



Congresso
**Novas Fronteiras
em Cardiologia**

8 a 10 fevereiro.2013

Hotel Vila Galé Ericeira



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Controvérsia: No jovem com FA paroxística e sem cardiopatia estrutural a ablação deve ser a terapêutica inicial? Sim – Diogo Cavaco; Não – Luís Carpinteiro

To a man with a hammer, everything looks like a nail
Abraham Maslow, The Psychology of Science (1966)





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Uma história clínica...

- Homem actualmente 37 anos, sem cardiopatia estrutural
- 2008: Episódio inaugural de FA, em contexto de fadiga e stress. Tolerou todo o dia, à noite foi a SU onde fez ECG. Terminou com 12 horas de evolução, durante perfusão de amiodarona.
- 2009: Morte do avô. Durante a noite teve sintomas por algumas horas, que reverteram espontaneamente. Cardiologista assistente prescreveu Amiodarona e referiu a Centro de Electrofisiologia. Foi retirada Amiodarona e sugerida Flecainida, a passar a “Pill in the Pocket” se não tivesse recorrência.
- 2011: Fadiga. Acorda durante a noite com sensação “estranha”, mas não tem a certeza de pulso arritmico. ECG no dia seguinte normal. Referido ao HSM para ablação. Recusado, e manutenção de P.I.P.
- 2012: Sem recorrências.





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“Doente jovem”

- 45 anos: limite arbitrário mas presente na literatura.
- Qual a história natural da doença, no jovem sem cardiopatia estrutural?
- Presença de etiologias específicas:
 - Molecular: não há estudos de ablação neste contexto
 - Arritmias primárias
 - Factores reversíveis
- Subpopulação específica, apenas contemplada em 1 estudo de ablação, e pouco incluída nos restantes
- Baixa prevalência de cardiopatia estrutural
 - Resposta a fármacos mais favorável?
 - Riscos dos Fármacos reduzidos?



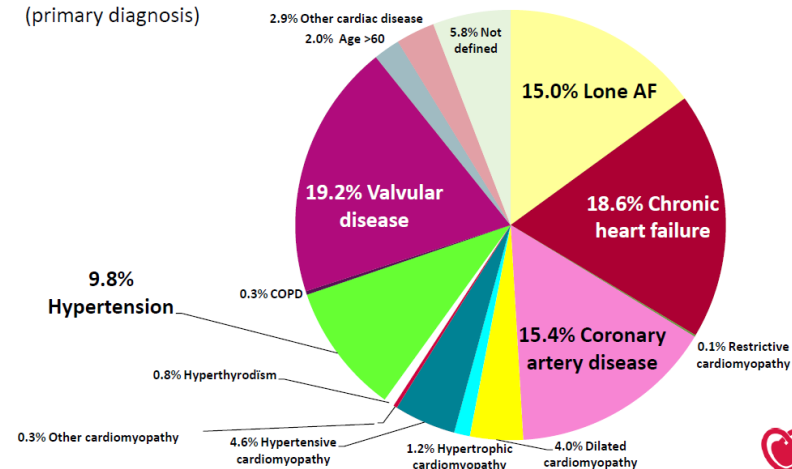
Atrial Fibrillation General Pilot registry

		All (n=754)
Age (years),	median (IQR)	68 (61-76)
	> 65 years, %	59.65

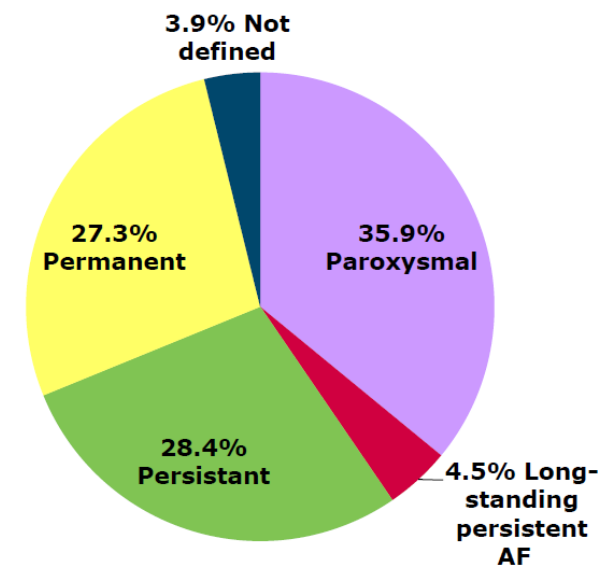
Atrial Fibrillation General Pilot registry

