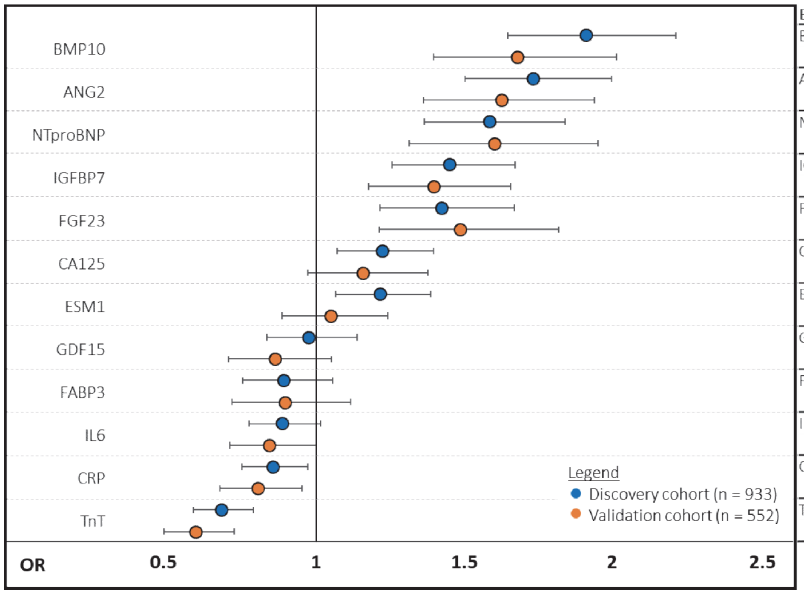

BIOMARKERS	OR	95% CI	
BMP10	1.864	1.612	2.155
	1.680	1.402	2.014
ANG2	1.690	1.472	1.939
	1.581	1.333	1.875
NTproBNP	1.539	1.331	1.780
	1.592	1.314	1.929
IGFBP7	1.409	1.205	1.647
	1.470	1.204	1.795
FGF23	1.407	1.226	1.615
	1.381	1.168	1.634
CA125	1.232	1.082	1.402
	1.149	0.969	1.362
ESM1	1.208	1.060	1.375
	1.030	0.870	1.219
GDF15	0.958	0.826	1.112
	0.861	0.710	1.044
FABP3	0.884	0.751	1.041
	0.897	0.725	1.111
IL6	0.868	0.761	0.991
	0.835	0.705	0.989
CRP	0.840	0.741	0.953
	0.805	0.682	0.951
TnT	0.696	0.604	0.802
	0.612	0.508	0.738

Abstract 64 Figure 1 Univariate odds ratios and 95% confidence intervals of quantified biomarkers

Methods and Results 1485 patients presenting acutely to hospital (median age [Q1, Q3] 69 [60, 78] years; 60% male; 45% with AF) with either diagnosed AF or ≥2 CHA2DS2-VASc risk factors (silent AF ruled out by 7-day ECG monitoring) were analysed. From EDTA plasma, 12 known cardiovascular biomarkers selected from published literature were quantified at a single centre on a high-throughput platform (Roche Diagnostics GMBH, DE). After adjustment for known confounders (age, sex, BMI, eGFR, heart failure, stroke/TIA, hypertension status), 6 biomarkers remained univariately associated with increased odds of AF (BMP10, ANG2, NTproBNP, IGFBP7, FGF23, CA125; see Figure). A model which simultaneously considered clinical characteristics and biomarkers was developed in a discovery cohort (n = 933) randomly sampled from all included patients (60:40 discovery:validation) and subsequently validated on the remaining patients (n = 552) using both logistic regression and machine learning methodologies for comparison. Using regression with backward statistical selection, an optimism-adjusted model of Age, Sex, BMI, BMP10, ANG2, and FGF23 was found to discriminate between patients with and without AF with an area under the ROC curve, AUC, of 0.743 [95% confidence interval, 0.712, 0.775], corroborated by machine learning (AUC 0.760 [95%CI 0.746, 0.764]). Performance was similar in the validation cohort for regression (AUC 0.719 [0.677, 0.762]) and machine learning (AUC 0.733 [95%CI 0.691, 0.775]). In a sensitivity analysis using biomarker quartiles instead of absolute values, an additional biomarker was selected: NTproBNP.

