ADVANCES IN CARDIAC ARRHYTHMIAS
and
GREAT INNOVATIONS IN CARDIOLOGY
XXIX GIORNATE CARDIOLOGICHE TORINESI

TURIN
27-28
OCTOBER
2017

ESC guidelines on atrial fibrillation management: what's new

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Disclosures:

St. Jude Medical (now Abbott)

Biosense Webster

New 2016 ESC Guidelines: Atrial fibrillation

2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS

The Task Force for the management of atrial fibrillation of the European Society of Cardiology (ESC)

Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC

Endorsed by the European Stroke Organisation (ESO)

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Detection

The NEW ENGLAND JOURNAL of MEDICINE

2012

ORIGINAL ARTICLE

Subclinical Atrial Fibrillation and the Risk of Stroke

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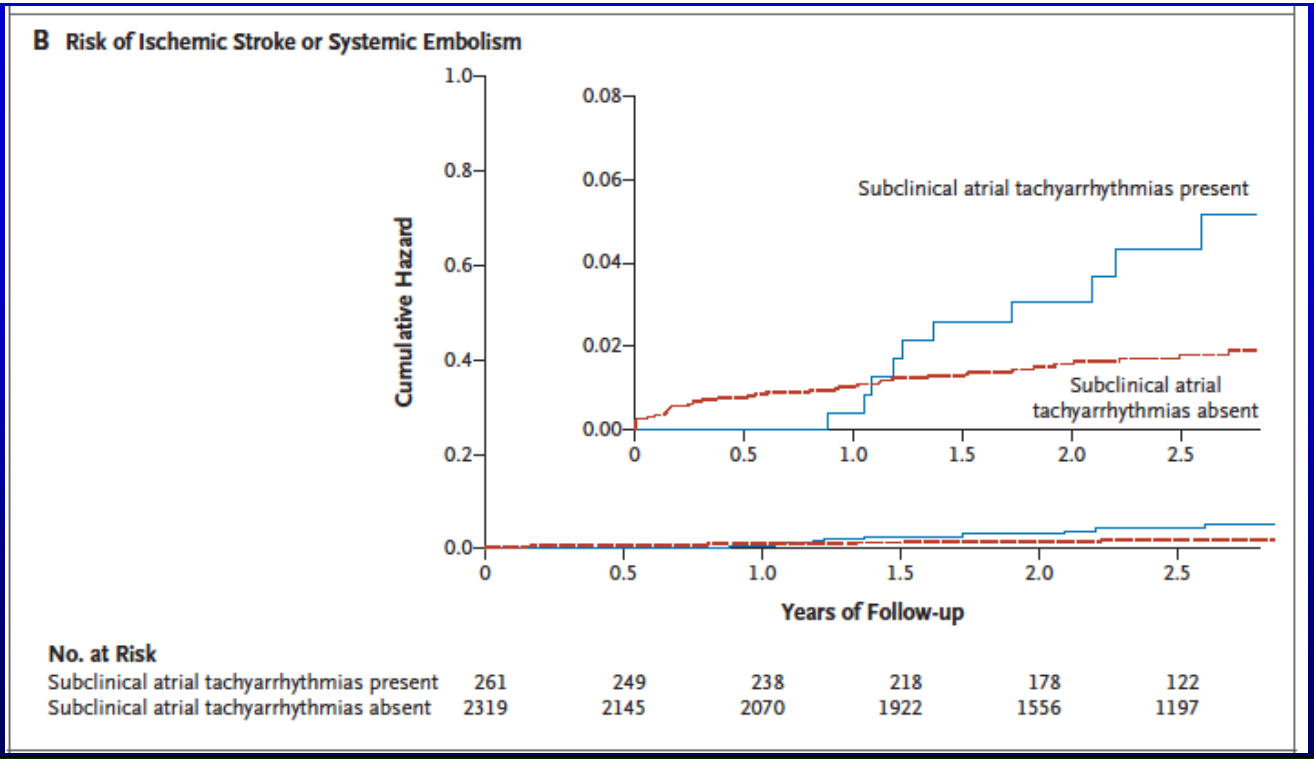

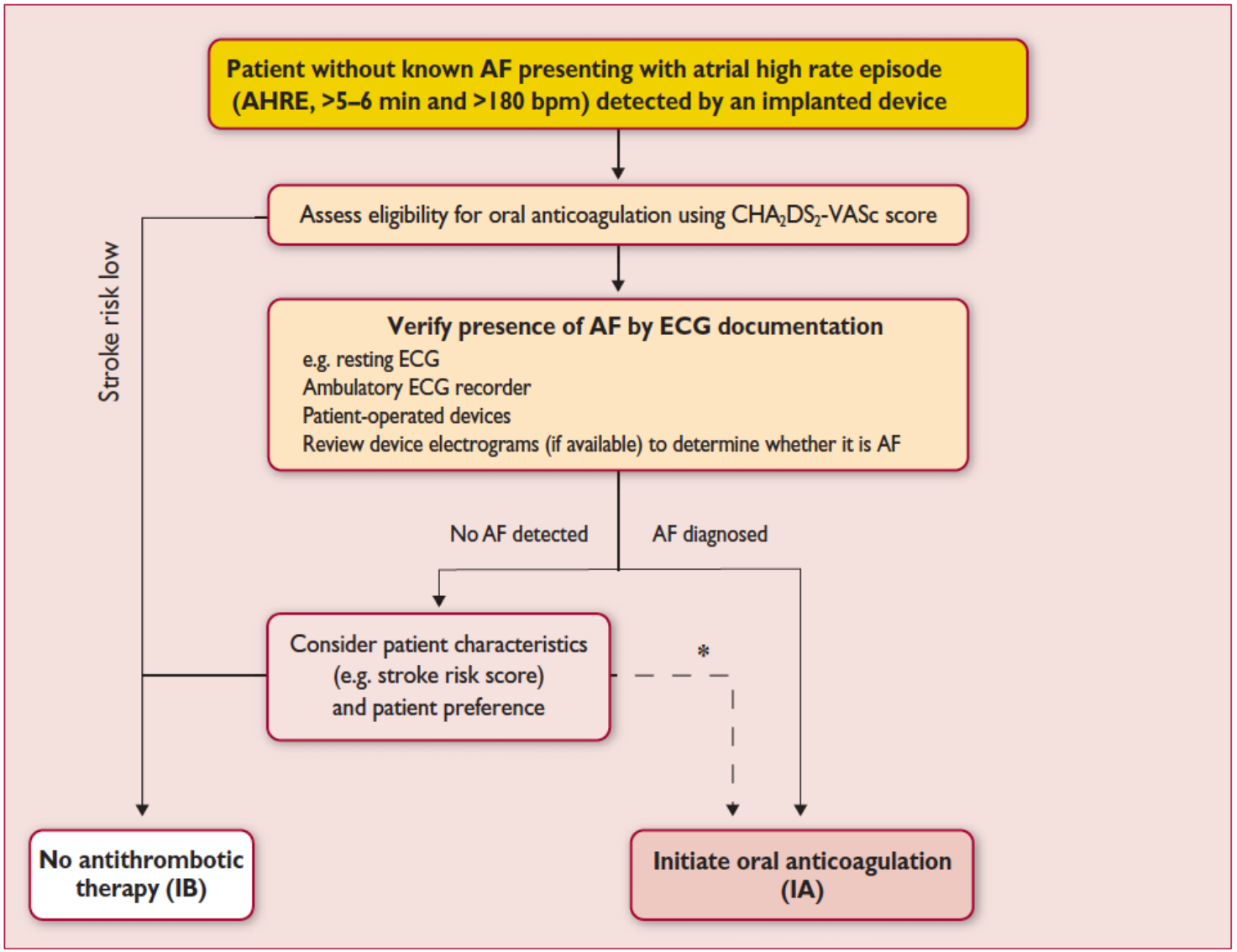

AF = atrial fibrillation; AFNET = German Competence NETwork on Atrial Fibrillation; AHRE = atrial high rate episodes; bpm = beats per minute; CHA_2DS_2-VASc = Congestive Heart failure, hypertension, Age ≥75 (doubled), Diabetes, Stroke (doubled), Vascular disease, Age 65–74, and Sex (female); ECG = electrocardiogram; EHRA = European Heart Rhythm Association.

*In rare individual circumstances, oral anticoagulation may be considered in patients with AHRE, but without diagnosed AF. This clearly needs discussion with the patient and careful evaluation of perceived benefit and risk.

[a]Adapted from the report of the 3rd AFNET/EHRA consensus conference.[150]

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JUNE 26, 2014 VOL. 370 NO. 26

Atrial Fibrillation in Patients with Cryptogenic Stroke

David J. Gladstone, M.D., Ph.D., Melanie Spring, M.D., Paul Dorian, M.D., Val Panzov, M.D., Kevin E. Thorpe, M.Math., Judith Hall, M.Sc., Haris Vaid, B.Sc., Martin O'Donnell, M.B., Ph.D., Andreas Laupacis, M.D., Robert Côté, M.D., Mukul Sharma, M.D., John A. Blakely, M.D., Ashfaq Shuaib, M.D., Vladimir Hachinski, M.D., D.Sc., Shelagh B. Coutts, M.B., Ch.B., M.D., Demetrios J. Sahlas, M.D., Phil Teal, M.D., Samuel Yip, M.D., J. David Spence, M.D., Brian Buck, M.D., Steve Verreault, M.D., Leanne K. Casaubon, M.D., Andrew Penn, M.D., Daniel Selchen, M.D., Albert Jin, M.D., David Howse, M.D., Manu Mehdiratta, M.D., Karl Boyle, M.B., B.Ch., Richard Aviv, M.B., Ch.B., Moira K. Kapral, M.D., and Muhammad Mamdani, Pharm.D., M.P.H., for the EMBRACE Investigators and Coordinators*

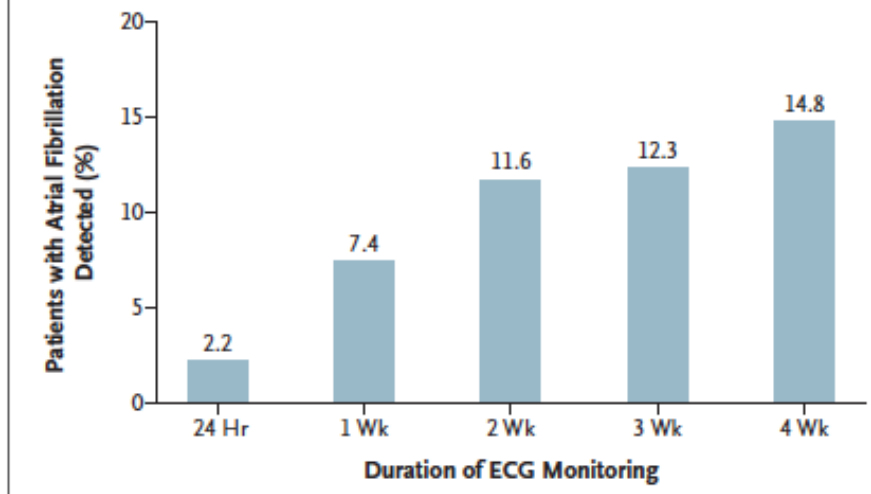

Figure 2. Incremental Yield of Prolonged ECG Monitoring for the Detection of Atrial Fibrillation in Patients with Cryptogenic Stroke or TIA.