Underlying disease

(primary diagnosis)



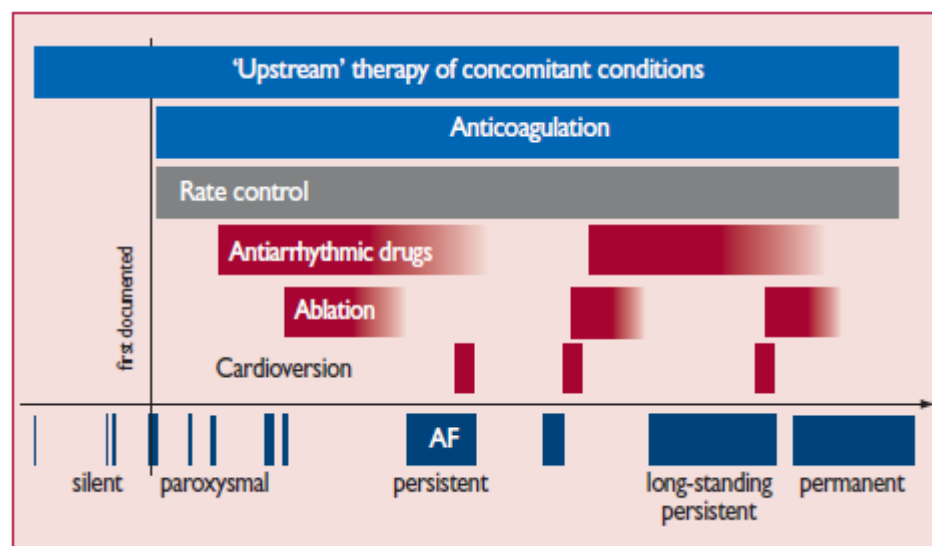
Characteristics of AF 1



Guidelines for the management of atrial fibrillation

3.3 ‘Natural’ time course

AF progresses from short, rare episodes, to longer and more frequent attacks. Over time (years), many patients will develop sustained forms of AF (Figure 1). Only a small proportion of patients without AF-promoting conditions (see Section 2.1.2) will remain in paroxysmal AF over several decades (2–3% of AF patients).³² The distribution of paroxysmal AF recurrences is not random, but clustered.³ ‘AF burden’ can vary markedly over months or even years in individual patients.³ Asymptomatic AF is



Rhythm control in patients with AF and AF-related heart failure should be considered for improvement of symptoms.	IIa	B	93–94, 97
Catheter ablation of AF may be considered prior to antiarrhythmic drug therapy in symptomatic patients despite adequate rate control with paroxysmal symptomatic AF and no significant underlying heart disease.	IIb	B	131

