



Congresso
Novas Fronteiras em Cardiologia
8 a 10 fevereiro.2013
Hotel Vila Galé Ericeira

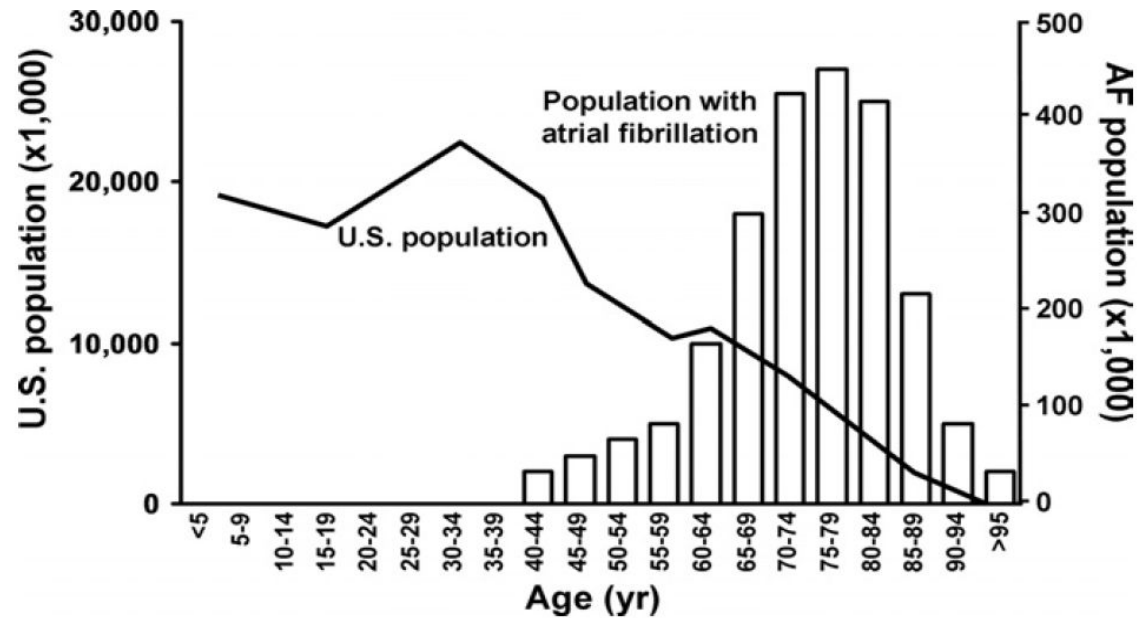


No jovem com FA paroxística e sem cardiopatia estrutural a ablação deve ser a terapêutica inicial?

DIOGO CAVACO



EPIDEMIOLOGIA

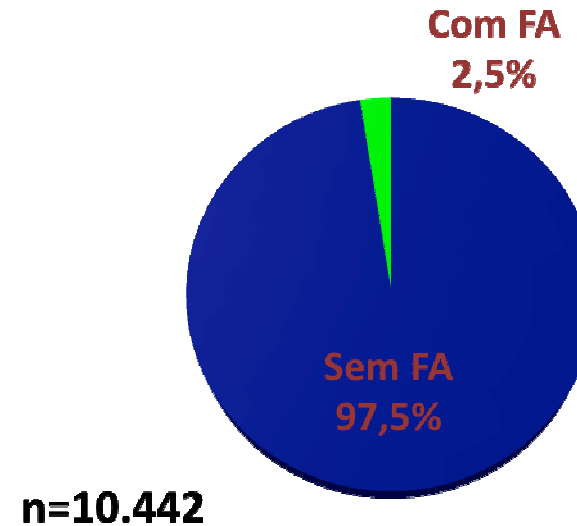


Prevalência aumenta com a idade

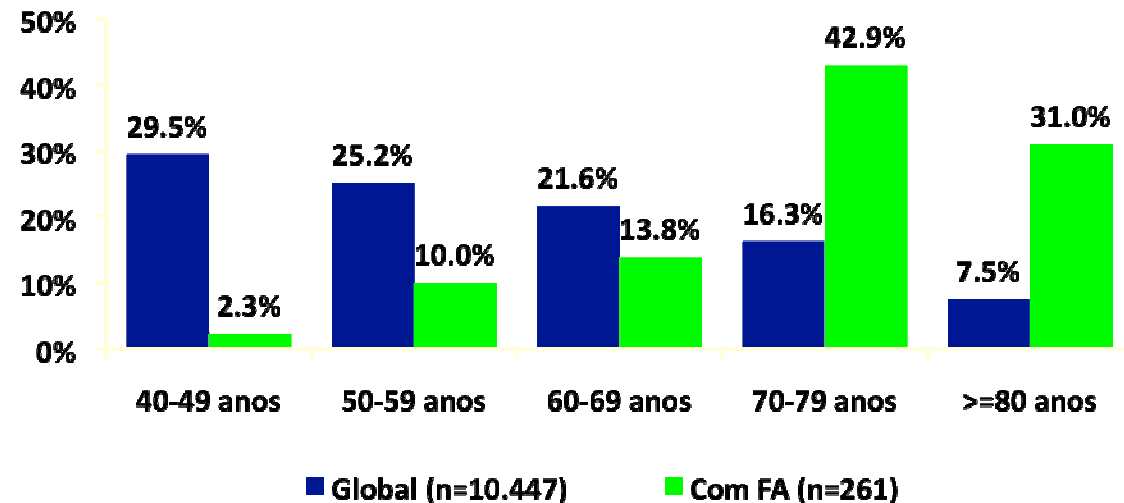
- 1% na população geral
- <55 anos – 0,1%; >80 anos – 9%
- Sub-estimada – episódios assintomáticos:sintomáticos = 12:1

Prevalência FA na população Portuguesa > 40 anos ESTUDO FAMA

Prevalência – 2,5 %



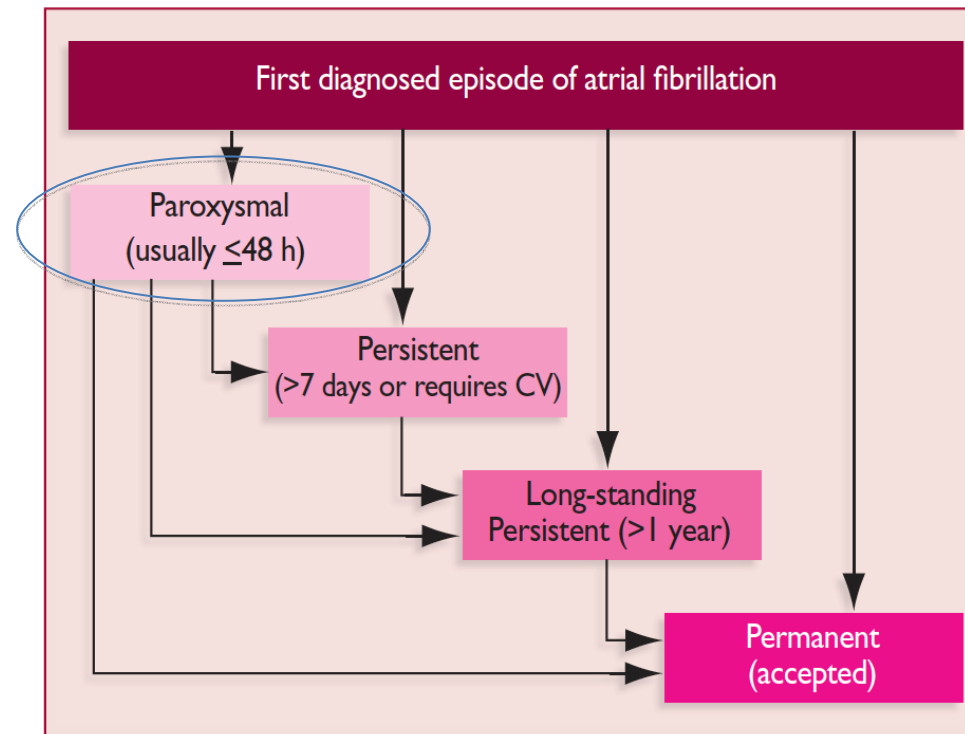
- A prevalência de FA mostrou correlação positiva com a idade
 $p < 0,001$



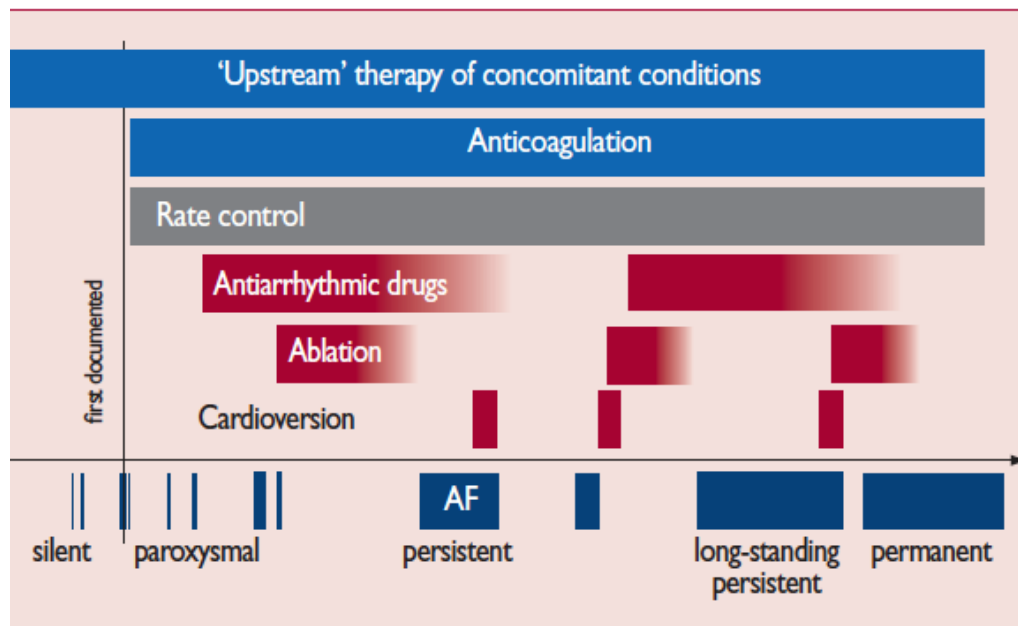
Prognóstico

- Aumento do risco a longo prazo de AVC, ICC e morte (sobretudo no sexo feminino)
- Mortalidade 2x superior à de doentes em ritmo sinusal (relacionado também com a doença de base)
- Risco de AVC
 - FA (“não valvular”) – 5%/ano (2 a 7x pop RS)
 - 1 em cada 6 AVC embólicos → FA
 - FA (Dça reumática) – risco 17x superior ao da população em RS e 5x superior a FA não valvular
 - Risco aumenta com idade e com outras co-morbilidades
 - 1.5% ano 50-59 anos
 - 23.5 ano > 80 anos

