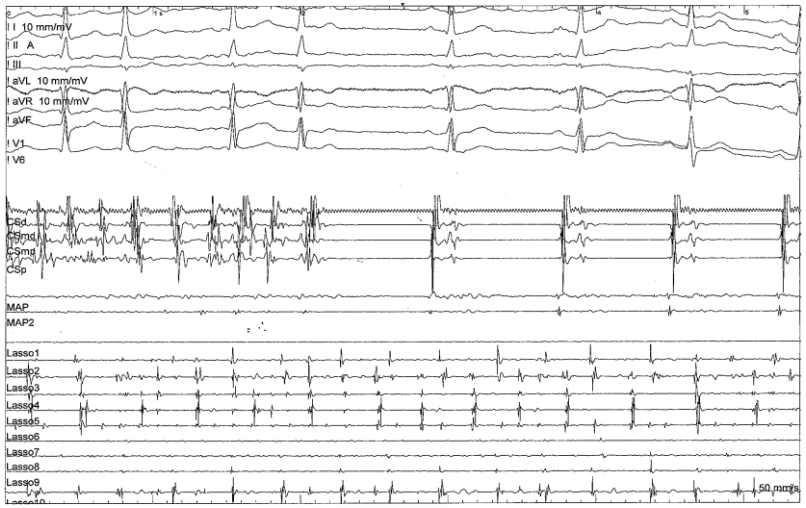
Congresso
Novas Fronteiras em Cardiologia
7 a 9 FEVEREIRO 2014
Hotel Vila Galé Ericeira

Os doentes com FA persistente de longa duração devem ser candidatos a ablação por cateter?

Os doentes com FA persistente de longa duração devem ser candidatos a ablação por cateter?



DEVEM SER CANDIDATOS !

Pedro Adragão

Os doentes com FA persistente de longa duração devem ser candidatos a ablação por cateter?

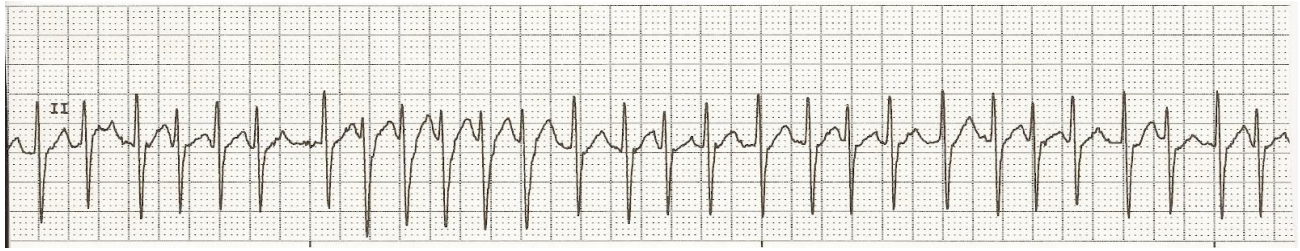
Faculdade de Medicina concede grau de doutor a médico do Hospital de Santa Marta

Escrito por CienciaPT

29-JUL-2010

Lisboa, 28 de Julho: O cardiologista Mário Oliveira, médico do Hospital de Santa Marta, acaba de ser reconhecido com o grau de doutor em arritmologia, pela Faculdade de Medicina de Lisboa, sendo apenas o segundo médico em Portugal que possui este elevado grau académico.

Mário Oliveira



NÃO DEVEM SER CANDIDATOS !

Candidato a perder peso?

Candidatas ao Óscar

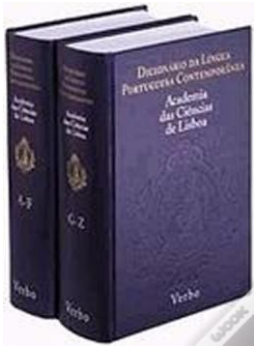
Os doentes com FA persistente de longa duração devem ser candidatos a ablação por cateter?

- Devem ser candidatos a ablação?

1. A ablação não está contraindicada
2. A ablação não é obrigatória
3. A ablação é muitas vezes a melhor opção terapêutica
   - A ablação pode ser para controlar o ritmo ou para controlar a frequência

A ablação deve ser equacionada nos doentes com FA PLD

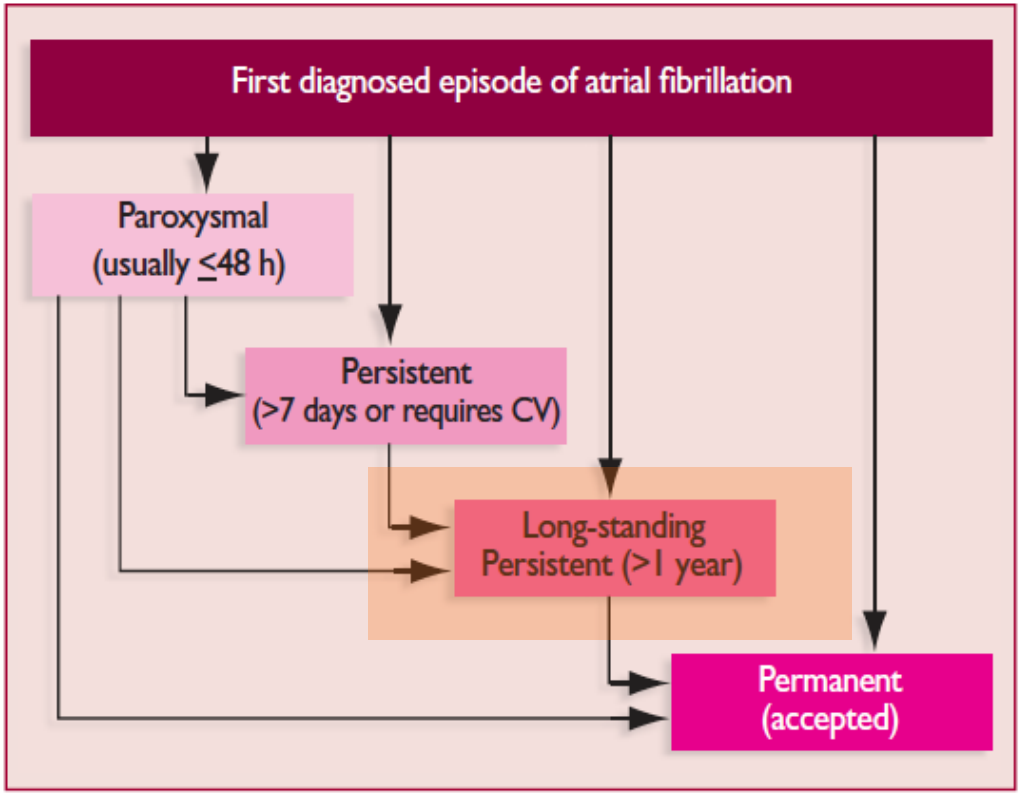
- São CANDIDATOS a ABLAÇÃO !



"Naquele ano houve muitos candidatos à Faculdade de Medicina.
A sala de concursos estava cheia, pois éramos cerca de duzentos candidatos a três vagas"
(E DE LEMOS, Companheiros, p.357)

FA persistente de longa duração

Definição:



FA mantida com mais de um ano de duração

European Heart Journal 2010; 31: 2369–2429

2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design

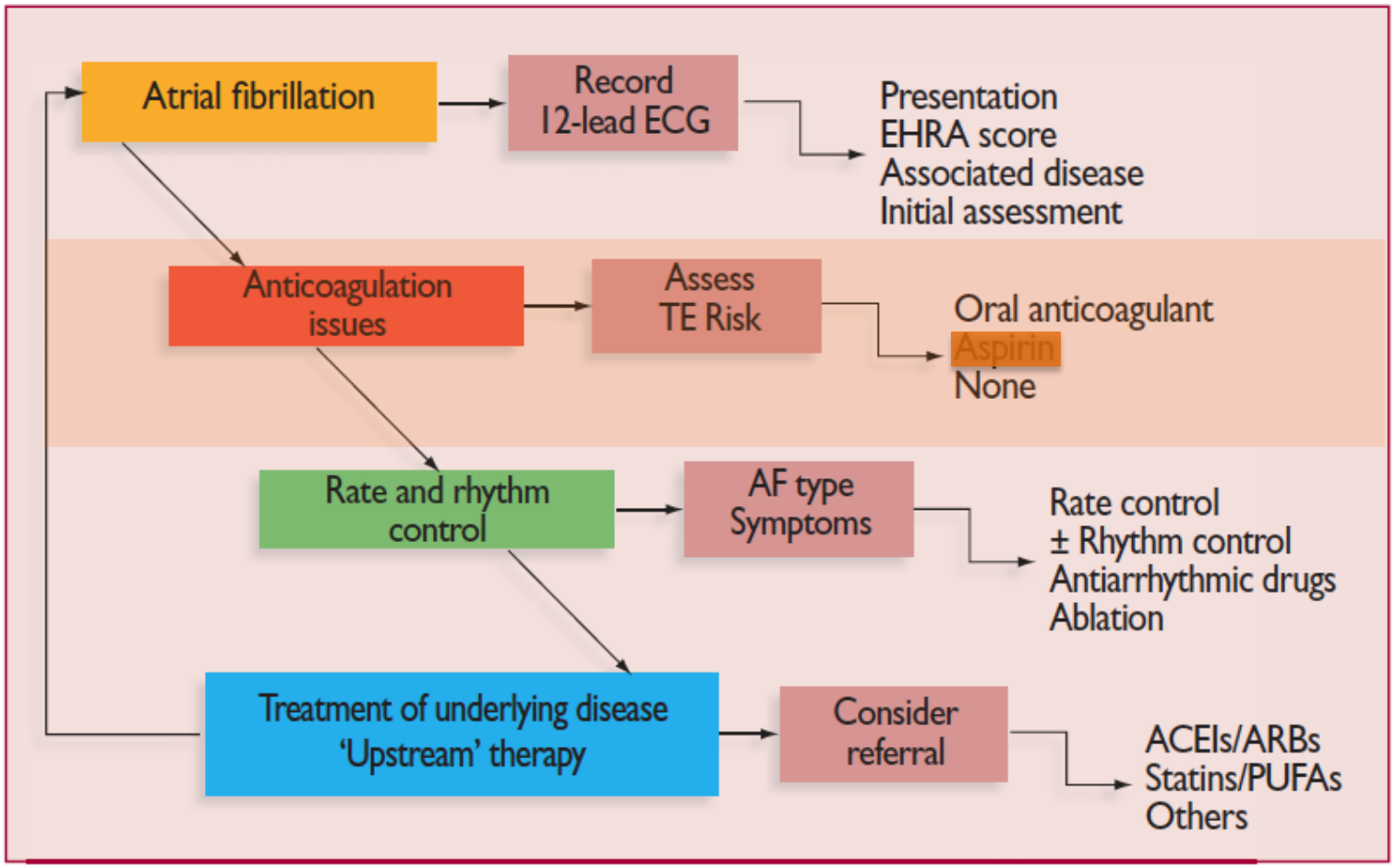
Table 1 Types and classification of atrial fibrillation**

Atrial Fibrillation Episode	An atrial fibrillation episode is defined as AF that is documented by ECG monitoring and has a duration of at least 30 seconds, or if less than 30 seconds, is present continuously throughout the ECG monitoring tracing. The presence of subsequent episodes of AF requires that sinus rhythm be documented by ECG monitoring between AF episodes.
Paroxysmal AF*	Paroxysmal AF is defined as recurrent AF (≥2 episodes) that terminates spontaneously within 7 days. Episodes of AF of ≤ 48 hours' duration that are terminated with electrical or pharmacologic cardioversion should also be classified as paroxysmal AF episodes.
Persistent AF*	Persistent AF is defined as continuous AF that is sustained beyond seven days. Episodes of AF in which a decision is made to electrically or pharmacologically cardiovert the patient after ≥ 48 hours of AF, but prior to 7 days, should also be classified as persistent AF episodes.
Longstanding Persistent AF	Longstanding persistent AF is defined as continuous AF of greater than 12 months' duration.
Permanent AF	The term permanent AF is not appropriate in the context of patients undergoing catheter or surgical ablation of AF, as it refers to a group of patients for which a decision has been made not to restore or maintain sinus rhythm by any means, including catheter or surgical ablation. If a patient previously classified as having permanent AF is to undergo catheter or surgical ablation, the AF should be reclassified.

**It is recognized that patients may have both paroxysmal and persistent AF. A patient's AF type should be defined as the most frequent type of AF experienced within six months of an ablation procedure.* Continuous AF is AF that is documented to be present on all ECG monitoring performed during a defined period of time.

**We recommend that the term "chronic AF" not be used in the context of patients undergoing ablation of AF as it is ambiguous, and there is no standardized definition of this term.

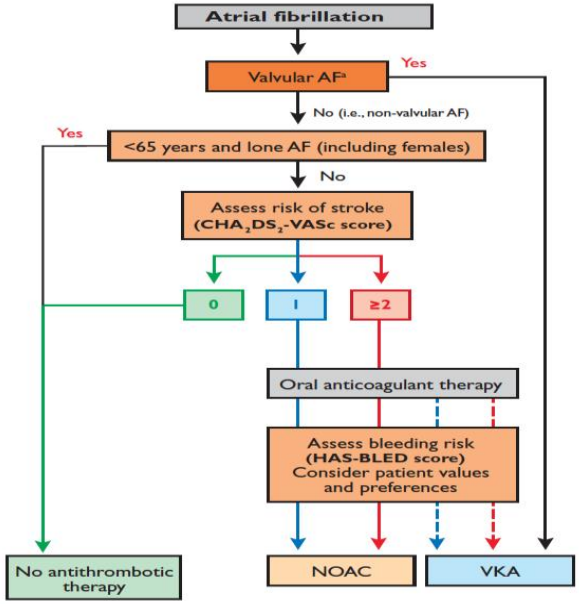
Tratamento da FA



Terapêutica Antitrombótica na FA

Antithrombotic therapy to prevent thromboembolism is recommended for all patients with AF,

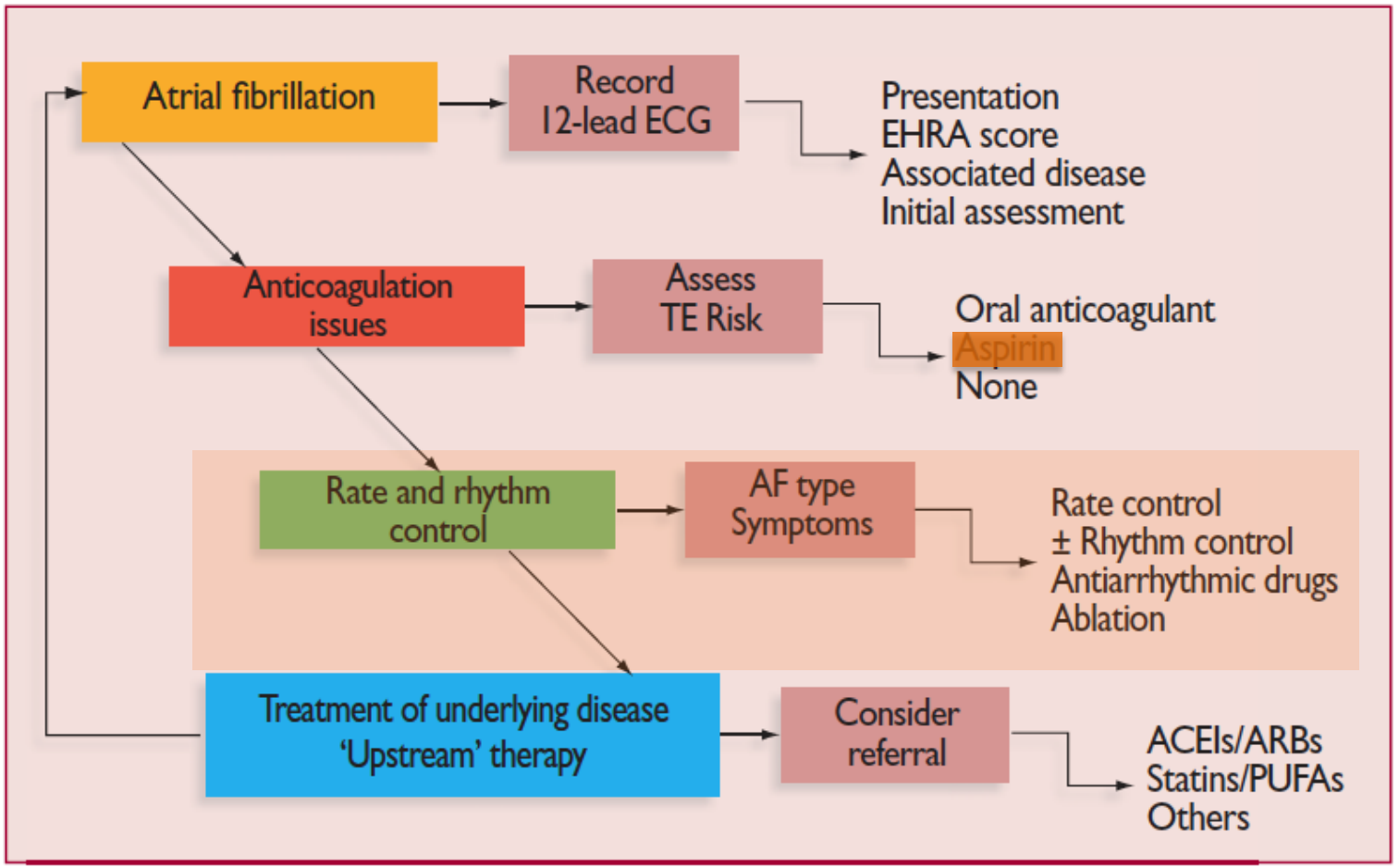
except in those patients (both male and female) who are at low risk (aged <65 years and lone AF), or with contraindications.



CHA2DS2-VASc score ≥1 ➡ ACO !!