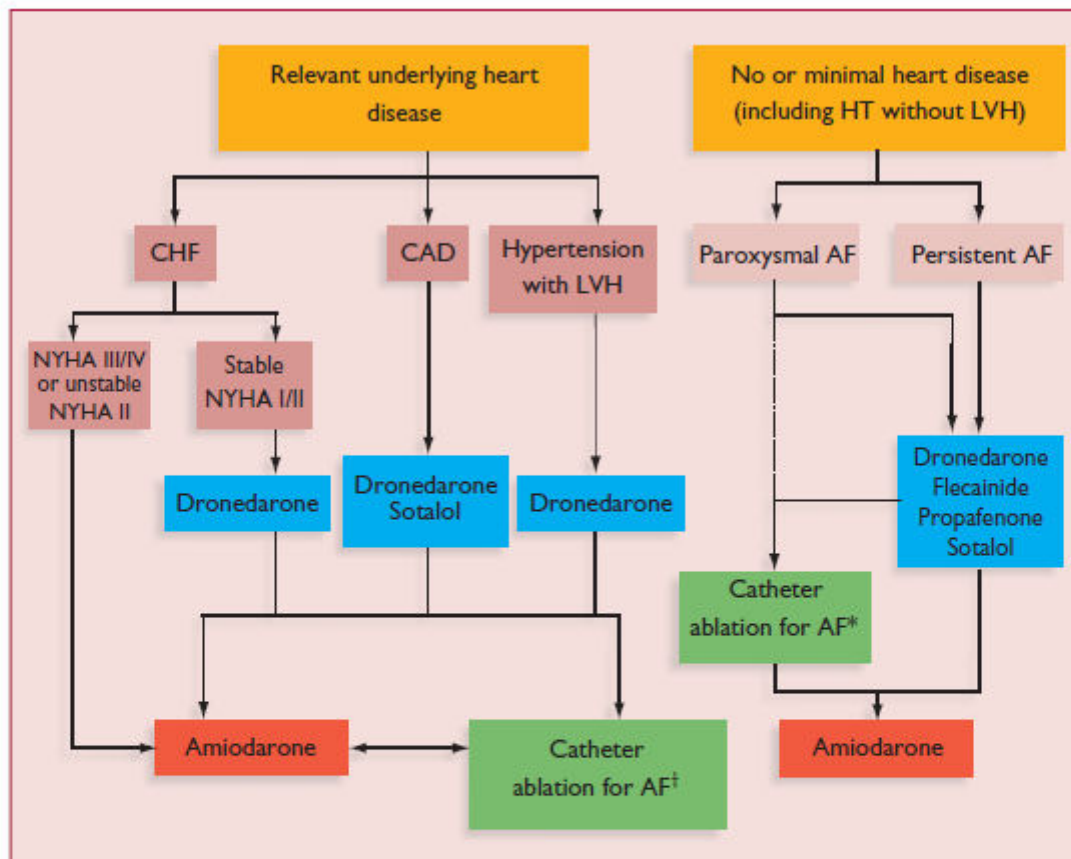


Figure 12 Choice between ablation and antiarrhythmic drug therapy for patients with and without structural heart disease. Proposed integration of antiarrhythmic drug and catheter ablation for AF in patients with relevant underlying heart disease and for those with no or minimal heart disease, including hypertension (HT) without left ventricular hypertrophy (LVH). †More extensive LA ablation may be needed; *usually PVI is appropriate. AF = atrial fibrillation; CAD = coronary artery disease; LVH = left ventricular hypertrophy; NYHA = New York Heart Association; order within each treatment box. Please note that left atrium ablation as first-line therapy (dashed line) is a Class IIb recommendation for patients with paroxysmal AF and no or minimal heart disease, who remain highly symptomatic, despite rate control, and who reject antiarrhythmic drug therapy.

Please note that left atrium (LA) ablation as first-line therapy (dashed line) is a Class IIb recommendation for patients with paroxysmal AF and no or minimal heart disease, who remain highly symptomatic, despite rate control, and who reject antiarrhythmic drug therapy.



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Long-Term Progression and Outcomes With Aging in Patients With Lone Atrial Fibrillation

A 30-Year Follow-Up Study

Arshad Jahangir, MD; Victor Lee, MBBS; Paul A. Friedman, MD; Jane M. Trusty, RN;
David O. Hodge, MS; Stephen L. Kopecky, MD; Douglas L. Packer, MD; Stephen C. Hammill, MD;
Win-Kuang Shen, MD; Bernard J. Gersh, MBChB, DPhil

Circulation 2007

- Duração média do seguimento $25 \pm 9,5$ anos
- 31% de progressão para F.A. Permanente
- Sobrevivência semelhante à de população geral emparelhada por idade e sexo
- Incidência de I.C.C. apenas ligeiramente aumentada (P 0,05)
- Incidência de A.V.C. semelhante à população geral nos primeiros 25 anos de seguimento. Todos os doentes que sofreram A.V.C tinham adquirido ≥ 1 factor de risco adicional.



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Atrial fibrillation progression and management: A 5-year prospective follow-up study

Carlo Pappone, MD, Andrea Radinovic, MD, Francesco Manguso, MD, Gabriele Vicedomini, MD, Giuseppe Ciconte, MD, Stefania Sacchi, MD, Patrizio Mazzone, MD, Gabriele Paglino, MD, Simone Gulletta, MD, Simone Sala, MD, Vincenzo Santinelli, MD

Heart Rhythm 2008

- 106 doentes seguidos durante 5 anos
 - 50 doentes sem recorrência
 - 56 doentes com FA recorrente tratados com fármacos / ablação, 42% de progressão para FA persistente sob fármacos.





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Progression From Paroxysmal to Persistent Atrial Fibrillation

Clinical Correlates and Prognosis

Cees B. de Vos, MD, Ron Pisters, MD, Robby Nieuwlaat, PHD, Martin H. Prins, MD, PHD, Robert G. Tieleman, MD, PHD, Robert-Jan S. Coelen, BSC, Antonius C. van den Heijkant, BSC, Maurits A. Allessie, MD, PHD, Harry J. G. M. Crijns, MD, PHD

- Progressão para F.A. Persistente em 15% dos doentes a 1 ano
- HATCH Score
 - Hipertensão
 - Idade
 - Acidente cerebrovascular prévio
 - D.P.O.C.
 - I.C.C.
- A progressão para FA persistente ocorreu em 6% dos doentes com HATCH score 0



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Alcohol and Illicit Drug Use as Precipitants of Atrial Fibrillation in Young Adults: A Case Series and Literature Review

Suresh Krishnamoorthy, MRCP, Gregory Y. H. Lip, MD, Deirdre A. Lane, PhD
University Department of Medicine, City Hospital, Birmingham, England, UK.