Classificação



Fibrilhação auricular – História Natural

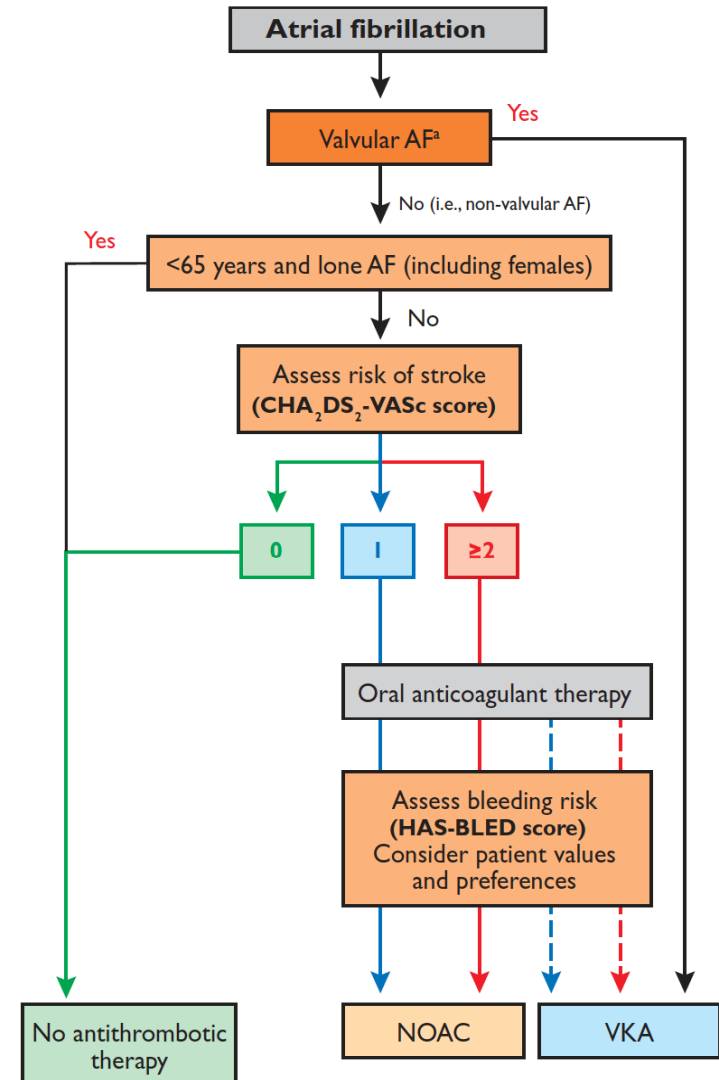
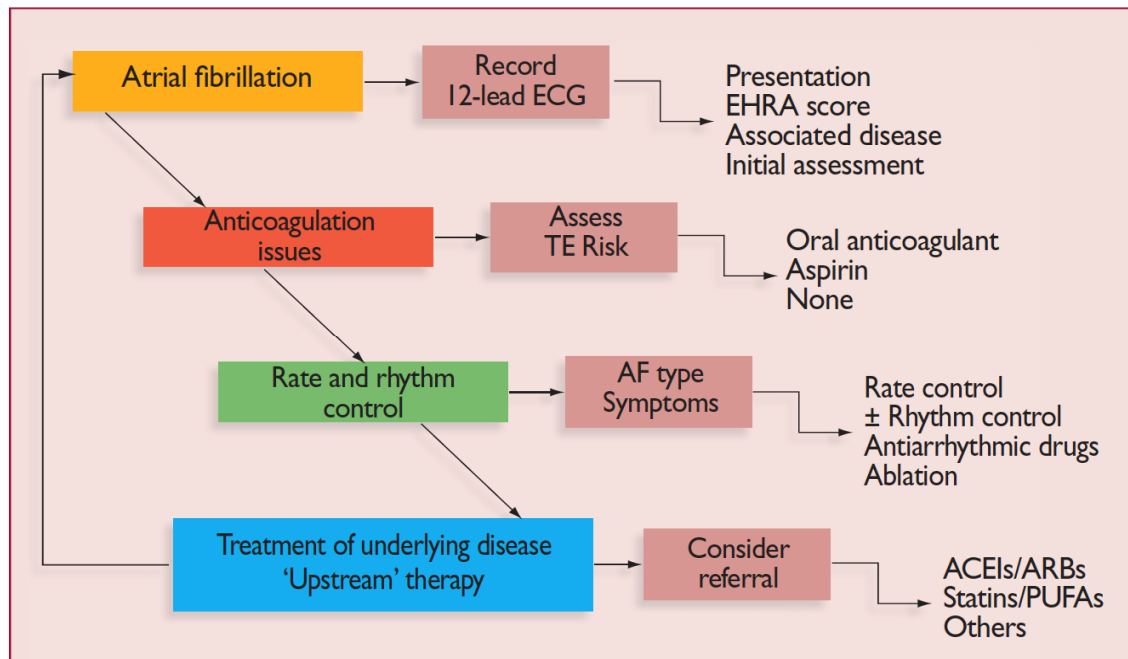


Anomalias estruturais associadas à FA

Extracellular matrix alterations
Interstitial and replacement fibrosis
Inflammatory changes
Amyloid deposit
Myocyte alterations
Apoptosis
Necrosis
Hypertrophy
Dedifferentiation
Gap junction redistribution
Intracellular substrate accumulation (haemochromatosis, glycogen)
Microvascular changes
Endocardial remodelling (endomyocardial fibrosis)

- A FA progride de episódios raros de curta duração para frequentes e persistentes
- As anomalias estruturais agravam e perpetuam o substrato arritmogénico
- As decisões terapêuticas têm implicações prognósticas irreversíveis

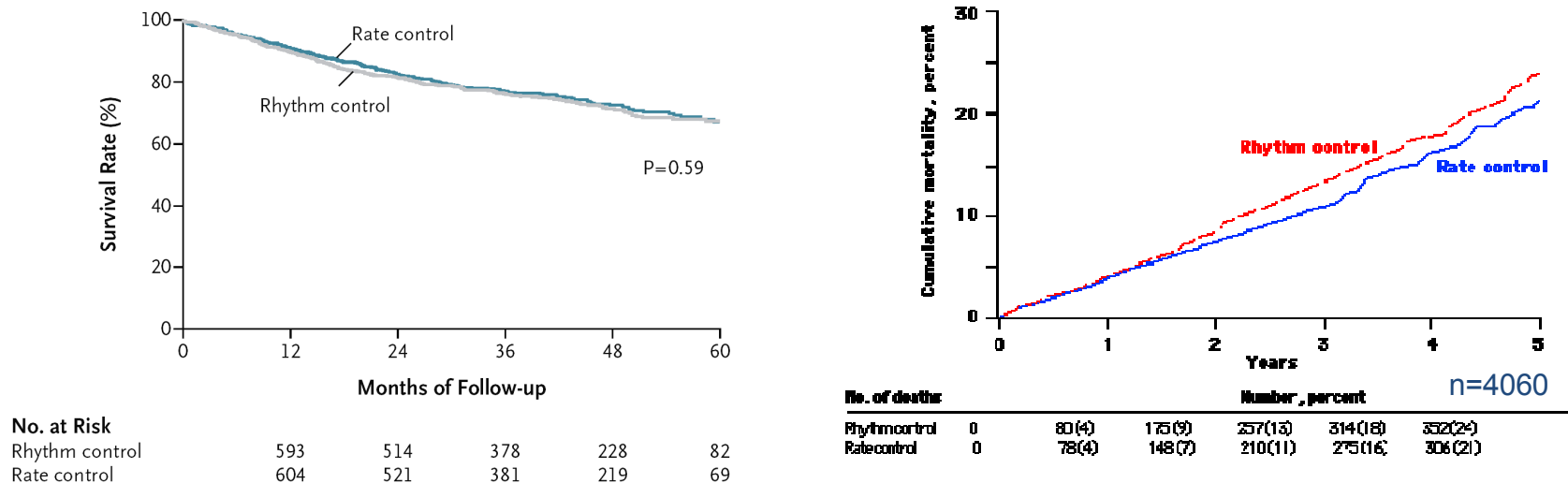
Decisão Terapêutica



EM TODOS OS DOENTES: AVALIAR TERAPÊUTICA ANTI-TROMBÓTICA (ACO) (1º)
Só depois o controlo do ritmo versus controlo da frequência

Tratamento Farmacológico

Controlo do ritmo vs Controlo da frequência



- Estratégias com resultados sobreponíveis
- Estratégia de manter RS é diferente de estar em RS:
Estavam em RS: 2/3 “controlo do ritmo” vs 1/3 “controlo da FC”
Só o RS e a anti-coagulação oral são preditores sobrevida

(AFFIRM trial)

FA: Controlo do ritmo vs frequência

Anti-arrítmicos

AFFIRM trial:

Benefício do RS foi anulado pelo o uso de AA

- Não é possível manter RS com anti-arrítmicos

Amiodarona: 60% em RS

AA classe I: 23% em RS

Sotalol: 38% em RS

- Não é possível manter a medicação anti-arrítmica

Interromperam a medicação no 1º ano:

12,3% sob amiodarona

28,1% sob AA classe I

11,1% sob sotalol

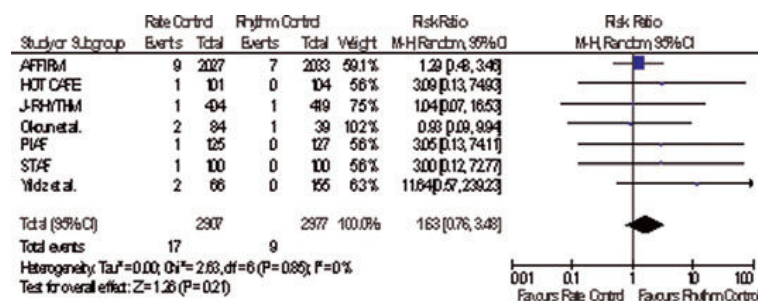
Pharmacologic Rate versus Rhythm-Control Strategies in Atrial Fibrillation: An Updated Comprehensive Review and Meta-Analysis

SAURAV CHATTERJEE, M.D.,* PARTHA SARDAR, M.D.,†

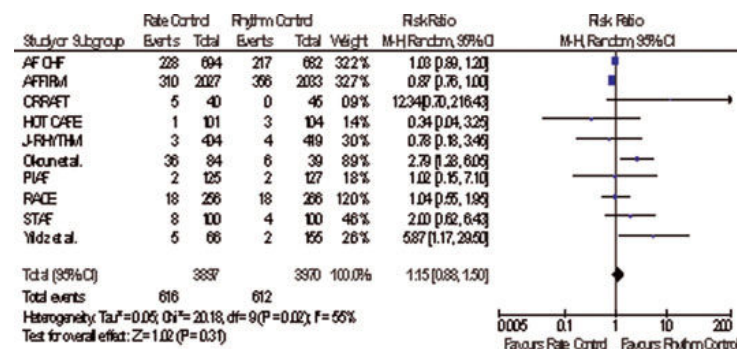
EDGAR LICHSTEIN, M.D., F.A.C.C.,‡ DEBABRATA MUKHERJEE, M.D., M.S.,§

and SHAMIK AIKAT, M.D., M.R.C.P.**

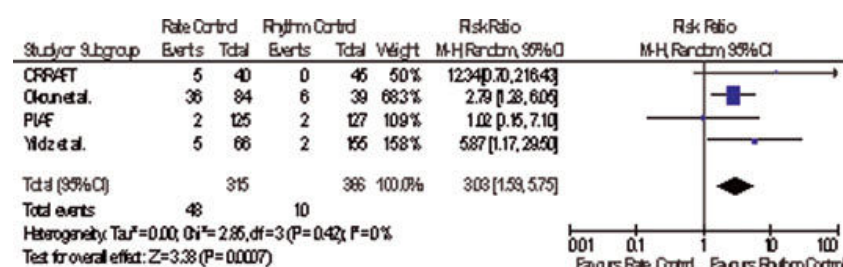
< de 65anos: melhor controlo do ritmo



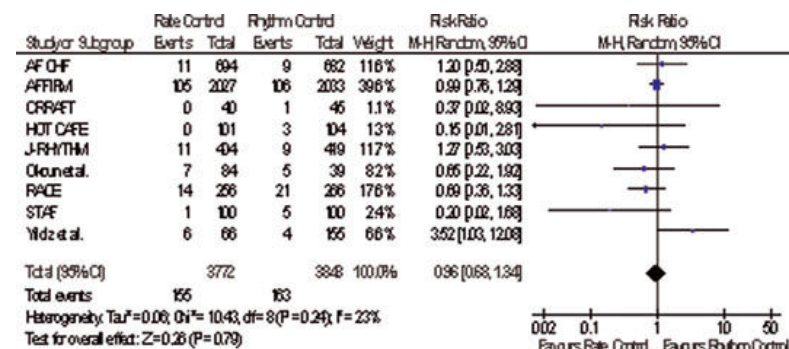
Embolia sistémica: melhor controlo do ritmo



Mortalidade



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

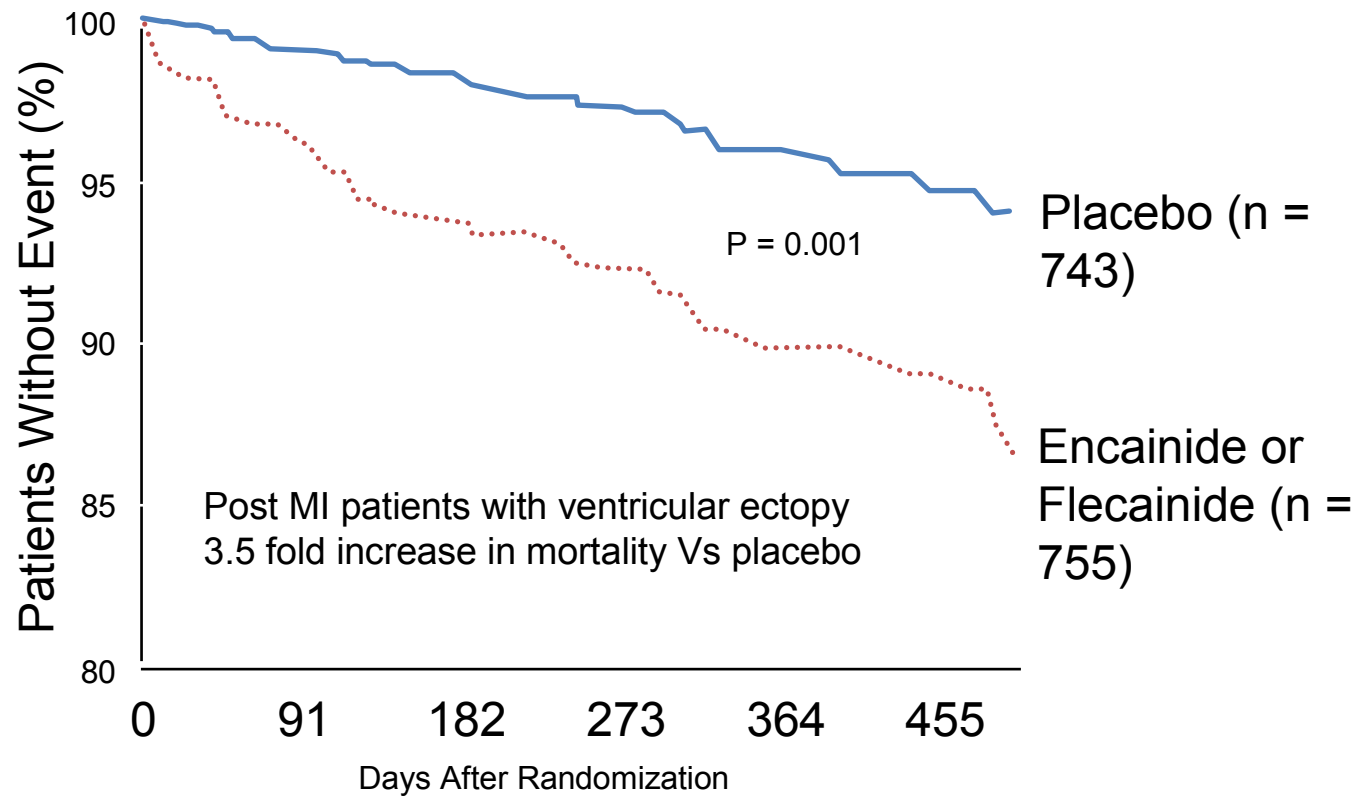


AVC e AIT

(PACE 2012;00:1-12)

CAST (1991)

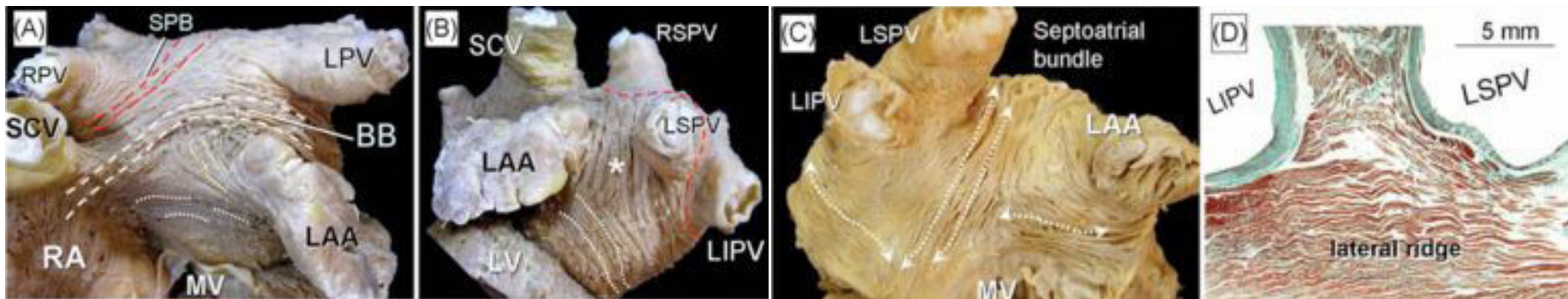
Anti-arrítmicos aumentam a mortalidade



Echt DS. *N Engl J Med.* 1991;324:781-788.

