RHYTHM 2017

Arrhythmias & Heart Failure

New Insights & Technological Advances

March 2-3

9th Congress Edition

Novotel PARIS Tour Eiffel

Ablation de la fibrillation atriale,resultats préliminaires de l'expérience Tunisienne

Pr S. kachboura FESC,FEHRA,

En collaboration avec

R.Chettaoui MD,S.Marrakchi MD,Z.Belhaj MD,M.Miled,A.Boussaffara

Ariana, Tunisie

www.rhythmcongress.com

Disclosure

salem kachboura

.....

I do not have any potential conflict of interest

- arythmie **la + fréquente**

- **2-4 %** de la population générale

- Sa prévalence réelle
  sous estimée : FA silencieuse, sous diagnostiquée

  dépend :

  Sexe: homme > femme

  Age +++: prévalence augmente avec l'âge ++++
  jeune (0,1%)<< sujet âgés 65 ans (5%)<80 ans(10%)

  Ethnie : blancs< noirs (2,2 vs 1,5%)

La FA est elle grave ?

FA est un problème de santé majeur: augmente la mortalité globale

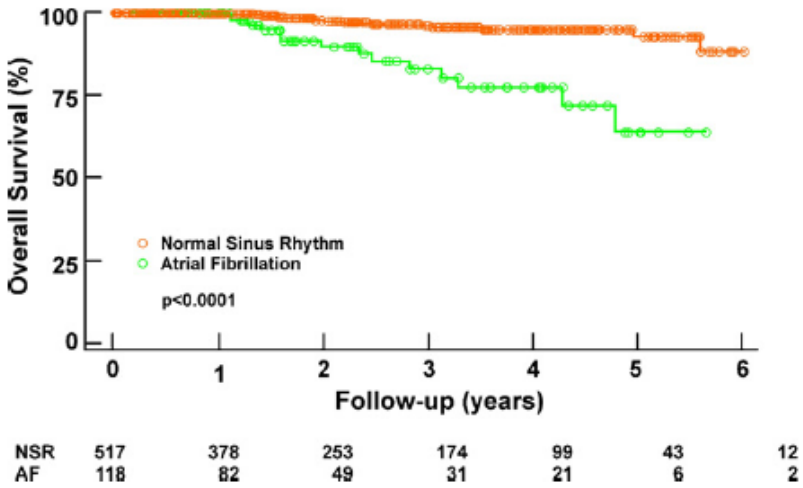


Figure 5 Kaplan–Meier curve demonstrating improved survival in patients who remained in normal sinus rhythm (NSR) from all-cause mortality compared with patients who remained in atrial fibrillation (AF).

noncardiac deaths) who remained in NSR died compared to

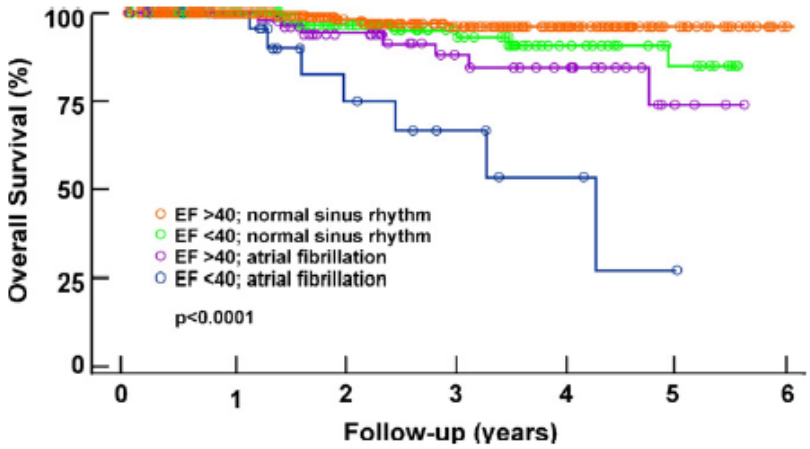


Figure 7 Multiple overlay Kaplan–Meier survival curves among 4 strata of patients: (1) patients with ejection fraction (EF) > 40% and normal sinus rhythm (orange), (2) patients with EF < 40% and normal sinus rhythm (green), (3) patients with EF > 40% and atrial fibrillation (purple), and (4) patients with EF < 40% and atrial fibrillation (blue). (For interpretation of the references to color in the figure caption, the reader is referred to the web version of the article.)

