

Atrial fibrillation patterns are associated with arrhythmia progression and clinical outcomes

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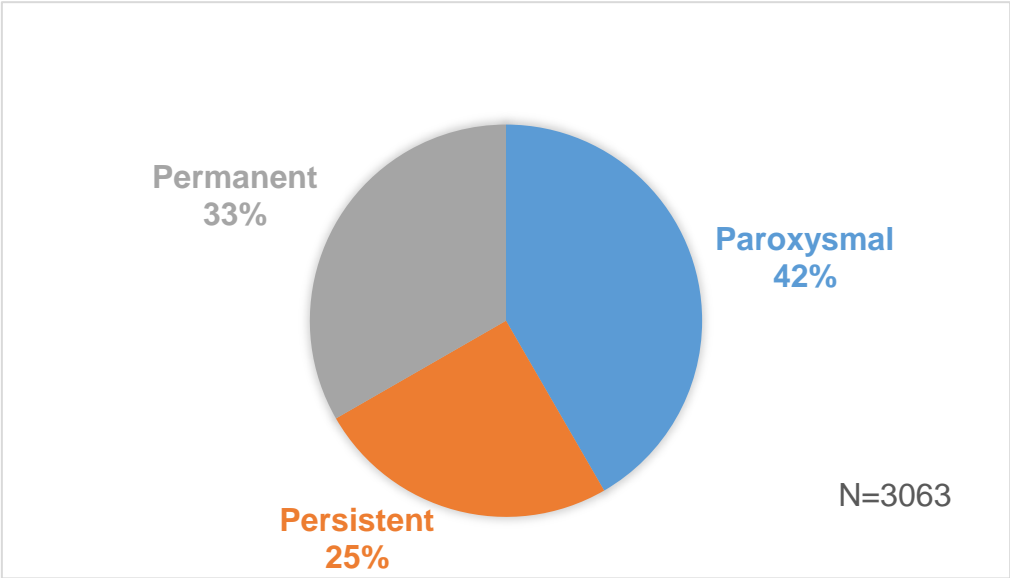
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Supplementary Material

Atrial Fibrillation Patterns are associated with arrhythmia progression and clinical outcomes

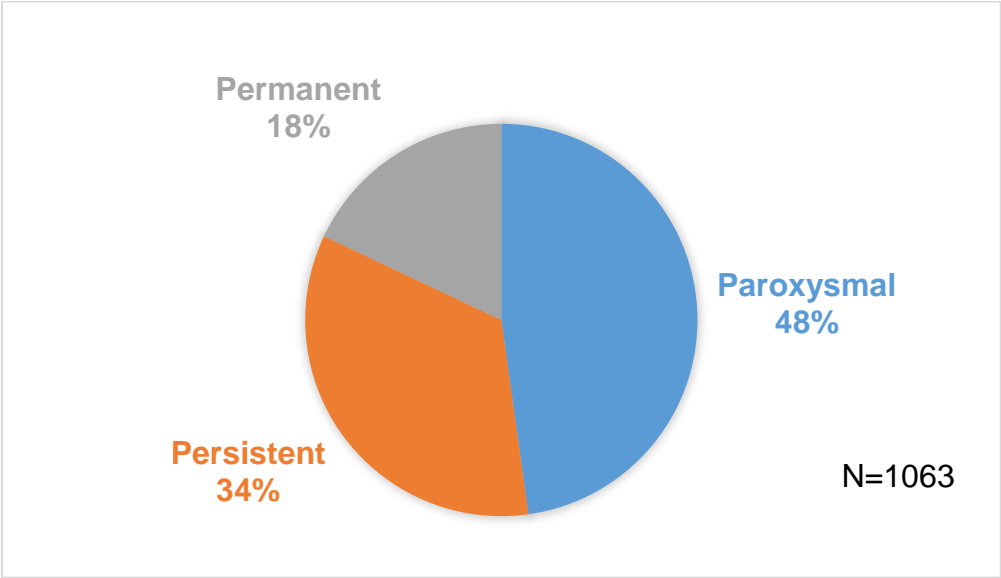
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Supplementary Figure 1. Distribution of atrial fibrillation types in percent for A) the total PREFER in AF Prolongation sample and B) for patients with atrial fibrillation duration <1year. The distribution in the PREFER in AF registry is shown for C) the total cohort and for D) patients with atrial fibrillation duration <1 year. Data are provided on patients with information on AF type at baseline and follow-up.