Objectivos no tratamento da FA

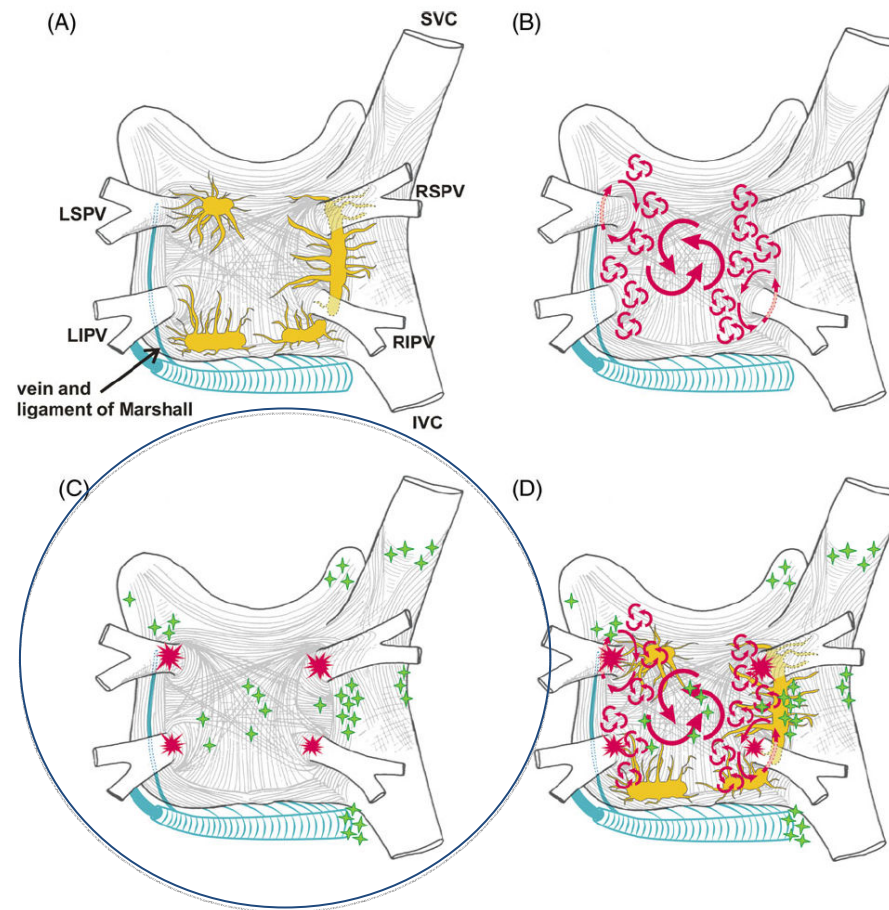
- Manter o RS
- Preservar a sincronia AV
- Restaurar a contracção auricular
- Prevenir os eventos trombo-embólicos



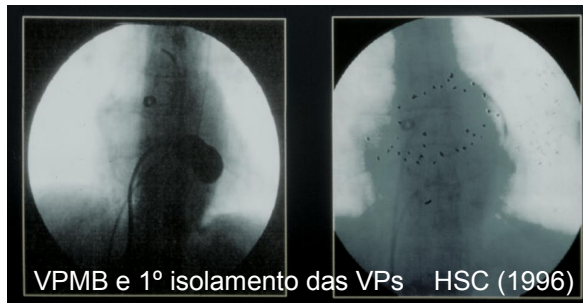
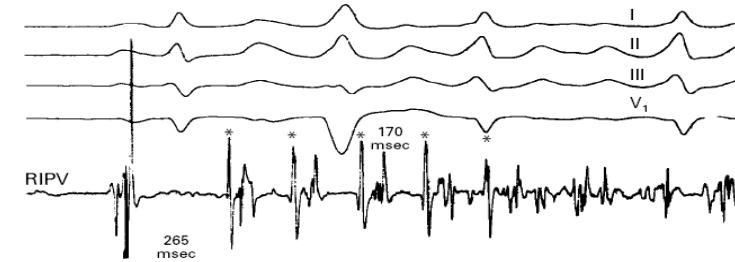
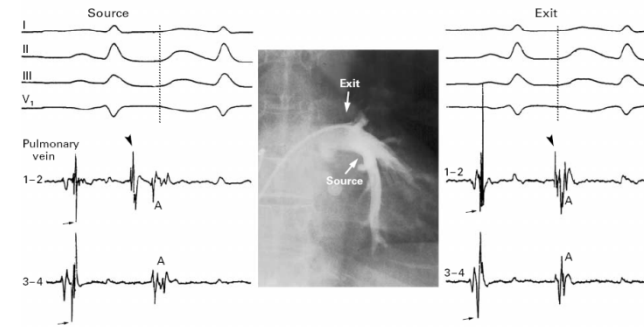
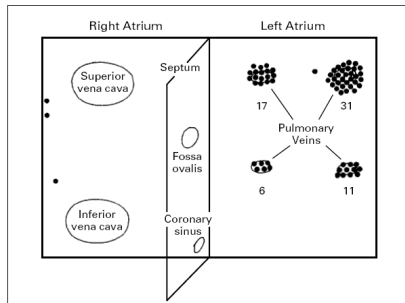
Lateral wall of left atrium; Cabrera JA, et al. Heart Rhythm. 2009;6:1192-1198

A ineficácia dos fármacos AA deu razões para promover uma terapêutica do substrato auricular : ABLAÇÃO

Fibrilhação auricular - mecanismos

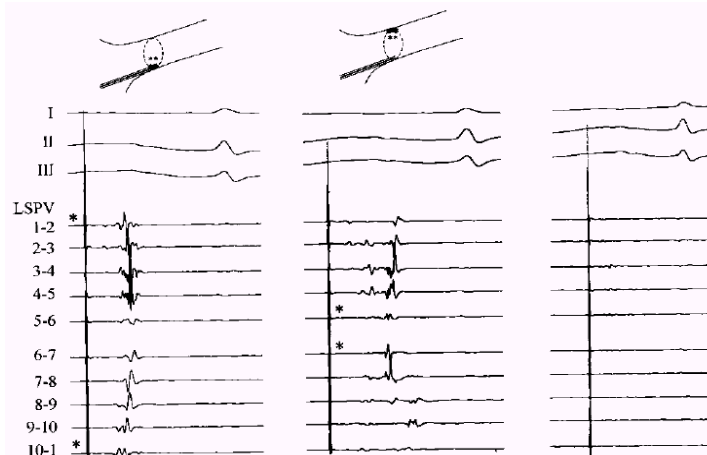
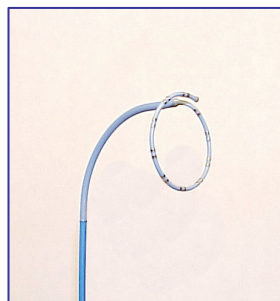


Ablação da FA – Isolamento das Veias Pulmonares

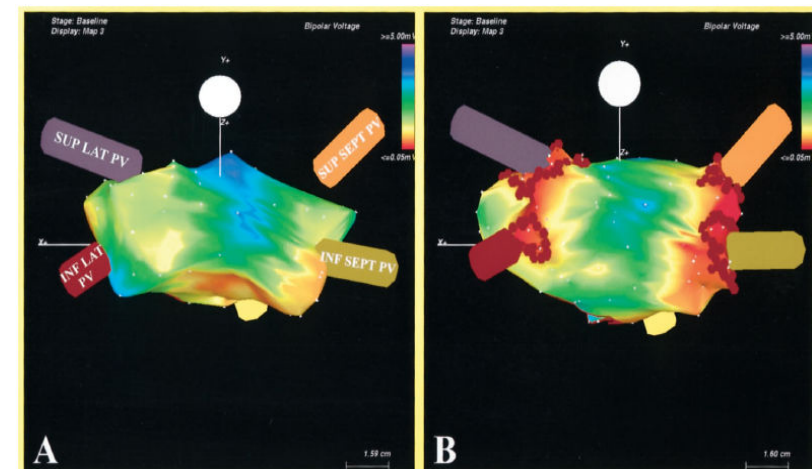


- The pulmonary veins are an important source of ectopic beats, initiating frequent paroxysms of atrial fibrillation
- These foci respond to radiofrequency ablation

Haissaguerre M. et al. N Engl J Med 1998;339:659-66



Haissaguerre M. et al. Circulation. 2000;102:2463-2465



Pappone C. et al. Circulation. 2000;102:2619-2628

Isolamento das VP – Resultados

TABLE 1. Success Rates of Most Recent Studies Using Ablation of All PVs Outside the Tubular Segment

Study	Year	Patients	Age, y	Parox, %	SHD, %	Tool(s)	End Point	AF Free (Off Drugs), %	Follow-Up, d
Ouyang et al ³⁷	2004	41	63±9	100	NA	CARTO	PV Isolat'n	76*	178
Haissaguerre et al ³⁸	2004	70	53±8	NA	43	Fluoro	PV Isolat'n	79	210
Mansour et al ⁴⁰	2004	40	55±10	80	13	CARTO	PV Isolat'n	75	330
Marrouche et al ⁴¹	2003	259	54±11	51	21	ICE	PV Isolat'n	87†	347
Oral et al ³⁹	2003	40	54±11	100	3	CARTO	EGM Red'n	88	365
Pappone et al ³⁶	2003	589	65±9	69	6	CARTO	EGM Red'n	79	861
Total		1039						81.0	

Parox indicates paroxysmal; SHE, structural heart disease; Fluoro, fluoroscopy only; Isolat'n, isolation; and EGM Red'n, reduction of local electrogram amplitude (usually >70%). CARTO is an electroanatomical mapping system (Biosense Webster).

*Success was 95% off drugs after a second procedure.

†Success was 90% off drugs in patients with microbubble monitoring by ICE.