Screening for atrial fibrillation: recommendations

Recommendations	Class[a]	Level[b]	Ref[c]
Opportunistic screening for AF is recommended by pulse taking or ECG rhythm strip in patients >65 years of age.	I	B	130, 134, 155
In patients with TIA or ischaemic stroke, screening for AF is recommended by short-term ECG recording followed by continuous ECG monitoring for at least 72 hours.	I	B	27, 127
It is recommended to interrogate pacemakers and ICDs on a regular basis for atrial high rate episodes (AHRE). Patients with AHRE should undergo further ECG monitoring to document AF before initiating AF therapy.	I	B	141, 156
In stroke patients, additional ECG monitoring by long-term non-invasive ECG monitors or implanted loop recorders should be considered to document silent atrial fibrillation.	IIa	B	18, 128
Systematic ECG screening may be considered to detect AF in patients aged >75 years, or those at high stroke risk.	IIb	B	130, 135, 157

Classification

Journal of the American College of Cardiology
© 2014 by the American College of Cardiology Foundation
Published by Elsevier Inc.

Vol. 63, No. 25, 2014
ISSN 0735-1097/$36.00
http://dx.doi.org/10.1016/j.jacc.2014.04.019

Heart Rhythm Disorders

Clinical Classifications of Atrial Fibrillation Poorly Reflect Its Temporal Persistence

Insights From 1,195 Patients Continuously Monitored With Implantable Devices

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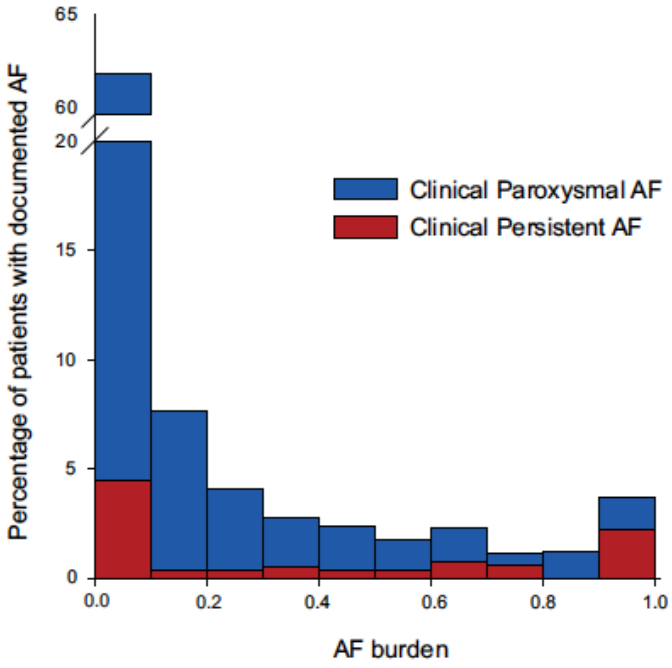


Figure 1 Distribution of AF Burden in Patients With Documented AF According to the Clinical AF Classification

Atrial fibrillation “patterns”

GL 2010/2012

(1) Every patient who presents with AF for the first time is considered a patient with **first diagnosed AF**, irrespective of the duration of the arrhythmia or the presence and severity of AF-related symptoms.

(2) **Paroxysmal AF** is self-terminating, usually within 48 h. Although AF paroxysms may continue for up to 7 days, the 48 h time point is clinically important—after this the likelihood of spontaneous conversion is low and anticoagulation must be considered (see Section 4.1).

(3) **Persistent AF** is present when an AF episode either lasts longer than 7 days or requires termination by cardioversion, either with drugs or by direct current cardioversion (DCC).

(4) **Long-standing persistent AF** has lasted for ≥1 year when it is decided to adopt a rhythm control strategy.

(5) **Permanent AF** is said to exist when the presence of the arrhythmia is accepted by the patient (and physician). Hence, rhythm control interventions are, by definition, not pursued in patients with permanent AF. Should a rhythm control strategy be adopted, the arrhythmia is redesignated as ‘long-standing persistent AF’.

GL 2016

Table 5 Patterns of atrial fibrillation

AF pattern	Definition
First diagnosed AF	AF that has not been diagnosed before, irrespective of the duration of the arrhythmia or the presence and severity of AF-related symptoms.
Paroxysmal AF	Self-terminating, in most cases within 48 hours. Some AF paroxysms may continue for up to 7 days.[a] AF episodes that are cardioverted within 7 days should be considered paroxysmal.[a]
Persistent AF	AF that lasts longer than 7 days, including episodes that are terminated by cardioversion, either with drugs or by direct current cardioversion, after 7 days or more.
Long-standing persistent AF	Continuous AF lasting for ≥1 year when it is decided to adopt a rhythm control strategy.
Permanent AF	AF that is accepted by the patient (and physician). Hence, rhythm control interventions are, by definition, not pursued in patients with permanent AF. Should a rhythm control strategy be adopted, the arrhythmia would be re-classified as ‘long-standing persistent AF’.

Risk factors

Detection and management of risk factors and concomitant cardiovascular diseases

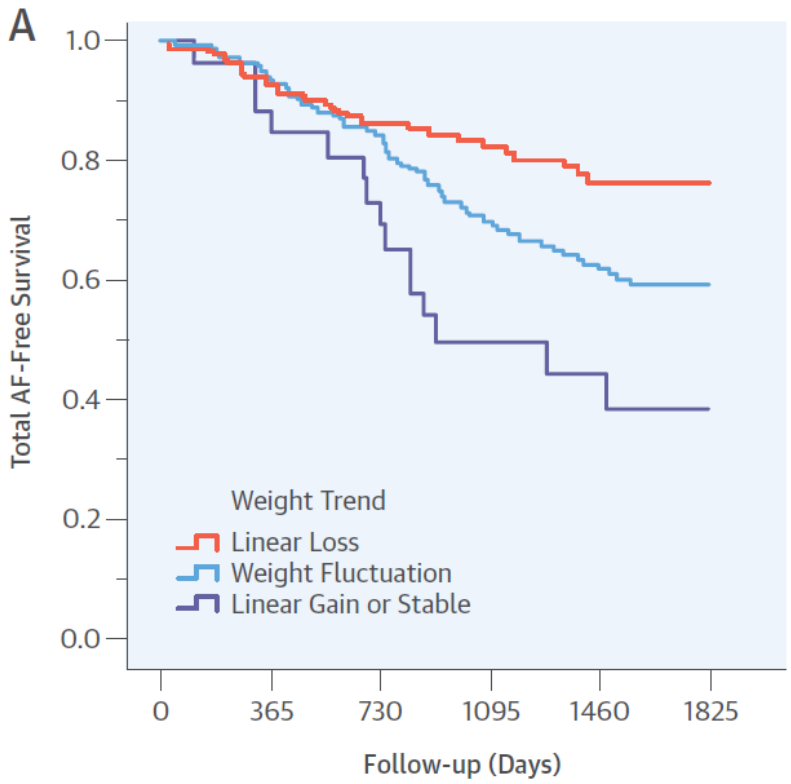
Characteristic/comorbidity	Association with AF
Genetic predisposition (based on multiple common gene variants associated with AF)[64]	HR range 0.4–3.2
Older age[19] 50–59 years 60–69 years 70–79 years 80–89 years	HR: 1.00 (reference) 4.98 (95% CI 3.49–7.10) 7.35 (95% CI 5.28–10.2) 9.33 (95% CI 6.68–13.0)
Hypertension (treated) vs. none[19]	HR 1.32 (95% CI 1.08–1.60)
Heart failure vs. none[19]	HR 1.43 (95% CI 0.85–2.40)
Valvular heart disease vs. none[205]	RR 2.42 (95% CI 1.62–3.60)
Myocardial infarction vs. none[19]	HR 1.46 (95% CI 1.07–1.98)
Thyroid dysfunction[206,207] Hypothyroidism Subclinical hyperthyroidism Overt hyperthyroidism	(reference: euthyroid) HR 1.23 (95% CI 0.77–1.97) RR 1.31 (95% CI 1.19–1.44) RR 1.42 (95% CI 1.22–1.63)
Obesity[19,208] None (BMI <25 kg/m^2) Overweight (BMI 25–30 kg/m^2) Obese (BMI ≥31 kg/m^2)	HR: 1.00 (reference) 1.13 (95% CI 0.87–1.46) 1.37 (95% CI 1.05–1.78)
Diabetes mellitus vs. none[19]	HR 1.25 (95% CI 0.98–1.60)
Chronic obstructive pulmonary disease[209] FEV1 ≥80% FEV1 60–80% FEV1 <60%	RR: 1.00 (reference) 1.28 (95% CI 0.79–2.06) 2.53 (95% CI 1.45–4.42)
Obstructive sleep apnoea vs. none[210]	HR 2.18 (95% CI 1.34–3.54)
Chronic kidney disease[211] None Stage 1 or 2 Stage 3 Stage 4 or 5	OR: 1.00 (reference) 2.67 (95% CI 2.04–3.48) 1.68 (95% CI 1.26–2.24) 3.52 (95% CI 1.73–7.15)
Smoking[212] Never Former Current	HR: 1.00 (reference) 1.32 (95% CI 1.10–1.57) 2.05 (95% CI 1.71–2.47)
Alcohol consumption[213] None 1–6 drinks/week 7–14 drinks/week 15–21 drinks/week >21 drinks/week	RR: 1.00 (reference) 1.01 (95% CI 0.94–1.09) 1.07 (95% CI 0.98–1.17) 1.14 (95% CI 1.01–1.28) 1.39 (95% CI 1.22–1.58)
Habitual vigorous exercise[214] Non-exercisers <1 day/week 1–2 days/week 3–4 days/week 5–7 days/week	RR: 1.00 (reference) 0.90 (95% CI 0.68–1.20) 1.09 (95% CI 0.95–1.26) 1.04 (95% CI 0.91–1.19) 1.20 (95% CI 1.02–1.41)