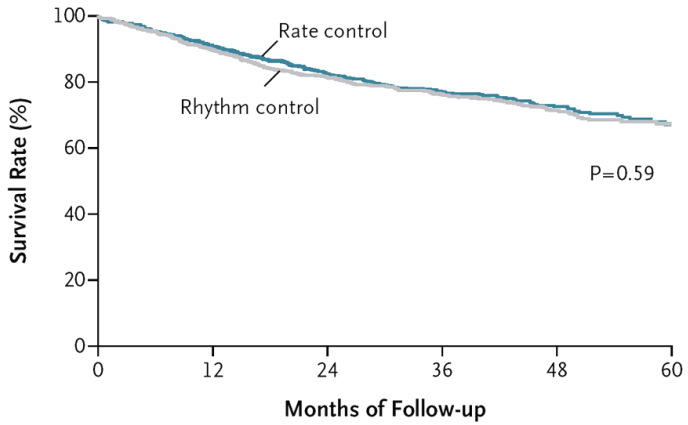
Europace. 2012;14:1385-1413

Tratamento da FA

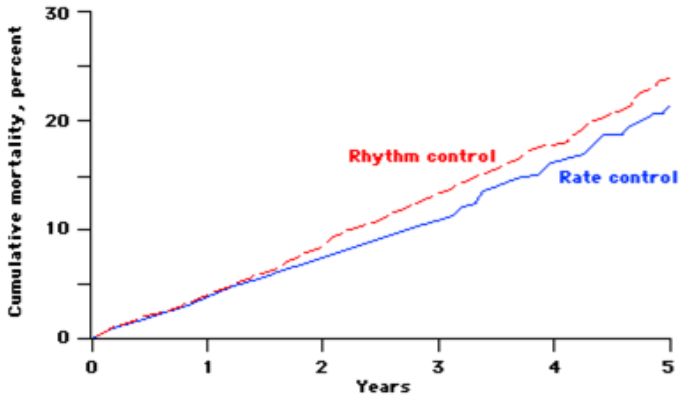


Tratamento da FA

Controlo da Frequência vs Controlo do Ritmo



No. at Risk					
Rhythm control	593	514	378	228	82
Rate control	604	521	381	219	69



n=4060

No. of deaths		Number, percent				
Rhythm control	0	80 (4)	175 (9)	257 (13)	314 (18)	352 (24)
Rate control	0	78 (4)	148 (7)	210 (11)	275 (16)	306 (21)

- Resultados iguais em ambas as estratégias
- Estratégia de controlo do ritmo foi diferente de estar em RS:

  Ritmo sinusal: 2/3 “Controlo do ritmo” vs 1/3 “Controlo da frequência”

Ritmo sinusal e anticoagulação oral foram preditores de sobrevida (AFFIRM trial)

AF and CHF trial; NEJM 2008; 358;25

AFFIRM trial, NEJM 2002;347:1825

JUL 2012

Comparative Effectiveness of Rhythm Control vs Rate Control Drug Treatment Effect on Mortality in Patients With Atrial Fibrillation

Raluca Ionescu-Ittu, PhD; Michal Abrahamowicz, PhD; Cynthia A. Jackevicius, MD, PhD; Vidal Essebag, MD, PhD; Mark J. Eisenberg, MD, MPH; Willy Wynant, MSc; Hugues Richard, MSc; Louise Pilote, MD, MPH, PhD

57 864 Quebec residents aged ≥66 y prescribed an AF drug within 7 days of discharge from an AF hospitalization

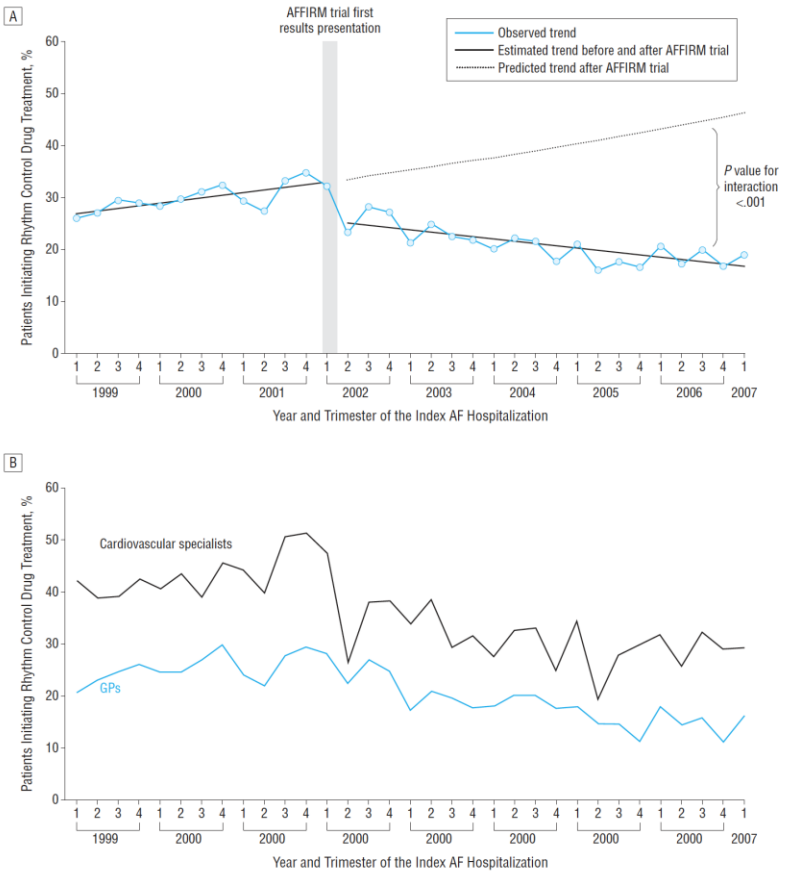
1-y AF washout

Specific exclusion criteria, in the order the exclusions were made:

- 6719 With rhythm drug prescription in the year before the index hospitalization
- 9983 With rate drug prescription and AF diagnosis in the year before the index hospitalization
- 4581 With warfarin drug prescription without valvular disease diagnosis in the year before the index hospitalization
- 811 With pacemaker or ICD device insertion in the year before the index hospitalization

▼

26 130 In study population



Após o AFFIRM:

Controlo da FC foi preferido à mantenção do RS

Arch Intern Med. 2012;172(13):997-1004

Controlo da Frequência

- Tratamento da FA deve sempre incluir o controlo da frequência ventricular
  (β-bloqueadores, antagonistas do Ca^{+}, digitálicos ou combinações)
  - Nos idosos com sintomas minor (EHRA I)
  - Nos doentes com remodelagem auricular importante

- Controlo ideal da frequência é desconhecido (Tolerante: em repouso < 110 /min)

N Engl J Med 2010;362:1363–1373

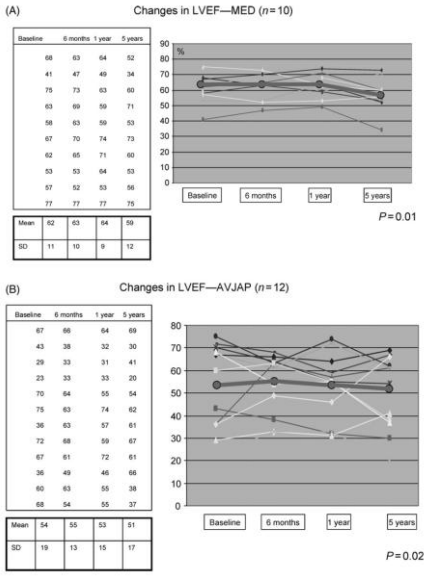
- Se muito sintomáticos com remodelagem importante e / ou muito idosos:
  CANDIDATOS A ABLAÇÃO DO NAV + PM (PM, CRT +/- CDI)

Ablate and pace strategy for atrial fibrillation: long-term outcome of AIRCRAFT trial

Kang-Teng Lim[1], Michael J.E. Davis[1,2*], Anne Powell[1,2], Leonard Arnolda[1], Kath Moulden[1], Max Bulsara[3], and Rukshen Weerasooriya[1]

- Sem CRT, com um follow-up de 4 a 7 anos,
- Deterioração semelhante da FEVE e da classe NYHA, em ambos os grupos
- Doentes com ablação NAV tiveram menos sintomas e melhor QOL

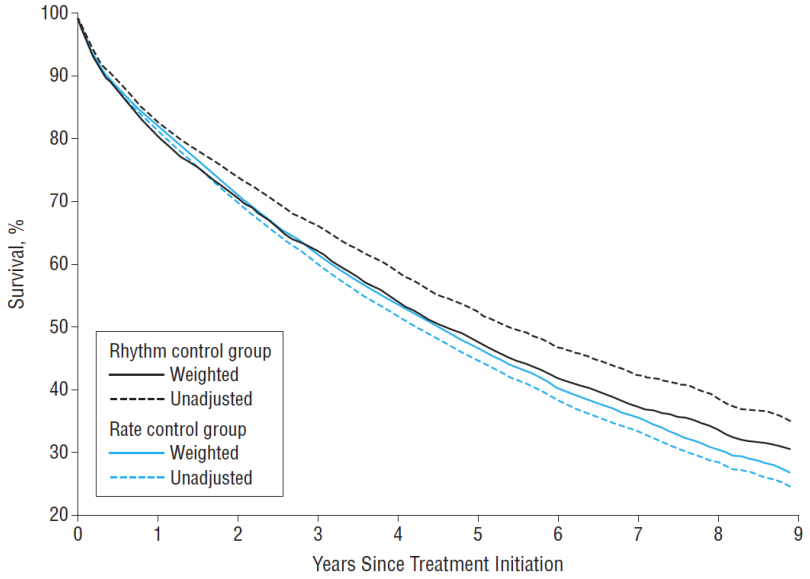
Europace (2007) 9, 498–505



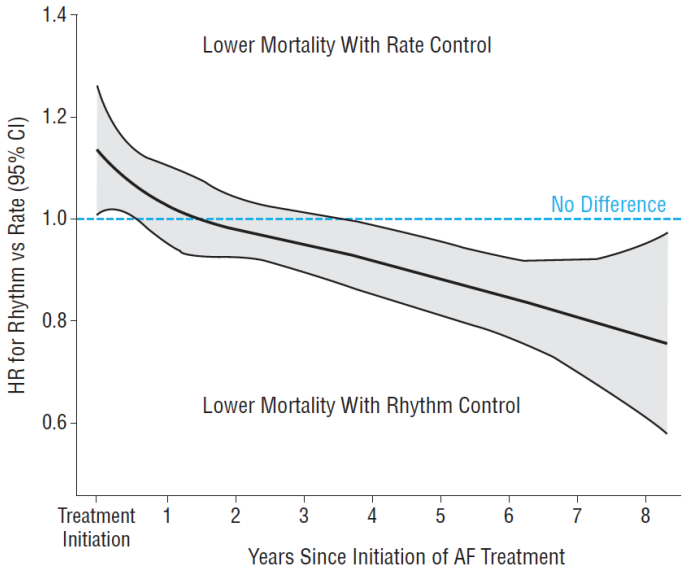
JUL 2012

Comparative Effectiveness of Rhythm Control vs Rate Control Drug Treatment Effect on Mortality in Patients With Atrial Fibrillation

small increase in mortality for patients treated with rhythm control in the first 6 months
the mortality was similar between the 2 groups until year 4
but decreased steadily in the rhythm control group after year 5



Rhythm control group, No.									
Deaths	1110	518	416	352	269	190	111	52	16
At risk	5137	4152	3358	2620	1996	1423	872	382	—
Rate control group, No.									
Deaths	3692	1994	1483	1032	706	470	289	167	46
At risk	15391	11396	8169	5781	3935	2503	1471	657	—



Arch Intern Med. 2012;172(13):997-1004

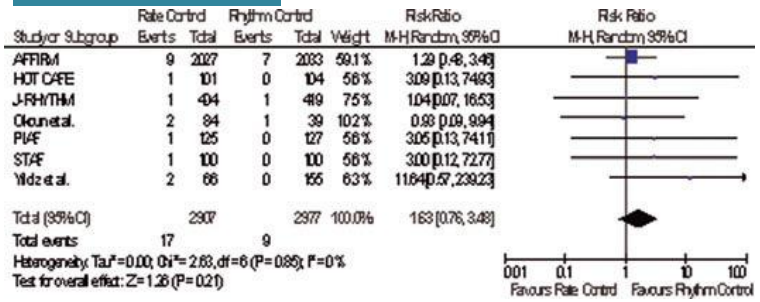
Controlo do ritmo: Reduz a mortalidade num seguimento prolongado (> 5 anos)

Pharmacologic Rate versus Rhythm-Control Strategies in Atrial Fibrillation: An Updated Comprehensive Review and Meta-Analysis

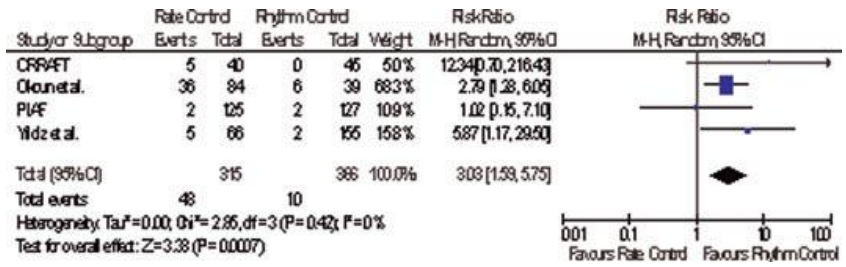
SAURAV CHATTERJEE, M.D.,* PARTHA SARDAR, M.D.,†
EDGAR LICHSTEIN, M.D., F.A.C.C.,‡ DEBABRATA MUKHERJEE, M.D., M.S.,§
and SHAMIK AIKAT, M.D., M.R.C.P.**

MAIO 2012

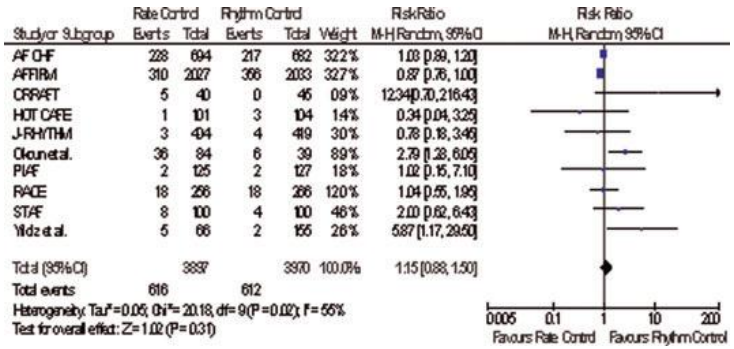
< 65 anos: Controlo do Ritmo é melhor!



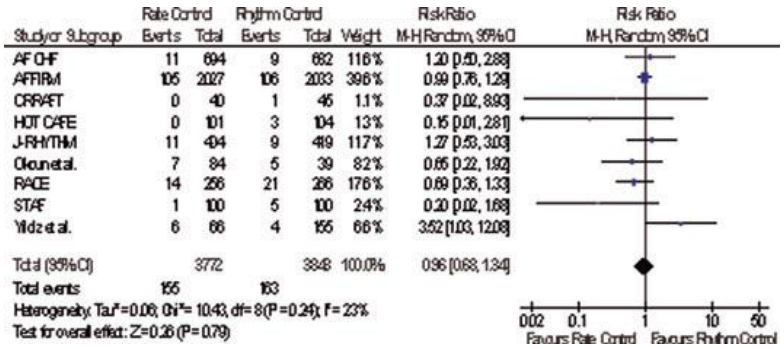
Embolia sistémica: melhor controlo do ritmo



patients younger than 65 years revealed a rhythm-control strategy was superior to rate control in the prevention of all-cause mortality (P = 0.0007)



Mortalidade

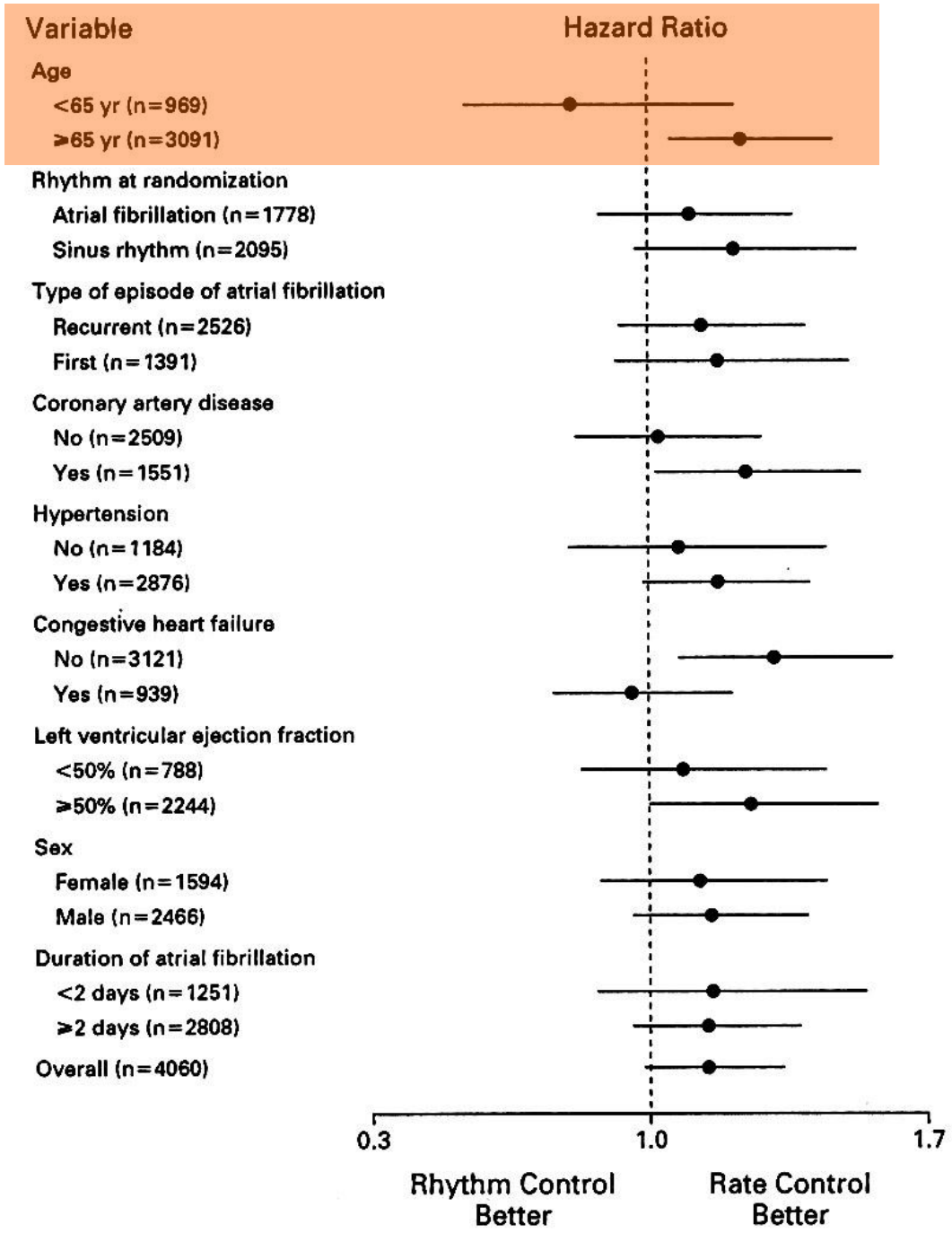


AVC e AIT

(PACE 2012;00:1–12)

Já se sabia !

AFFIRM
Main study

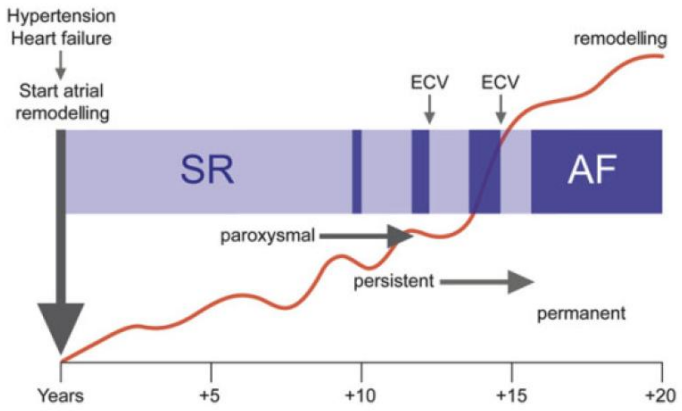


N Engl J Med, 2002

Controlo da Frequência vs Controlo do Ritmo

Controlo do Ritmo:

- (Não) demonstrou beneficio na sobrevida
- Está recomendado se doente sintomático apesar de controlo adequado da FC (EHRA>1)
- Ineficácia e efeitos secundários dos antiarrítmicos prejudicam resultados
- O controlo do ritmo é iniciado demasiado tarde



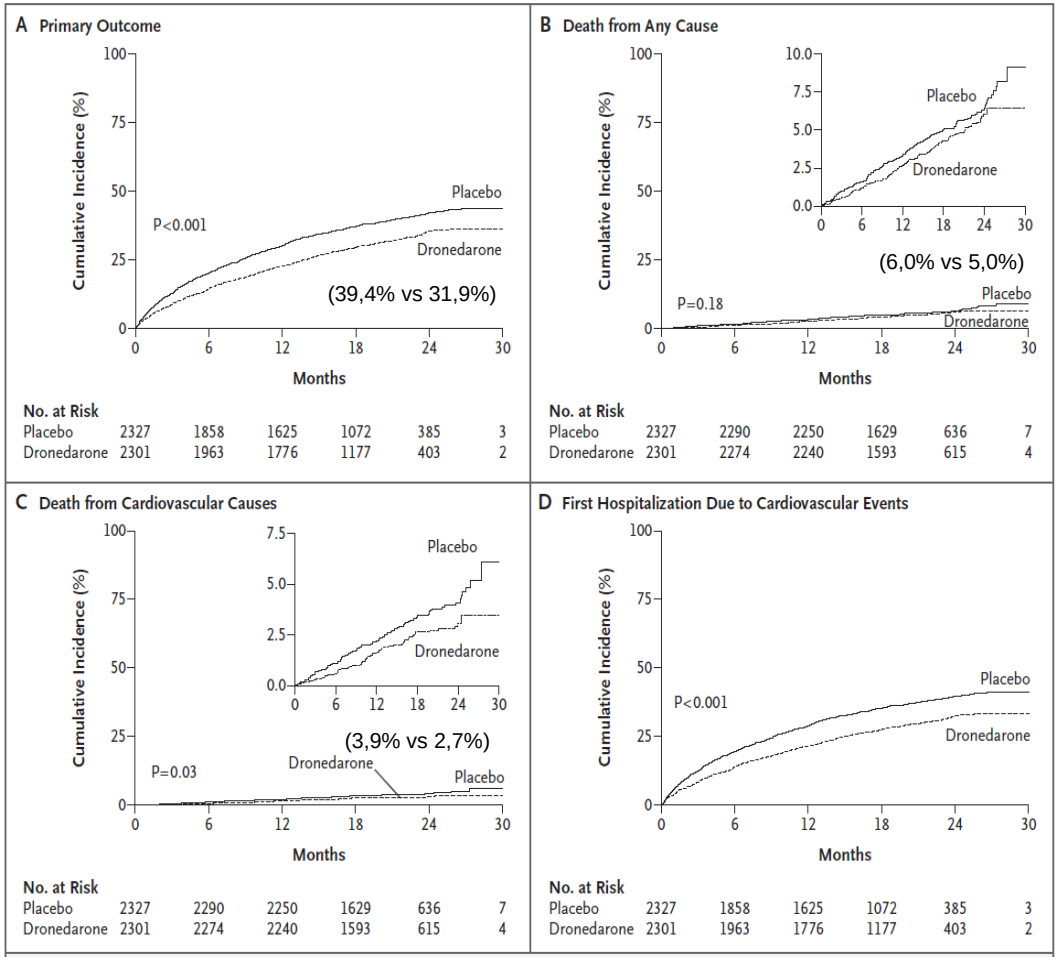
Europace 2008;10:21-7

Classification of AF-related symptoms (EHRA score)	
EHRA class	**Explanation**
EHRA I	'No symptoms'
EHRA II	'Mild symptoms'; normal daily activity not affected
EHRA III	'Severe symptoms'; normal daily activity affected
EHRA IV	'Disabling symptoms'; normal daily activity discontinued

Se a remodelagem auricular for reversível
e o ritmo sinusal for mantido
o prognóstico melhora !

