



Differences in Clinical Outcomes with Rhythm and Rate Control Therapies for Atrial Fibrillation in the RecordAF Registry

A. John Camm

REgistry on **C**ardiac rhythm dis**ORD**ers:
an international, observational, prospective
survey assessing the control of
Atrial **F**ibrillation



Background

- The results of AFFIRM, and other rate versus rhythm trials suggest that there is no advantage of rhythm control over rate control for the treatment of atrial fibrillation with respect to major cardiovascular outcomes
- However, randomized controlled trials often do not fully represent real life situations
- Registry data may be of value to complement information derived from randomized controlled trials
- The RecordAF Registry was established to trace the influence of the physician's choice of a rate versus rhythm control strategy for consecutive patients with first onset or recent recurrent atrial fibrillation



RecordAF Registry - Enrolment

- ⌘ Real-life International, observational, prospective, longitudinal cohort study from 2007 to 2009
- ⌘ Evaluate management and clinical outcomes in recently diagnosed AF patients over 1 year



21 countries, 532 randomly chosen general cardiologists sites
n=5604 eligible pts included from May 2007 to April 2008



RecordAF Registry - Design

⌘ Main Inclusion criteria

- Age \geq 18 years
- History of atrial fibrillation <1 year
- In sinus rhythm or in atrial fibrillation
- Eligible for pharmacological treatment of AF

⌘ Main Exclusion criteria:

- “Permanent” AF
- AF due to a transient cause
- Post-operative AF



Two endpoints at 12 months

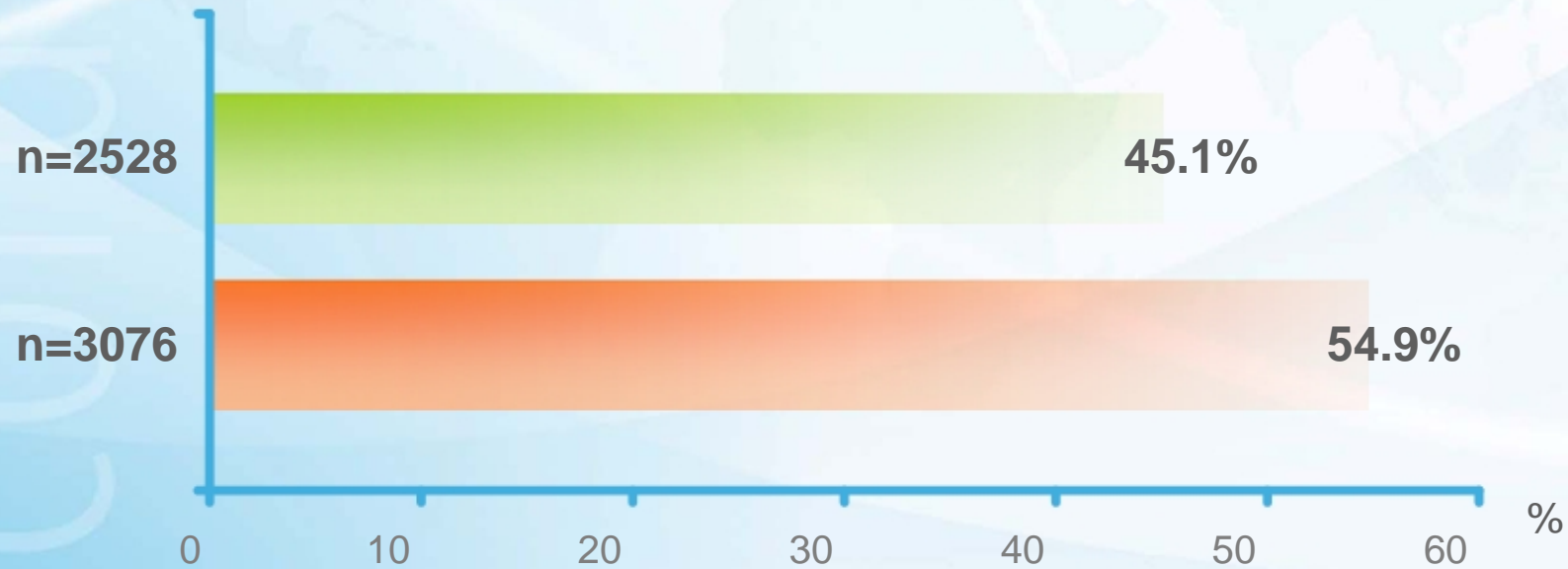
- Rate of therapeutic success of AF management (SR or at rate control target + no major CV event + no strategy switch)
- Rate of major CV events (CV death, myocardial Infarction, stroke, TIA leading to hospitalization, hospitalization or prolongation of hospitalization (arrhythmic or pro-arrhythmic events, other CV events, major complications of ablative procedure))