Long-Term Effect of Goal-Directed Weight Management in an Atrial Fibrillation Cohort

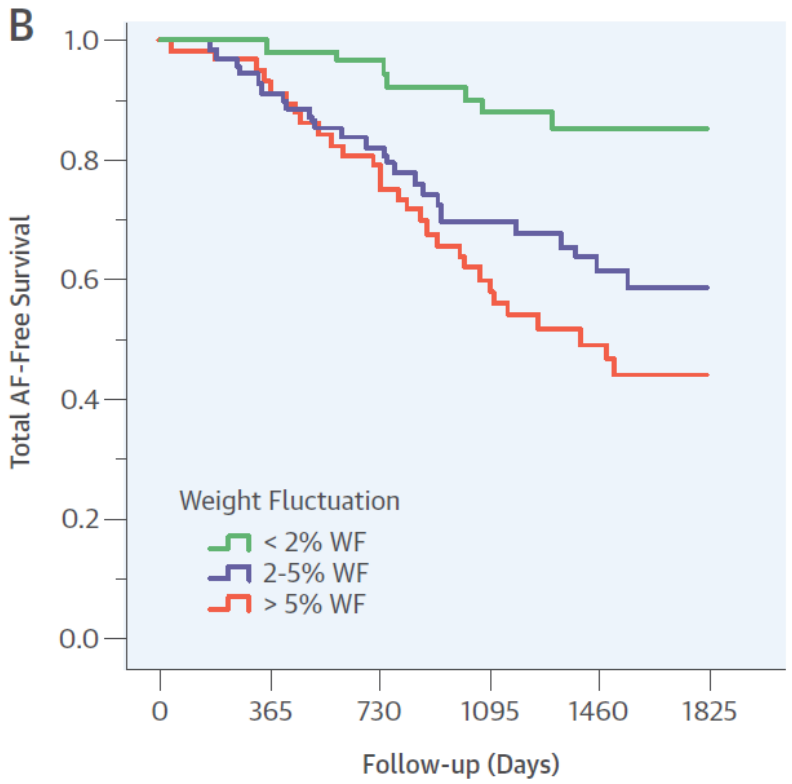
A Long-Term Follow-Up Study (LEGACY)

Rajeev K. Pathak, MBBS,* Melissa E. Middeldorp,* Megan Meredith,* Abhinav B. Mehta, MAcrSt,† Rajiv Mahajan, MD, PhD,* Christopher X. Wong, MBBS, PhD,*‡ Darragh Twomey, MBBS,* Adrian D. Elliott, PhD,*§ Jonathan M. Kalman, MBBS, PhD,¶ Walter P. Abhayaratna, MBBS, PhD,# Dennis H. Lau, MBBS, PhD,* Prashanthan Sanders, MBBS, PhD*

2015



Time (Days)	0	365	730	1095	1460	1825
Linear Loss	141	130	122	80	52	29
Fluctuation	179	165	140	99	71	44
Linear Gain	24	20	18	12	8	5



Time (Days)	0	365	730	1095	1460	1825
< 2% WF	54	52	49	39	33	19
2-5% WF	68	62	54	39	27	15
> 5% WF	57	53	45	31	19	14

Recommendation for obese patients with atrial fibrillation

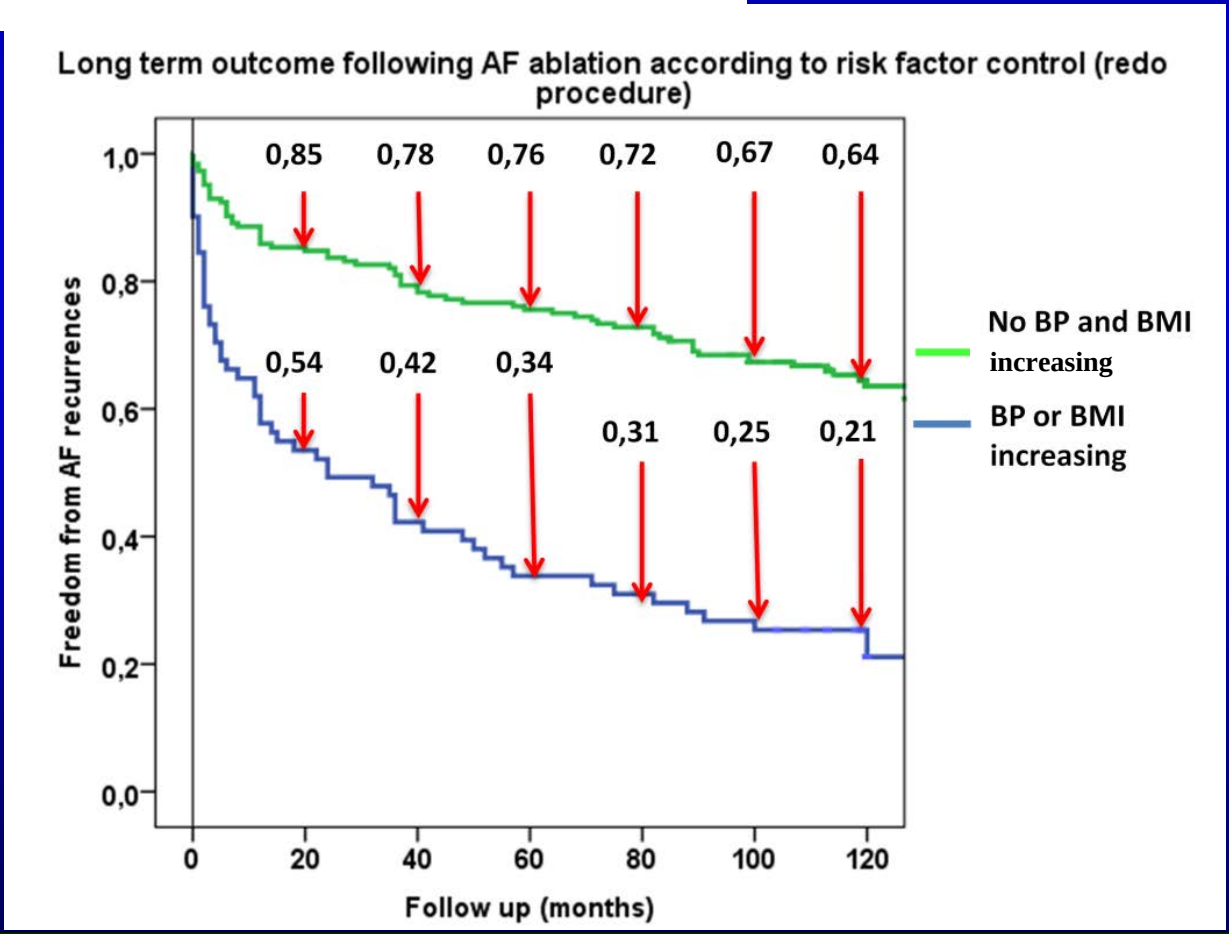
Recommendation	Class[a]	Level[b]	Ref[c]
In obese patients with AF, weight loss together with management of other risk factors should be considered to reduce AF burden and symptoms.	IIa	B	204, 288, 296

Europace (2017) 0, 1–8
doi:10.1093/europace/eux008

CLINICAL RESEARCH

Very long-term outcome following transcath-eter ablation of atrial fibrillation. Are results maintained after 10 years of follow up?

Fiorenzo Gaita[1]*, Marco Scaglione[2], Alberto Battaglia[1], Mario Matta[1], Cristina Gallo[1], Michela Galatà[1], Domenico Caponi[2], Paolo Di Donna[2], and Matteo Anselmino[1]



Europace 2017

Management

Antithrombotic therapy in AF patient

OPEN ACCESS

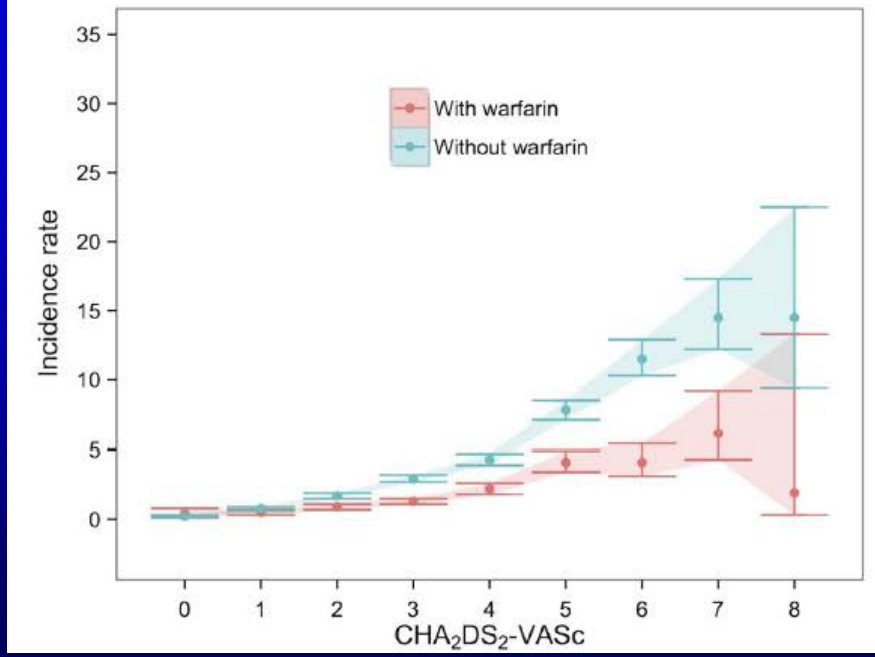
ORIGINAL ARTICLE

Net clinical benefit of warfarin in individuals with atrial fibrillation across stroke risk and across primary and secondary care