Effect of Dronedarone on Cardiovascular Events in Atrial Fibrillation

ATHENA



4628 pts non-permanent AF without severe HF

CONCLUSION

Dronedarone reduced the incidence of hospitalization due to cardiovascular events or death in patients with atrial fibrillation. (ClinicalTrials.gov number, NCT00174785.)

N Engl J Med 2009;360:668-78

PALLAS

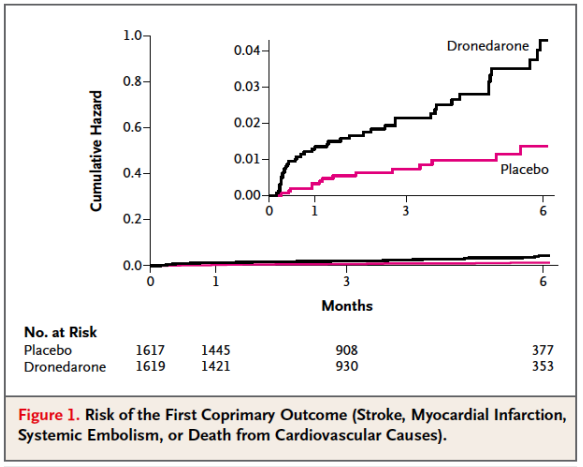


Figure 1. Risk of the First Coprimary Outcome (Stroke, Myocardial Infarction, Systemic Embolism, or Death from Cardiovascular Causes).

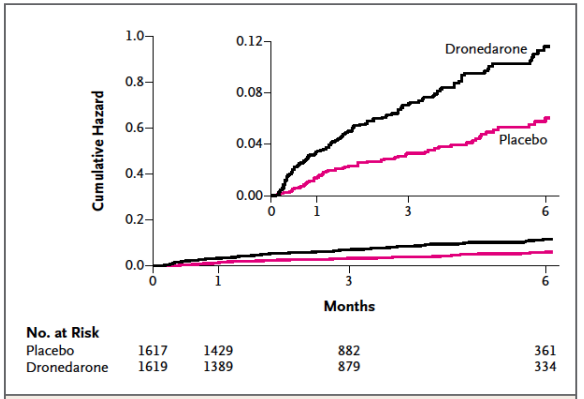


Figure 2. Risk of the Second Coprimary Outcome (Unplanned Hospitalization for Cardiovascular Causes or Death).

CONCLUSIONS

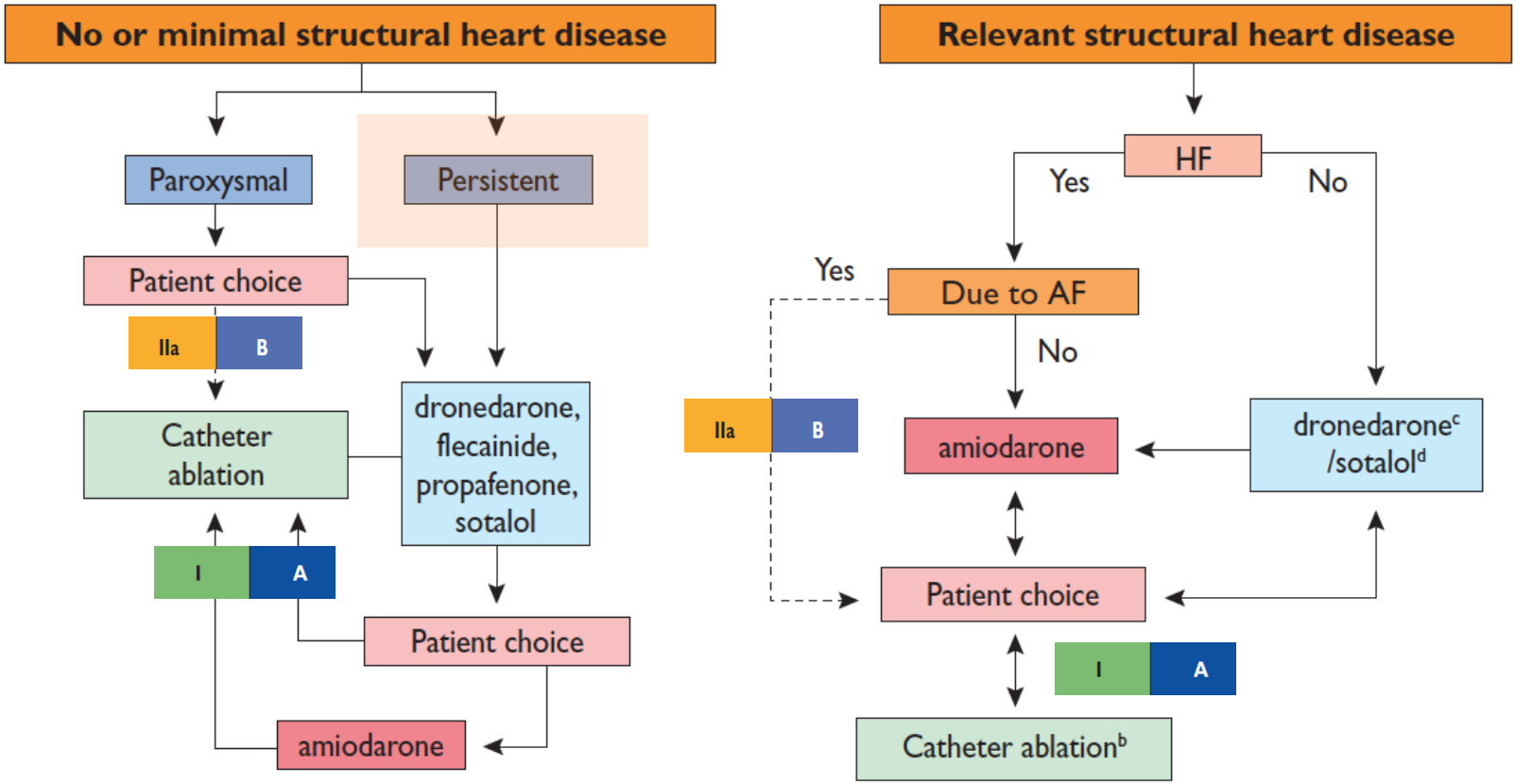
Dronedarone increased rates of heart failure, stroke, and death from cardiovascular causes in patients with permanent atrial fibrillation who were at risk for major vascular events. Our data show that this drug should not be used in such patients. (Funded by Sanofi-Aventis; PALLAS ClinicalTrials.gov number, NCT01151137.)

N ENGL J MED 365;24 NEJM.ORG DECEMBER 15, 2011

Table 18 Randomized clinical trials of catheter ablation vs. antiarrhythmic drugs or no treatment in AF

Study	Reference	Patients (n)	Age, years	Type of AF	Previous use of AAD	Ablation technique	Repeat ablation in the ablation group	Crossed to ablation in the AAD group	AF free at 1 year	
									Ablation	AAD
Krittayaphong *et al.* 2003	Online	30	55 ± 10 (ablation) 47 ± 15 (AAD)	Paroxysmal, persistent	≥1[a]	PVI + LA lines + CTI ablation + RA lines	Not stated	Not stated	79%	40%
Wazni *et al.* 2005 (RAAFT)	134	70	53 ± 8 (ablation) 54 ± 8 (AAD)	Mainly paroxysmal	No	PVI	12%[b]	49%[c]	87%	37%
Stabile *et al.* 2005 (CACAF)[d]	Online	245	62 ± 9 (ablation) 62 ± 10 (AAD)	Paroxysmal, persistent	≥2	PVI + LA lines ± CTI ablation	No exact data	57%	56%	9%
Oral *et al.* 2006[e]	Online	245	57 ± 9	Persistent	≥1 (mean 2.1 ± 1.2)	CPVA	26% for AF; 6% for LA flutter	77%	74%	4%
Pappone *et al.* 2006 (APAF)	135	198	55 ± 10 (ablation) 57 ± 10 (AAD)	Paroxysmal	≥2 (mean 2 ± 1)	CPVA + CTI ablation	6% for AF; 3% for atrial tachycardia	42%	86%	22%
Jais *et al.* 2008 (A4 study)	133	112	51 ± 11	Paroxysmal	≥1	PVI ± LA lines ± CTI ablation	Mean 1.8 ± 0.8, median 2 per patient	63%	89%	23%
Forleo *et al.* 2008[f]	Online	70	63 ± 9 (ablation) 65 ± 6 (AAD)	Paroxysmal, persistent	≥1	PVI ± LA lines ± CTI ablation	Not stated	Not stated	80%	43%
Wilber *et al.* 2010 (Thermocool)[g]	96	167	55.5 (ablation) 56.1 (AAD)	Paroxysmal	≥1 (mean 1.3)[h]	PVI ± LA lines ± CFAEs ± CTI ablation ± RA lines	12.6% within 80 days after 1st procedure[i]	59%[c]	66%	16%
Packer *et al.* 2010 (STOP-AF)[j]	Online	245	56.7 (ablation) 56.4 (AAD)	Paroxysmal	≥1[b]	Cryo-PVI ± LA lines	19% within 90 days after 1st procedure	79%	69.9%	7.3%

Ablação FA (2012)



AF = atrial fibrillation; HF = heart failure. [a]Usually pulmonary vein isolation is appropriate. [b]More extensive left atrial ablation may be needed. [c]Caution with coronary heart disease. [d]Not recommended with left ventricular hypertrophy. Heart failure due to AF = tachycardiomyopathy.

Europace. 2012;14:1385-1413

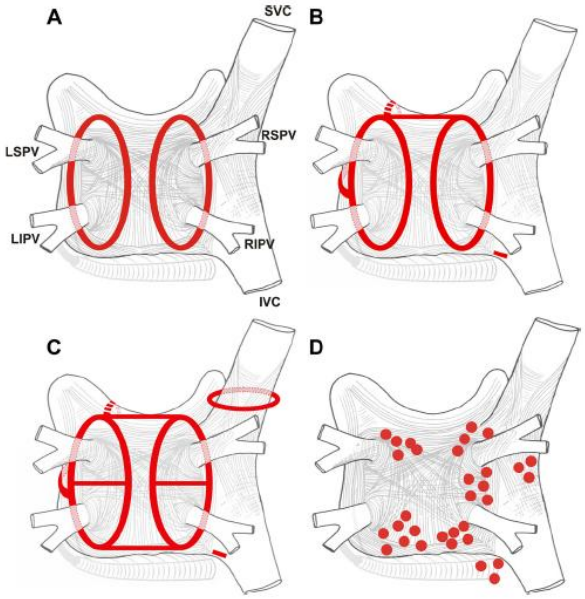
2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design

Table 2 Consensus indications for catheter and surgical ablation of AF

Indications for catheter ablation of AF	Class	Level
Symptomatic AF refractory or intolerant to at least one Class 1 or 3 antiarrhythmic medication		
Paroxysmal: Catheter ablation is recommended*	I	A
Persistent: Catheter ablation is reasonable	IIa	B
Longstanding Persistent: Catheter ablation may be considered	IIb	B
Symptomatic AF prior to initiation of antiarrhythmic drug therapy with a Class 1 or 3 antiarrhythmic agent		
Paroxysmal: Catheter ablation is reasonable	IIa	B
Persistent: Catheter ablation may be considered	IIb	C
Longstanding Persistent: Catheter ablation may be considered	IIb	C

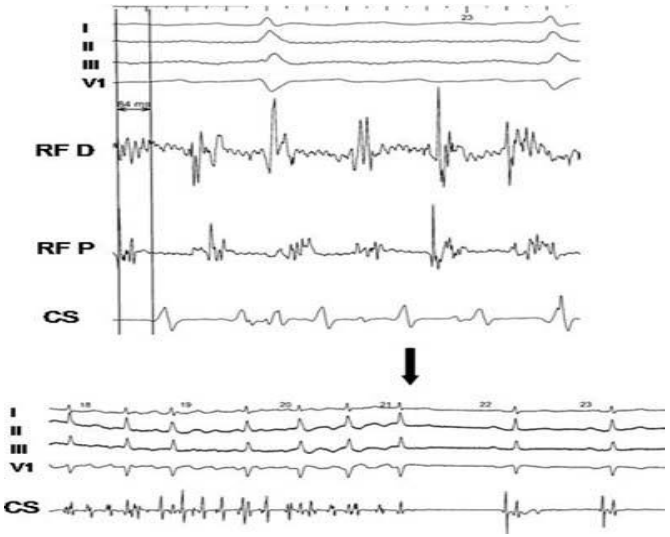
Table 3 Recommendations regarding ablation technique

- Ablation strategies that target the PVs and/or PV antrum are the cornerstone for most AF ablation procedures.
- If the PVs are targeted, electrical isolation should be the goal.
- Achievement of electrical isolation requires, at a minimum, assessment and demonstration of entrance block into the PV.
- Monitoring for PV reconduction for 20 minutes following initial PV isolation should be considered.
- If patients with longstanding persistent AF are approached, operators should consider more extensive ablation based on linear lesions or complex fractionated electrograms.



Heart Rhythm 2012;9:632– 696

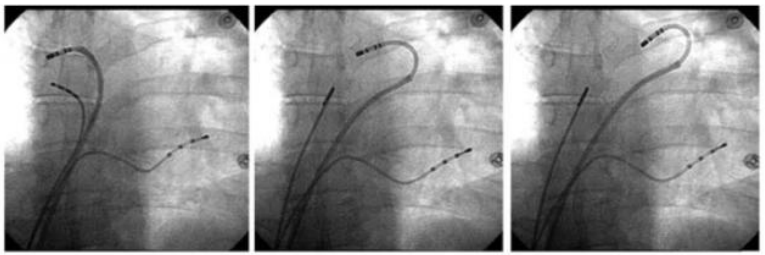
Stepwise Ablation for Long-Lasting Persistent AF



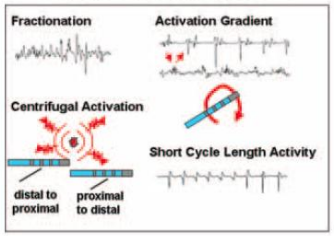
91% of success if non-inducible AF (AF termination in 86% of patients)

Clinical Variables of the Population

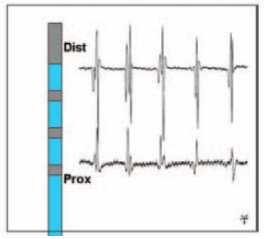
Variable	Mean ± SD
Age (years)	56 ± 10
Male	65 (81%)
Body weight (kg)	86 ± 15
Duration of AF (month)	87 ± 88
Duration without interruption (month)	25 ± 44

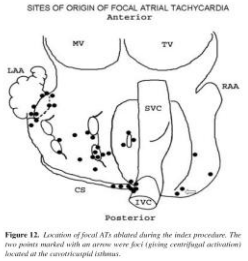


Atrial ablation targets



Local ablation endpoint





1) Pulmonary veins isolation
2) Roof, CS, mitral isthmus lines
3) Complex fractionated atrial electrograms
4) Discrete electrogram during atrial tachycardia

Jais P et al. J Cardiovasc Electrophysiol. 2005;16:1125-1137 and 2006; 17: S28-S36, Suppl. 3

European Heart Journal (2009) **30**, 1105–1112
doi:10.1093/eurheartj/ehp063

Long-term follow-up of persistent atrial fibrillation ablation using termination as a procedural endpoint

Mark D. O'Neill, Matthew Wright*, Sébastien Knecht, Pierre Jaïs, Mélèze Hocini, Yoshihide Takahashi, Anders Jönsson, Frédéric Sacher, Seiichiro Matsuo, Kang Teng Lim, Leonardo Arantes, Nicolas Derval, Nicholas Lellouche, Isabelle Nault, Pierre Bordachar, Jacques Clémenty, and Michel Haïssaguerre

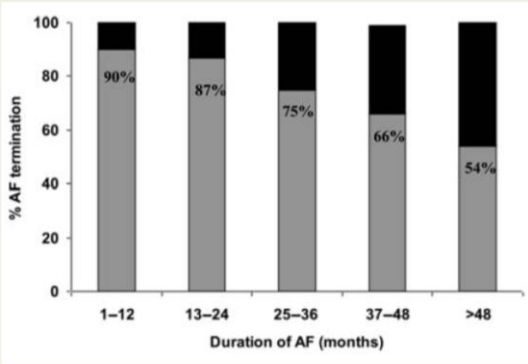


Figure 1 Percentage of patients in whom atrial fibrillation was terminated (grey bars) and not terminated (black bars) during the index procedure plotted as a function of the duration of persistent atrial fibrillation prior to the ablation procedure.

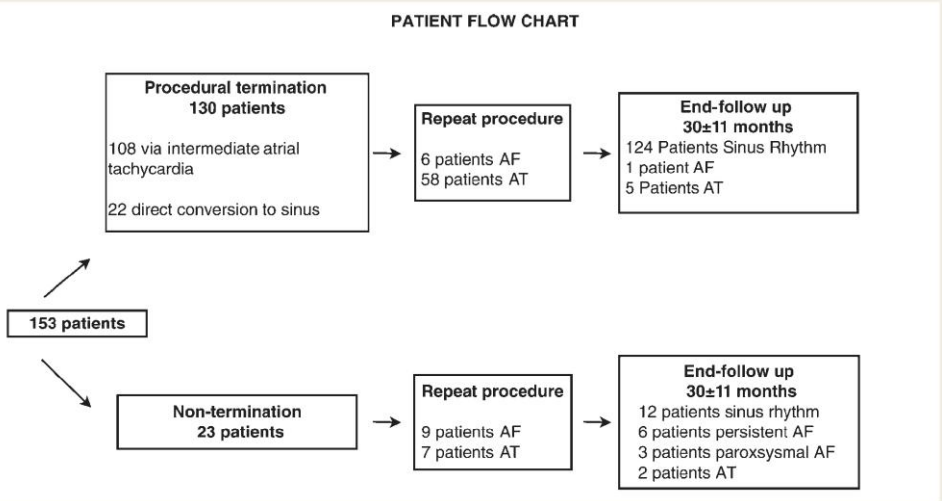


Figure 6 Patient flow chart. AF, atrial fibrillation; AT, atrial tachycardia.

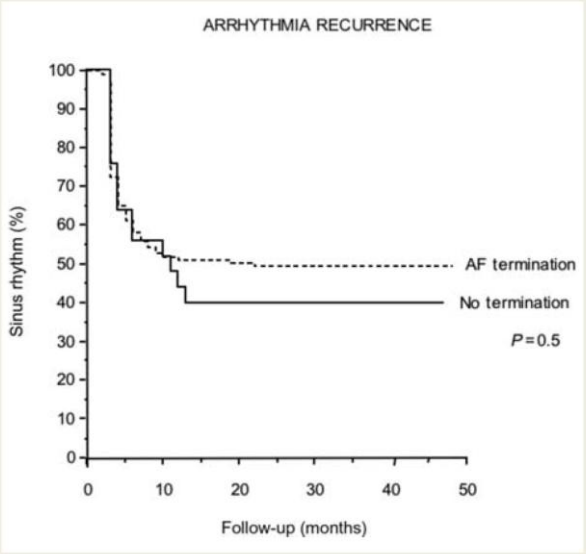


Figure 4 Kaplan–Meier plot demonstrating time to first arrhythmia recurrence in patients undergoing catheter ablation for persistent atrial fibrillation according to whether atrial fibrillation was terminated (termination) or not terminated (non-termination) during the ablation procedure.