Europace (2012) 14, 528–606

Journal of Cardiology Volume 55, Issue 1 2010 1 - 12

Atrial Fibrillation Patterns and Risks of Subsequent Stroke, Heart Failure, or Death in the Community

Steven A. Lubitz, MD, MPH; Carlee Moser, PhD; Lisa Sullivan, PhD; Michiel Rienstra, MD, PhD; João D. Fontes, MD; Mark L. Villalon, MD; Manju Pai, MD; David D. McManus, MD, ScM; Renate B. Schnabel, MD, MSc; Jared W. Magnani, MD, MSc; Xiaoyan Yin, PhD; Daniel Levy, MD; Michael J. Pencina, PhD; Martin G. Larson, ScD; Patrick T. Ellinor, MD, PhD;* Emelia J. Benjamin, MD, ScM*

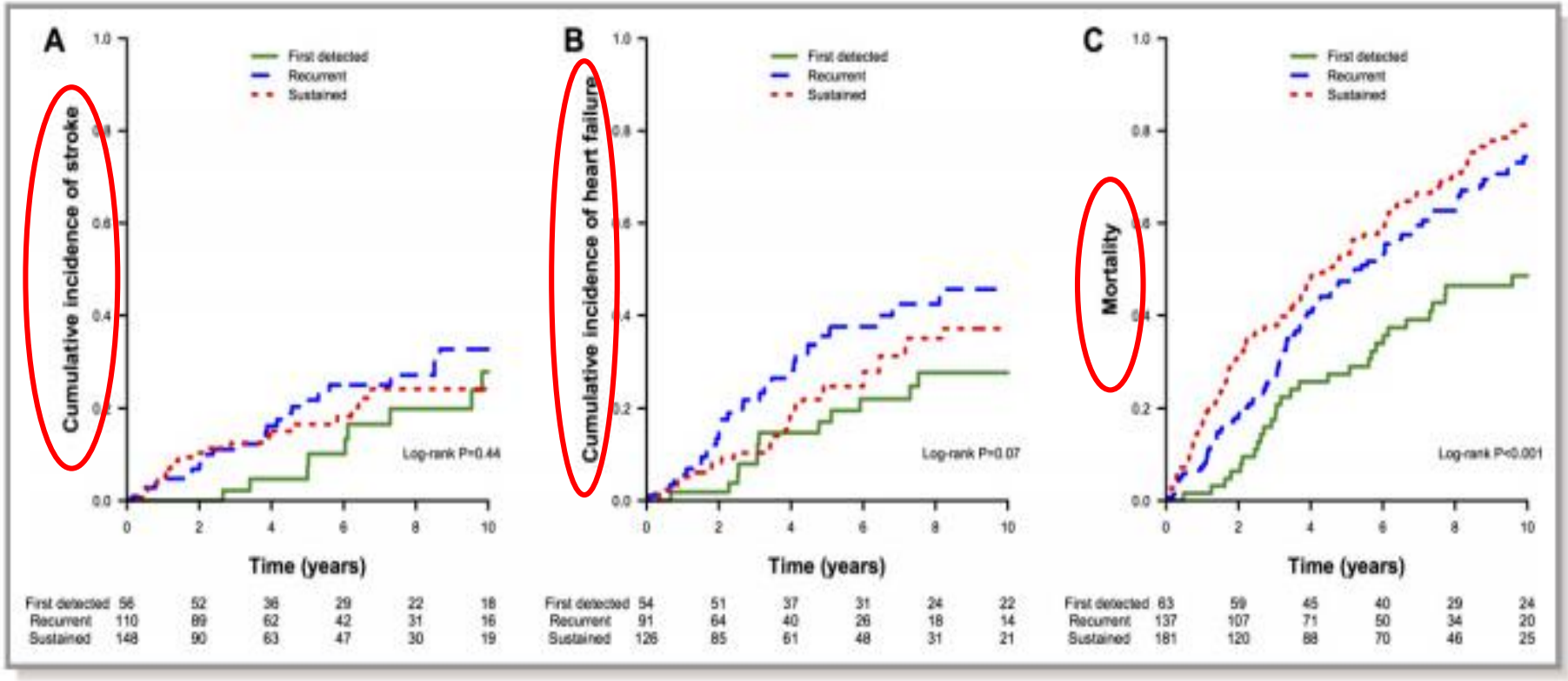
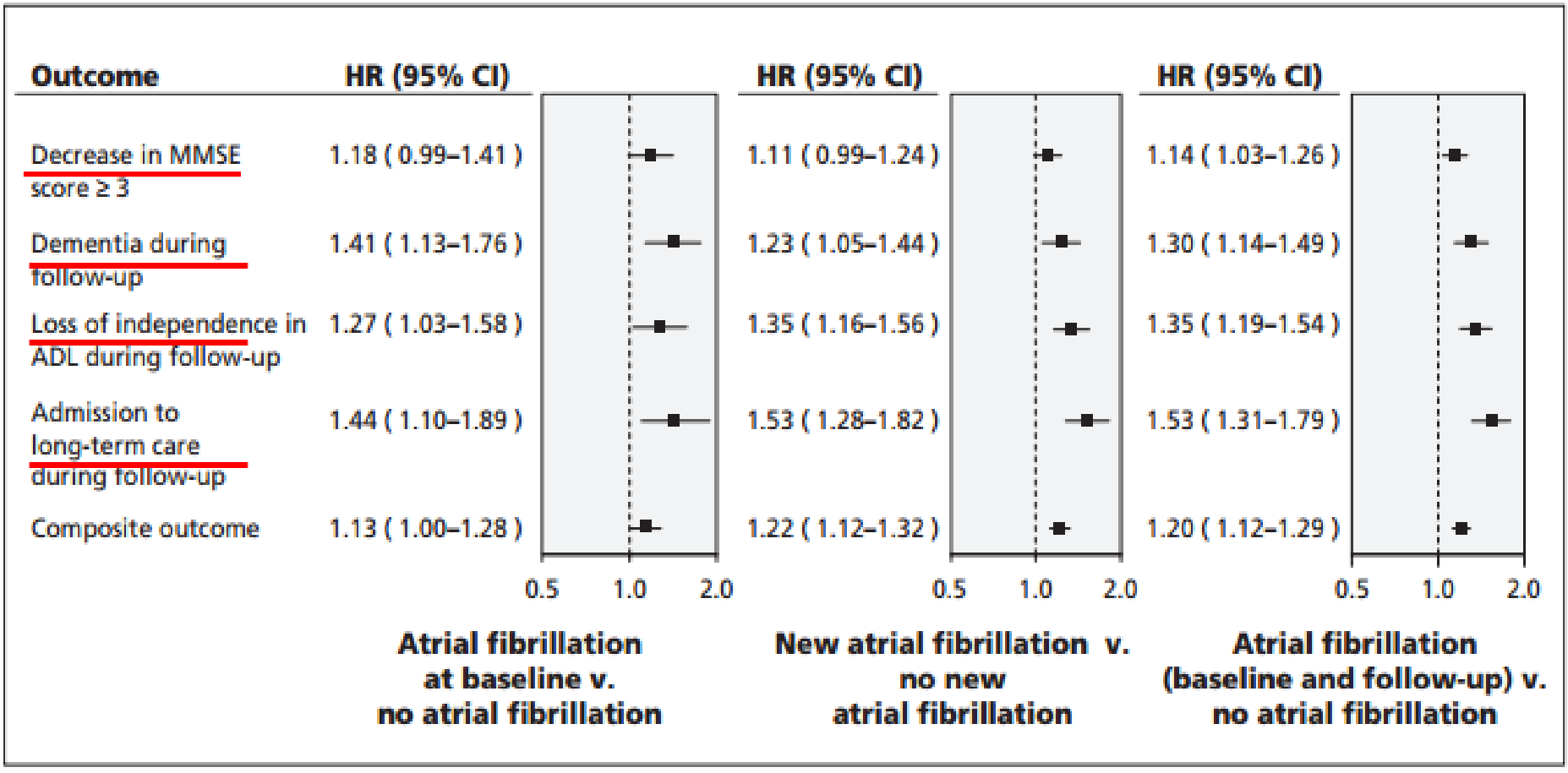