Victoria Allan, Amitava Banerjee, Anoop Dinesh Shah, Riyaz Patel, Spiros Denaxas, Juan-Pablo Casas, Harry Hemingway

Heart 2016

Male



Female

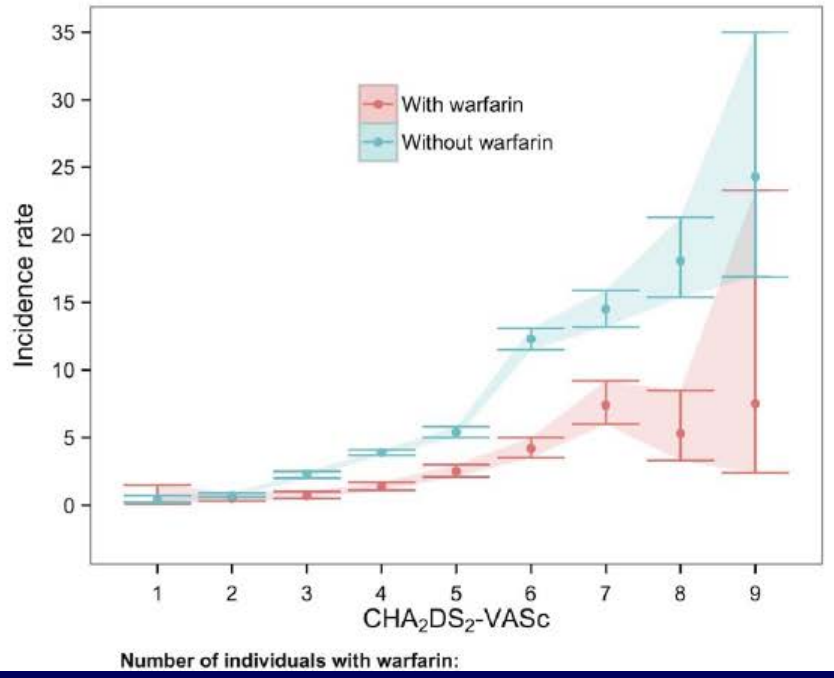
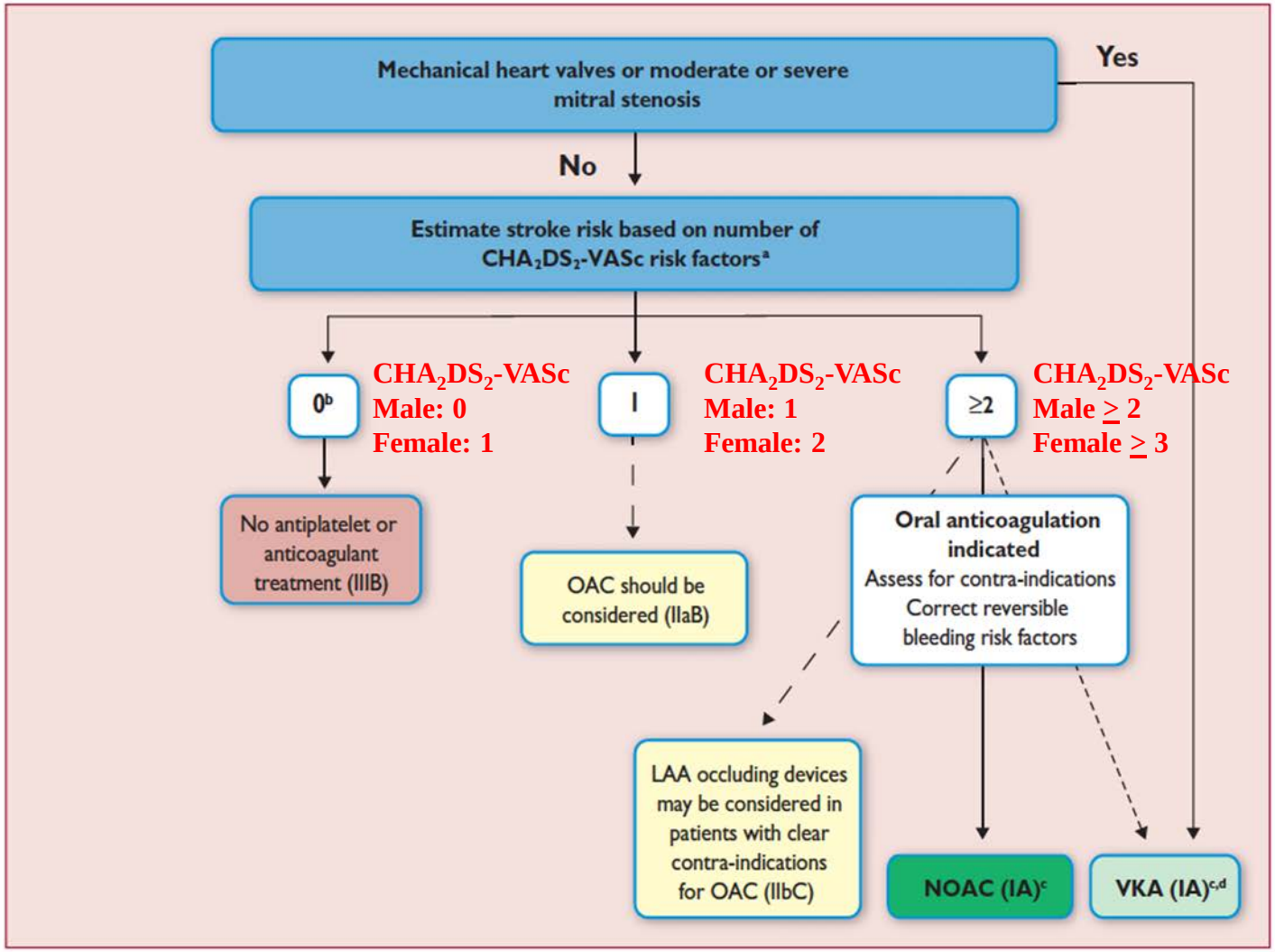


Table 3 Incidence rates (95% CIs) per 100 person-years of ischaemic stroke by CHA_2DS_2-VASC scores, sex and use of warfarin

	With warfarin		Without warfarin			Population overall	
	Events	Rate	Events	Rate	p Value	Events	Rate
CHA_2DS_2-VASc scores							
Overall population							
0	7	0.4 (0.2 to 0.8)	21	0.2 (0.1 to 0.3)	0.23	28	0.2 (0.2 to 0.4)
1	27	0.4 (0.3 to 0.7)	126	0.7 (0.6 to 0.8)	0.03	153	0.6 (0.5 to 0.7)
2	87	0.8 (0.7 to 1.0)	366	1.4 (1.3 to 1.6)	0.00	453	1.2 (1.1 to 1.3)
3	144	1.0 (0.9 to 1.2)	869	2.6 (2.5 to 2.8)	0.00	1013	2.2 (2.0 to 2.3)
4	226	1.7 (1.5 to 2.0)	1447	4.0 (3.8 to 4.2)	0.00	1673	3.4 (3.2 to 3.6)
5	233	3.2 (2.8 to 3.6)	1183	6.2 (5.8 to 6.5)	0.00	1416	5.3 (5.1 to 5.6)
6	159	4.2 (3.6 to 4.8)	1201	12.1 (11.4 to 12.8)	0.00	1360	9.9 (9.4 to 10.4)
7	111	7.1 (5.9 to 8.6)	581	14.5 (13.4 to 15.7)	0.00	692	12.4 (11.5 to 13.4)
8	18	4.8 (3.0 to 7.6)	167	17.6 (15.1 to 20.5)	0.00	185	14.0 (12.1 to 16.2)
9	3	7.5 (2.4 to 23.3)	29	24.3 (16.9 to 35.0)	0.03	32	20.1 (14.2 to 28.4)
0–9	**1015**	**1.7 (1.6 to 1.8)**	**5990**	**3.8 (3.7 to 3.9)**	**0. 00**	**7005**	**3.2 (3.2 to 3.3)**
Men							
0	7	0.4 (0.2 to 0.8)	21	0.2 (0.1 to 0.3)	0.23	28	0.2 (0.2 to 0.4)
1	25	0.5 (0.3 to 0.7)	112	0.8 (0.6 to 0.9)	0.01	137	0.7 (0.6 to 0.8)
2	75	0.9 (0.7 to 1.1)	306	1.7 (1.5 to 1.9)	0.00	381	1.5 (1.3 to 1.6)
3	106	1.3 (1.1 to 1.5)	550	2.9 (2.7 to 3.2)	0.00	656	2.4 (2.2 to 2.6)
4	119	2.2 (1.8 to 2.6)	489	4.3 (3.9 to 4.7)	0.00	608	3.6 (3.3 to 3.9)
5	122	4.1 (3.4 to 4.9)	491	7.8 (7.1 to 8.5)	0.00	613	6.6 (6.1 to 7.1)
6	51	4.1 (3.1 to 5.4)	312	11.5 (10.3 to 12.9)	0.00	363	9.2 (8.3 to 10.1)
7	27	6.1 (4.3 to 9.2)	129	14.5 (12.2 to 17.3)	0.00	156	11.9 (10.1 to 13.9)
8	1	1.9 (0.3 to 13.3)	20	14.5 (9.4 to 22.5)	0.01	21	11.0 (7.2 to 16.8)
0–8	**533**	**1.6 (1.4 to 1.7)**	**2430**	**2.9 (2.8 to 3.1)**	**0.00**	**2963**	**2.5 (2.4 to 2.6)**
Women							
1	2	0.4 (0.1 to 1.5)	14	0.4 (0.2 to 0.7)	0.97	16	0.4 (0.3 to 0.7)
2	12	0.5 (0.3 to 0.9)	60	0.7 (0.6 to 0.9)	0.24	72	0.7 (0.5 to 0.8)
3	38	0.7 (0.5 to 1.0)	319	2.3 (2.0 to 2.5)	0.00	357	1.8 (1.6 to 2.0)
4	107	1.4 (1.1 to 1.7)	958	3.9 (3.7 to 4.1)	0.00	1065	3.3 (3.1 to 3.5)
5	111	2.5 (2.1 to 3.0)	692	5.4 (5.0 to 5.8)	0.00	803	4.7 (4.4 to 5.0)
6	108	4.2 (3.5 to 5.0)	889	12.3 (11.5 to 13.1)	0.00	997	10.2 (9.5 to 10.8)
7	84	7.4 (6.0 to 9.2)	452	14.5 (13.2 to 15.9)	0.00	536	12.6 (11.6 to 13.7)
8	17	5.3 (3.3 to 8.5)	147	18.1 (15.4 to 21.3)	0.00	164	14.5 (12.4 to 16.9)
9	3	7.5 (2.4 to 23.3)	29	24.3 (16.9 to 35.0)	0.03	32	20.1 (14.2 to 28.4)
1–9	**482**	**2.0 (1.8 to 2.1)**	**3560**	**4.8 (4.6 to 4.9)**	**0.00**	**4042**	**4.1 (3.9 to 4.2)**



AF = atrial fibrillation; LAA = left atrial appendage; NOAC = non-vitamin K antagonist oral anticoagulant; OAC = oral anticoagulation; VKA = vitamin K antagonist.