Prevalence and Causes of Fatal Outcome in Catheter Ablation of Atrial Fibrillation

Riccardo Cappato, MD,* Hugh Calkins, MD,† Shih-Ann Chen, MD,‡ Wyn Davies, MD,§ Yoshito Iesaka, MD,‖ Jonathan Kalman, MD,¶ You-Ho Kim, MD,# George Klein, MD,** Andrea Natale, MD,†† Douglas Packer, MD,‡‡ Allan Skanes, MD**

Milan, Italy; Baltimore, Maryland; Taipei, Taiwan; London, United Kingdom; Tsuchiura, Ibaraki, Japan; Parkville, Victoria, Australia; Seoul, South Korea; London, Ontario, Canada; Austin, Texas; and Rochester, Minnesota

Objectives The purpose of this study was to provide a systematic multicenter survey on the incidence and causes of death occurring in the setting of or as a consequence of catheter ablation (CA) of atrial fibrillation (AF).

Background CA of AF is considered to be generally safe. However, serious complications, including death, have been reported.

Methods Using a retrospective case series, data relevant to the incidence and cause of intra- and post-procedural death occurring in patients undergoing CA of AF between 1995 and 2006 were collected from 162 of 546 identified centers worldwide.

Results Thirty-two deaths (0.98 per 1,000 patients) were reported during 45,115 procedures in 32,569 patients. Causes of deaths included tamponade in 8 patients (1 later than 30 days), stroke in 5 patients (2 later than 30 days), atrioesophageal fistula in 5 patients, and massive pneumonia in 2 patients. Myocardial infarction, intractable torsades de pointes, septicemia, sudden respiratory arrest, extrapericardial pulmonary vein (PV) perforation, occlusion of both lateral PVs, hemothorax, and anaphylaxis were reported to be responsible for 1 death each, while asphyxia from tracheal compression secondary to subclavian hematoma, intracranial bleeding, acute respiratory distress syndrome, and esophageal perforation from an intraoperative transesophageal echocardiographic probe were causes of 1 late death each.

Conclusions Death is a complication of CA of AF, occurring in 1 of 1,000 patients. Knowledge of possible precipitating causes is key to operators and needs to be considered during decision making with patients. (J Am Coll Cardiol 2009;53:1798–803)

Journal of the American College of Cardiology

Published by Elsevier Inc.

EDITORIAL COMMENT

A 1 Per 1,000 Mortality Rate After Catheter Ablation of Atrial Fibrillation

An Acceptable Risk?*

Bernard Belhassen, MD

FA PLD: não é considerado factor de risco

Table 1 Main Characteristics of the Present Survey

No. of centers reporting data on efficacy and safety	162
No. of centers reporting data on safety	262
No. of patients	32,569
No. of procedures	45,115
Male, %	61.9
Lower and upper age limit for entry, yrs	18–90
Proportion (%) of centers based on no. of procedures per year	
<20	35
21 to 50	28
51 to 100	24
>100	13
Proportion (%) of centers with experience in one ablation technique	
Lasso-guided	27
CARTO-guided	48
Other techniques	4
Combination	21

Table 3 Fatality Rates According to Type of Complication

Complication	Death/Overall Events (n)	Rate (%)
Tamponade	7/331	2.3
Atrioesophageal fistula	5/7	71.4
Massive pneumonia	2/2	100.0
Peripheral embolism		
Stroke	3/59	5.1
Myocardial infarction	1/3	33.3
Torsades de pointes	1/1	100.0
Septicemia (3 weeks after procedure)	1/3	33.3
Sudden respiratory arrest	1/1	100.0
Acute pulmonary vein occlusion of both lateral veins	1/6	16.7
Internal bleeding (includes hemothorax, subclavian hematoma, and extrapericardial pulmonary vein perforation)	3/21	14.3
Anaphylaxis	1/6	16.7
Acute respiratory distress syndrome	1/1	100.0
Esophageal perforation from intraoperative TEE probe	1/1	100.0
Intracranial bleeding under oral anticoagulation therapy in prior stroke	1/4	25.0

CPV Ablation for Chronic AFib

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Circumferential Pulmonary-Vein Ablation for Chronic Atrial Fibrillation

Hakan Oral, M.D., Carlo Pappone, M.D., Aman Chugh, M.D., Eric Good, D.O., Frank Bogun, M.D., Frank Pelosi, Jr., M.D., Eric R. Bates, M.D., Michael H. Lehmann, M.D., Gabriele Vicedomini, M.D., Giuseppe Augello, M.D., Eustachio Agricola, M.D., Simone Sala, M.D., Vincenzo Santinelli, M.D., and Fred Morady, M.D.

ABSTRACT

BACKGROUND

We conducted a randomized, controlled trial of circumferential pulmonary-vein ablation for the treatment of chronic atrial fibrillation.

METHODS

A total of 146 patients with a mean (±SD) age of 57±9 years who had chronic atrial fibrillation were randomly assigned to receive amiodarone and undergo two cardioversions during the first three months alone (the control group) or in combination with circumferential pulmonary-vein ablation. Cardiac rhythm was assessed with daily telephonic transmissions for one year. The left atrial diameter and the severity of symptoms were assessed at 12 months.

RESULTS

Among the 77 patients assigned to undergo circumferential pulmonary-vein ablation, ablation was repeated because of recurrent atrial fibrillation in 26 percent of patients and atypical atrial flutter in 6 percent. An intention-to-treat analysis showed that 74 percent of patients in the ablation group and 58 percent of those in the control group were free of recurrent atrial fibrillation or flutter without antiarrhythmic-drug therapy at one year (P=0.05). Among the 69 patients in the control group, 53 (77 percent) crossed over to undergo circumferential pulmonary-vein ablation for recurrent atrial fibrillation by one year and only 3 (4 percent) were in sinus rhythm without antiarrhythmic-drug therapy or ablation. There were significant decreases in the left atrial diameter (12±11 percent, P<0.001) and the symptom severity score (59±21 percent, P<0.001) among patients who remained in sinus rhythm after circumferential pulmonary-vein ablation. Except for atypical atrial flutter, there were no complications attributable to circumferential pulmonary-vein ablation.

CONCLUSIONS

Sinus rhythm can be maintained long term in the majority of patients with chronic atrial fibrillation by means of circumferential pulmonary-vein ablation independently of the effects of antiarrhythmic-drug therapy, cardioversion, or both. The maintenance of sinus rhythm is associated with a significant decrease in both the severity of symptoms and the left atrial diameter.

Randomized trial, 146 pts, 57± 9 years

77% crossed-over from control to ablation

Repeated ablation in 26% of pts

Table 2. Characteristics of the Patients.*

Characteristic	Control (N=69)	Circumferential Pulmonary-Vein Ablation (N=77)
Age (yr)	58±8	55±9†
Sex (no. of patients)		
Male	62	67
Female	7	10
Duration of atrial fibrillation (yr)	4±4	5±4
Left atrial diameter (mm)	45±5	45±6
Left ventricular ejection fraction (%)	56±7	55±7
Structural heart disease (no. of patients)	6	6

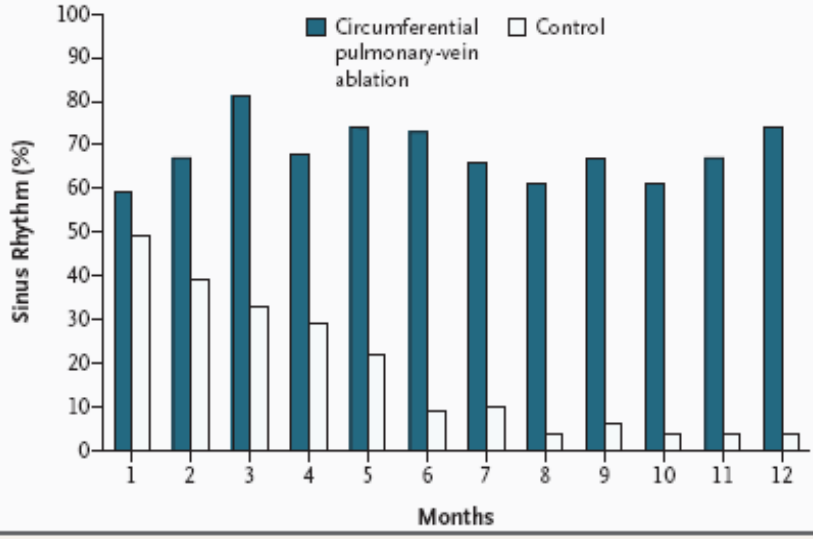


Figure 3. Percentages of Patients without Atrial Fibrillation and Atrial Flutter in the Absence of Antiarrhythmic-Drug Therapy.

Ablation: SR (74% vs 3%)

N Engl J Med 2006;354:934

AF Ablation in CHF

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 2, 2004 VOL. 351 NO. 23

Catheter Ablation for Atrial Fibrillation in Congestive Heart Failure

Li-Fern Hsu, M.B., B.S., Pierre Jaïs, M.D., Prashanthan Sanders, M.B., B.S., Ph.D., Stéphane Garrigue, M.D., Ph.D., Mélèze Hocini, M.D., Frédéric Sacher, M.D., Yoshihide Takahashi, M.D., Martin Rotter, M.D., Jean-Luc Pasquié, M.D., Ph.D., Christophe Scavée, M.D., Pierre Bordachar, M.D., Jacques Clémenty, M.D., and Michel Haïssaguerre, M.D.

ABSTRACT

BACKGROUND

Congestive heart failure and atrial fibrillation often coexist, and each adversely affects the other with respect to management and prognosis. We prospectively evaluated the effect of catheter ablation for atrial fibrillation on left ventricular function in patients with heart failure.

METHODS

We studied 58 consecutive patients with congestive heart failure and a left ventricular ejection fraction of less than 45 percent who were undergoing catheter ablation for atrial fibrillation. We selected as controls 58 patients without congestive heart failure who were undergoing ablation for atrial fibrillation, matched according to age, sex, and classification of atrial fibrillation. We evaluated the patients' left ventricular function and dimensions, symptom score, exercise capacity, and quality of life at baseline and at months 1, 3, 6, and 12.

RESULTS

After a mean (±SD) of 12±7 months, 78 percent of the patients with congestive heart failure and 84 percent of the controls remained in sinus rhythm (P=0.34) (69 percent and 71 percent, respectively, were in sinus rhythm without the administration of antiarrhythmic drugs). The patients with congestive heart failure had significant improvement in left ventricular function (increases in the ejection fraction and fractional shortening of 21±13 percent and 11±7 percent, respectively; P<0.001 for both comparisons), left ventricular dimensions (decreases in the diastolic and systolic diameters of 6±6 mm and 8±7 mm, respectively; P=0.03 and P<0.001, respectively), exercise capacity, symptoms, and quality of life. The ejection fraction improved significantly not only in patients without concurrent structural heart disease (24±10 percent, P<0.001) and those with inadequate rate control before ablation (23±10 percent, P<0.001), but also in those with coexisting heart disease (16±14 percent, P<0.001) and adequate rate control before ablation (17±15 percent, P<0.001).

CONCLUSIONS

Restoration and maintenance of sinus rhythm by catheter ablation without the use of drugs in patients with congestive heart failure and atrial fibrillation significantly improve cardiac function, symptoms, exercise capacity, and quality of life.

From Hôpital Cardiologique du Haut-Lévêque and Université Victor Ségalen, Bordeaux II, Bordeaux-Pessac, France. Address reprint requests to Dr. Jaïs at Hôpital Cardiologique du Haut-Lévêque, Ave. de Magellan 33604, Bordeaux-Pessac, France, or at pierre.jais@chu-bordeaux.fr.

N Engl J Med 2004;351:2373-83.

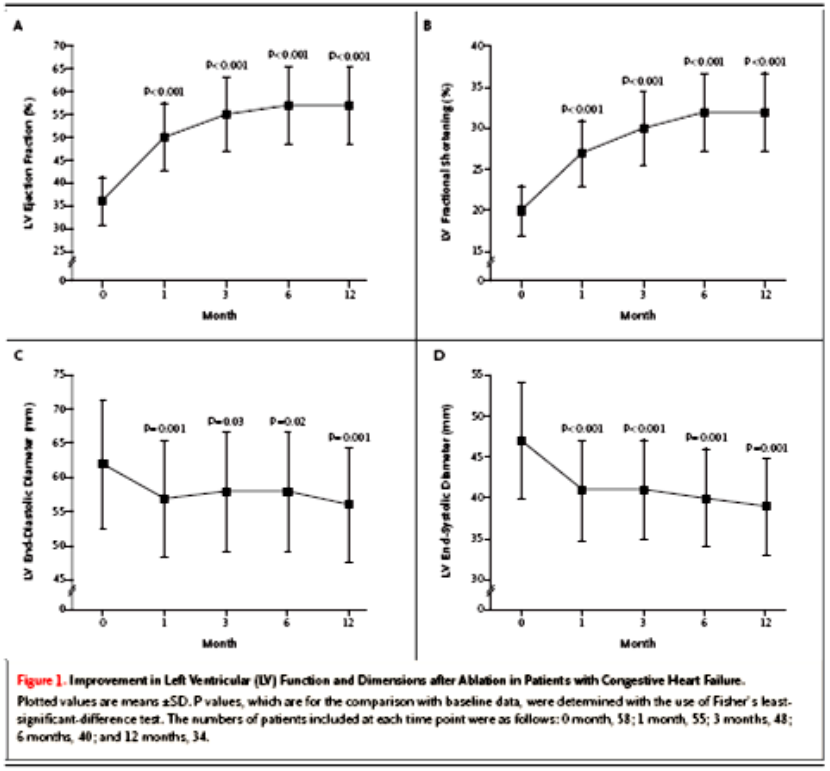


Figure 1. Improvement in Left Ventricular (LV) Function and Dimensions after Ablation in Patients with Congestive Heart Failure.
Plotted values are means ±SD. P values, which are for the comparison with baseline data, were determined with the use of Fisher's least-significant-difference test. The numbers of patients included at each time point were as follows: 0 month, 58; 1 month, 55; 3 months, 48; 6 months, 40; and 12 months, 34.

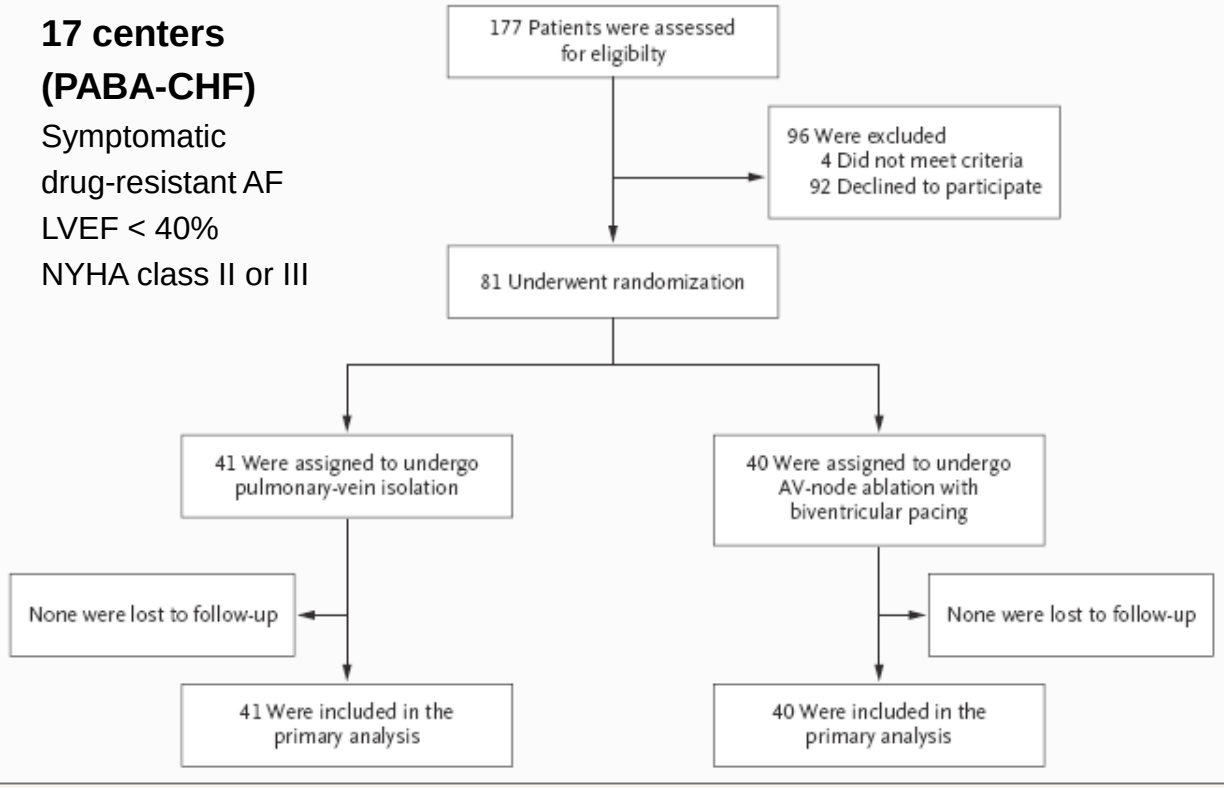
58 CHF pts vs 58 control pts
SR: 78% CHF pts, 84% control group

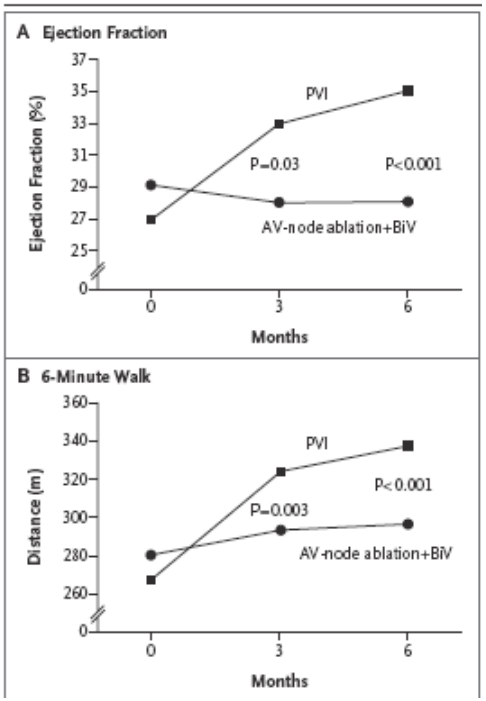
Ablation improves:
LVEF, symptoms and QoL

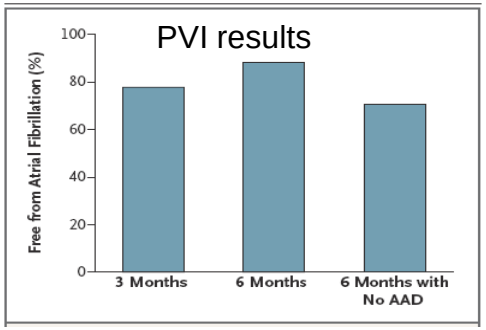
N Engl J Med 2004;351:2373-83

Pulmonary-Vein Isolation for Atrial Fibrillation in Patients with Heart Failure

17 centers
(PABA-CHF)
Symptomatic
drug-resistant AF
LVEF < 40%
NYHA class II or III







CONCLUSIONS

Pulmonary-vein isolation was superior to atrioventricular-node ablation with biventricular pacing in patients with heart failure who had drug-refractory atrial fibrillation. (ClinicalTrials.gov number, NCT00599976.)

N Engl J Med 2008;359:1778-85.

Impact of type of atrial fibrillation and repeat catheter ablation on long-term freedom from atrial fibrillation: Results from a multicenter study

Mandeep Bhargava, MD,*[*] Luigi Di Biase, MD,*[§††*] Prasant Mohanty, MBBS, MPH,[§] Subramanyam Prasad, MD,* David O. Martin, MD, MPH,* Michelle Williams-Andrews, RN,* Oussama M. Wazni, MD,* J. David Burkhardt, MD,[§] Jennifer E. Cummings, MD,* Yaariv Khaykin, MD,[¶] Atul Verma, MD,[¶] Steven Hao, MD,[†] Salwa Beheiry, RN,[†] Richard Hongo, MD,[†] Antonio Rossillo, MD,[‡] Antonio Raviele, MD,[‡] Aldo Bonso, MD,[‡] Sakis Themistoclakis, MD,[‡] Kelly Stewart, RN,* Walid I. Saliba, MD,* Robert A. Schweikert, MD,** Andrea Natale, MD, FACC, FHRS[§¶¶§§]

*From the *Cleveland Clinic, Cleveland, Ohio, [†]California Pacific Medical Center, San Francisco, California, [‡]Umberto I Hospital, Mestre-Venice, Italy, [¶]Southlake Regional Health Center, Newmarket, Ontario, Canada, **Akron General Medical Center, Akron, Ohio, [¶¶]Stanford University, Palo Alto, California, [§§]Case Western Reserve University, Cleveland, Ohio, [§]Texas Cardiac Arrhythmia Institute at St. David's Medical Center, Austin, Texas, and [††]Department of Cardiology, University of Foggia, Foggia, Italy.*

BACKGROUND/OBJECTIVE The purpose of this prospective multicenter study was to compare results of catheter ablation in patients with paroxysmal atrial fibrillation (PAF) and those with nonparoxysmal atrial fibrillation (NPAF). The impact and the role of repeat catheter ablation were assessed in patients with recurrence.