Choice of Strategy at Baseline by Cardiologists

n=5604

- Rate control strategy
- Rhythm control strategy





Baseline Demographics and AF Status

Variable	Rhythm control strategy n=3076	Rate control strategy n=2528	p-value
Age (years), mean (SD)	64 (12.0)	67 (11.6)	<0.001
Gender			
Male	57%	58%	0.75
Body mass index (kg/m ²), mean (SD)	28.6 (5.3)	28.3 (5.7)	0.008
Seated systolic blood pressure (mm Hg), mean (SD)	133.5 (18.9)	132.3 (20.0)	0.02
Seated diastolic blood pressure (mm Hg), mean (SD)	79.7 (10.9)	79.5 (11.5)	0.51
Resting heart rate (bpm), mean (SD)	76.6 (20.9)	80.6 (19.1)	<0.001



RecordAF Registry - Follow-up

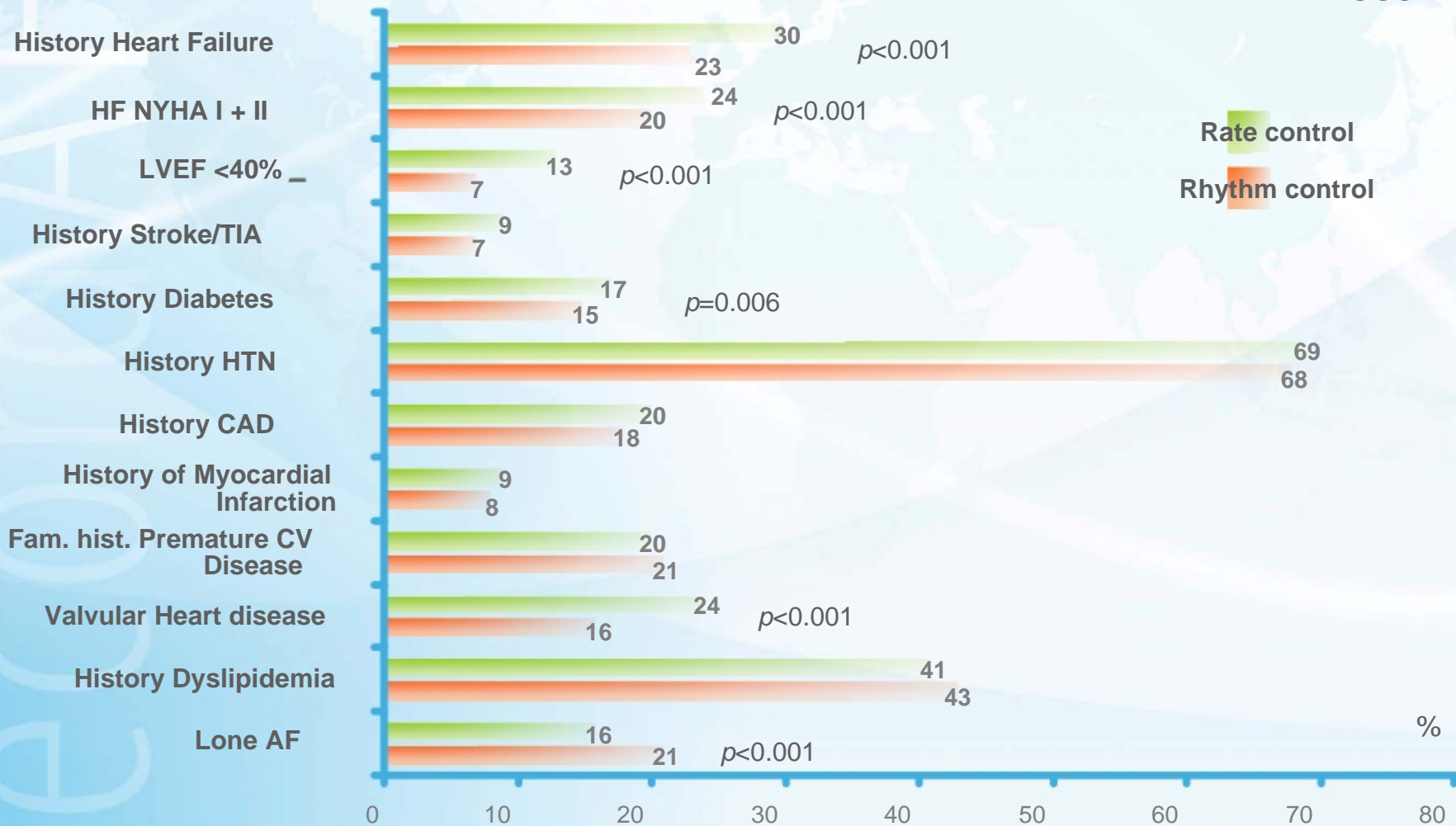


*44 patients (0.8%) had a 6 months F-U only but had a change in strategy or a clinical event by 6 months