[a]Congestive heart failure, Hypertension, Age ≥75 years (2 points), Diabetes, prior Sstroke/TIA/embolus (2 points), Vascular disease, age 65–74 years, female Sex.

[b]Includes women without other stroke risk factors.

[c]IIaB for women with only one additional stroke risk factor.

[d]IB for patients with mechanical heart valves or mitral stenosis.

Antitrombotic therapy in AF patient: 2016 vs 2010/recommendations

GL 2010/2012

In patients with a CHA_2DS_2-VASc score of 0 (i.e., aged <65 years with lone AF) who are at low risk, with none of the risk factors, no antithrombotic therapy is recommended.	I	B	21, 36, 82
In patients with a CHA_2DS_2-VASc score ≥2, OAC therapy with: • adjusted-dose VKA (INR 2–3); or • a direct thrombin inhibitor (dabigatran); or • an oral factor Xa inhibitor (e.g. rivaroxaban, apixaban)[d] … is recommended, unless contraindicated.	I	A	3, 4, 70, 82
In patients with a CHA_2DS_2-VASc score of 1, OAC therapy with • adjusted-dose VKA (INR 2–3); or • a direct thrombin inhibitor (dabigatran); or • an oral factor Xa inhibitor (e.g. rivaroxaban, apixaban)[d] …. should be considered, based upon an assessment of the risk of bleeding complications and patient preferences.	IIa	A	33, 44
Female patients who are aged <65 and have lone AF (but still have a CHA_2DS_2-VASc score of 1 by virtue of their gender) are low risk and no antithrombotic therapy should be considered.	IIa	B	33, 44

GL 2016

Recommendations	Class[a]	Level[b]	Ref[c]
Oral anticoagulation therapy to prevent thromboembolism is recommended for all male AF patients with a CHA_2DS_2-VASc score of 2 or more.	I	A	38, 318–321, 354, 404
Oral anticoagulation therapy to prevent thromboembolism is recommended in all female AF patients with a CHA_2DS_2-VASc score of 3 or more.	I	A	38, 318–321, 354, 404
Oral anticoagulation therapy to prevent thromboembolism should be considered in male AF patients with a CHA_2DS_2-VASc score of 1, considering individual characteristics and patient preferences.	IIa	B	371, 375–377
Oral anticoagulation therapy to prevent thromboembolism should be considered in female AF patients with a CHA_2DS_2-VASc score of 2, considering individual characteristics and patient preferences.	IIa	B	371, 376, 377

Rhythm control

Rhythm control

"Although many clinicians believe that maintaining sinus rhythm can improve outcomes in AF patients, all trials that have compared rhythm control and rate control to rate control alone (with appropriate anticoagulation) have resulted in neutral outcomes.Whether modern rhythm control management involving catheter ablation, combination therapy, and early therapy leads to a reduction in major cardiovascular events is currently under investigation, e.g. in the EAST – AFNET 4 (Early treatment of Atrial fibrillation for Stroke prevention Trial) and CABANA (Catheter Ablation vs. Anti-arrhythmic Drug Therapy for Atrial Fibrillation Trial) trials. For now, rhythm control therapy is indicated to improve symptoms in AF patients who remain symptomatic on adequate rate control therapy."

General recommendations			
Rhythm control therapy is indicated for symptom improvement in patients with AF.	I	B	120, 586, 601
Management of cardiovascular risk factors and avoidance of AF triggers should be pursued in patients on rhythm control therapy to facilitate maintenance of sinus rhythm.	IIa	B	203, 204, 296, 312
With the exception of AF associated with haemodynamic instability, the choice between electrical and pharmacological cardioversion should be guided by patient and physician preferences.	IIa	C	

Rhythm control by drugs

Drug	Route	1st dose	Follow-up dose	Risks	Reference
Flecainide	Oral IV	200–300 mg 1.5–2 mg/kg over 10 min	N/A	Hypotension, atrial flutter with 1:1 conduction, QT prolongation. Avoid in patients with IHD and/or significant structural heart disease.	595, 598
Amiodarone	IV[a]	5–7 mg/kg over 1–2 hours	50 mg/hour to a maximum of 1.0 g over 24 hours	Phlebitis, hypotension, bradycardia/AV block. Will slow ventricular rate. Delayed conversion to sinus rhythm (8–12 hours).	596–601
Propafenone	IV Oral	1.5–2 mg/kg over 10 min 450–600 mg		Hypotension, atrial flutter with 1:1 conduction, QRS prolongation (mild). Avoid in patients with IHD and/or significant structural heart disease.	622, 625
Ibutilide[b]	IV	1 mg over 10 min	1 mg over 10 min after waiting for 10 min	QT prolongation, polymorphic ventricular tachycardia/torsades de pointes (3–4% of patients). Will slow ventricular rate. Avoid in patients with QT prolongation, hypokalemia, severe LVH or low ejection fraction.	614, 615
Vernakalant	IV	3 mg/kg over 10 min	2 mg/kg over 10 min after waiting for 15 min	Hypotension, non-sustained ventricular arrhythmias, QT and QRS prolongation. Avoid in patients with SBP <100 mmHg, recent (<30 days) ACS, NYHA Class III and IV heart failure, QT interval prolongation (uncorrected QT >440 ms) and severe aortic stenosis.	602–605, 618

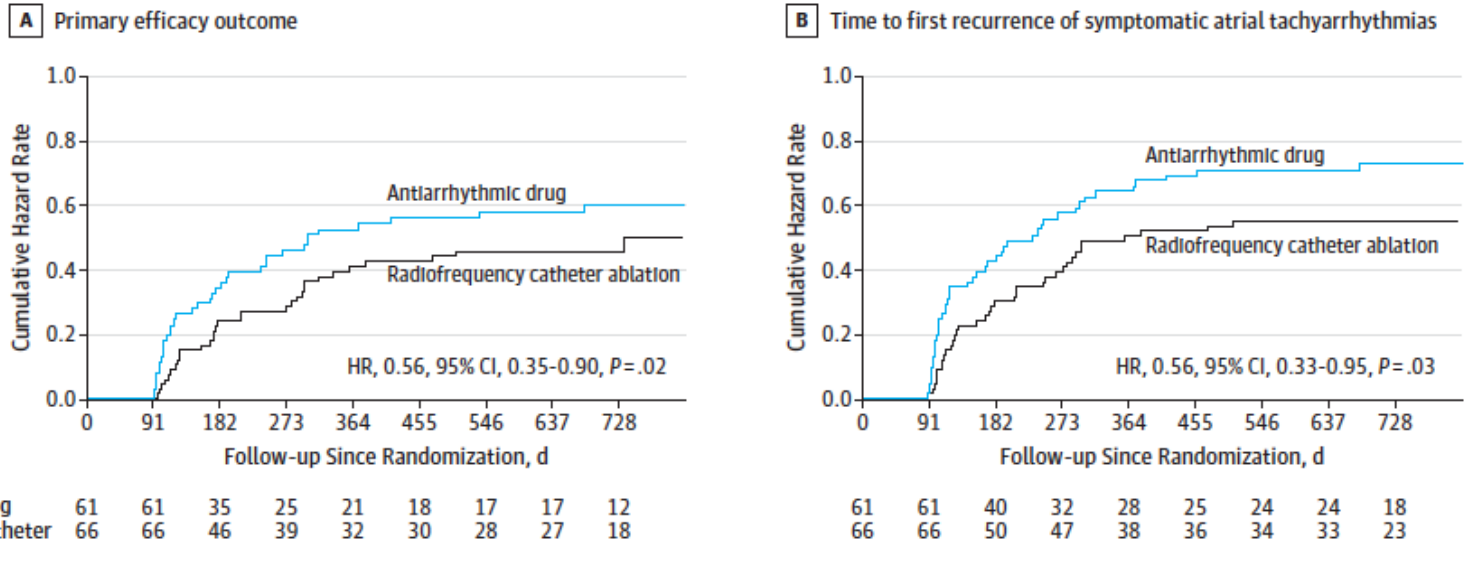
Original Investigation

Radiofrequency Ablation vs Antiarrhythmic Drugs as First-Line Treatment of Paroxysmal Atrial Fibrillation (RAAFT-2)
A Randomized Trial

Carlos A. Morillo, MD, FRCPC; Atul Verma, MD, FRCPC; Stuart J. Connolly, MD, FRCPC; Karl H. Kuck, MD, FHRS; Girish M. Nair, MBBS, FRCPC; Jean Champagne, MD, FRCPC; Laurence D. Sterns, MD, FRCPC; Heather Beresh, MSc; Jeffrey S. Healey, MD, MSc, FRCPC; Andrea Natale, MD; for the RAAFT-2 Investigators

JAMA 2014

Figure 2. Kaplan-Meier Curves of Time to First Recurrence of Any Atrial Tachyarrhythmias (A) and Time to First Recurrence of Symptomatic Atrial Tachyarrhythmias (B)