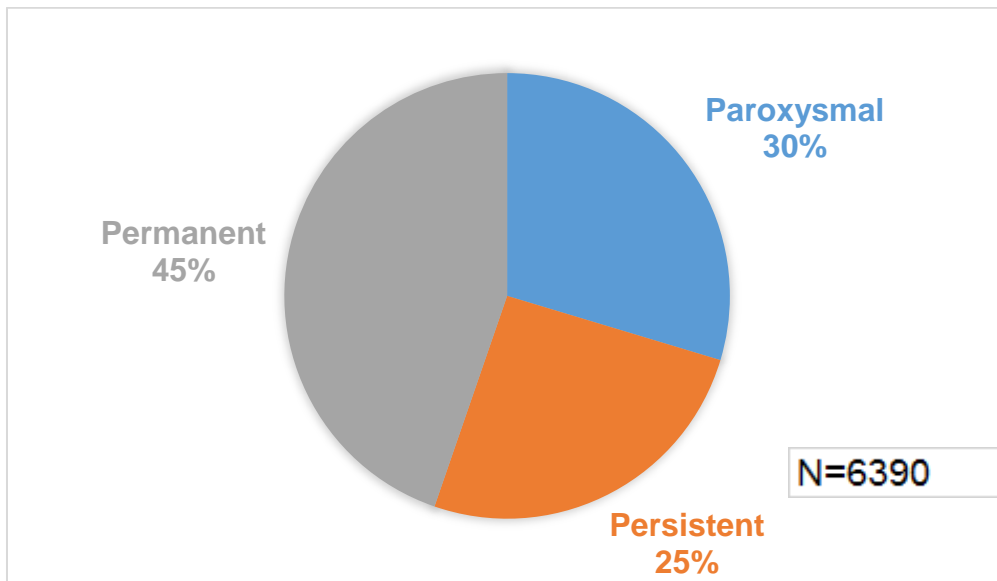


A)