- Sucesso > 75% (mediana 80,5%) sem fármacos AA
- Mais 10% a 20% com fármacos AA
- Resultados 2 a 3 vezes melhores que fármacos AA isolados
- Sucesso depende da experiência do centro (*Worldwide Survey*)*

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%

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

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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) © 2009 by the American College of Cardiology Foundation

Journal of the American College of Cardiology
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EDITORIAL COMMENT

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

An Acceptable Risk?*

Bernard Belhassen, MD

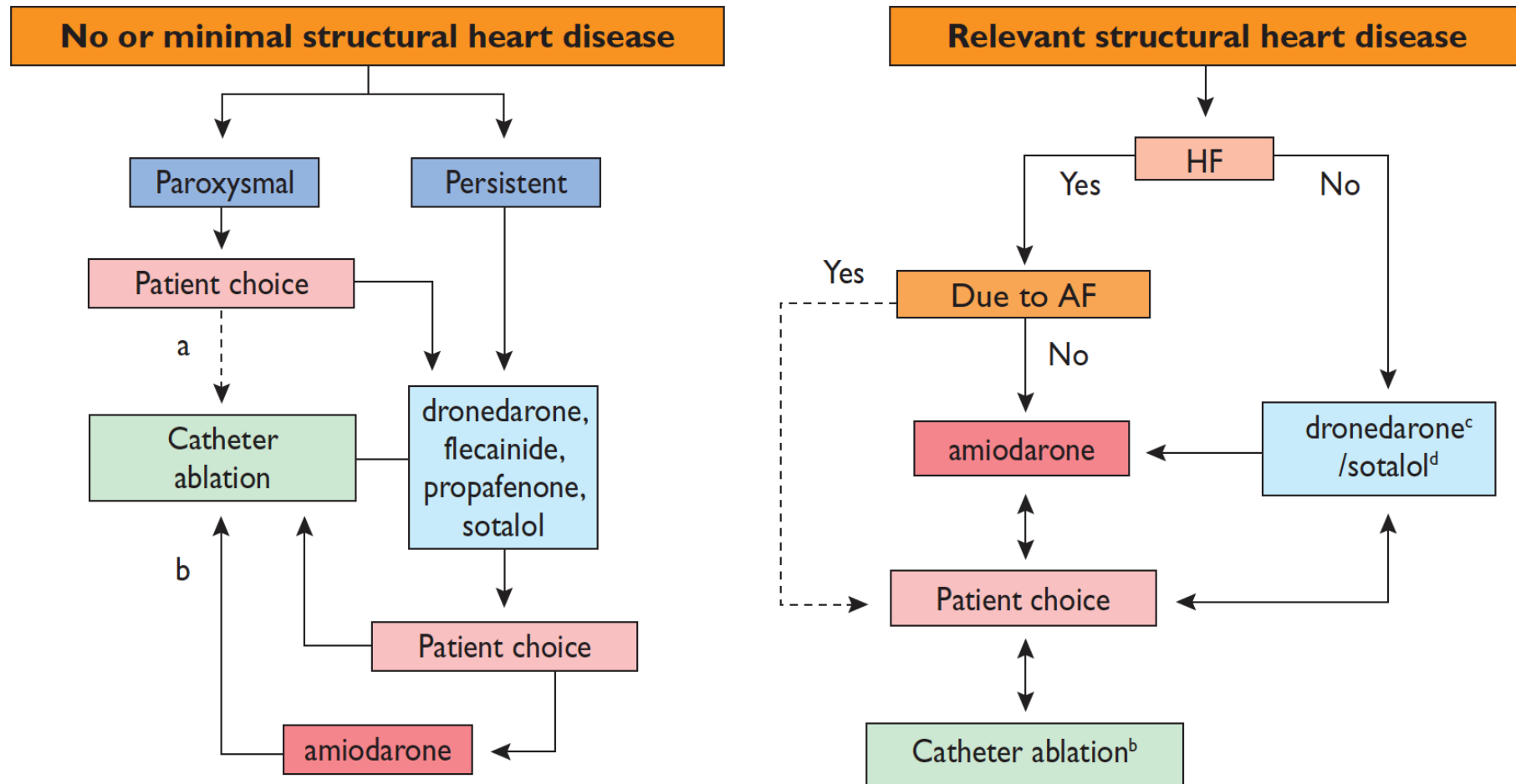
Table 1 Main Characteristics of the Present Survey

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

2012 focused update of the ESC Guidelines for the management of atrial fibrillation



AF = atrial fibrillation; HF = heart failure. ^aUsually pulmonary vein isolation is appropriate. ^bMore extensive left atrial ablation may be needed. ^cCaution with coronary heart disease. ^dNot recommended with left ventricular hypertrophy. Heart failure due to AF = tachycardiomyopathy.

Quais os doentes que mais beneficiam da
ablação?

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.

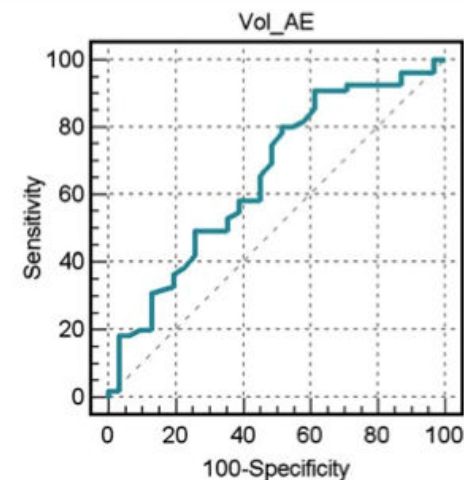


Figure 5 Receiver operating characteristics (ROC) curve: success after ablation of AF for LA volumes below 145 mL (estimation by multi-slice CT).

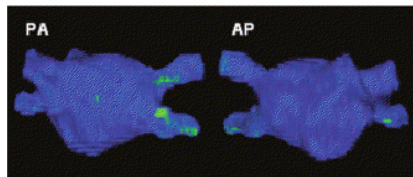
Tailored Management of Atrial Fibrillation Using a LGE-MRI Based Model: From the Clinic to the Electrophysiology Laboratory

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

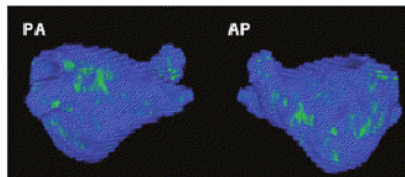
From the Comprehensive Arrhythmia Research and Management (CARMA), University of Utah, Salt Lake City, Utah, USA

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 $\leq 5\%$, 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 CHADS₂. 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)

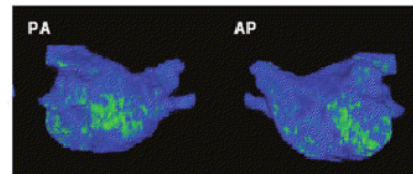
Utah I - $<5\%$ LGE



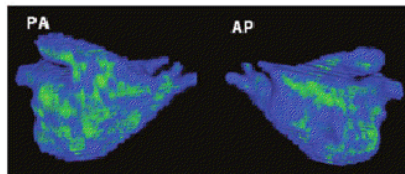
Utah II - $5 - 20\%$ LGE



Utah III - $>20 - 35\%$ LGE



Utah IV - $\geq 35\%$ LGE



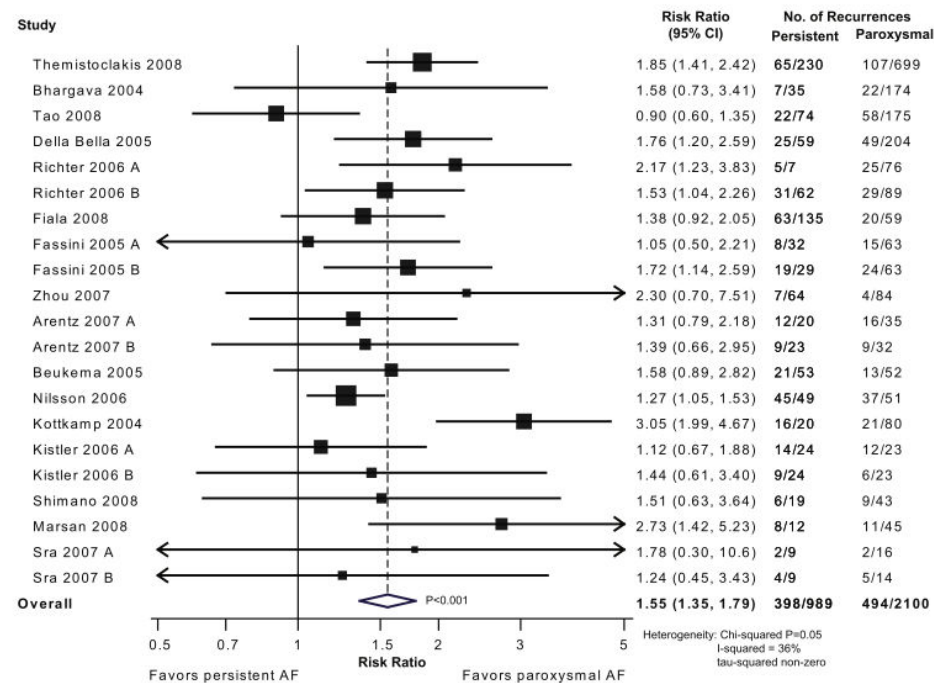
Sucesso da Ablação de FA
depende da selecção dos doentes

Utah MRI fibrosis score
permite uma estratificação de risco

Predictors of Atrial Fibrillation Recurrence After Radiofrequency Catheter Ablation: A Systematic Review

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ALAWI A. ALSHEIKH-ALI, M.D., M.S.,† TERUHIKO TERASAWA, M.D.,*
MEI CHUNG, M.P.H.,* and STANLEY IP, M.D.*

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- Formas paroxísticas têm melhores resultados na ablação do que formas persistentes ou permanentes
 - Nas formas paroxísticas, o mecanismo predominante são os “triggers” localizados na maioria dos casos nas veias pulmonares
 - Uma forma simples de ablação – o isolamento das veias pulmonares pode resolver
- Quanto menos alterações estruturais existirem (quanto mais precoce for a ablação), maior a probabilidade de sucesso
 - AE mais pequenas
 - Ausência de fibrose

Ablação como tratamento de 1ª linha

RAAFT

Radiofrequency Ablation vs Antiarrhythmic Drugs as First-line Treatment of Symptomatic Atrial Fibrillation

A Randomized Trial

Wazni O, Marrouche N, Martin D et al.

Context Treatment with antiarrhythmic drugs and anticoagulation is considered first-line therapy in patients with symptomatic atrial fibrillation (AF). Pulmonary vein isolation (PVI) with radiofrequency ablation may cure AF, obviating the need for antiarrhythmic drugs and anticoagulation.