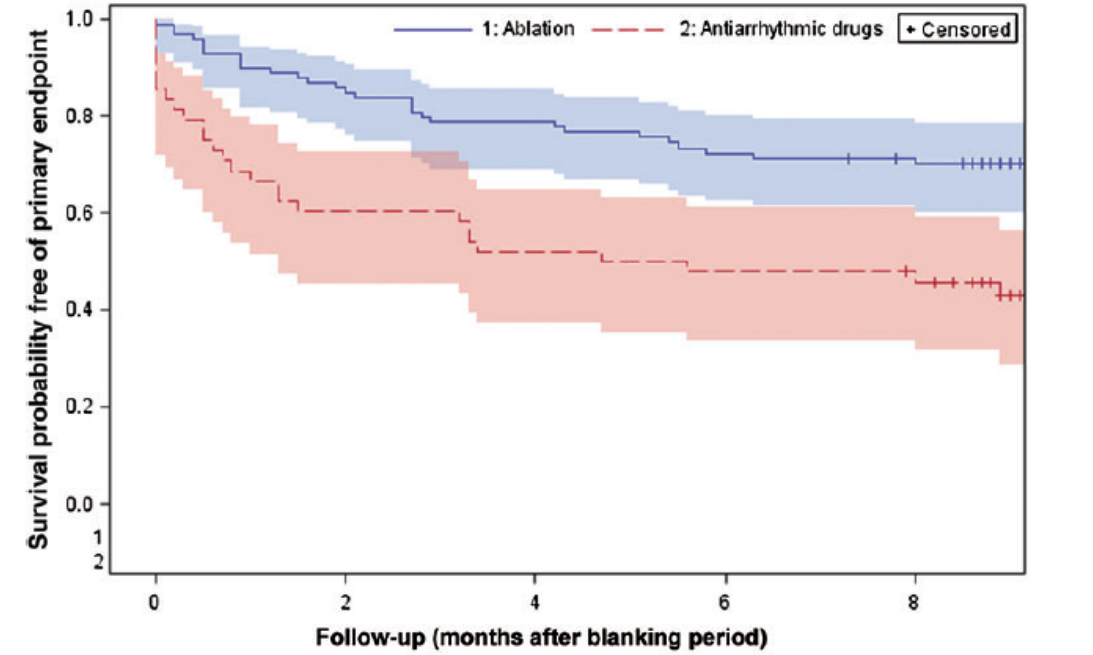
Tachyarrhythmias include atrial fibrillation, tachycardia, and flutter. HR indicates hazard ratio.

EHJ 2014

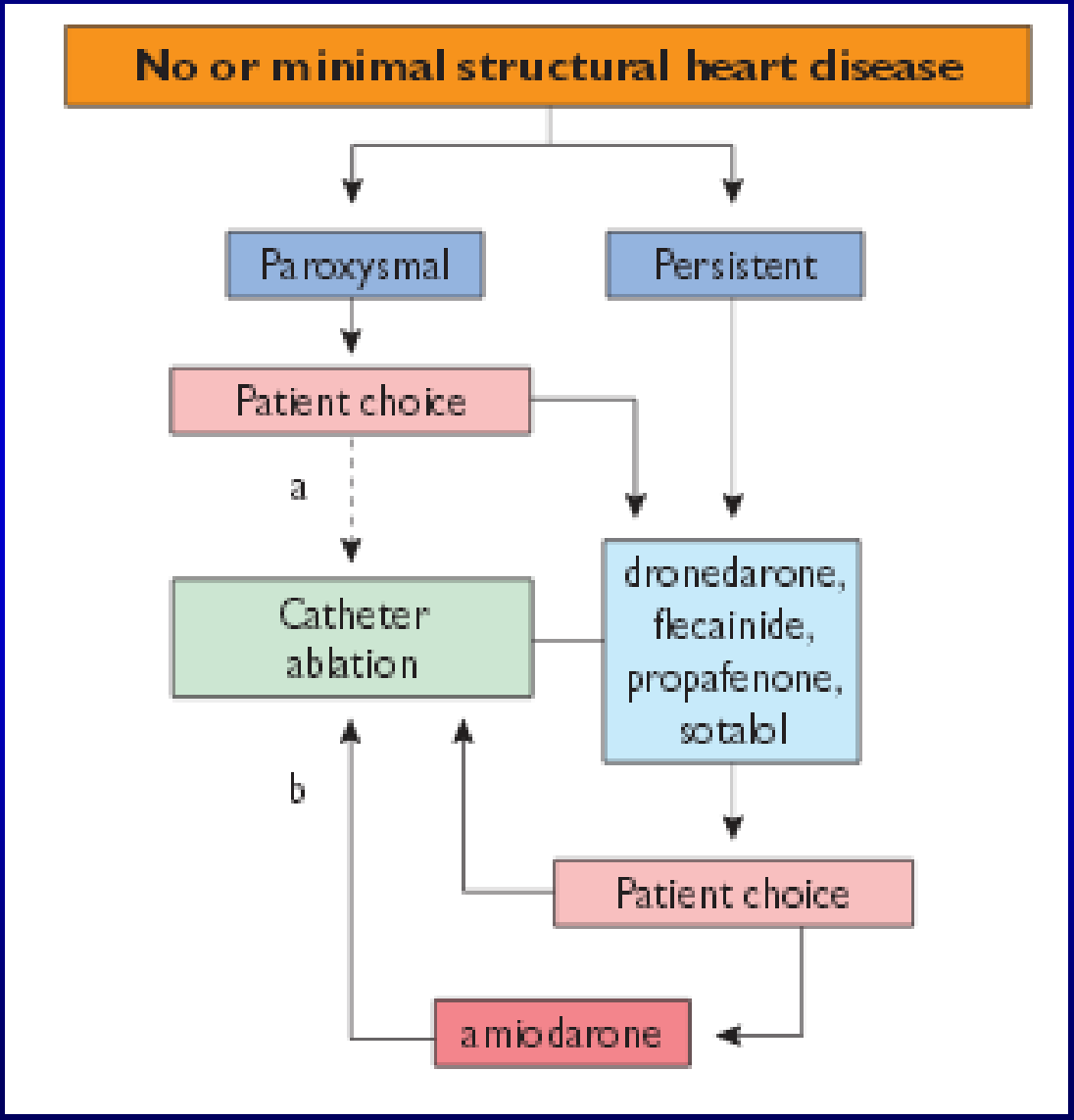
Catheter ablation vs. antiarrhythmic drug treatment of persistent atrial fibrillation: a multicentre, randomized, controlled trial (SARA study)

Lluís Mont[1]*, Felipe Bisbal[1], Antonio Hernández-Madrid[2], Nicasio Pérez-Castellano[3], Xavier Viñolas[4], Angel Arenal[5], Fernando Arribas[6], Ignacio Fernández-Lozano[7], Andrés Bodegas[8], Albert Cobos[9], Roberto Matía[2], Julián Pérez-Villacastín[3], José M. Guerra[4], Pablo Ávila[5], María López-Gil[6], Victor Castro[7], José Ignacio Arana[8], and Josep Brugada[1], on behalf of SARA investigators

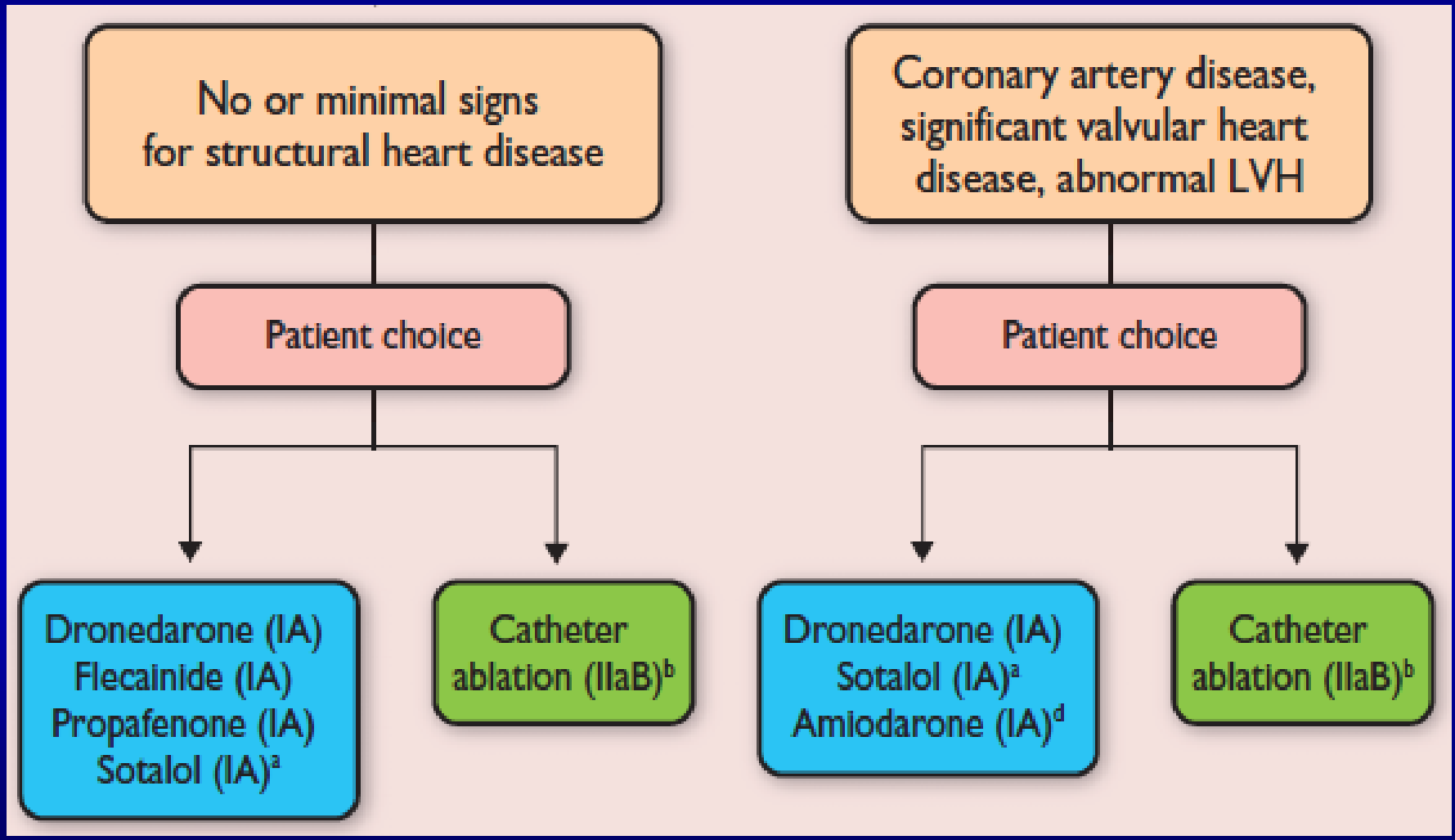
Primary outcome: 12-month freedom from AF