METHODS/RESULTS One thousand four hundred four patients underwent catheter ablation for atrial fibrillation (AF) performed by 12 operators at four institutions using a single technique guided by intracardiac echocardiography. Of these patients, 728 had PAF and 676 had NPAF. Among the NPAF patients, 293 had persistent AF and 383 had long-standing persistent AF. Patients with NPAF had a higher incidence of hypertension and/or structural heart disease (64.8% vs 48.5%, $P = .003$) and a lower mean left ventricular ejection fraction (53.3% ± 8.7% vs 55.7 ± 6.5%, $P < .001$). All patients underwent antral isolation of all four pulmonary veins and the superior vena cava. At mean follow-up of 57 ± 17 months, 565 of 728 patients with PAF and 454 of 676 patients with NPAF (77.6% vs 67.2%, $P < .001$) had freedom from AF after a single ablation procedure. For arrhythmia recurrences, 74.2% (121/163) patients with PAF and 74.8% (166/222) with NPAF underwent repeat ablation, after which 92.4% patients with PAF and 84.0% patients with NPAF remained free from AF.

CONCLUSION Pulmonary vein antrum isolation guided by intracardiac echocardiography results in significant freedom from AF, even when performed by multiple operators in different centers. At least moderate efficacy can be achieved in patients with NPAF, although the success rate is lower than in patients with PAF. Considerably higher success can be achieved in both groups with repeat ablation.

KEYWORDS Atrial fibrillation; Catheter ablation; Nonparoxysmal; long-standing persistent atrial fibrillation

(Heart Rhythm 2009;6:1403–1412)

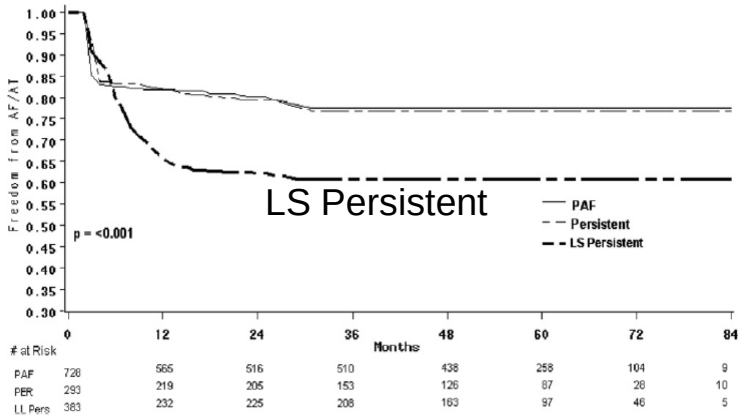


Figure 4 Kaplan-Meier survival estimates for freedom from atrial fibrillation/atrial tachycardia (AF/AT) recurrence after a single ablation. LS = long-standing; PAF = paroxysmal atrial fibrillation.

Table 3 Multivariate Cox regression analysis of recurrence of AF after first ablation (primary recurrence) of the entire population

	Hazard ratio	95% Confidence interval	*P* value
Age	0.84	0.63–1.12	.228
Sex (female)	1.33	0.97–1.84	.078
Duration of AF	1.30	1.02–1.71	.038
Left atrial size (>40 mm)	1.30	1.01–1.67	.032
Left ventricular ejection fraction (>55%)	0.85	0.64–1.13	.265
Hypertension	1.14	0.85–1.52	.375
Structural heart disease	1.00	0.7–1.43	.989
AF type: PAF vs NPAF	1.53	1.15–2.03	.004

Age and duration of AF are dichotomized at median.
AF = atrial fibrillation; NPAF = nonparoxysmal atrial fibrillation; PAF = paroxysmal atrial fibrillation.

Table 4 Multivariate Cox regression analysis of recurrence of AF after redo ablation(s) (secondary recurrence) of the entire population

Redo ablation: 24.5%

	Hazard ratio	95% Confidence interval	*P* value
Age	0.66	0.35–1.25	.200
Sex (female)	2.19	1.08–4.46	.030
Duration of AF	1.55	0.82–2.93	.176
Left atrial size (>40 mm)	1.14	0.6–2.17	.688
Left ventricular ejection fraction (>55%)	0.70	0.32–1.57	.390
Hypertension	2.13	1.11–4.1	.023
Structural heart disease	0.72	0.32–1.63	.425
AF type: PAF vs NPAF	3.32	1.47–7.48	.004

Age and duration of AF are dichotomized at median.
AF = atrial fibrillation; NPAF = nonparoxysmal atrial fibrillation; PAF = paroxysmal atrial fibrillation.

Ablation for longstanding permanent atrial fibrillation: Results from a randomized study comparing three different strategies

Claude S. Elayi, MD,* Atul Verma, MD,¶ Luigi Di Biase, MD,†‡ Chi Keong Ching, MD,§§ Dimpi Patel, DO,‡ Conor Barrett, MD,## David Martin, MD,§ Bai Rong, MD,*** Tamer S. Fahmy, MD,¶¶ Yaariv Khaykin, MD,¶ Richard Hongo, MD,‖ Steven Hao, MD,‖ Gemma Pelargonio, MD,# Antonio Dello Russo, MD,# Michela Casella, MD,# Pietro Santarelli, MD,# Domenico Potenza, MD,†† Raffaele Fanelli, MD,†† Raimondo Massaro, MD,†† Mauricio Arruda, MD,‖‖ Robert A. Schweikert, MD,††† Andrea Natale, FHRS*‡‡‖‖

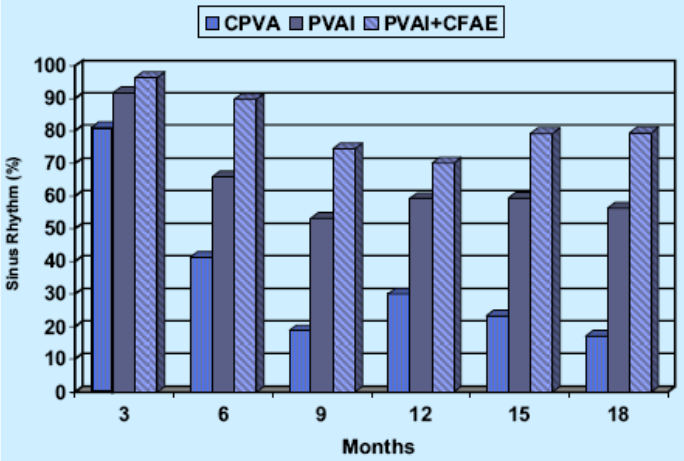
144 pts Longstanding permanent AF

Group 1: CPVA (47 pts) EGM reduction 80%
Group 2 : PVAI (48 pts) PVI with entry block
Group 3 : CFAE (RA and LA)+PVAI (49 pts)

Table 3 Follow-up and success rate (primary and secondary endpoints)

	Group 1 CPVA n = 47	Group 2 PVAI n = 48	Group 3 CFAE + PVAI n = 49	*P* value
Mean follow-up (mo)	16.7 ± 1.6	16.4 ± 1.1	16.2 ± 1.2	
Patients free of AF/AT after a single procedure (primary endpoint)	5 (11%)	19 (40%)	30 (61%)	<.001
Patients free of AF/AT after 2 procedures and no AADs (secondary endpoint)	8 (17%)	27 (56%)	39 (80%)	<.001
Patients free of AF/AT after 1 or 2 procedures and AADs (secondary endpoint)	13 (28%)	41 (83%)	46 (94%)	<.001

Pairwise comparisons are reported in the Results section under the subheading Follow-up and success rate.
AADs = antiarrhythmic drugs; other abbreviations as in Tables 1 and 2.



CONCLUSION

The hybrid AF ablation strategy including antrum isolation and CFAE ablation had the highest likelihood of maintaining sinus rhythm in pts with longstanding permanent AF.

Free of AF and AT:
CFAE+ PVAI (61%) outperformed
PVAI (40%), which was superior to CPVA (11%)

Heart Rhythm 2008;5:1658 –1664

Efficacy of Catheter Ablation in Nonparoxysmal Atrial Fibrillation Patients with Severe Enlarged Left Atrium and Its Impact on Left Atrial Structural Remodeling

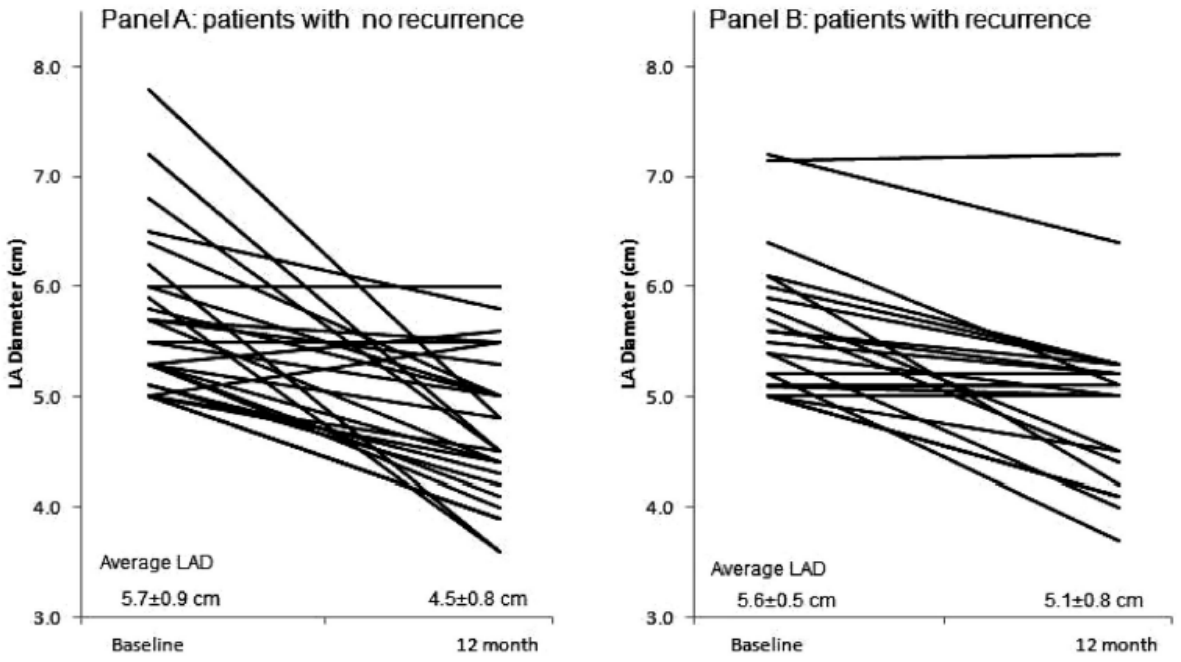


Figure 1. *Change in left atrial diameter (LAD) pre-ablation and 12 months postablation. The lines represent the trajectory of LAD for each patient with no arrhythmia recurrence (Panel A) and those who experienced arrhythmia recurrence (Panel B). Left atrial diameter (mean ± SD) in both groups was significantly lower at 12 months follow-up compared to baseline (P from paried comparison <0.001).*

TABLE 2
Echo Parameters Correlation With AF Recurrence

	Overall Population (n = 50)				Recurrence-Free (n = 27)				With Recurrence (n = 23)			
Parameters	**Baseline**	**12 Month**	**%Δ**	**P**	**Baseline**	**12 Month**	**%Δ**	**P**	**Baseline**	**12 Month**	**%Δ**	**P**
LA diameter (mm)	56.9 ± 7.8	47.9 ± 8.8	15.2	<0.001	57.6 ± 9.5	45.5 ± 8.3	20.1	<0.001	56.1 ± 5.2	50.9 ± 8.5	9.3	0.002
LVEDD index (mm/m)	24.1 ± 5.0	23.6 ± 3.6	2.6	0.889	23.5 ± 3.9	23.4 ± 2.9	0.96	0.930	24.7 ± 6.1	23.7 ± 3.3	4.4	0.636
LVESD index (mm/m)	16.6 ± 4.4	15.9 ± 2.9	3.6	0.193	16.1 ± 3.9	15.6 ± 2.5	6.6	0.294	17.0 ± 5.1	16.5 ± 3.5	0.21	0.501
LVEF (%)	52.7 ± 13.7	58.3 ± 8.7	20.5	0.032	54.0 ± 13.7	59.9 ± 7.4	27.9	0.013	51.3 ± 13.0	56.1 ± 10.0	13.2	0.133

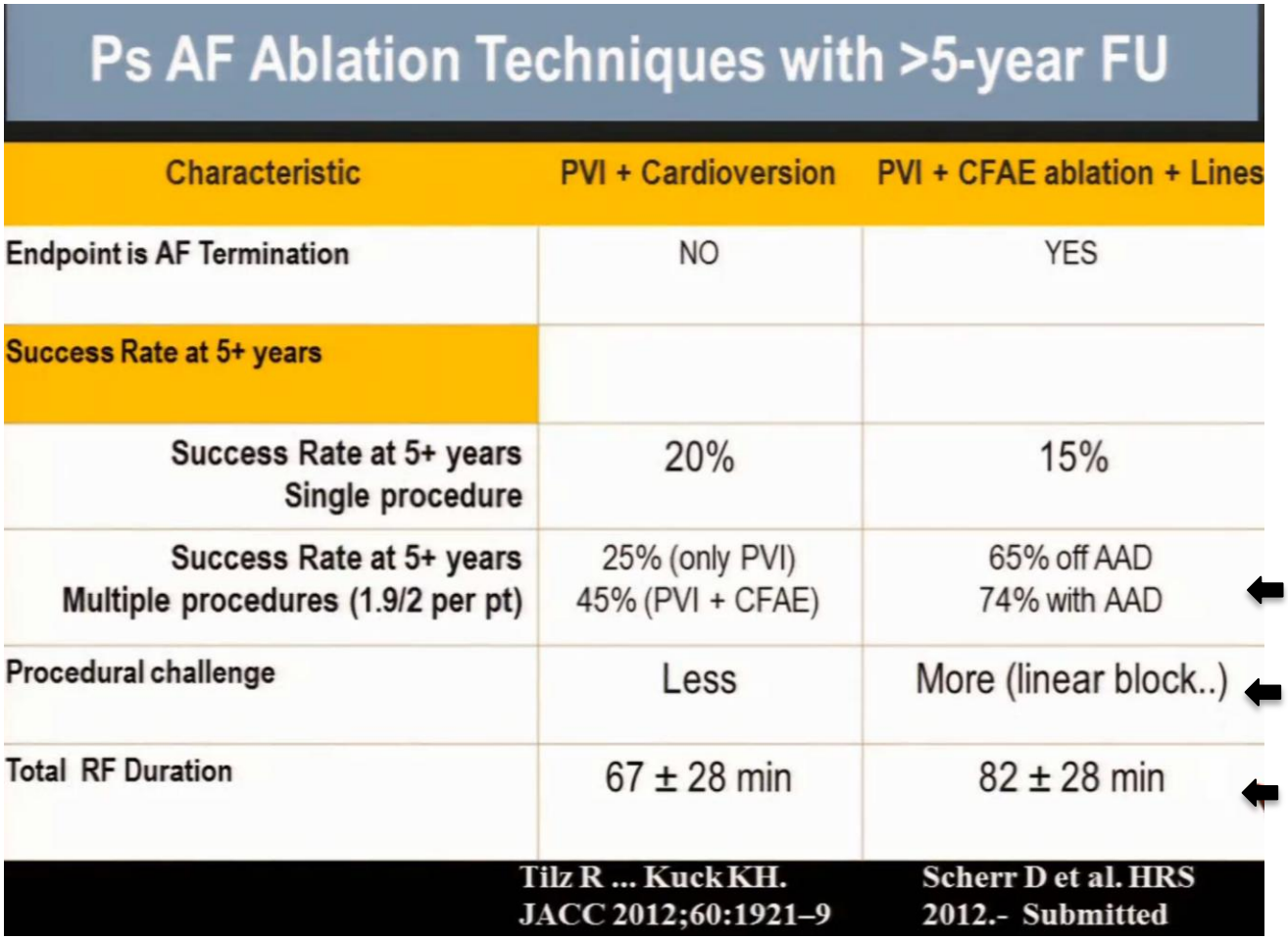
LA = left atrial; LVEDD = left ventricular end-diastolic diameter; LVESD = left ventricular systolic diameter; LVEF = left ventricular ejection fraction.

Conclusion:

AF ablation is effective in NPAF patients with severe LA enlargement and is associated with LA reverse remodeling and improvement in LVEF

(J CardiovascElectrophysiol, Vol. 24, pp. 1224-1231, November 2013)

Persistent AF
PVI vs Stepwise Approach



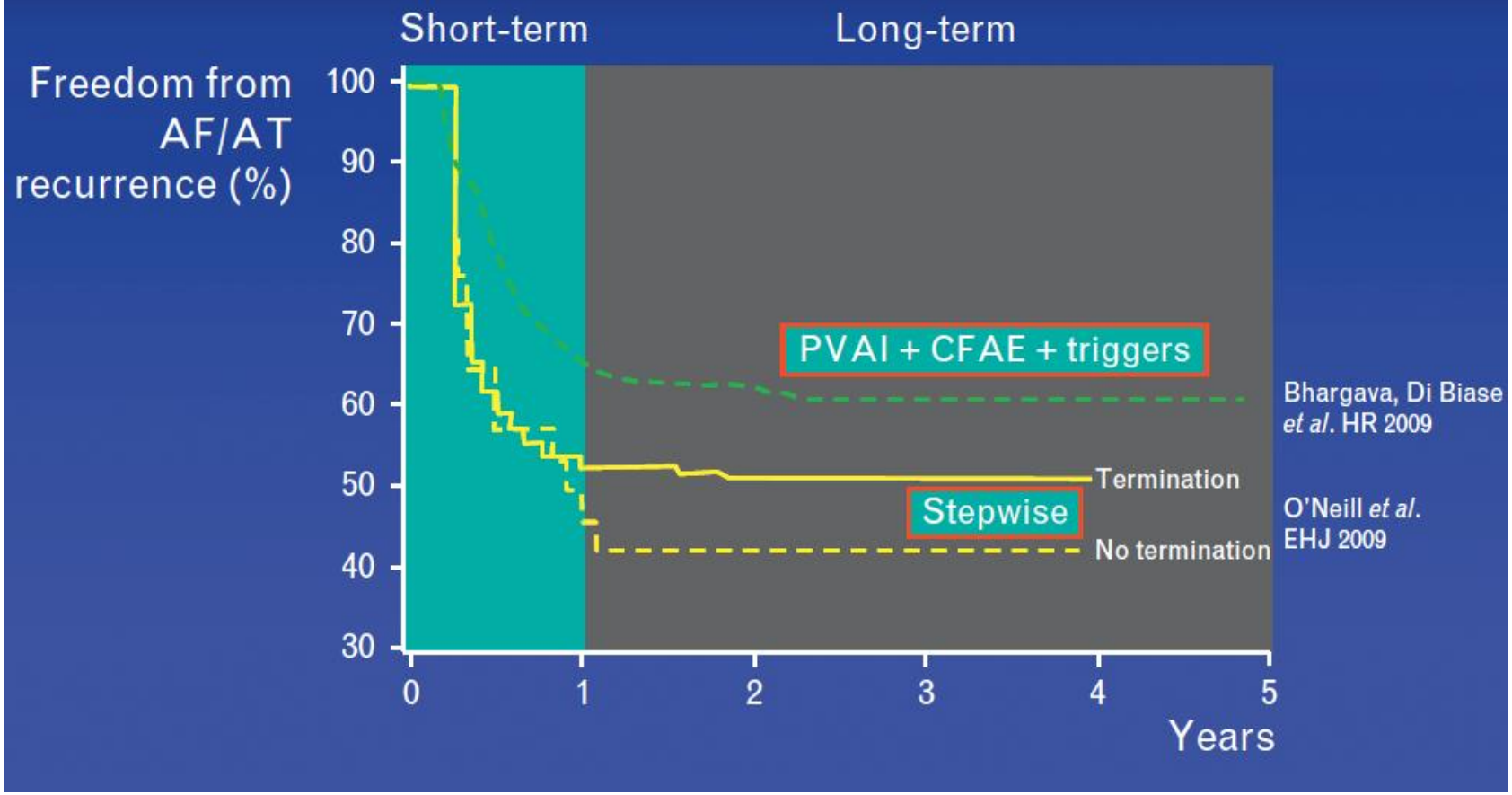
Ps AF Ablation Techniques with >5-year FU