Baseline Demographics and Co-morbidities

n=5604

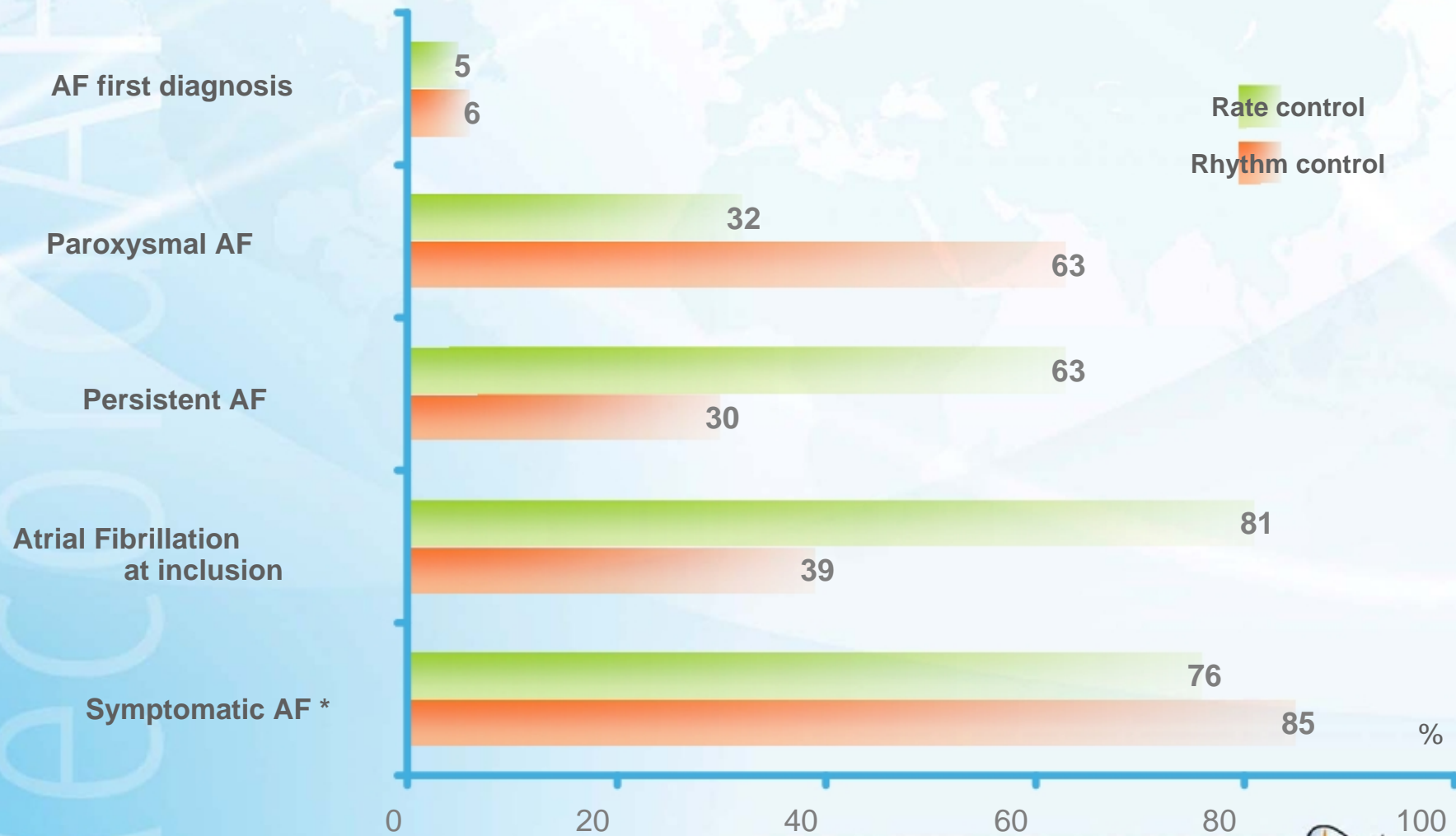


*p value compares the percentage of the condition between rhythm control vs. rate control