Figure 3. Cumulative incidence of stroke, heart failure, and death by atrial fibrillation pattern. The cumulative incidence of (A) stroke, (B) heart failure, and (C) death is displayed stratified by atrial fibrillation pattern over the 10 years of follow-up after atrial fibrillation pattern classification.

Increased risk of cognitive and functional decline in patients with atrial fibrillation: results of the ONTARGET and TRANSCEND studies



Event	Association with AF
Death	Increased mortality, especially cardiovascular mortality due to sudden death, heart failure or stroke.
Stroke	20–30% of all strokes are due to AF. A growing number of patients with stroke are diagnosed with 'silent', paroxysmal AF.
Hospitalizations	10–40% of AF patients are hospitalized every year.
Quality of life	Quality of life is impaired in AF patients independent of other cardiovascular conditions.
Left ventricular dysfunction and heart failure	Left ventricular dysfunction is found in 20–30% of all AF patients. AF causes or aggravates LV dysfunction in many AF patients, while others have completely preserved LV function despite long-standing AF.
Cognitive decline and vascular dementia	Cognitive decline and vascular dementia can develop even in anticoagulated AF patients. Brain white matter lesions are more common in AF patients than in patients without AF.

Quelles stratégies faut il adopter face à ces risques?

Rhythm vs. rate control trials

Trial	Inclusion criteria	Primary outcome Parameter	Patients reaching primary outcome (n)		
			Rate ctrl	Rhytm ctrl	P
PIAF (2000) 252 Patients	Persistent AF (7-360 days)	Symptomatic improvement	76/125 (60.8%)	70/127 (55.1%)	0.32
AFFIRM (2002) 4060 Patients	Paroxysmal AF or persistent AF, age ≥65 years, or risk of stroke or death	All-cause mortality	310/2027 (25.9%)	356/2033 (26.7%)	0.08
RACE (2002) 522 Patients	Persistent AF or flutter for <1 year and 1-2 cardioversions over 2 years and oral anticoagulation	Composite: cardiovascular death, CHF, severe bleeding, pacemaker implantatation, thrombo-embolic events, severe adverse effects of antiarrhythmic drugs	44/256 (17.2%)	60/266 (22.6%)	0.11
STAF (2003) 200 Patients	Persistent AF (>4 weeks and <2 years), LA size >45 mm, CHF NYHA II-IV, LVEF <45%	Composite: overall mortality, cerebrovascular complications, CPR, embolic events	10/100 (10.0%)	9/100 (9.0%)	0.99
HOT CAFÈ (2004) 205 Patients	First clinically overt persistent AF (≥7 days and <2 years), age 50-75 years	Composite: death, thrombo-embolic events; intracranial/major haemorrhage	1/101 (1.0%)	4/104 (3.9%)	>0.71
AF-CHF (2008) 1376 Patients	LVEF ≤35%, symptoms of CHF, history of AF (≥6 h or DCC <last 6 months)	Cardiovascular death	175/1376 (25%)	182/1376 (27%)	0.59
J-RHYTHM (2009) 823 Patients	Paroxysmal AF	Composite of total mortality, symptomatic cerebral infarction, systemic embolism, major bleeding, hospitalization for heart failure, or physical/psychological disability	89/405 (22.0%)	64/418 (15.3%)	0.012