Objective To determine whether PVI is feasible as first-line therapy for treating patients with symptomatic AF.

Design, Setting, and Participants A multicenter prospective randomized study conducted from December 31, 2001, to July 1, 2002, of 70 patients aged 18 to 75 years who experienced monthly symptomatic AF episodes for at least 3 months and had not been treated with antiarrhythmic drugs.

Intervention Patients were randomized to receive either PVI using radiofrequency ablation (n=33) or antiarrhythmic drug treatment (n=37), with a 1-year follow-up.

Main Outcome Measures Recurrence of AF, hospitalization, and quality of life assessment.

Results Two patients in the antiarrhythmic drug treatment group and 1 patient in the PVI group were lost to follow-up. At the end of 1-year follow-up, 22 (63%) of 35 patients who received antiarrhythmic drugs had at least 1 recurrence of symptomatic AF compared with 4 (13%) of 32 patients who received PVI ($P<.001$). Hospitalization during 1-year follow-up occurred in 19 (54%) of 35 patients in the antiarrhythmic drug group compared with 3 (9%) of 32 in the PVI group ($P<.001$). In the antiarrhythmic drug group, the mean (SD) number of AF episodes decreased from 12 (7) to 6 (4), after initiating therapy ($P=.01$). At 6-month follow-up, the improvement in quality of life of patients in the PVI group was significantly better than the improvement in the antiarrhythmic drug group in 5 subclasses of the Short-Form 36 health survey. There were no thromboembolic events in either group. Asymptomatic mild or moderate pulmonary vein stenosis was documented in 2 (6%) of 32 patients in the PVI group.

Conclusion Pulmonary vein isolation appears to be a feasible first-line approach for treating patients with symptomatic AF. Larger studies are needed to confirm its safety and efficacy.

JAMA. 2005;293:2634-2640

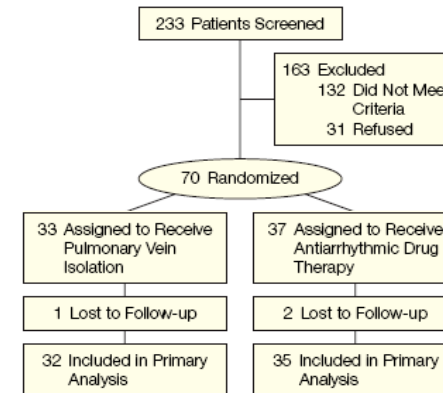
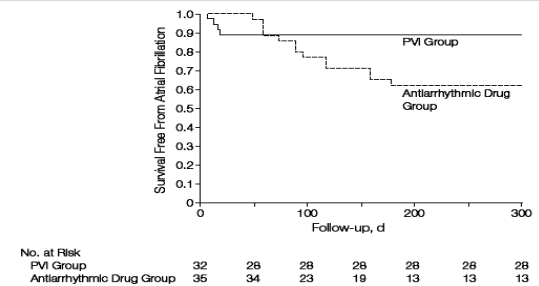


Figure 2. Kaplan-Meier Curve of Survival Free From Atrial Fibrillation



PVI indicates pulmonary vein isolation.

RS (1ano FUp): 87% IVP vs 37% drogas AA
Hospitalização: 9% IVP vs 54%; melhor QoL

Isolating the pulmonary veins as first-line therapy in patients with lone paroxysmal atrial fibrillation using the Cryoballoon

Mehdi Namdar^{1*†}, Gian-Battista Chierchia^{1,2†}, Sjoerd Westra², Antonio Sorgente^{1,3}, Mark La Meir¹, Fatih Bayrak¹, Jayakeerthi Y. Rao¹, Danilo Ricciardi¹, Carlo de Asmundis¹, Andrea Sarkozy¹, Joep Smeets², and Pedro Brugada¹

Table 1 Baseline and procedural characteristics of the patient population (n = 18)

Age (years)	44 ± 9
Male (n/%)	15 (83%)
LVEF (%)	58 ± 3
LA (mm)	39 ± 4
DM (n/%)	1 (6)
CHADS ₂ (n/%)	
0	17 (94%)
1	1 (6%)
AF time (month)	32 ± 29
Follow-up time (month)	14 ± 9
Procedural time (min)	108 ± 7
Fluoroscopy time (min)	23 ± 4

All values are expressed as mean ± SD or percentage.
BMI, body mass index; LVEF, left ventricular ejection fraction; LA, left atrial diameter; DM, diabetes mellitus; AF, atrial fibrillation.

Table 3 Outcome characteristics of the patient population

Patient	Rhythm 1 month	Rhythm 2 months	Rhythm 3 months	Rhythm 6 months	Rhythm 12 months	Rhythm during blanking period	Rhythm after blanking period	Medication after procedure	FU time (months)
1	AF	SR	SR	SR	SR	AF	SR	–	12
2	SR	SR	SR	SR	SR	SR	SR	–	12
3	SR	SR	SR	SR	AF	SR	AF	IC/BB	12
4	SR	SR	SR	SR	AF	SR	AF	IC/BB	12
5	SR	SR	SR	SR	–	SR	SR	–	6
6	SR	SR	SR	SR	SR	SR	SR	–	32
7	SR	SR	SR	SR	SR	SR	SR	–	16
8	SR	SR	SR	SR	SR	SR	SR	–	18
9	AF	SR	SR	SR	SR	AF	SR	BB	33
10	SR	SR	SR	SR	SR	SR	SR	–	29
11	SR	SR	SR	SR	–	SR	SR	–	10
12	SR	SR	SR	SR	–	SR	SR	–	9
13	SR	SR	SR	SR	–	SR	SR	–	8
14	SR	SR	SR	SR	SR	SR	SR	–	12
15	SR	SR	SR	SR	–	SR	SR	–	7
16	SR	SR	SR	SR	SR	SR	SR	–	18
17	SR	SR	SR	SR	–	SR	SR	–	6
18	SR	SR	SR	SR	–	SR	SR	–	7
Total/mean	16 (89%)	18 (100%)	18 (100%)	18 (100%)	9/11 (82%)	16 (89%)	16 (89%)	3 (17%)	14 ± 9

All values are expressed as sum (%) or mean ± SD.
FU, follow-up; AF, atrial fibrillation; SR, sinus rhythm; IC, class IC antiarrhythmic drug; BB, beta blocker.

Cryoballoon ablation in patients with lone paroxysmal AF is feasible and yields a high acute efficacy rate with a great chance of being free of symptomatic AF recurrence without antiarrhythmic drugs when offered as a first-line treatment after a single procedure. These findings suggest that it may be appropriate to consider cryoballoon therapy for PVI as first-line therapy in this group of patients

Efficacy and Risk of Atrial Fibrillation Ablation Before 45 Years of Age

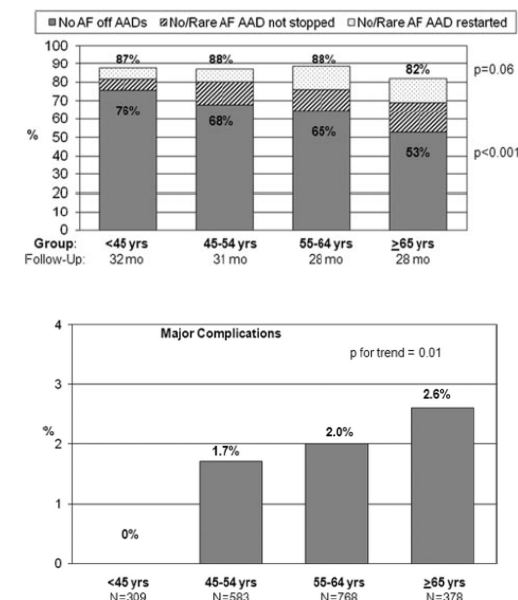
Peter Leong-Sit, MD; Erica Zado, PA-C; David J. Callans, MD; Fermin Garcia, MD; David Lin, MD; Sanjay Dixit, MD; Rupa Bala, MD; Michael P. Riley, MD, PhD; Mathew D. Hutchinson, MD; Joshua Cooper, MD; Edward P. Gerstenfeld, MD; Francis E. Marchlinski, MD

Table 1. Baseline Characteristics

	Group 1 Age <45 y (n=232 Patients/309 Procedures)	Group 2 Age 45 to 54 y (n=438 Patients/583 Procedures)	Group 3 Age 55 to 64 y (n=570 Patients/768 Procedures)	Group 4 Age ≥65 y (n=308 Patients /378 Procedures)	P Value
Men, n (%)	179 (77%)	372 (85%)	439 (77%)	199 (65%)	<0.001
Paroxysmal atrial fibrillation, n (%)	165 (71%)	271 (62%)	374 (66%)	193 (63%)	0.09
LVEF, %, SD	58±10	58±9	58±10	60±10	0.03
LA size, cm, SD	4.2±0.7	4.4±0.7	4.4±0.7	4.5±0.8	<0.001
CHADS2 score,* median (IQR)	0 (0, 1)	1 (0, 1)	1 (0, 1)	1 (0, 2)	<0.001
Hypertension, n (%)	50 (22%)	189 (43%)	305 (54%)	196 (63%)	<0.001
Diabetes, n (%)	7 (3.0%)	25 (5.7%)	60 (11%)	22 (7.1%)	0.03
Heart failure, n (%)	5 (2.2%)	18 (4.1%)	19 (3.3%)	19 (6.2%)	0.02
Embolic event, n (%)	5 (2.2%)	22 (5.0%)	37 (6.5%)	29 (9.4%)	0.005
Follow-up, mo, SD	32±20	31±19	28±17	28±17	0.05

IQR indicates interquartile range (25th and 75th percentiles).

*CHADS2 score: 1 point each for congestive heart failure, hypertension, age ≥75 years, diabetes; 2 points for prior stroke or transient ischemic attack.



In patients younger than 45 years, there is a lower complication rate, while having a comparable overall efficacy rate with a greater chance of being AF free without the use of antiarrhythmic medications.