Clinical Presentation of AF at Baseline

n=5604



* Recorded at the time of baseline visit or during the previous year



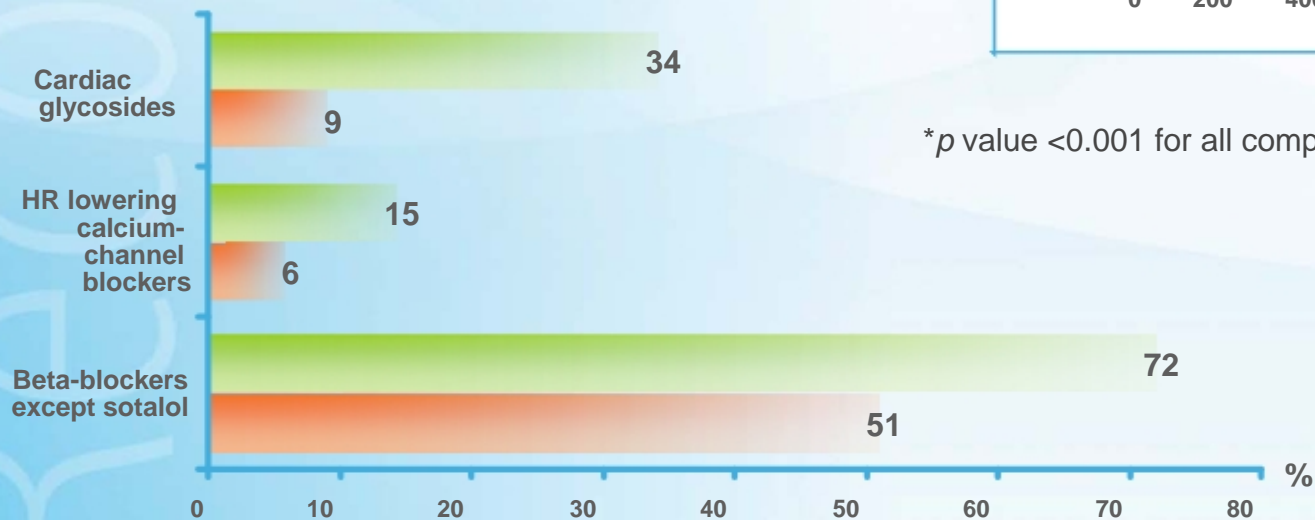
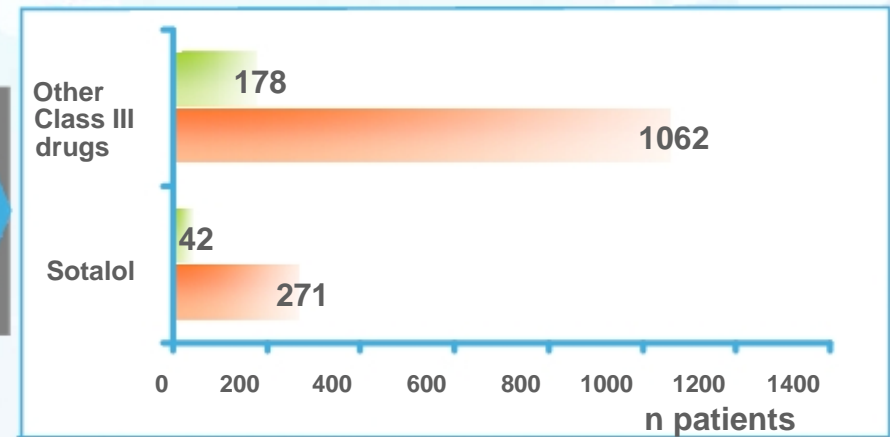
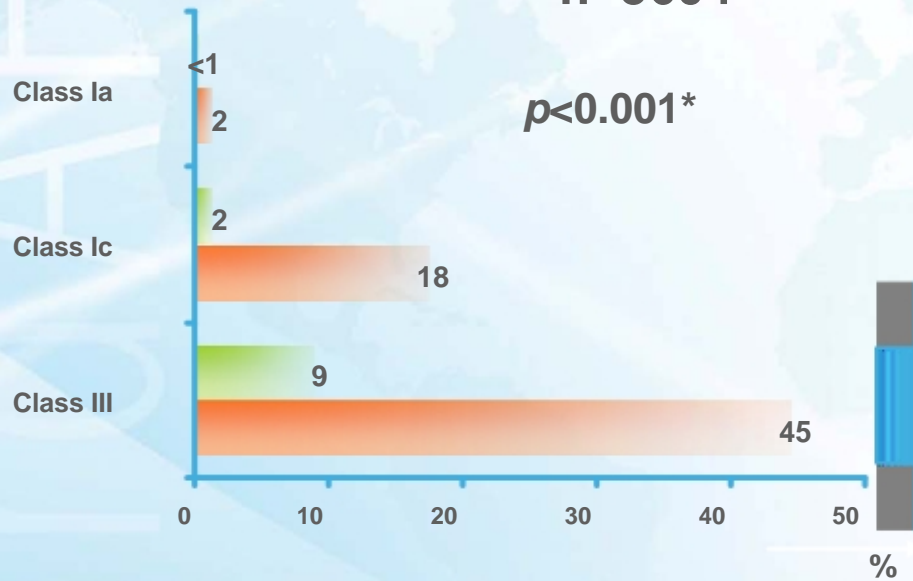
Baseline Medication