Conclusion In our analysis of known markers of AF, a combination of 3 simple clinical characteristics (Age, Sex, BMI) and 3 biomarkers (BMP10, ANG2, and FGF23) robustly discriminated between patients with diagnosed AF and sinus rhythm patients with cardiovascular risks in both discovery and validation cohorts. Biomarkers implicate pathways related to inflammation (BMP10), fibrosis (FGF23) and hypoxia (ANG2), known to be associated with AF. Prospective studies can examine if AF screening with multiple biomarkers has the potential of identifying patients who could benefit from further ECG monitoring.

Conflict of Interest None.

65 CHANGES IN ANTICOAGULANT USE IN ENGLAND OVER TWO DECADES: 1998-2018

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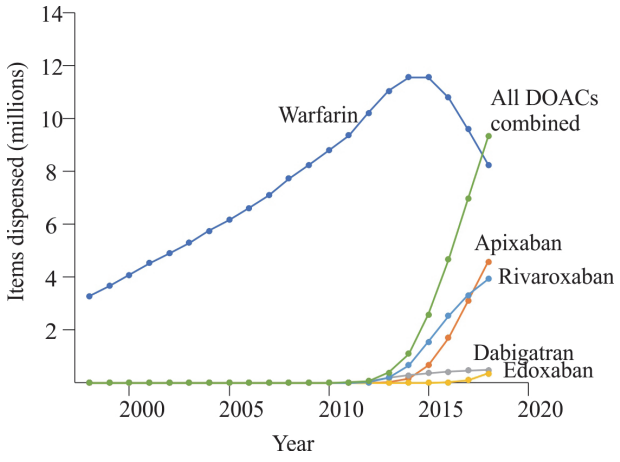
Introduction The European Society of Cardiology guidelines on the management of Atrial Fibrillation (AF) advocate the use of direct oral anticoagulants (DOACs) over warfarin. Their use is also licenced for the treatment of pulmonary embolism and deep vein thrombosis. DOACs have superior efficacy in stroke reduction, reduced rates of intracranial haemorrhage and improved overall mortality. DOACs are safer, easier to use and don't require monitoring.

Aims We sought to describe changes in prescriptions for anticoagulants over the 20 years from 1998-2018 and to describe the financial implications of the shift away from warfarin.

Methods We conducted a comprehensive nationwide retrospective study. Data were obtained from the Prescription Cost Analysis system, which holds information on every prescription dispensed in the community in England, covering a population of more than 50 million people. We obtained data for warfarin, dabigatran, rivaroxaban, apixaban and edoxaban from 1998 to 2018.

Results There was a linear increase in warfarin prescriptions from 1998 to 2014 but this plateaued in 2015. Thereafter there has been a linear decrease in prescriptions for warfarin. Conversely, total prescriptions for all DOACs combined has increased exponentially in the same time frame and for the first time, there were more prescriptions for DOACs than warfarin in 2018 (9.3 million prescriptions for DOACs vs. 8.2 million prescriptions for warfarin). Rivaroxaban and Apixaban



Abstract 65 Figure 1

are the most commonly prescribed DOACs by a significant margin. In 2018 the cost of prescriptions for all DOACs combined was £458.6 million compared to £8.9 million for warfarin prescriptions.

Conclusion In 2016 prescriptions for warfarin fell for the first time in 18 years. Within 2 years, DOAC prescriptions have surpassed warfarin prescriptions and warfarin use has continued to decline. This trend has a financial cost in terms of prescriptions with spending on DOACs being 50-fold more than those of warfarin in 2018. The additional cost of warfarin, however, includes anticoagulation clinics and there is no data available to suggest that there has been a reduction in the number of anticoagulation clinics in line with the reduction in warfarin use. Despite this increased cost, the overall safety benefits, ease of use and lack of monitoring supports the continued use of DOACs and there seems no reason to think these trends are likely to change in the near future.

