testing by age and sex. *Circulation*. 2022 Jan 25;145(4):242-55.
- January CT, Wann LS, Calkins H, Chen LY, Cigarroa JE, Cleveland Jr JC, Ellinor PT, Ezekowitz MD, Field ME, Furie KL, Heidenreich PA. 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society in collaboration with the Society of Thoracic Surgeons. *Circulation*. 2019 Jul 9;140(2):e125-51.
- Wadsworth D, Sullivan E, Jacky T, Sprague T, Feinman H, Kim J. A review of indications and comorbidities in which warfarin may be the preferred oral anticoagulant. *Journal of clinical pharmacy and therapeutics*. 2021 Jun;46(3):560-70.