n=5604

p<0.001*

Rate control strategy selected

Rhythm control strategy selected



*p value <0.001 for all comparisons



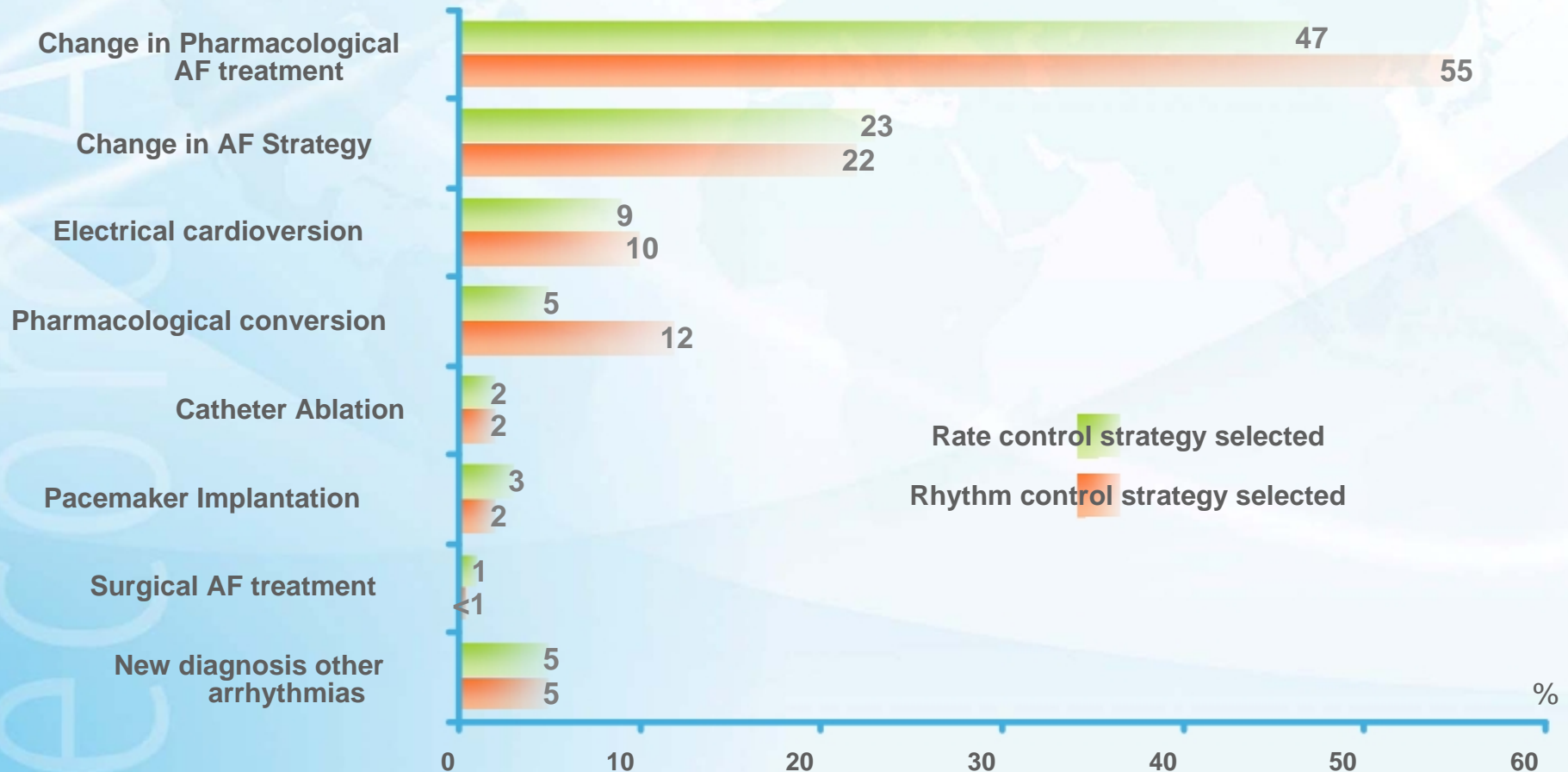
AF Status at 1 Year

Rhythm Status	Rhythm control n=2879 %	Rate control n=2292 %
Sinus rhythm at the visit	81	33
Paroxysmal AF	70	30
Persistent AF	17	16
Permanent AF	13	54
Symptoms at the time of the visit	21	20