Rhythm control 2012



Rhythm control 2016



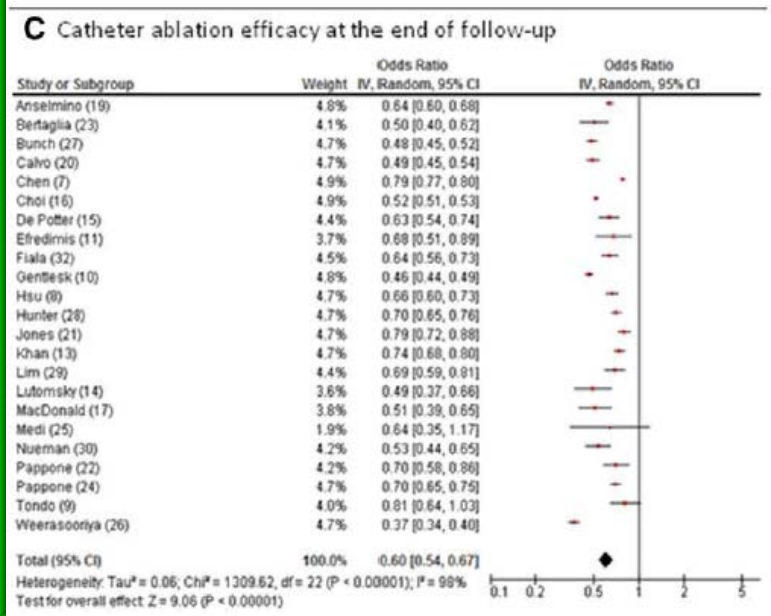
Original Article

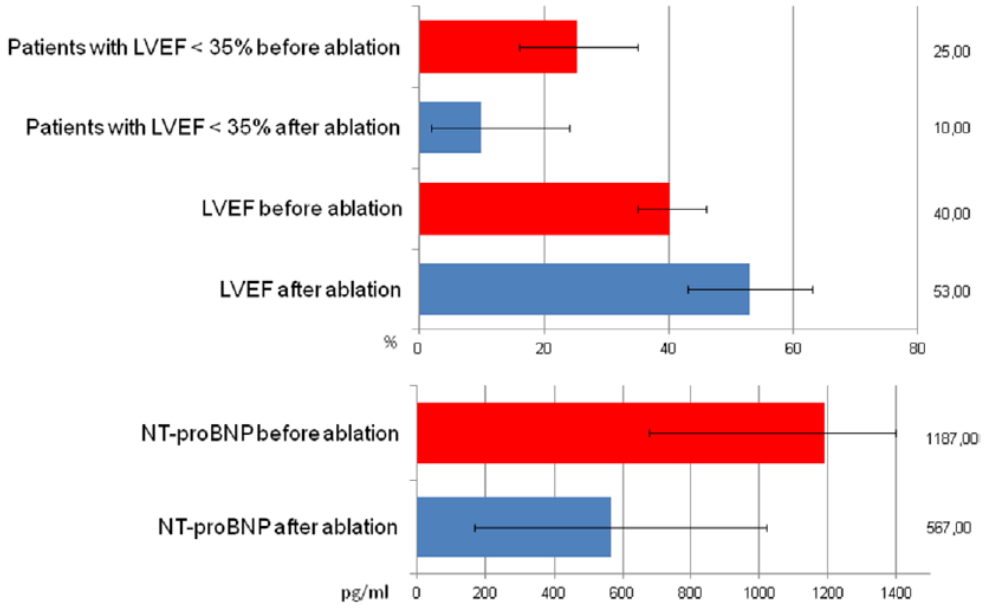
Catheter Ablation of Atrial Fibrillation in Patients With Left Ventricular Systolic Dysfunction

A Systematic Review and Meta-Analysis

Matteo Anselmino, MD, PhD; Mario Matta, MD; Fabrizio D'Ascenzo, MD; T. Jared Bunch, MD; Richard J. Schilling, MD; Ross J. Hunter, MD, PhD; Carlo Pappone, MD, PhD; Thomas Neumann, MD; Georg Noelker, MD; Martin Fiala, MD, PhD; Emanuele Bertaglia, MD; Antonio Frontera, MD; Edward Duncan, MD; Chrishan Nalliah, BSc, MBBS; Pierre Jais, MD; Rukshen Weerasooriya, MD; Jon M. Kalman, MD, PhD; Fiorenzo Gaita, MD