These findings suggest that it may be appropriate to consider ablative therapy as first-line therapy in patients younger than 45 years.

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Radiofrequency Ablation as Initial Therapy in Paroxysmal Atrial Fibrillation

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Table 1. Baseline Characteristics of the Patients According to Assignment to Initial Treatment with Radiofrequency Ablation or Antiarrhythmic Drugs.*

Characteristic	Ablation (N=146)	Drug Therapy (N=148)
Age — yr	56±9	54±10
Male sex — no. (%)	100 (68)	106 (72)
Blood pressure — mm Hg		
Systolic	138±19	135±17
Diastolic	82±9	82±10
Body-mass index †	27±4	27±4
Medical history — no. (%)		
Coronary artery disease	6 (4)	2 (1)
Hypertension	43 (29)	53 (36)
Valvular disease	7 (5)	15 (10)
Previous valvular intervention	1 (1)	1 (1)
Previous stroke or TIA	6 (4)	5 (3)
Pacemaker	5 (3)	6 (4)
Thyroid disease	10 (7)	10 (7)
Diabetes mellitus	6 (4)	10 (7)
Chronic lung disease	8 (5)	6 (4)
Left atrial size, parasternal long axis — mm	40±6	40±5
Left ventricular ejection fraction — no. ‡		
>60%	116	121
40–60%	29	26
New York Heart Association functional class — no.		
I	131	128
II	15	19
III	0	1
CHA ₂ DS ₂ score — no. §		
0	92	80
1	37	49
2	13	14
3	3	4
4	1	1

Fármacos AA vs ablação

Grupo Fármacos – 99% IC

Grupo ablação – Cateter irrigado ou 8 mm, WACA, sem cateter circular de mapeamento, sem confirmação de isolamento, sem necessidade de controlo de ACT durante procedimento

36% de "cross-over" (fármacos para ablação)

10% doentes do grupo ablação a fazer AA 24 meses

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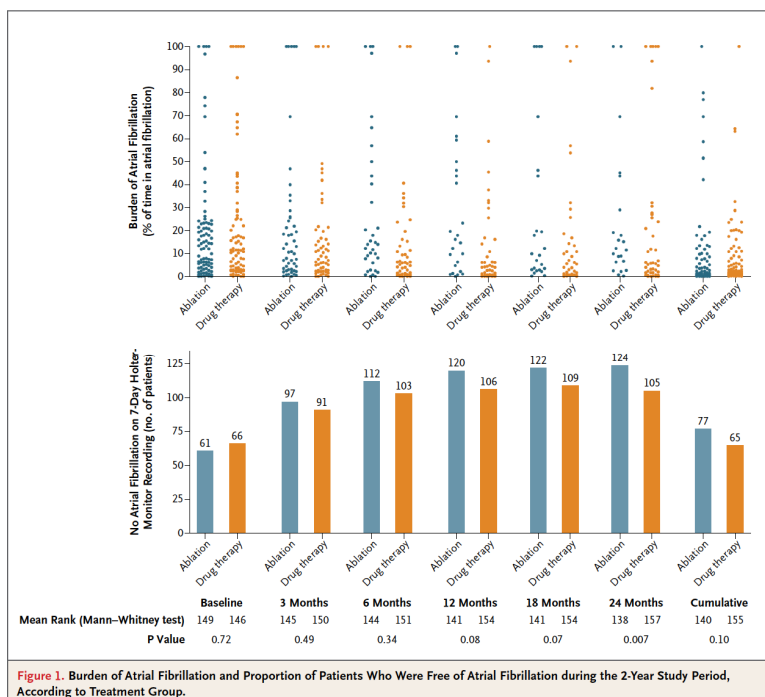
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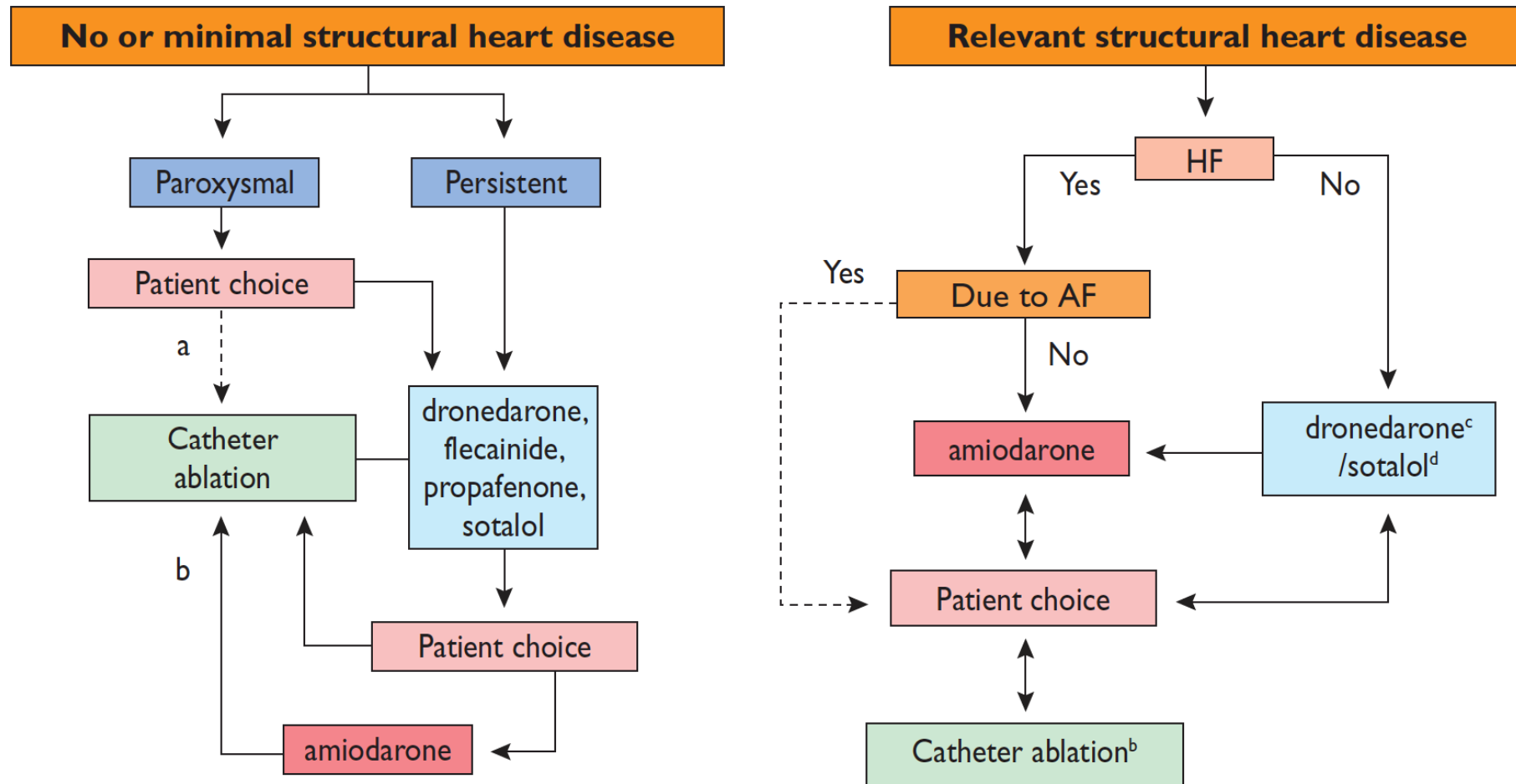
- At 24-month follow-up, significantly more patients in the ablation group were free from any AF and symptomatic AF
- Quality of life was significantly better in the ablation group at 12 and 24 months

The burden of atrial fibrillation was significantly lower in the ablation group than in the drug-therapy group at 24 months (90th percentile, 9% vs. 18%; $P = 0.007$)

Conclusões

- A fibrilhação auricular é uma doença evolutiva (paroxística, persistente, permanente)
- O controlo do ritmo é superior como estratégia ao controlo da frequência cardíaca
- A ablação (isolamento veias pulmonares) mostrou ser superior aos fármacos AA na manutenção de RS
- Eficaz no controlo de sintomas quando comparado com fármacos antiarrítmicos
- A ablação tem maior probabilidade de sucesso se efectuada numa fase precoce da doença
- Os doentes jovens têm menos alterações estruturais auriculares, mais frequentemente formas paroxísticas, uma maior probabilidade de sucesso na ablação e menor taxa de complicações

2012 focused update of the ESC Guidelines for the management of atrial fibrillation



AF = atrial fibrillation; HF = heart failure. ^aUsually pulmonary vein isolation is appropriate. ^bMore extensive left atrial ablation may be needed. ^cCaution with coronary heart disease. ^dNot recommended with left ventricular hypertrophy. Heart failure due to AF = tachycardiomyopathy.