Characteristic	PVI + Cardioversion	PVI + CFAE ablation + Lines
Endpoint is AF Termination	NO	YES
Success Rate at 5+ years		
Success Rate at 5+ years Single procedure	20%	15%
Success Rate at 5+ years Multiple procedures (1.9/2 per pt)	25% (only PVI) 45% (PVI + CFAE)	65% off AAD 74% with AAD
Procedural challenge	Less	More (linear block..)
Total RF Duration	67 ± 28 min	82 ± 28 min
	Tilz R ... Kuck KH. JACC 2012;60:1921–9	Scherr D et al. HRS 2012.- Submitted

Conclusions: **CPVI alone is sufficient to restore SR in 43.2% LP AF**

JCE 2010: 21, 1085-1093

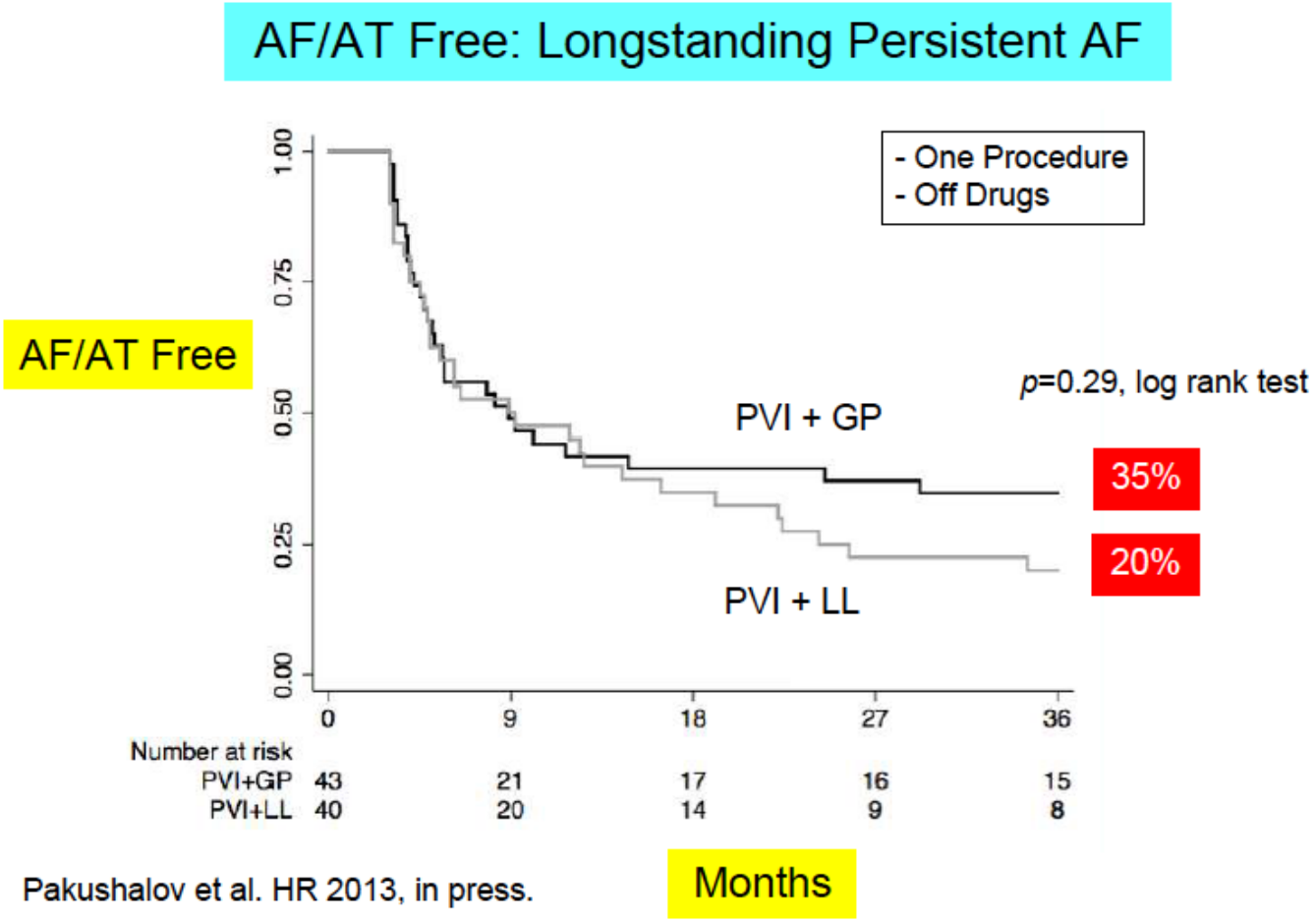
Long-standing persistent AF ablation outcomes
Short- and long-term success



Ablação de FA Persistente de Longa Duração:
Aos 5 anos 40 a 60% dos doentes em ritmo sinusal

Curr Opin Cardiol 2013, 28:26–35

PVI + GP ablation vs PVI + CFAE



Pakushalov et al. HR 2013, in press.

Treatment of Atrial Fibrillation by the Ablation of Localized Sources

JACC Vol. 60, No. 7, 2012
August 14, 2012:628–36

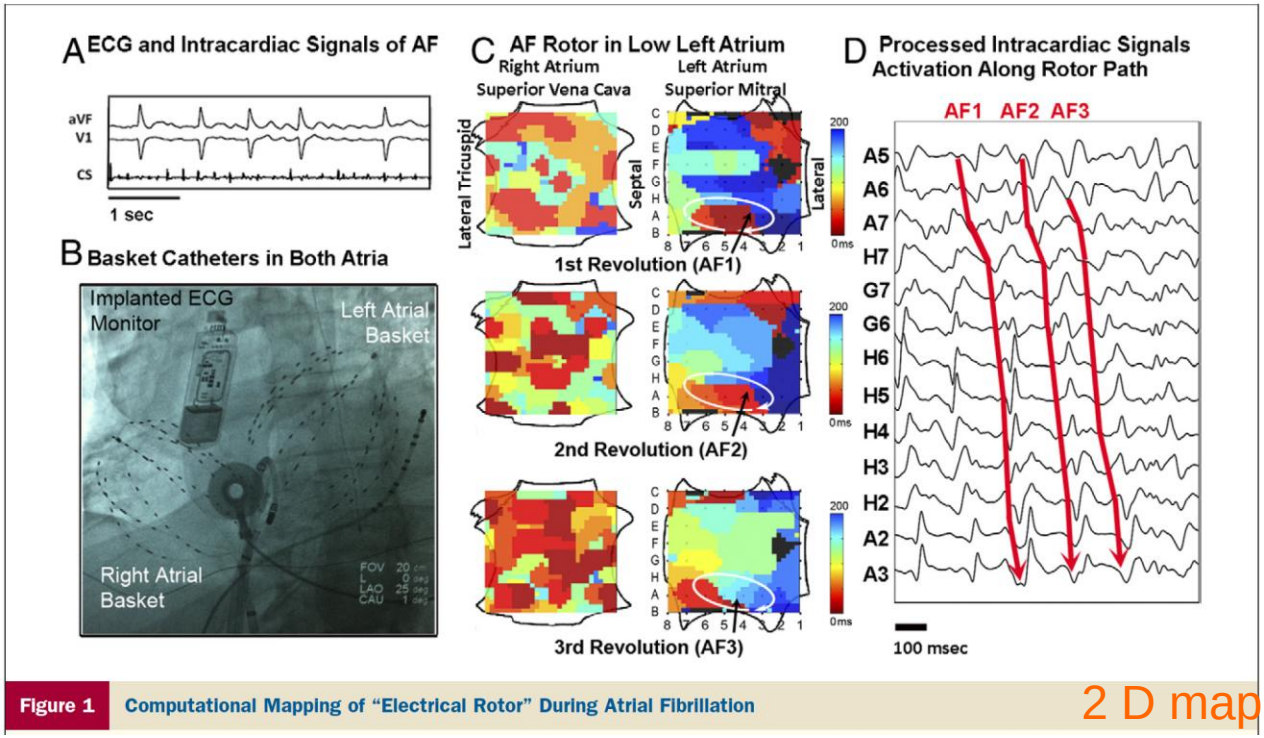
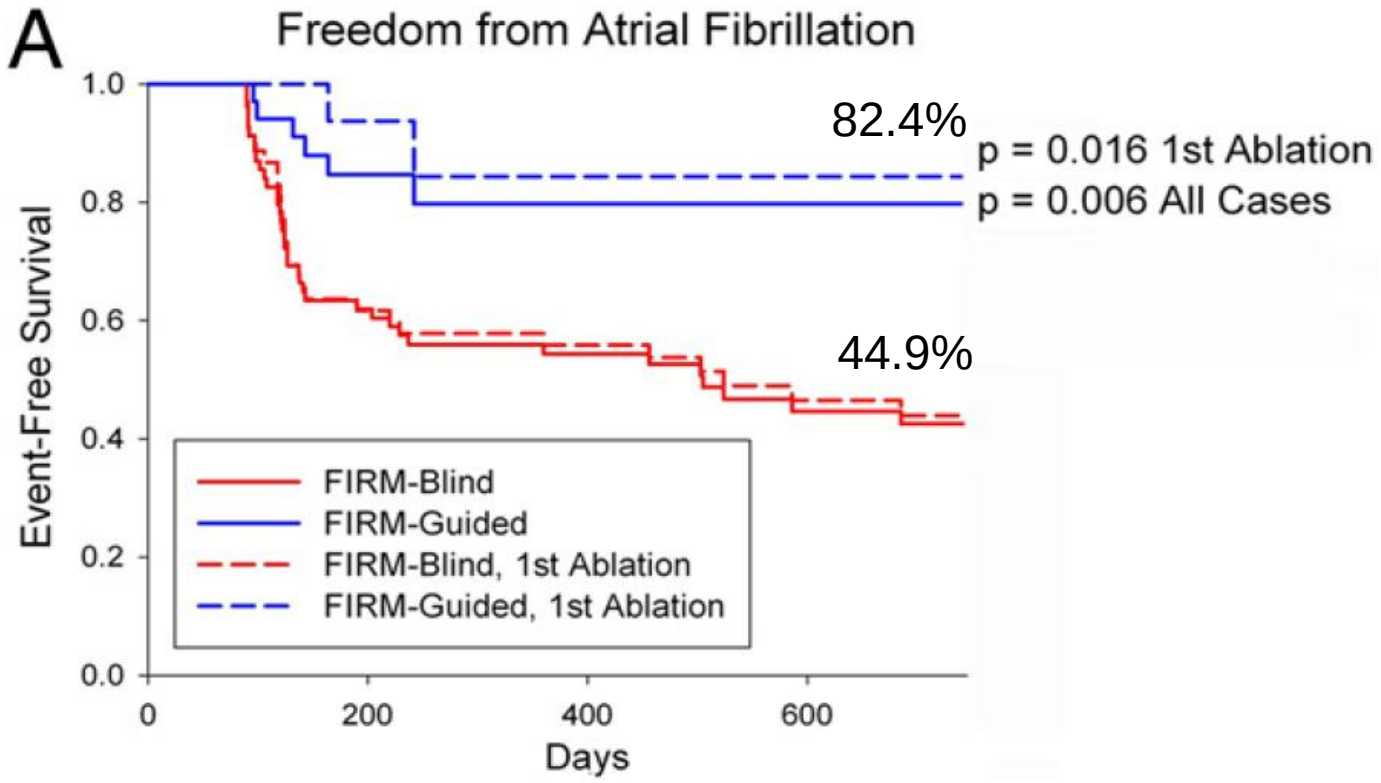


Figure 1 Computational Mapping of "Electrical Rotor" During Atrial Fibrillation

2 D map

CONFIRM (Conventional Ablation for Atrial Fibrillation With or Without Focal Impulse and Rotor Modulation) Trial

Treatment of Atrial Fibrillation by the Ablation of Localized Sources



CONFIRM (Conventional Ablation for Atrial Fibrillation With or Without Focal Impulse and Rotor Modulation) Trial

Catheter Ablation for Atrial Fibrillation

Are Results Maintained at 5 Years of Follow-Up?

Rukshen Weerasooriya, BMEDSC(HONS), MBBS,*† Paul Khairy, MD, PHD,‡ Jean Litalien, MD,* Laurent Macle, MD,‡ Meleze Hocini, MD,* Frederic Sacher, MD,* Nicolas Lellouche, MD,* Sebastien Knecht, MD,* Matthew Wright, PHD, MD,* Isabelle Nault, MD,* Shinsuke Miyazaki, MD,* Christophe Scavee, MD,* Jacques Clementy, MD,* Michel Haissaguerre, MD,* Pierre Jais, MD*

Bordeaux–Pessac, France; Crawley, Western Australia; and Montreal, Quebec, Canada

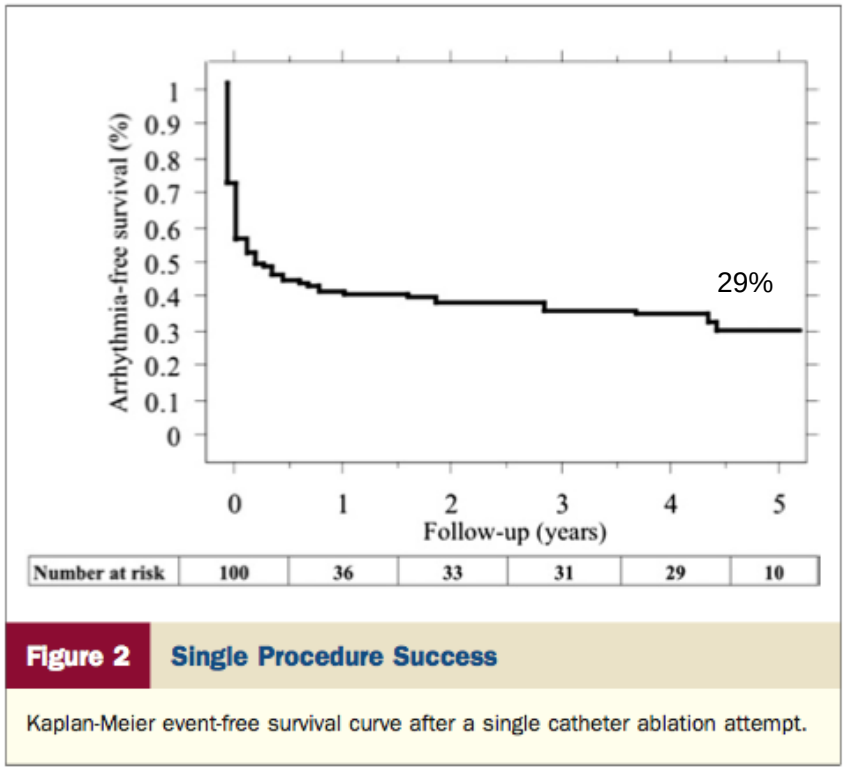


Figure 2 **Single Procedure Success**

Kaplan-Meier event-free survival curve after a single catheter ablation attempt.

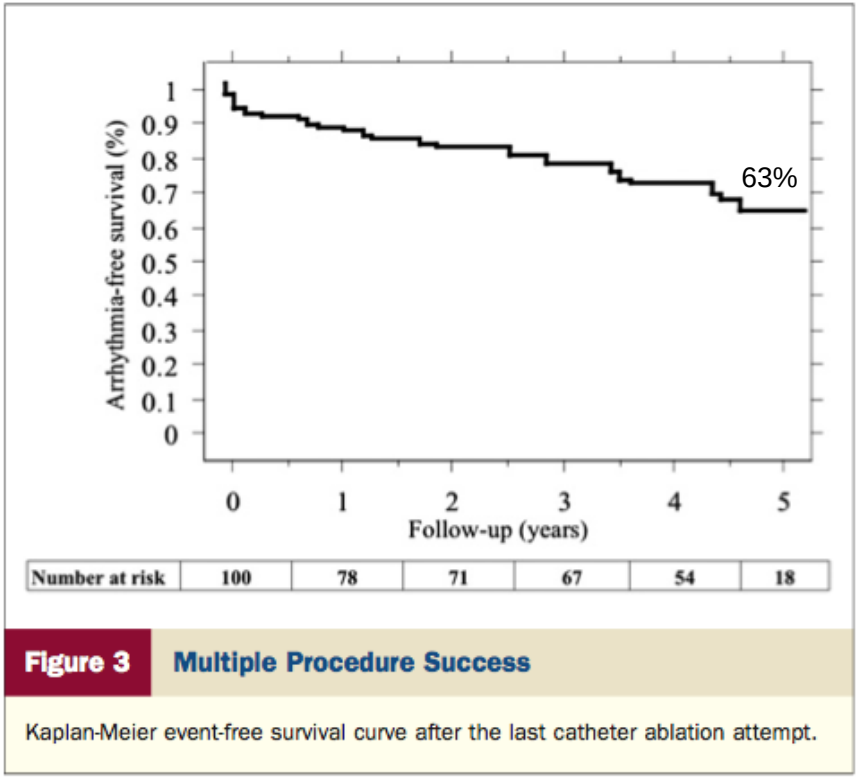


Figure 3 **Multiple Procedure Success**

Kaplan-Meier event-free survival curve after the last catheter ablation attempt.

J Am Coll Cardiol 2011;57:160–6

Europace (2009) **11**, 1289–1294
doi:10.1093/europace/eup198

Left atrial volume calculated by multi-detector computed tomography may predict successful pulmonary vein isolation in catheter ablation of atrial fibrillation

João Abecasis*, Raquel Dourado, António Ferreira, Carla Saraiva, Diogo Cavaco, Katya Reis Santos, Francisco Belo Morgado, Pedro Adragão, and Aniceto Silva

Cardiologia, Centro Hospitalar de Lisboa Ocidental, Rua Professor Reynaldo dos Santos 2795-523 Carnaxide, Portugal

Received 26 February 2009; accepted after revision 29 June 2009; online publish-ahead-of-print 23 July 2009

Figure 1 Two- and three-dimensional renderings of left atrium and pulmonary veins.

Figure 2 Left atrium volume evaluation. Semi-automatic software with atrium endocardial contour, automatic detection and operator correction.

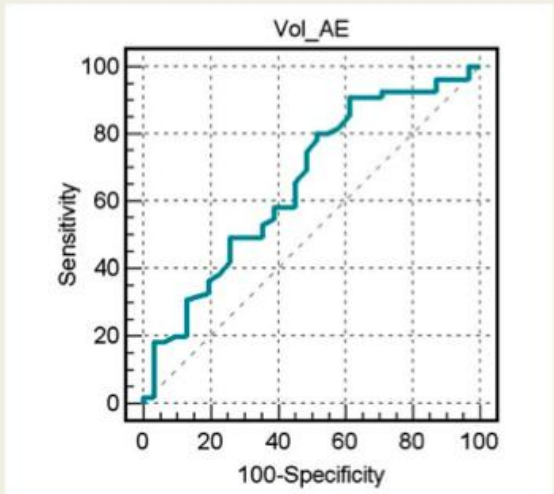


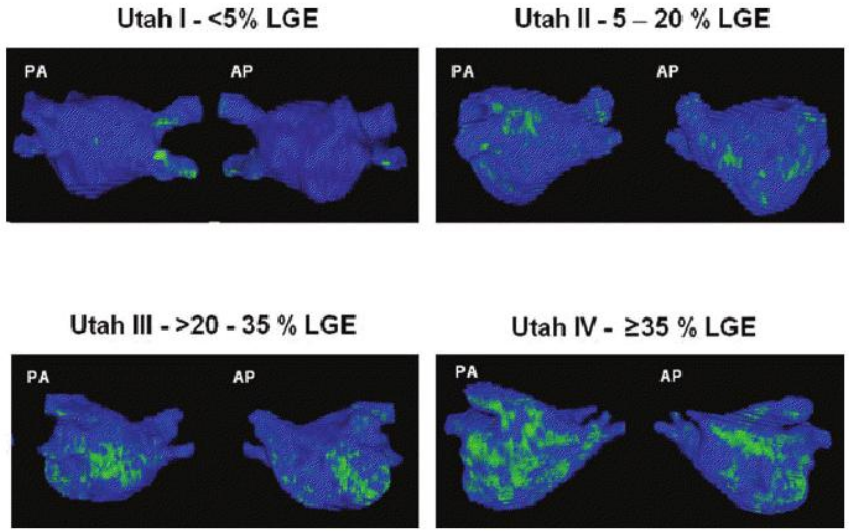
Figure 5 Receiver operating characteristics (ROC) curve: success after ablation of AF for LA volumes below 145 mL (estimation by multi-slice CT).

Tailored Management of Atrial Fibrillation Using a LGE-MRI Based Model: From the Clinic to the Electrophysiology Laboratory

GASTON R. VERGARA, M.D. and NASSIR F. MARROUCHE, M.D.