ABSTRACT

BACKGROUND: Atrial fibrillation in young patients (≤ 45 years) is uncommon. There is the perception that the precipitant in such cases is alcohol, but we also have noted cases related to illicit drug abuse. There are no clear guidelines on the treatment of atrial fibrillation in patients presenting with "lone atrial fibrillation" precipitated by alcohol or illicit drugs.

METHODS: We retrospectively analyzed young (defined as ≤ 45 years) patients with "lone" atrial fibrillation who were admitted to the hospital with electrocardiographically confirmed diagnosis of atrial fibrillation or atrial flutter, precipitated by either alcohol or illicit drugs, over a 6-year period.

RESULTS: Eighty-eight patients aged ≤ 45 years were admitted with atrial fibrillation or atrial flutter. In 22 patients, (mean [SD] age 33.6 [8.4] years; 20 male), alcohol ($n = 19$) and/or illicit drugs ($n = 3$) were found to be the precipitant. One patient required electrical cardioversion, with the remaining patients cardioverting back to sinus rhythm either pharmacologically or spontaneously. Twelve (54.5%) were investigated for atrial fibrillation burden by 24-hour Holter monitoring and the majority also underwent a transthoracic echocardiogram (81.8%). At discharge, 14 (63.6%) patients were treated with anti-arrhythmic drugs and 10 received either antiplatelets or anticoagulants. Most (85%) patients were followed-up for at least 12 months, during which time 6 had further paroxysms; all of whom continued to abuse either alcohol or illicit drugs.

CONCLUSIONS: Alcohol and illicit drugs are arrhythmogenic and are associated with atrial fibrillation. Apart from abstinence, the optimal management of such patients and the long-term effects of these substances on the heart and atrial fibrillation recurrences are still unclear.

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KEYWORDS: Alcohol; Atrial fibrillation; Illicit drugs



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Arrhythmia/Electrophysiology

Atrioventricular Nodal Reentrant Tachycardia in Patients Referred for Atrial Fibrillation Ablation

Response to Ablation That Incorporates Slow-Pathway Modification

William H. Sauer, MD; Concepcion Alonso, MD; Erica Zado, PA-C; Joshua M. Cooper, MD; David Lin, MD; Sanjay Dixit, MD; Andrea Russo, MD; Ralph Verdino, MD; Sen Ji, MD; Edward P. Gerstenfeld, MD; David J. Callans, MD; Francis E. Marchlinski, MD

Background—Although the most common sites of atrial ectopy that trigger atrial fibrillation (AF) are in or around the pulmonary veins (PVs), atrioventricular nodal reentrant tachycardia (AVNRT) can also cause or coexist with AF. We sought to characterize patients with AF and AVNRT and assess clinical outcomes after ablation.

Methods and Results—To determine the prevalence of concomitant AVNRT and AF, 629 consecutive patients referred for catheter ablation between November 1998 and March 2005 were studied. Electrophysiological studies with programmed stimulation during isoproterenol infusion identified atrial ectopy that initiated AF and the presence of inducible AVNRT. AF ablation consisted of proximal isolation of PVs and elimination of any non-PV trigger of AF, including AVNRT. There were 27 patients (4.3%) who had inducible AVNRT at the time of AF ablation. Of these, 13 underwent AVNRT ablation without PV isolation. Compared with the rest of the cohort, patients with AVNRT and AF were younger at the time of symptom onset (age 36.8 ± 13.8 versus 48.2 ± 11.7 years; $P < 0.01$). Freedom from AF with or without previously ineffective antiarrhythmic medication was similar in both groups (96.3% versus 90.7%; mean follow-up 21.4 ± 9.4 months); however, patients with AVNRT targeted for ablation were more likely to be AF free while not taking any antiarrhythmic medication after a single procedure during the follow-up period (87.5% versus 54.7%; $P < 0.01$) and had fewer complications (0% versus 2.5%; $P = 0.30$). Twelve of the 13 patients who underwent slow-pathway ablation without left atrial ablation remained AF free without the need for antiarrhythmic medication after a single procedure.