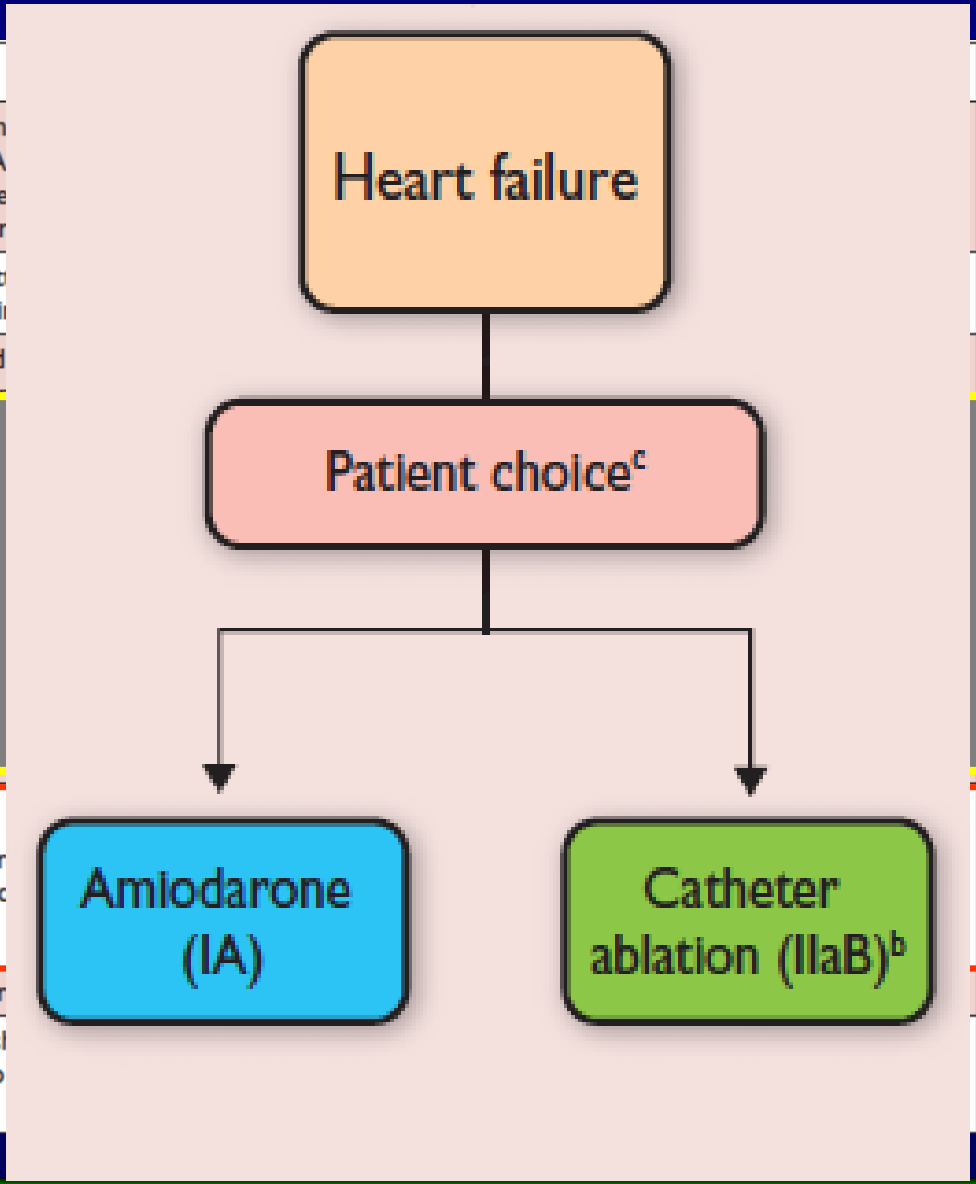
Circ AE 2014





Long term rhythm control: catheter ablation

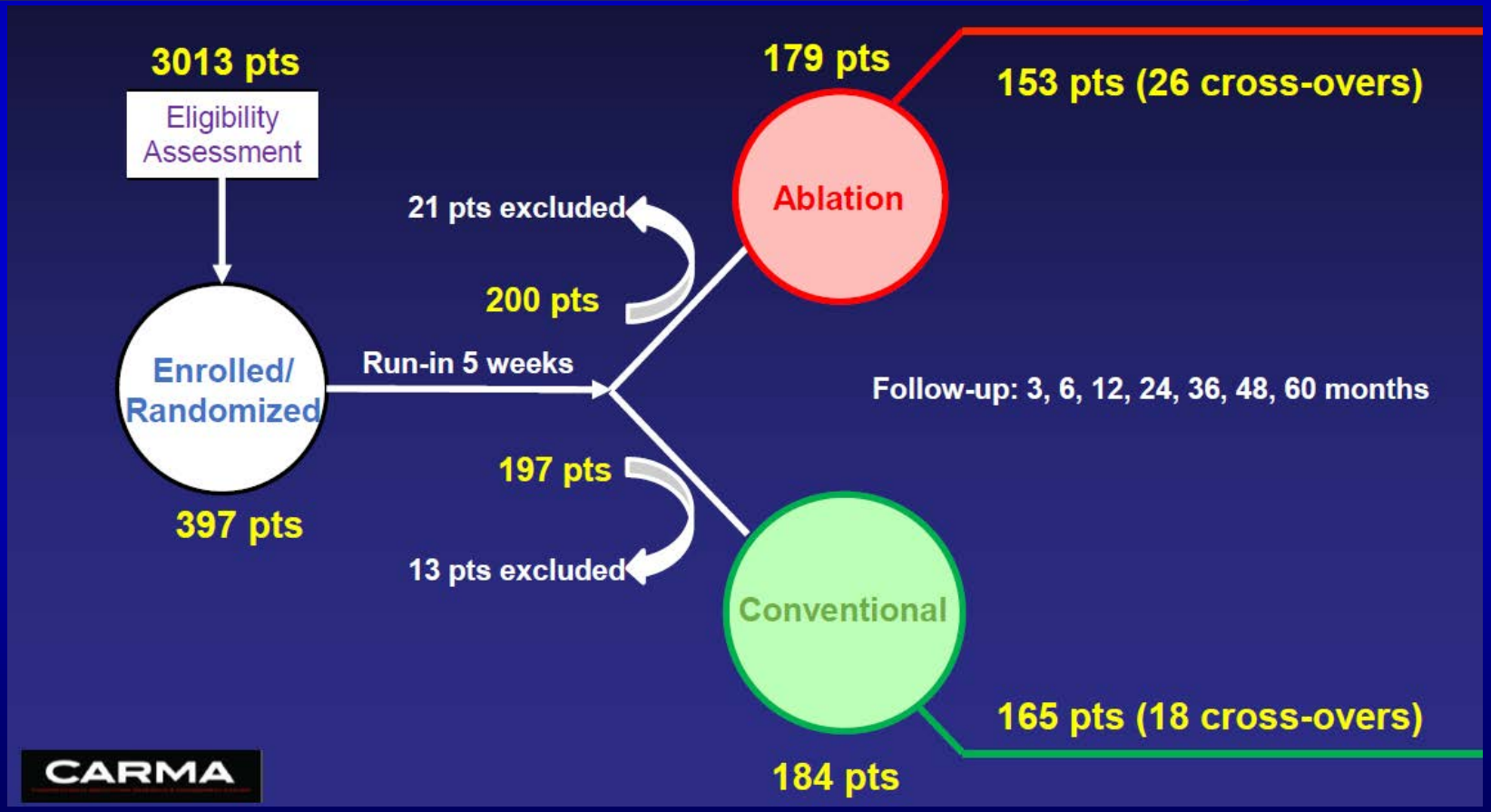
Recommendations	Class[a]	Level[b]	Ref[c]
Catheter ablation of symptom symptomatic recurrences of A sotalol) and who prefer furthe appropriate training and is per	I	A	585–587, 713, 727
Ablation of common atrial flut documented or occurring duri	IIa	B	827
Catheter ablation of AF should			
AF ablation should be consider improve symptoms and cardiac	IIa	C	185, 226–228, 720, 777–779, 828
AF ablation should be consider	IIa	C	829, 830
Catheter or surgical ablation sh refractory to AAD therapy to Team.	IIa	C	468, 735, 777, 831, 832, 1040

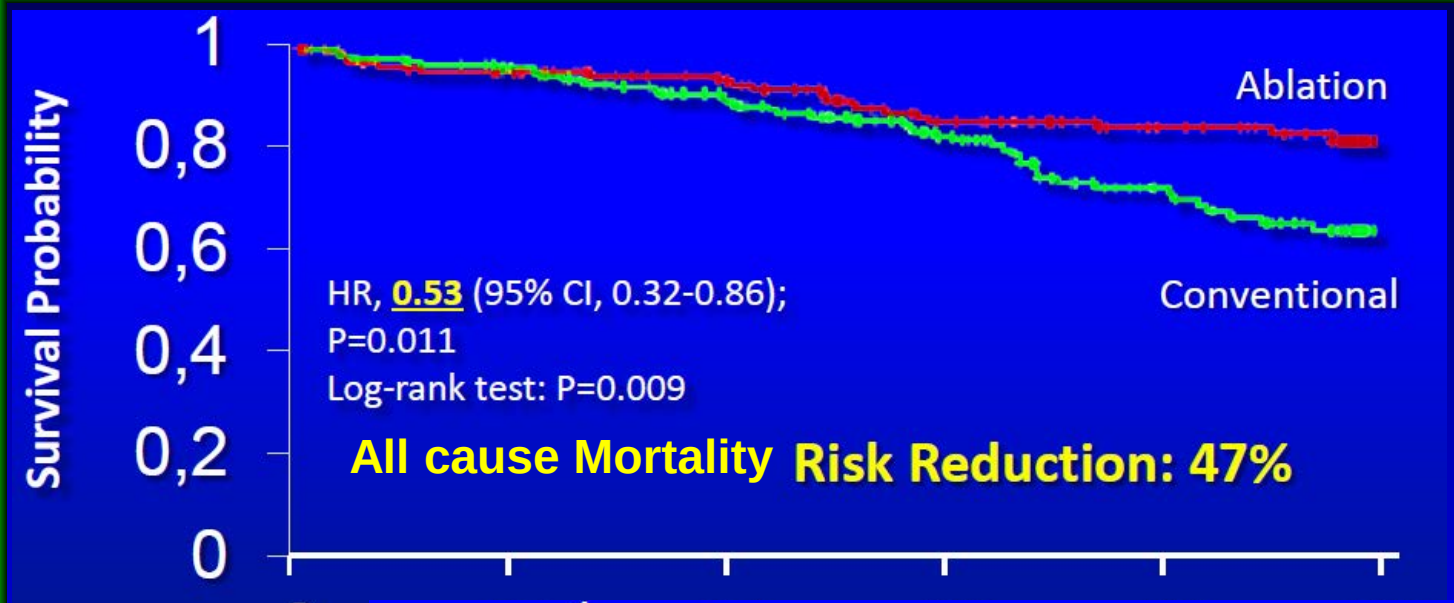


Catheter Ablation versus Standard conventional Treatment in patients with LEft ventricular dysfunction and Atrial Fibrillation

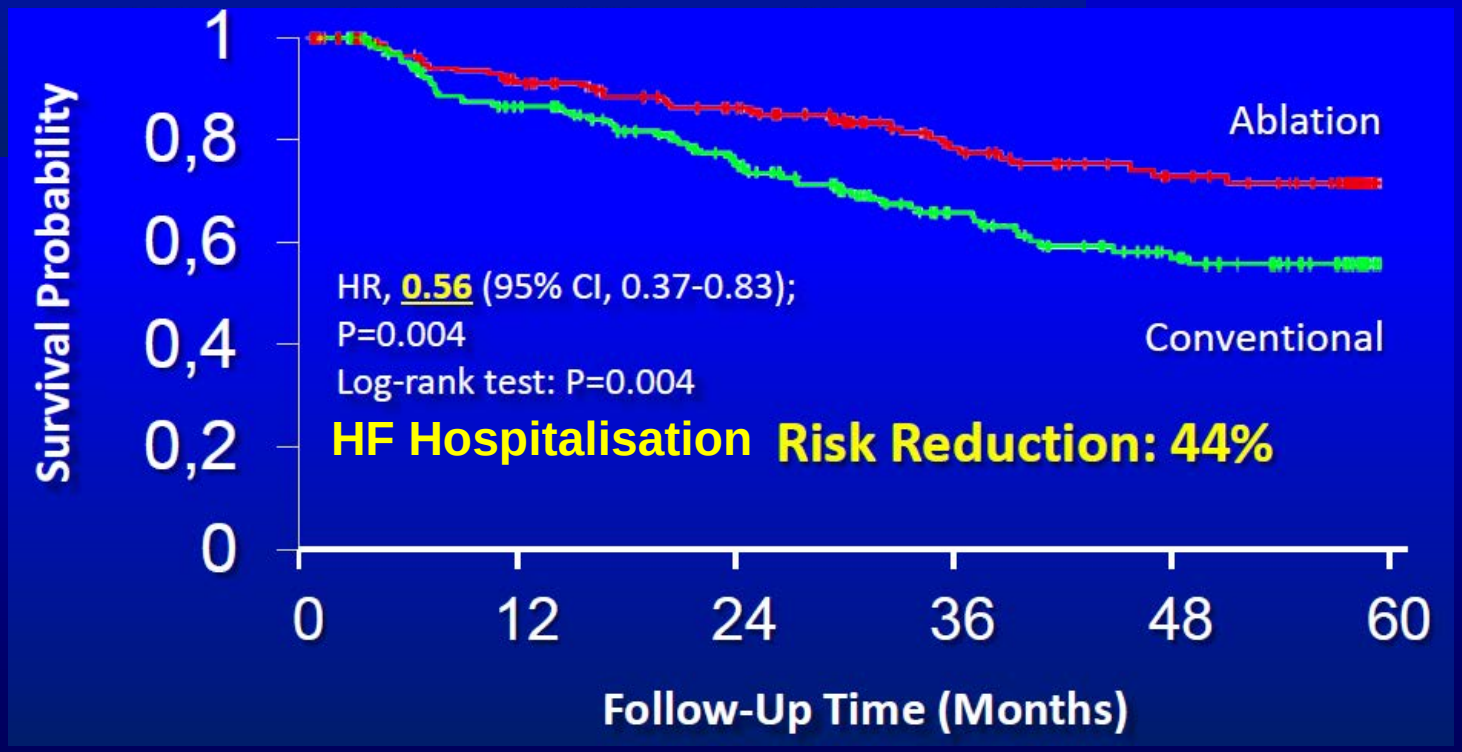
CASTLE-AF

The CASTLE-AF trial




Survival Probability
1
0,8
0,6
0,4
0,2
0
0
Ablation
Conventional
HR, 0.53 (95% CI, 0.32-0.86);
P=0.011
Log-rank test: P=0.009
All cause Mortality
Risk Reduction: 47%

CASTLE-AF


Survival Probability
1
0,8
0,6
0,4
0,2
0
Ablation
Conventional
HR, 0.56 (95% CI, 0.37-0.83);
P=0.004
Log-rank test: P=0.004
HF Hospitalisation
Risk Reduction: 44%
0
12
24
36
48
60
Follow-Up Time (Months)


Grazie!!!