From the Comprehensive Arrhythmia Research and Management (CARMA), University of Utah, Salt Lake City, Utah, USA

Tailored Management of Atrial Fibrillation with LGE-MRI. **Ablation provides a good therapeutic alternative for atrial fibrillation (AF) management; however, its effectiveness relies in adequate patient selection. Late gadolinium enhancement-magnetic resonance imaging (LGE-MRI) allows for atrial arrhythmic substrate, as well as postablation scarring visualization. In this article, we describe a new staging system for AF based on the amount of left atrial enhancement on LGE-MRI (Utah I ≤ 5%, Utah II >5–20%, Utah III > 20–35%, and Utah IV > 35%). On the basis of patient stage, a more tailored approach to AF management can be taken. This includes triaging appropriate candidates for ablation (Utah stages I–III), as well as anticoagulation management based on an increase on the predictive statistics of the $CHADS_2$. LGE-MRI also allows for ablation lesion characterization. Acute edema, defined as enhancement on T2-weighted MRI images immediately post-AF ablation correlates with low voltage areas but not with LGE-MRI-defined scar. Post-AF ablation LGE-MRI scans show significant heterogeneity in the atrial wall on portions subject to radiofrequency (RF). We have postulated that some of these areas correspond to no-reflow type phenomenon. Postablation LGE-MRI can also help identify breaks in lesion sets and its correlation with conduction recovery has been used successfully to guide redo procedures. Real-time MRI-based ablation system has the potential advantage of tissue lesion visualization during RF delivery. To that end, we have developed a 3-Tesla-based real-time MRI ablation system. We demonstrated the feasibility to safely navigate, pace, and record intracardiac EGMs in the atrial chambers, as well as applying RF energy while directly visualizing lesion formation in real time.** *(J Cardiovasc Electrophysiol, Vol. pp. 1-7)*



Sucesso da Ablação de FA depende da selecção dos doentes

Utah MRI fibrosis score permite uma estratificação de risco

Ablação de FA

FAP vs FANP

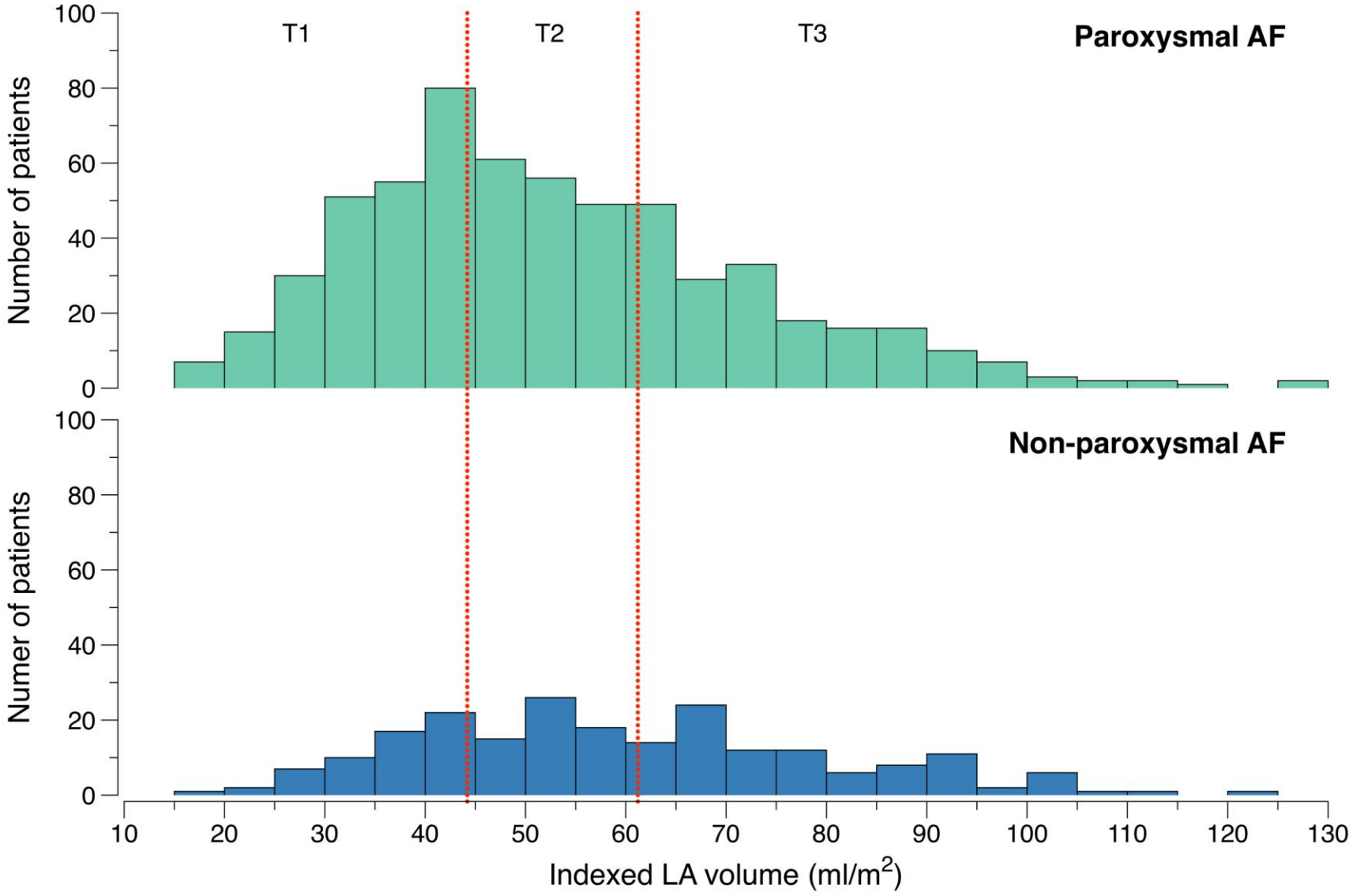
CENTRO HOSPITALAR DE LISBOA OCIDENTAL, E.P.E.

HOSPITAL DE SANTA CRUZ

HOSPITAL DA LUZ

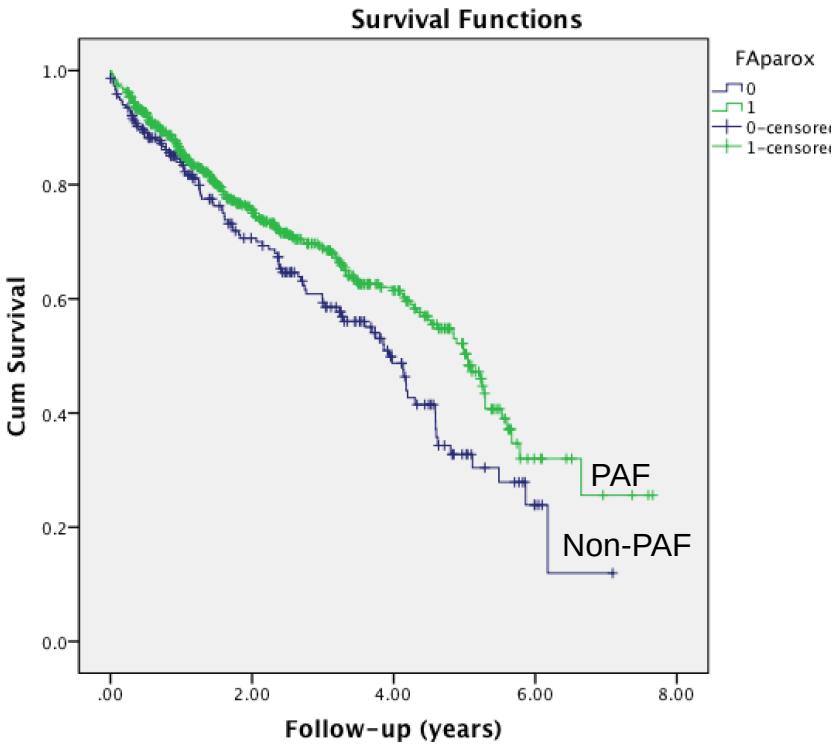
Caracteristicas demográficas

	Total (n=809)	**PAF** (n=592)	**Non-PAF** (n=217)	**P-value**
Male	584 (72.2%)	420 (70.9%)	164 (75.6%)	0.215
Age (years)	57 ± 11	56 ± 11	58 ± 11	0.055
Body mass index (Kg/m^2)	27.0 ± 3.6	26.8 ± 3.6	27.6 ± 3.6	0.040
Type of AF				
Paroxysmal	592 (73.2%)	592 (100%)	NA	-
Persistent	161 (19.9%)	NA	161 (74.2%)	-
Long-standing persistent	56 (6.9%)	NA	56 (25.8%)	-
Hypertension / structural heart disease	306 (37.8%)	213 (36.0%)	93 (42.9%)	0.086
Left ventricular systolic dysfunction	59 (7.3%)	41 (6.9%)	18 (8.3%)	0.542
LA volume (ml)	104 ± 38	99 ± 35	116 ± 40	<0.001
Indexed LA volume (ml/m^2)	54.9 ± 20.1	53.0 ± 19.2	60.2 ± 21.4	<0.001
Patients with more than one ablation procedure	90 (11.1%)	57 (9.6%)	33 (15.2%)	0.032


T1
T2
T3
Paroxysmal AF
Non-paroxysmal AF
Number of patients
Numer of patients
0
20
40
60
80
100
10
20
30
40
50
60
70
80
90
100
110
120
130
Indexed LA volume (ml/m2)