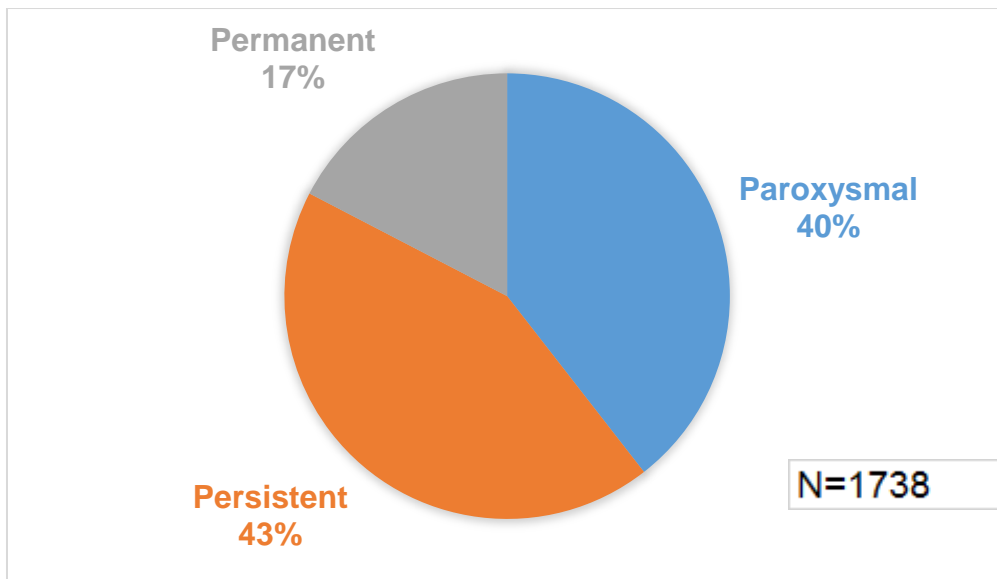
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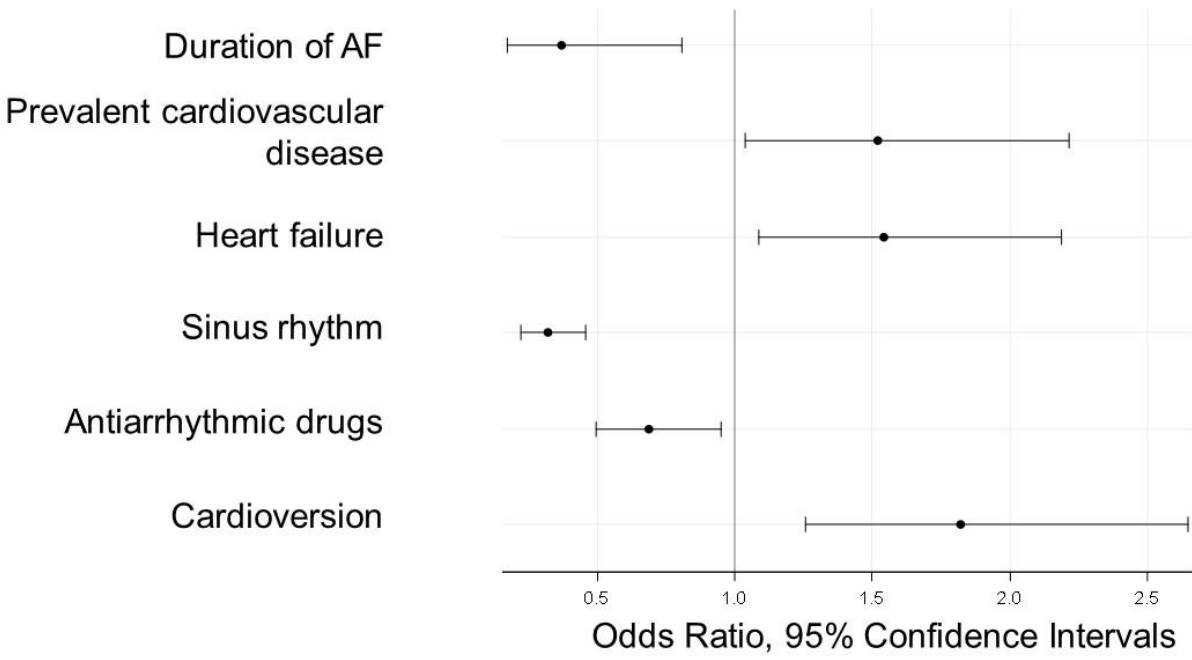
C)



D)



Supplementary Figure 2. Logistic stepwise selection model for predictors of atrial fibrillation progression in the PREFER in AF Prolongation study in patients with AF duration <1 year. Data are based on N=1063 patients Odds ratios and 95% confidence intervals per 1 year increase in AF duration or for the condition present, The continuous variable atrial fibrillation entered analyses logarithmically transformed ($\log(1+\text{atrial fibrillation duration in years})$). Cardioversion indicates cardioversion in the last 12 months. Prevalent cardiovascular disease incorporates coronary heart disease, peripheral arterial disease and myocardial infarction.



Supplementary Table 1. Baseline characteristics of patients in PREFER in AF by AF type