Strategies and Treatment Modifications between Baseline and 1 year

n=5171





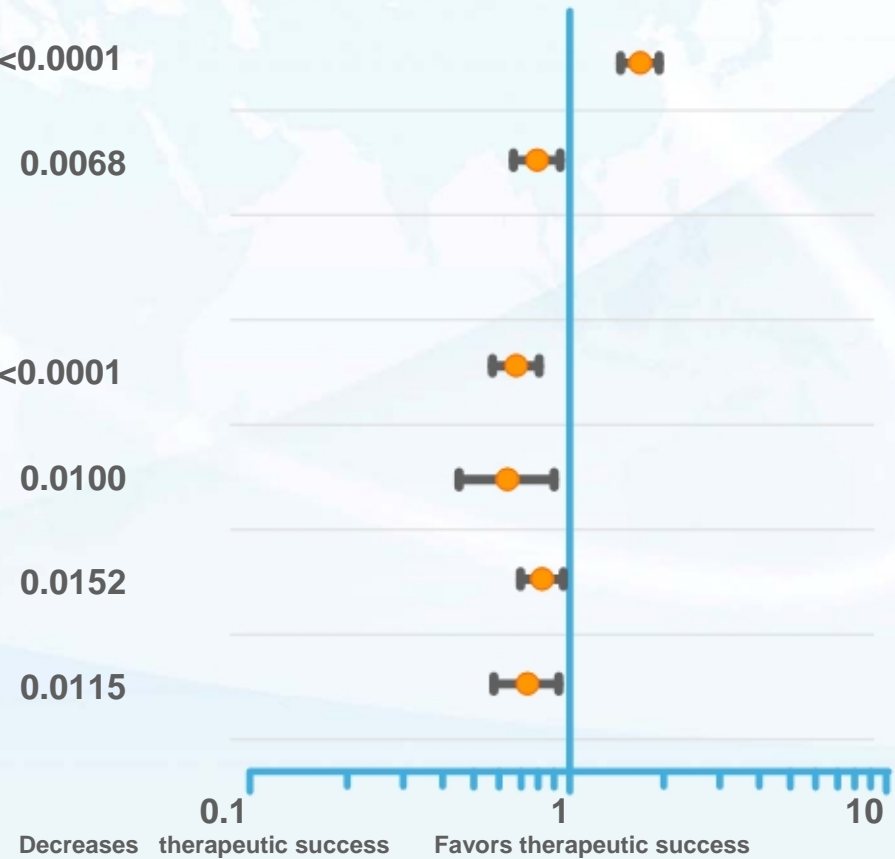
1st Primary Endpoint Therapeutic Success at 1 year

Therapeutic Success	Rhythm control n=2879 %	Rate control n=2292 %	p-value
Therapeutic success	60	47	p<0.001
Control of AF	81	74	
No change in strategy between baseline and 1 year	78	77	
No clinical outcome between baseline and 1 year	83	82	



Multivariate Analysis of Baseline Prognostic Factors for Therapeutic Success

Parameters	Odds ratio	95% Confidence Interval	p-value
Strategy (rhythm vs. rate)	1.67	1.45-1.91	<0.0001
CAD	0.79	0.67-0.94	0.0068
Heart failure:			
I+II vs. No HF	0.68	0.57-0.80	<0.0001
III+IV vs. No HF	0.64	0.45-0.90	0.0100
Age >75	0.82	0.70-0.96	0.0152
Prior stroke/TIA	0.74	0.58-0.93	0.0115