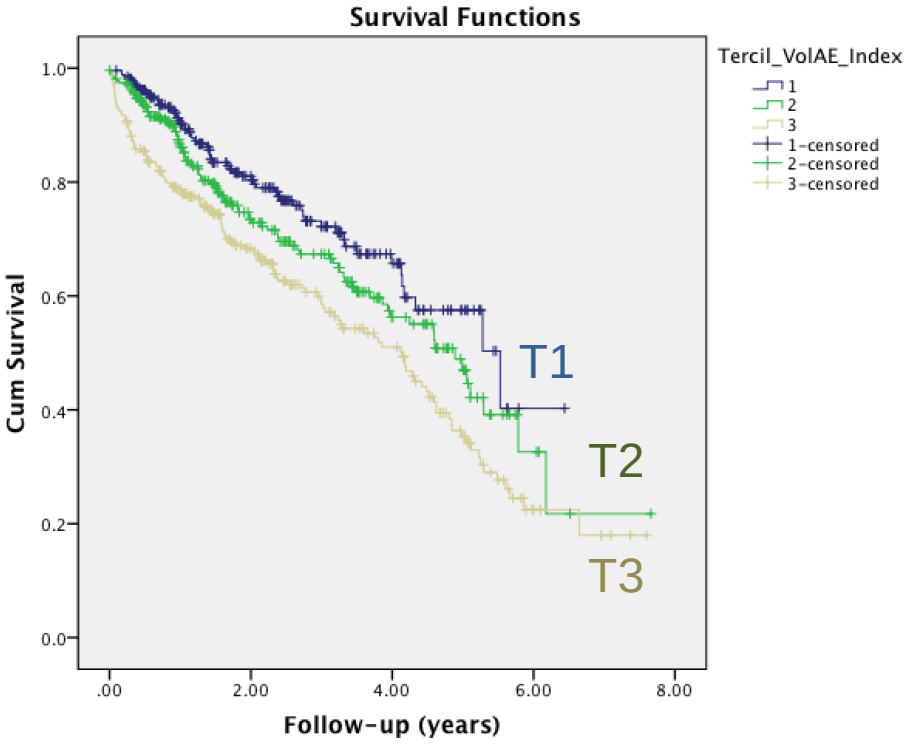
Curvas de sobrevida sem FA

PAF vs Non-PAF



Log-rank p = 0.010

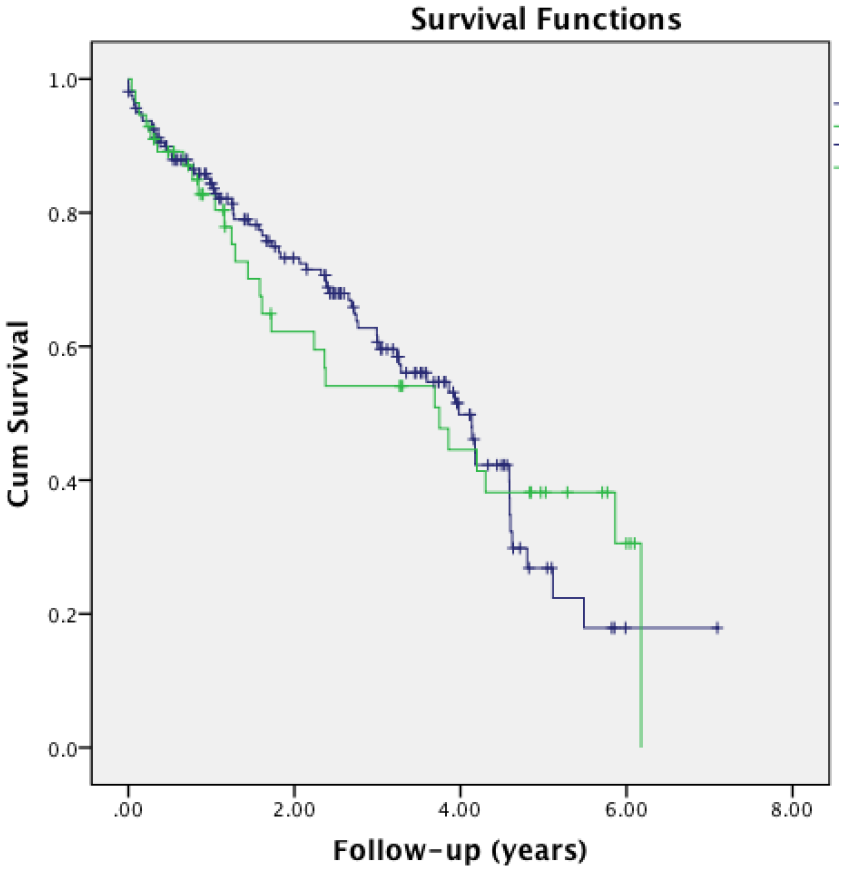
Indexed LA volume



Log-rank p < 0.001

Follow-up médio: 2.4 ± 1.7 anos

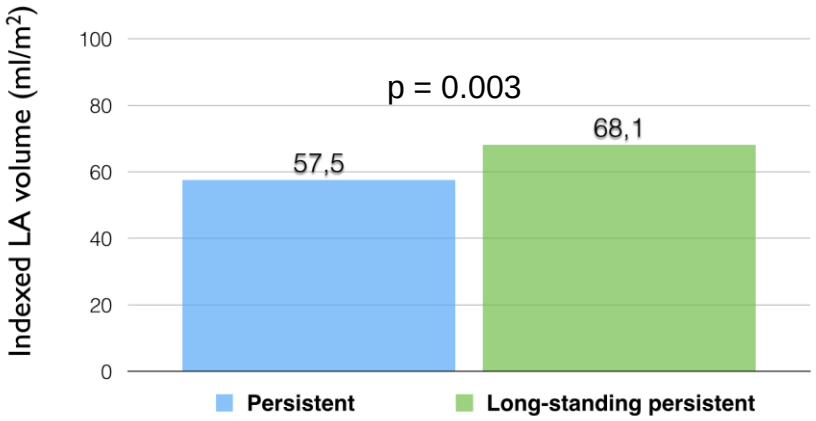
Curvas de sobrevida sem FA



Persistent

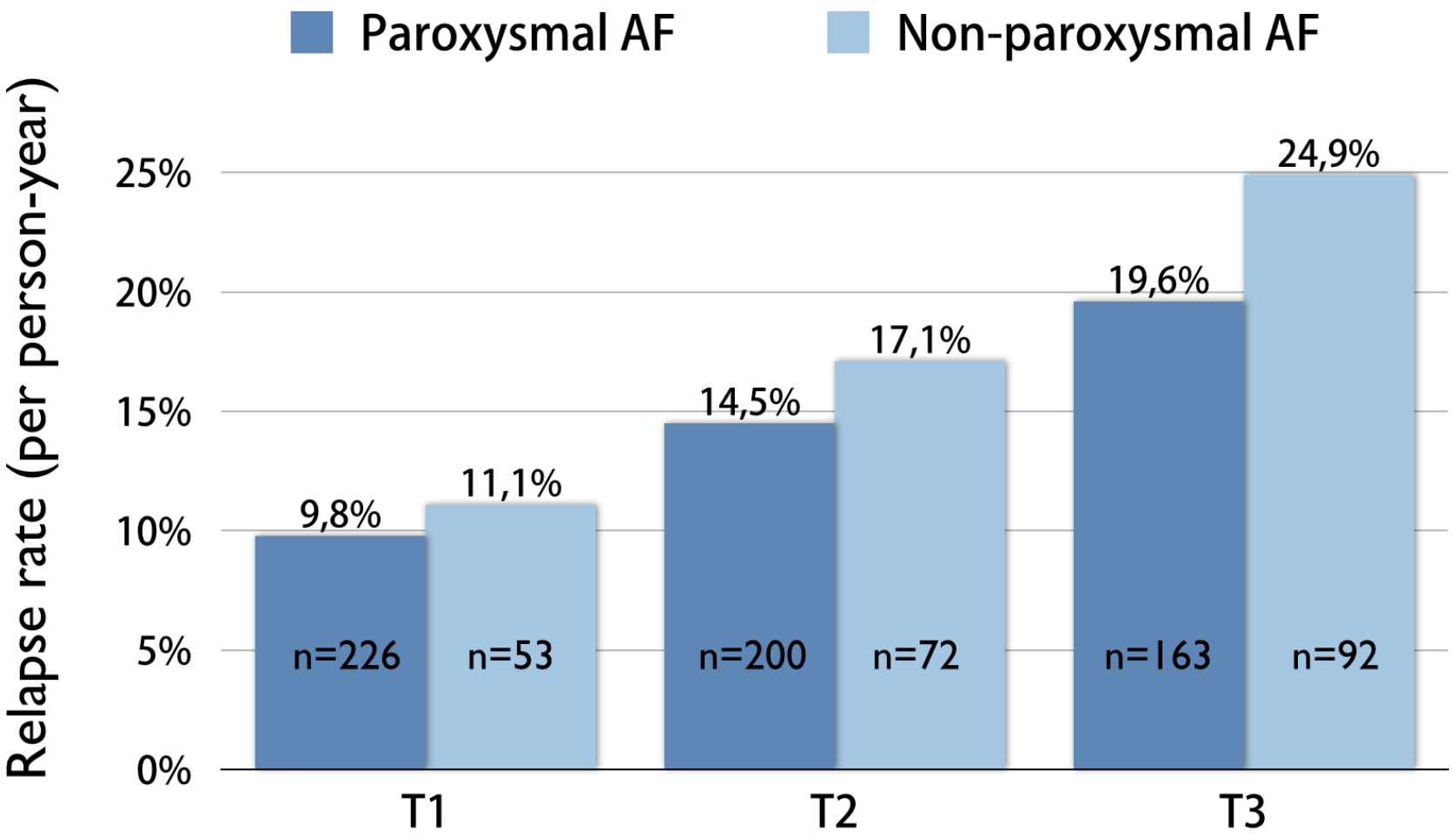
Long-standing persistent

Log-rank p = 0.933



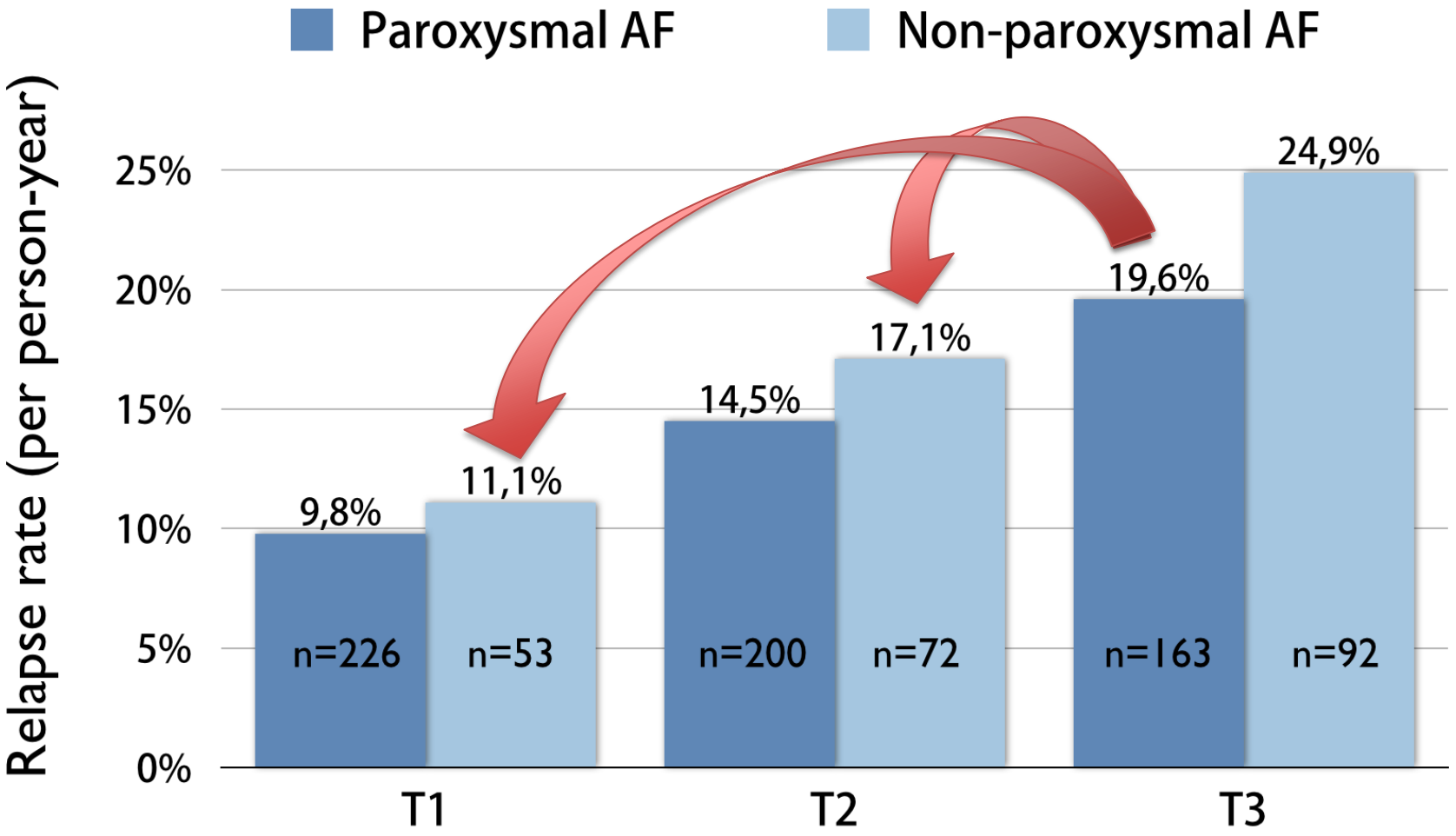
Follow-up médio: 2.4 ± 1.7 anos

Taxa anual de recidiva



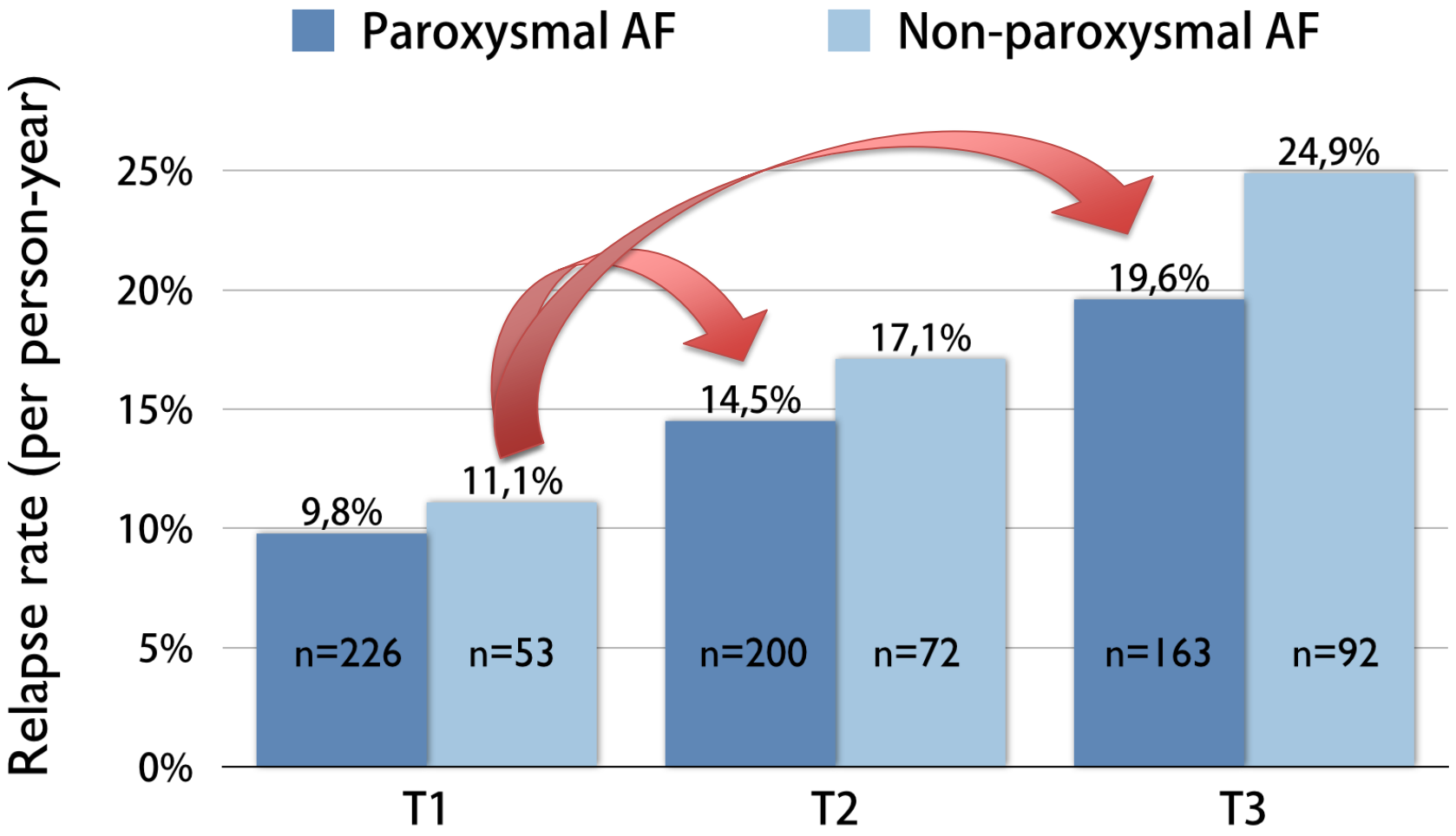
Tertiles of indexed LA volume (ml/m2) measured by cardiac CT

Taxa anual de recidiva



Tertiles of indexed LA volume (ml/m2) measured by cardiac CT

Taxa anual de recidiva



Tertiles of indexed LA volume (ml/m2) measured by cardiac CT

Análise univariada

Variable	Wald χ^2	HR	95% CI	P-value
Age	0.838	1.006	0.994 - 1.018	0.360
Female gender	11.486	1.581	1.213 - 2.060	0.001
Non-paroxysmal AF	4.387	1.309	1.017 - 1.685	0.036
Hypertension / structural heart disease	0.033	0.977	0.759 - 1.257	0.857
LV systolic dysfunction	1.057	1.299	0.789 - 2.139	0.304
Indexed LA volume *	23.303	1.161	1.093 - 1.233	<0.001
Magnetic navigation	1.505	1.181	0.905 - 1.542	0.220
More than one ablation procedure	1.216	1.237	0.848 - 1.804	0.270

* For each 10ml/m^2 increase

Análise multivariável

(regressão de Cox, com ajuste para as 8 variáveis que estão na tabela)

Preditores independentes de recidiva após ablação da FA, por ordem decrescente de importância:

- Vol AE indexado (medido por TC)
- Sexo feminino

Conclusões

- O tipo de FA é apenas um preditor fraco de recorrência na ablação de FA, após o ajuste para o volume da AE, e não constitui factor de exclusão

- O volume indexado da AE, avaliado pelo TC cardíaco, é o mais poderoso preditor de recorrência de FA após ablação

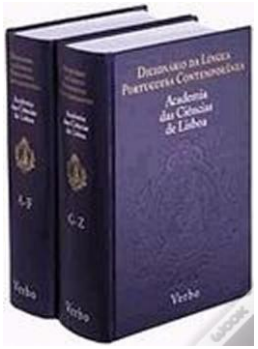
- O volume indexado da AE é muito mais importante que o tipo de FA, na seleção de doentes para ablação

Os doentes com FA persistente de longa duração devem ser candidatos a ablação por cateter?

- SIM, DEVEM SER CANDIDATOS a ABLAÇÃO !

1. A ablação não está contraindicada
2. A ablação não é obrigatória
3. A ablação é muitas vezes a melhor opção terapêutica

– Mantem o RS em 1/3 a 2/3 dos dts com FA PLD que a realizam!

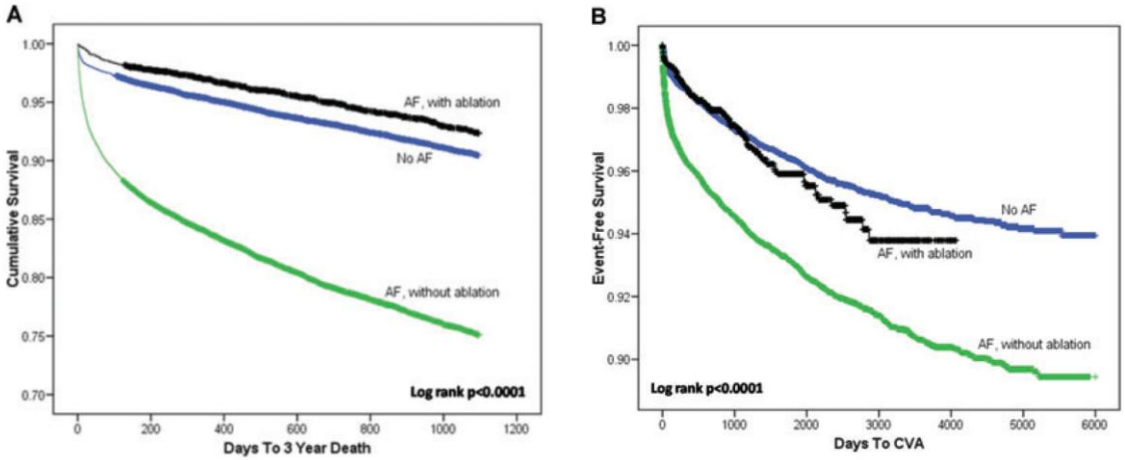


"Naquele ano houve muitos candidatos à Faculdade de Medicina.
A sala de concursos estava cheia, pois éramos cerca de duzentos candidatos a três vagas"
(E DE LEMOS, Companheiros, p.357)

Patients Treated with Catheter Ablation for Atrial Fibrillation Have Long-Term Rates of Death, Stroke, and Dementia Similar to Patients Without Atrial Fibrillation

MAR 2011

37 908 patients:
4 212 AF ablation
16 848 Medical treatment
16 848 control (pts without AF)



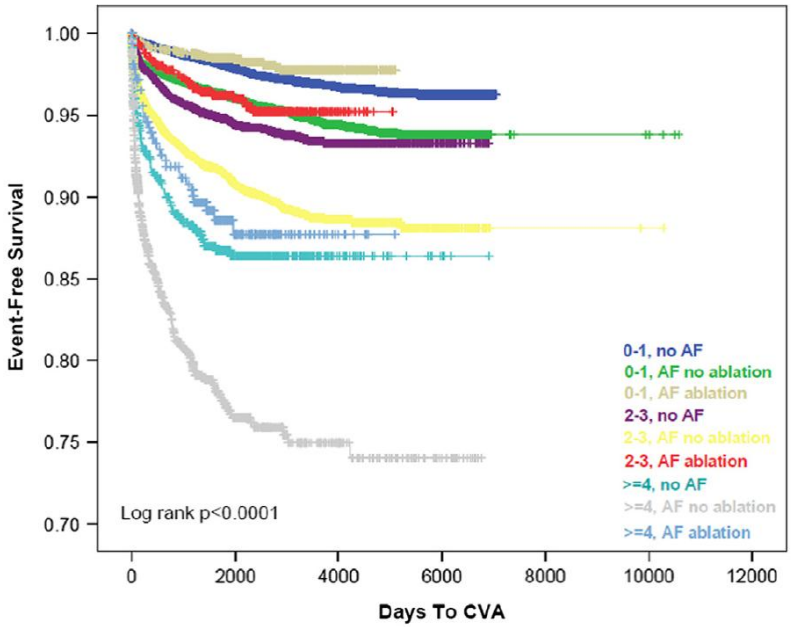
Rates of death, stroke and dementia at three years

%

End point	AF, no ablation	No AF	AF, ablation	p
Alzheimer's disease	0.9	0.5	0.2	<0.001
Other dementia	1.7	0.7	0.4	<0.001
Mortality	23.5	8.7	6.0	<0.001
Stroke	4.7	2.4	2.2	<0.001

J Cardiovasc Electrophysiol. 2011;22(8):839-45

Risk of stroke after Ablation is identical to individuals without AF



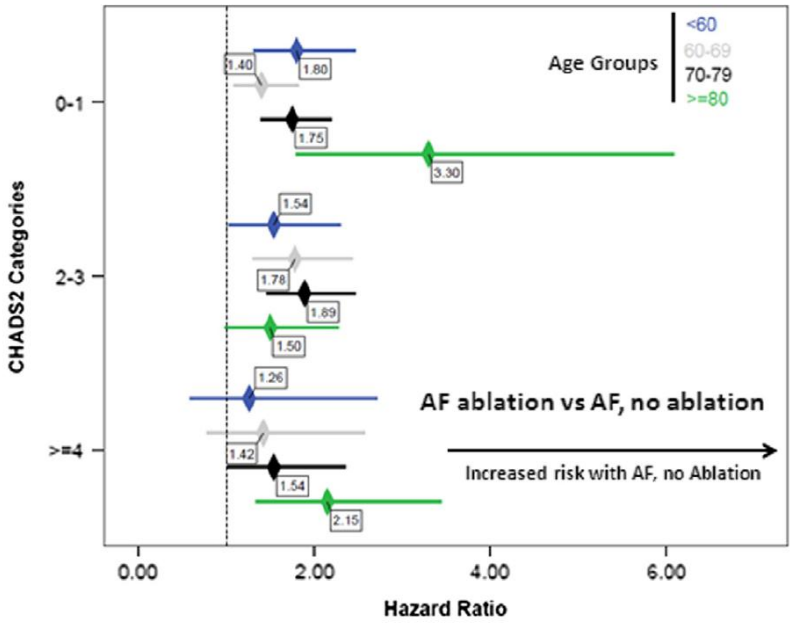


Table 3 Age-based long-term stroke rates among AF patients who underwent ablation compared to those AF patients who did not underwent ablation

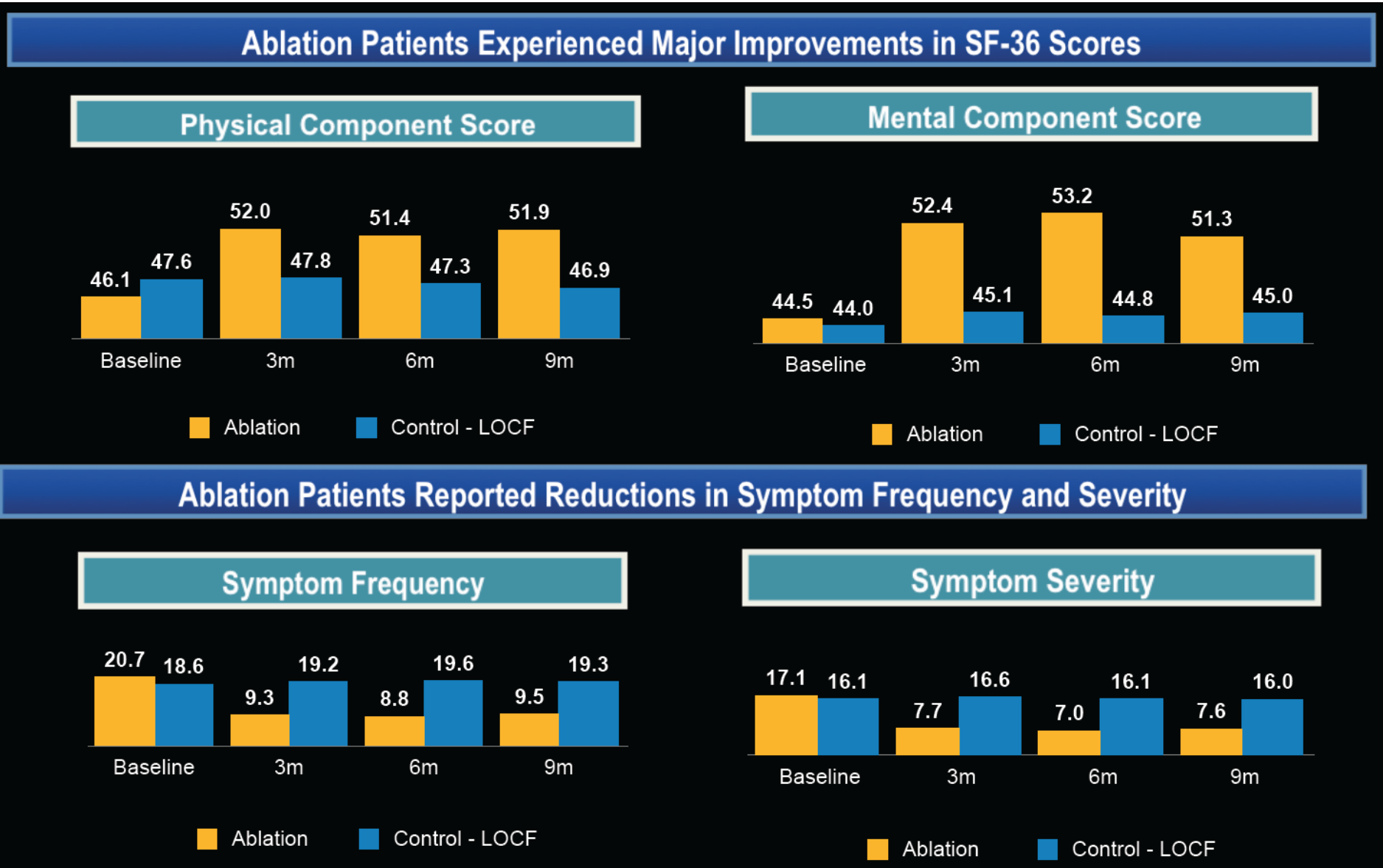
Age	AF, no ablation	AF, ablation	*P*	Univariate HR for ablation	Multivariate HR for ablation
<60, n = 5638	3.6%	1.3%	<.0001	0.38, *P* < .0001	0.38, *P* < .0001
60–69, n = 5804	5.6%	2.9%	<.0001	0.50, *P* < .0001	0.59, *P* = .005
70–79, n = 7082	8.7%	3.8%	<.0001	0.42, *P* < .0001	0.50, *P* < .0001
≥80, n = 2536	8.6%	5.8%	.07	0.55, *P* = .009	0.72, *P* = .17

AF = atrial fibrillation; HR = hazard ratio.

Ablation reduces the risk of stroke, specially on the elderly

Bunch et al, Heart Rhythm 2013

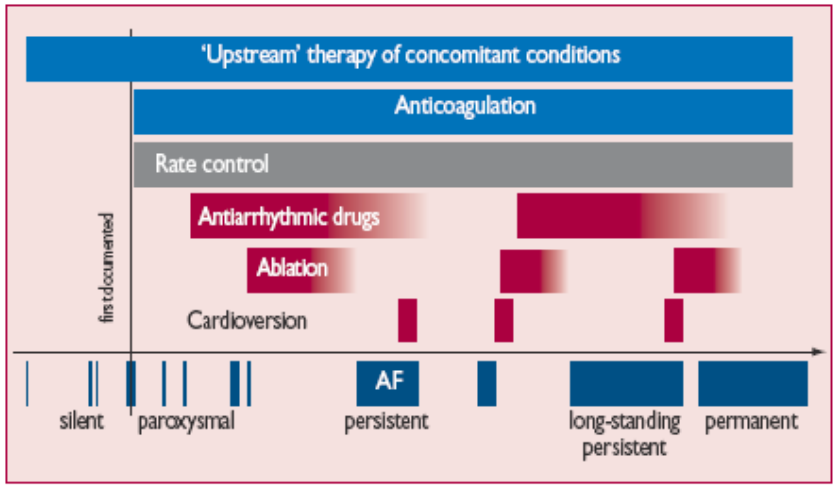
Ablation improves QoL



Como orientar os doentes com FA?

FA Paroxística

- crises raras
  - pill in the pocket
- crises frequentes
  - anti-arrítmico
    - recidivas
      - <75 anos
        - **Ablação**
      - > 75 anos
        - Controlo da frequência



Na decisão de iniciar controlo do ritmo, deve equacionar-se
ablação como 1ª opção

Como orientar os doentes com FA?