Variables	Paroxysmal N=1895	Persistent N=1638	Permanent N=2857
Age, years (SD)	68.9±11.4	70.2±10.6	74.4±9.0
Women, N (%)	817 (43.1)	618 (37.7)	1101 (38.5)
Body mass index, kg/m ² (SD)	27.7±4.9	28.2±5.2	28.0±4.9
Systolic blood pressure, mm Hg (SD)	132±17	130±17	132±16
Heart rate, bpm (SD)	77.9±19.3	83.2±19.3	78.9±15.2
Atrial fibrillation duration, years	1.3 (0.3, 4.8)	0.7 (0.2, 3.4)	4.9 (1.9, 9.3)
Arterial hypertension, N (%)	1293 (68.7)	1138 (69.9)	2215 (77.9)
Ever smoking, N (%)	696 (38.7)	622 (40.2)	1079 (40.4)
Alcohol abuse, N (%)	37 (2.0)	44 (2.7)	82 (2.9)
Diabetes mellitus, N (%)	321 (17.0)	314 (19.4)	784 (27.6)
Dyslipidaemia, N (%)	794 (42.9)	677 (42.4)	1302 (46.6)
Prevalent cardiovascular disease, N (%)	430 (23.2)	367 (23.1)	862 (30.8)
Prevalent heart failure, N (%)	331 (17.9)	414 (26.2)	1056 (38.0)
History of ischemic stroke/TIA/other ischemic-thromboembolic event, N (%)	238 (12.7)	180 (11.2)	541 (19.1)
Chronic renal insufficiency, N (%)	194 (10.4)	178 (11.1)	470 (16.9)
Chronic hepatic disease, N (%)	31 (1.6)	38 (2.4)	56 (2.0)
Hyperthyroidism, N (%)	79 (4.2)	80 (5.0)	106 (3.8)
Chronic obstructive pulmonary disease, N (%)	144 (7.7)	190 (11.8)	391 (13.8)
Major gastrointestinal/cerebrovascular/ other bleeding events, N (%)	72 (3.8)	57 (3.5)	137 (4.8)
Heart valve dysfunction, N (%)	567 (30.3)	590 (36.7)	1317 (46.7)
Sinus rhythm, N (%)	1382 (73.3)	566 (34.8)	-
Antiarrhythmic drugs, N (%)	1384 (73.0)	1099 (67.1)	1363 (47.7)
Cardioversion in the last 12 months, N (%)	822 (43.5)	862 (52.6)	417 (14.6)

Mean±standard deviation (SD) or median (25th/75th percentile) for skewed data are provided for continuous variables, number and percent for discrete values.

Prevalent cardiovascular disease indicates coronary heart disease, peripheral arterial disease and myocardial infarction.

TIA stands for transient ischemic attack.

Supplementary Table 2. Logistic regression analysis for atrial fibrillation type in relation to

one-year outcomes in PREFER in AF

Outcome	Odds ratio	95% Confidence interval		P value
Stroke/TIA/arterial embolism, N=138				
Persistent vs. PAF	1.13	0.73	1.75	0.57
	0.90	0.58	1.40	0.64
Permanent vs. PAF	0.87	0.58	1.30	0.49
	0.69	0.47	1.07	0.09
Heart failure*, N=160				
Persistent vs. PAF	1.86	1.21	2.87	<0.001
	1.66	1.07	2.57	0.02
Permanent vs. PAF	1.72	1.15	2.57	0.01
	1.45	0.97	2,20	0.08
Coronary event, N=153				
Persistent vs. PAF	1.10	0.71	1.71	0.66
	1.00	0.64	1.57	0.99
Permanent vs. PAF	1.12	0,76	1.65	0.55
	0.85	0.57	1.27	0.43
Major bleeding, N=179				
Persistent vs. PAF	0.77	0.49	1.19	0.24
	0.74	0.47	1.16	0.19
Permanent vs. PAF	1.23	0.87	1.74	0.24
	1.04	0.73	1.50	0.84

*Patients with heart failure at baseline were excluded from analyses (N=1801).
The upper row model is unadjusted. The lower row model is age-, sex- and country-adjusted.

Supplementary Table 3. Logistic regression analysis for predictors of progression of atrial fibrillation from PAF to non-paroxysmal AF over one year in PREFER in AF Prolongation