2nd Primary Endpoint Clinical Outcomes at 1 year

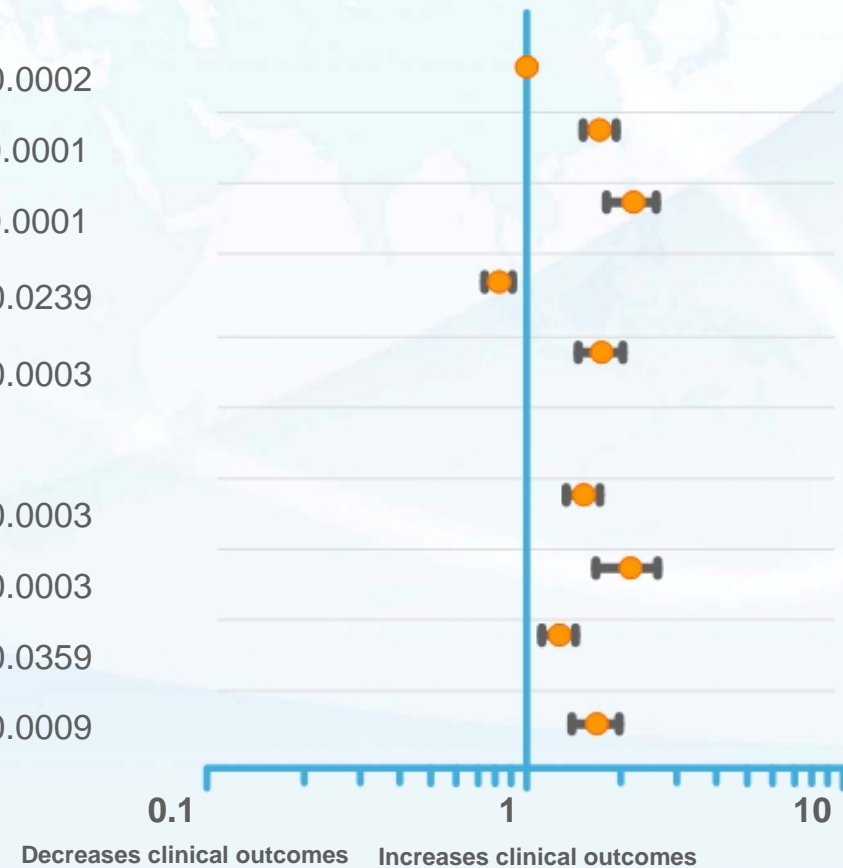
Clinical Events	Rhythm control n=2879 %	Rate control n=2292 %
Any clinical event	17	18
CV death	1	3
Stroke or TIA	2	3
Myocardial infarction	1	1
Hospitalization or prolongation of hospitalization for arrhythmia or pro-arrhythmia	11	7
Hospitalization or prolongation of hospitalization for other CV events or interventions:	7	9
Congestive heart failure	2	5
Unstable angina	1	2
Other	4	4
Hospitalization or prolongation of hospitalization for major complications of ablative procedure	1	1
Hospitalization for CV event		
Yes	17	17

p- value = 0.35



Multivariate Analysis of Baseline Prognostic Factors for Clinical Outcomes

Parameters	Odds ratio	95% Confidence Interval	p-value
Heart rate (for 1 bpm increase)	1.009	1.004-1.01	0.0002
CAD	1.69	1.37-2.08	<0.0001
Renal disease	2.11	1.54-2.89	<0.0001
Duration of AF (\geq 3 months vs. <3 months)	0.82	0.69-0.97	0.0239
Symptoms	1.68	1.27-2.24	0.0003
Heart failure:			
I+II vs. No HF	1.49	1.20-1.85	0.0003
III+IV vs. No HF	2.03	1.38-2.99	0.0003
Age >75	1.26	1.02-1.55	0.0359
Prior stroke/TIA	1.63	1.22-2.17	0.0009





RecordAF Registry - Conclusions

- ⌘ In a cardiology setting rhythm control was preferred (55%)
- ⌘ AF progressed more rapidly to a permanent status at 1 year with rate control (54%) than with rhythm control (13%)
- ⌘ Therapeutic success was achieved more frequently in patients treated by rhythm control (60% vs. 47%), driven by 81% in SR in the rhythm control group and 74% at HR target of ≤ 80 bpm at 1 year in the rate control group
- ⌘ The high occurrence of CV clinical events was dependent on co-morbidity rather than the choice of strategy
- ⌘ In real life, the better success of AF management with rhythm control did not translate into better outcomes
- ⌘ These results confirm and complement results from previous controlled randomized trials