Conflict of Interest nil

66 ULTRA-HIGH DENSITY ELECTROANATOMIC MAPPING AND LOCAL IMPEDANCE-GUIDED ABLATION: A MORE ACCURATE AND EFFICIENT ABLATION STRATEGY FOR CAVOTRICUSPID ISTHMUS DEPENDENT ATRIAL FLUTTER?

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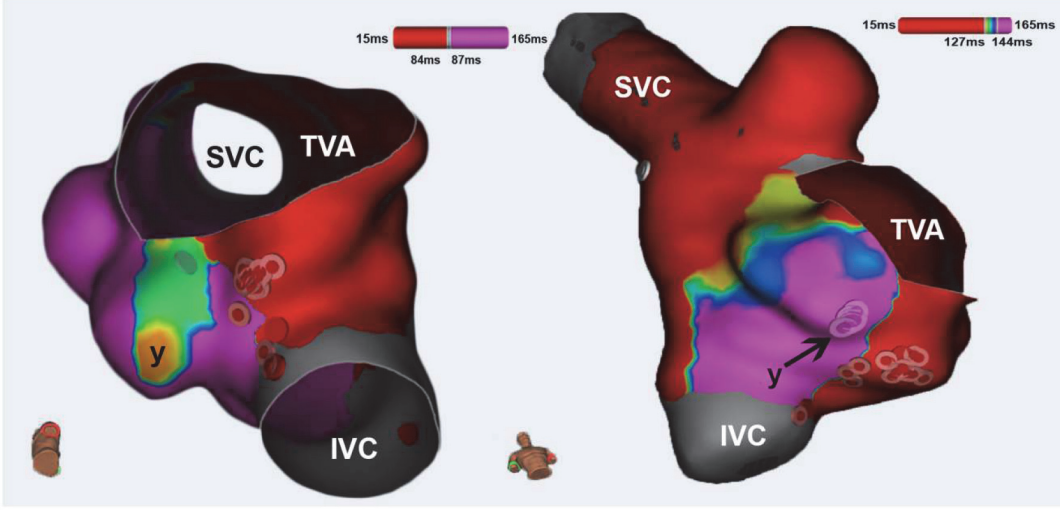
Background . Radiofrequency ablation (RFA) of CTI dependent atrial flutter (CTI-AFL) is conventionally performed under fluoroscopic guidance, or alternatively with 3D mapping and contact force (CF) catheters. Ultra-high density mapping (UHDm) and local impedance (LI) guided ablation have not yet been evaluated for this indication.

Methods . An observational study comparing conventional, CF and LI-guided ablation of CTI-AFL to understand whether LI offers superior ablation metrics and UHDm allows accurate identification of breakthrough after initial RFA.

Retrospective analysis of consecutive CTI-AFL cases was performed. Irrigated RFA was used in all groups. Contact was determined in the CF group with target >9 g and in the LI group with patient-specific LI. Target LI drop of -20 ohms was used to determine effective lesion formation. Standard generator impedance was used for the conventional group. Power was limited to 40-50W in all groups. In the LI group, if the CTI was not blocked after initial ablation, UHDm was used to identify breakthrough. Mean RFA time, time to CTI block, number of lesions required to achieve block, acute procedural success and complications were analysed with ANOVA. Breakthrough points were manually assessed.

Results . Data is presented for 27 patients; 7 conventional, 10 CF and 10 LI. Mean RFA time was 6, 5.8, 3.2min respectively (p=0.0227). Significant differences also seen with LI vs Fluo (p=0.0194), LI vs CF (p=0.0164). Time from first application of RF to block was 22.8, 20.4, 14.2 min (p=ns). No significant difference was seen in the number of lesions



Abstract 66 Figure 1 A) Left lateral caudal view of CTI line following failure to demonstrate bi-directional isthmus block. UHD mapping shows EEB away from the line (point 'y'); B) Right anterior oblique caudal view of ablation line following further RFA of EEB site (pink lesions at point 'y') resulting in bi-directional CTI block