Variable	Odds ratio	95% Confidence interval	P value	
Age	1.00	0.98	1.02	0.72
	0.99	0.97	1.01	0.47
Body mass index	1.02	0.99	1.06	0.22
	1.02	0.98	1.06	0.29
Systolic blood pressure	1.00	0.99	1.01	0.98
	1.00	0.99	1.01	0.97
Heart rate	1.00	0.99	1.01	0.13
	1.00	0.99	1.01	0.15
Atrial fibrillation duration	0.99	0.95	1.03	0.57
	1.00	0.96	1.04	0.87
Arterial Hypertension	1.09	0.71	1.70	0.69
	1.06	0.67	1.66	0.81
Ever smoking	0.95	0.64	1.40	0.79
	1.10	0.72	1.68	0.67
Alcohol abuse	0.27	0.04	1.99	0.20
	0.38	0.05	2.84	0.35
Diabetes mellitus	1.61	1.07	2.43	0.02
	1.50	0.99	2.28	0.06
Dyslipidaemia	1.15	0.79	1.67	0.47
	1.11	0.76	1.62	0.60
Prevalent cardiovascular disease	1.18	0.76	1.81	0.46
	1.08	0.69	1.69	0.75
Prevalent heart failure	1.13	0.77	1.66	0.50
	1.214	0.83	1.77	0.32
Stroke/ TIA/ thromboembolism	0.98	0.60	1.62	0.94
	0.98	0.59	1.63	0.94
Chronic renal insufficiency	0.69	0.42	1.13	0.14
	0.72	0.43	1.19	0.20
Chronic hepatic disease	2.21	0.48	10.21	0.31
	1.79	0.38	8.38	0.46
Hyperthyroidism	2.17	0.99	4.73	0.05
	1.90	0.88	4.10	0.09
Chronic obstructive pulmonary disease	0.89	0.44	1.80	0.75

Supplementary Table 3. Logistic regression analysis for predictors of progression of atrial fibrillation from PAF to non-paroxysmal AF over one year in PREFER in AF Prolongation

Variable	Odds ratio	95% Confidence interval	P value	
	0.86	0.42	1.75	0.67
Major bleeding	0.52	0.16	1.69	0.28
	0.54	0.17	1.78	0.31
Heart valve dysfunction	1.50	1.04	2.17	0.03
	1.46	1.03	2.08	0.04
Sinus rhythm	0.87	0.60	1.26	0.47
	0.89	0.61	1.31	0.56
Antiarrhythmic drugs	0.91	0.69	1.20	0.62
	0.92	0.67	1.26	0.67
Cardioversion	0.92	0.60	1.40	0.70
	0.99	0.64	1.53	0.95

Odds ratios are per one unit increase for continuous variables or for the condition present for dichotomous variables. The upper row model is unadjusted. The lower row model is age-, sex- and country-adjusted.

Supplementary Table 4. Logistic stepwise selection model for predictors of AF progression in the PREFER in AF Prolongation study excluding sinus rhythm.

Variable	Odds ratio	95% Confidence interval		P value
Duration of atrial fibrillation	0.77	0.68	0.87	<0.001
Diabetes	1.26	1.00	1.59	0.05
Heart failure	1.35	1.07	1.70	0.01
Hyperthyroidism	1.75	1.09	2.83	0.02
Cardioversion	1.19	0.95	1.50	0.13
Heart Valve Dysfunction	1.35	1.09	1.68	0.01

Odds ratios and 95% confidence intervals are provided per standard deviation (duration of atrial fibrillation) or presence of the condition. The continuous variable atrial fibrillation entered analyses logarithmically transformed ($\log(1+\text{atrial fibrillation duration in years})$). Cardioversion indicates cardioversion in the last 12 months.

Supplementary Table 5. Logistic regression analyses for non-paroxysmal atrial fibrillation versus PAF in relation to one-year outcomes in PREFER in AF Prolongation

Outcome	Odds ratio	95% Confidence interval		P value
Stroke/TIA/arterial embolism, N=49				
Non-paroxysmal vs. PAF	1.38	0.70	2.72	0.32
	1.08	0.53	2.20	0.78
Heart failure*, N=75				
Non-paroxysmal vs. PAF	1.60	0.91	2.81	0.08
	1.51	0.84	2.71	0.16
Coronary event, N=50				
Non-paroxysmal vs. PAF	0.68	0.36	1.28	0.17
	0.62	0.30	1.27	0.16
Major bleeding, N=62				
Non-paroxysmal vs. PAF	1.61	0.90	2.88	0.09
	1.40	0.75	2.61	0.23

*Patients with heart failure at baseline were excluded from analyses (N=797).

The upper row model is unadjusted. The lower row model is age-, sex- and country-adjusted. PAF stands for paroxysmal atrial fibrillation.