Congresso
Novas Fronteiras em Cardiologia
8 a 10 fevereiro.2013
Hotel Vila Galé Ericeira

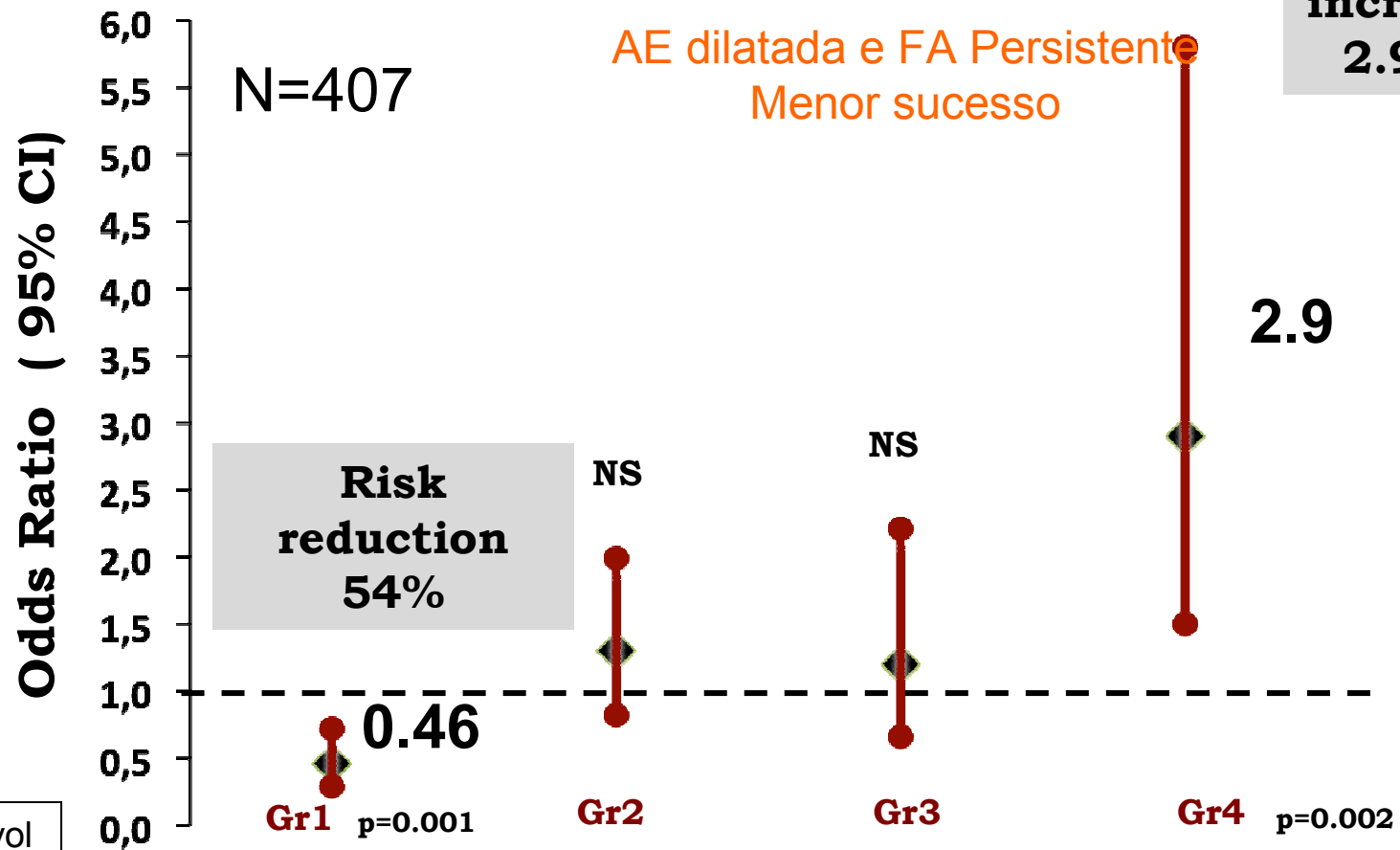
No jovem com FA paroxística e sem cardiopatia estrutural a
ablação deve ser a terapêutica inicial?

SIM!

ABLATION OF ATRIAL FIBRILLATION:

TYPE OF PRESENTATION, LEFT ATRIAL VOLUME AND GENDER
INFLUENCE THE TREATMENT SUCCESS

ADJUSTED RECURRENCE RISK OF ATRIAL FIBRILLATION FOR GROUPS



Gr 1 Par AF Lvol
Gr 2 Par AF Hvol
Gr 3 Per AF Lvol
Gr 4 Per AF Hvol

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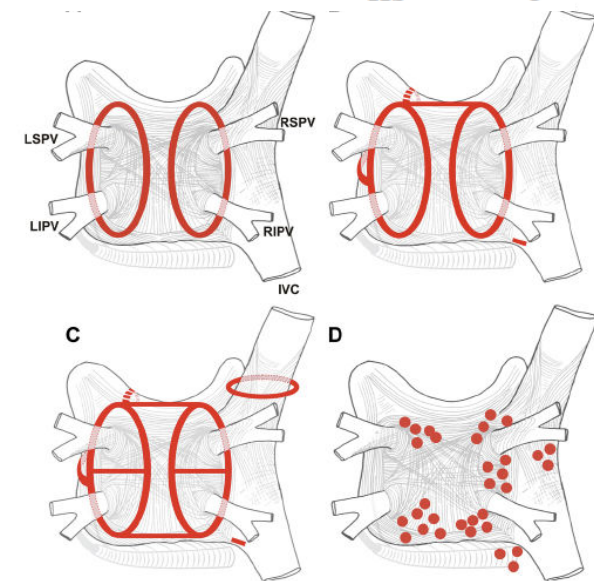
2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design

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

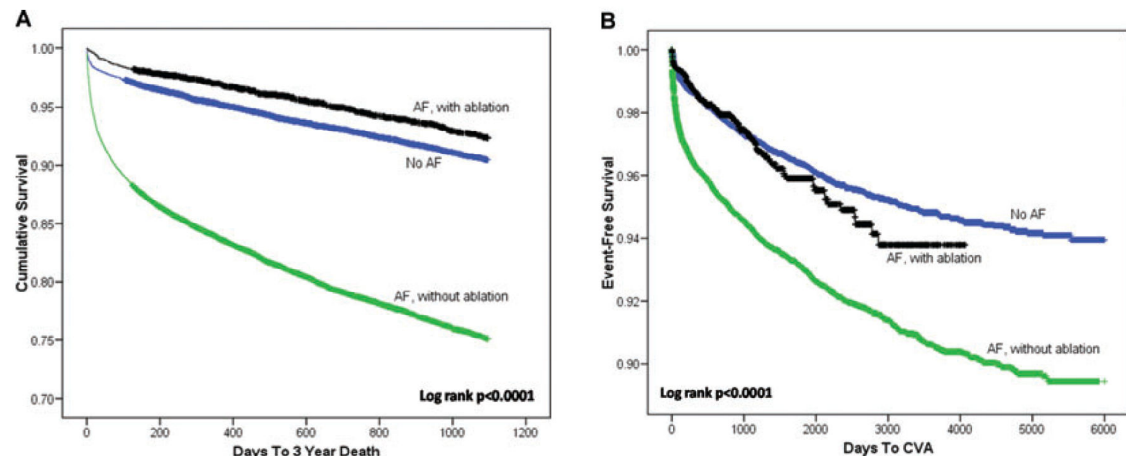
- Ablation strategies that target the PVs and/or PV antrum are the cornerstone for most AF ablation procedures.
- If the PVs are targeted, electrical isolation should be the goal.
- Achievement of electrical isolation requires, at a minimum, assessment and demonstration of entrance block into the PV.
- Monitoring for PV reconnection for 20 minutes following initial PV isolation should be considered.



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 doentes:
 4 212 ablação de FA
 16 848 terapêutica médica
 16 848 controlo (dts sem FA)



Rates of death, stroke and dementia at three years %

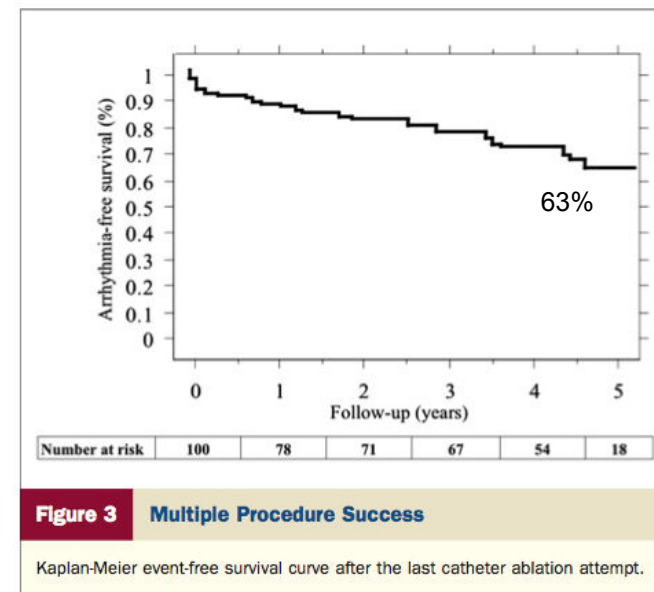
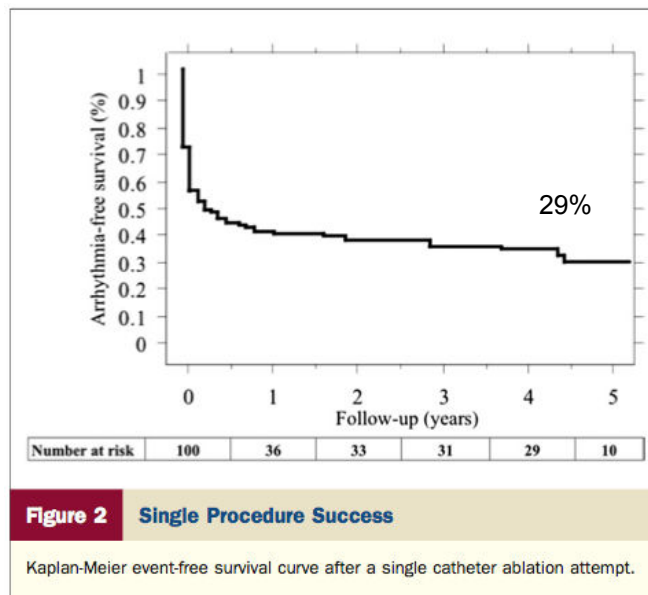
End point	AF, no ablation	No AF	AF, ablation	p
Alzheimer's disease	0.9	0.5	0.2	<0.001
Other dementia	1.7	0.7	0.4	<0.001
Mortality	23.5	8.7	6.0	<0.001
Stroke	4.7	2.4	2.2	<0.001

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



Procedimentos/doente – mediana=2

65% FAP, IVP em todos, linhas em 90%

Reconexão de VPs em todos os doentes reintervencionados precocemente

Reintervenções tardias – reconexão, gaps em linhas, focos extra pulmonares