Conclusions—AVNRT is an uncommon AF trigger seen more frequently in younger patients. Ablation of AVNRT in patients with AF was associated with improved outcomes compared with those with other triggers of AF. (*Circulation*. 2006;114:191-195.)



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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: resultados a longo prazo

	Idade	FU	N / % Paroxística	Resultados		Ablações / doente	NOTA
				Único	Multiplos		
Cheema / Calkins JICE 2006	56±11	26±11	200 / 46%	28%	41%	1,35	PAF (1 / Mult) 37% 69%
Shah /Syeinberg JCE 2008	57±12	28±12	350 / 87%		25% recorrencia actuarial 5 anos	1,11	Apenas sucesso aos 12 meses
Bertaglia / Stabile Epace 2010	59±10	49,7±13	177 / 57,6%		46,8% recorrência actuarial 5 anos		
Sawhney / Feld AJC 2009	60±10	5Y	71 / 100%	56%			1,6 SINTOMAS!
Ouyang / Kuck Circ 2010	59±9	4,8Y	161 / 100%	46,60%	79,50%	1,48	
Arya / Hindricks Epace 2010	57±11	12	674 / 84.8%		75,70%		
Tzou / Gerstenfeld CAE 2010	54±11		140 / 85%	71%			Apenas sucesso aos 12 meses
Weerasooriya / Haissaguerre JACC 2011	55±9	5Y	100 / 63%	29%	63% MEDIANA 2		
Wokhlu / Packer JCE 2011	54±11	2Y	428 / 100%	62%	71%	1,14	



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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

Background—Young patients with atrial fibrillation (AF) tend to be more symptomatic and less willing to take long-term medications, yet catheter ablation remains recommended as second-line therapy for AF regardless of age. This study seeks to characterize the effectiveness and risk of AF ablation in the young.

Methods and Results—Consecutive (n=1548) patients who underwent 2038 AF ablation procedures were included. Major procedural complications and efficacy were analyzed on the basis of age at the initial procedure: <45 years (group 1), 45 to 54 years (group 2), 55 to 64 years (group 3), and ≥65 years (group 4). AF control was defined as no or rare AF on or off antiarrhythmic drugs. The primary outcome of AF control was similar in all groups; it was achieved in 87% in group 1, 88% in group 2, 88% in group 3, and 82% in group 4 ($P=0.06$). However, more group 1 patients demonstrated freedom from AF off antiarrhythmic drugs (76%) compared with group 2 at 68%, group 3 at 65%, and group 4 at 53% ($P<0.001$). There were no major complications in group 1, 10 (1.7%) in group 2, 14 (1.4%) in group 3, and 10 (2.6%) in group 4 ($P=0.01$).

Conclusions—In patients younger than 45 years, there is a lower major complication rate and a comparable efficacy rate, with a greater chance of being AF free without antiarrhythmic drugs. These findings suggest that it may be appropriate to consider ablative therapy as first-line therapy in this age group. (*Circ Arrhythm Electrophysiol.* 2010;3:452-457.)

To achieve this level of AF control, the proportion of patients with repeat procedures was 25% in group 1, 21% in group 2, 30% in group 3, and 19% in group 4 ($P<0.01$).



Conclusões 1:

- A população jovem, sem cardiopatia estrutural com fibrilação auricular paroxística constitui uma minoria pouco representada nos estudos existentes sobre a eficácia e segurança terapêutica.
- Nesta população, a história natural da doença é benigna em termos de sobrevivência, complicações e progressão para FA persistente / permanente;
- São frequentes os factores precipitantes elimináveis
- Cerca de metade dos doentes cursam sem ou com raras recorrências
- Não se aplicam nesta população as contraindicações / factores de risco de complicações associadas aos fármacos IC, e provavelmente a terapêutica de comorbilidades (AOS, HTA, etc.) terá neste grupo um maior sucesso como “upstream therapy”





Conclusões 2:

- O actual estadio da técnica ablativa, mesmo em centros de topo, está longe de proporcionar uma taxa óptima de cura com uma única intervenção.
- A evidência recente leva a encarar com reserva os resultados a longo prazo; e nesta população o “longo prazo” é muito superior a 5 anos.

Assim, a ablação da Fibrilhação Auricular (leia-se no caso, Isolamento das veias pulmonares) PODE ser considerada em doentes com carga arritmica recorrente e sintomática significativa, sem remissão após manejo judicioso de todas as comorbilidades, controle de frequência e ritmo conservadores, e ponderando o grau de preferência manifestado por doentes informados.