Antiarrhythmic Drug Therapy for Atrial Fibrillation

Peter Zimetbaum, MD

Table 5. Selected Studies of Comparative Efficacy of Antiarrhythmic Drugs

Study	No. of Patients, Average Duration of Follow-Up	Drugs	Percentage of Patients Without Documented AF Recurrence
CTAF[51]	403, 16 mo	Amiodarone	65
		Sotalol	37
		Propafenone	37
SAFE-T[52]	665, 33 mo	Amiodarone	65
		Sotalol	25
		Placebo	10
PAFAC[53]	848, 9 mo	Sotalol	33
		Quinidine plus verapamil	35
		Placebo	17
DIONYSOS[34]	504, 7 mo	Amiodarone	58
		Dronedarone	36

- Risque de récidive non négligeable
- Effes indésirables++++

Limitations++

Atrial Fibrillation

Antiarrhythmic Drug Therapy for Atrial Fibrillation

Peter Zimetbaum, MD

	No Structural Heart Disease	Coronary Artery Disease	Heart Failure	Severe Ventricular Hypertrophy (Hypertrophic Cardiomyopathy)
First line				
	Flecainide	Sotalol	Amiodarone	Amiodarone
	Propafenone	Amiodarone	Dofetilide	
	Dronedarone	Dronedarone		
	Sotalol	Dofetilide		
Second line				
	Amiodarone			Disopyramide
	Dofetilide			
		Avoid flecainide, propafenone	Avoid flecainide, propafenone, dronedarone	Avoid flecainide, propafenone

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

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

Conclusions: *This systematic review suggests no difference in clinical outcomes with a rate or rhythm-control strategy with AF. However, rehospitalization rates appear to be lower with pharmacological rate control for all ages, while finding support for rhythm control in younger patients. (PACE 2012;00:1–12)*

rate control, rhythm control, atrial fibrillation

Figur

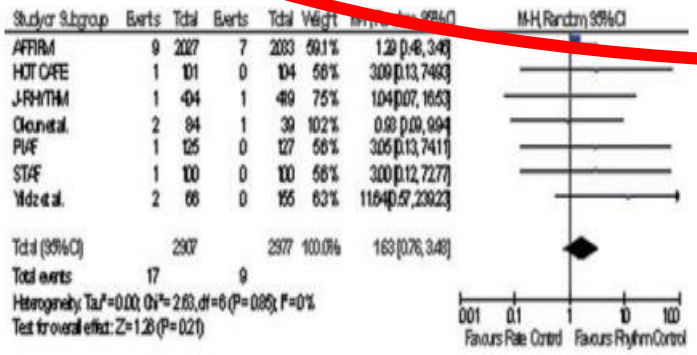


Figure 4. *Rate and rhythm control in atrial fibrillation and systemic embolism.*

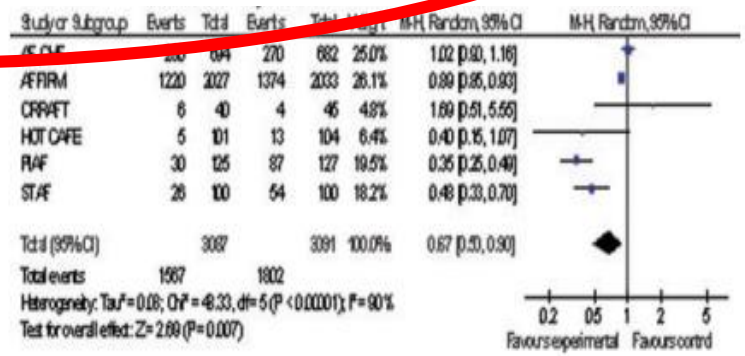


Figure 5. *Rate and rhythm control in atrial fibrillation and rehospitalization.*

Relationships Between Sinus Rhythm, Treatment, and Survival in the Atrial Fibrillation Follow-Up Investigation of Rhythm Management (AFFIRM) Study

The AFFIRM Investigators*

Conclusions—Warfarin use improves survival. SR is either an important determinant of survival or a marker for other factors associated with survival that were not recorded, determined, or included in the survival model. Currently available AADs are not associated with improved survival, which suggests that any beneficial antiarrhythmic effects of AADs are offset by their adverse effects. If an effective method for maintaining SR with fewer adverse effects were available, it might be beneficial. (*Circulation.* 2004;109:1509-1513.)

Relationships Between Sinus Rhythm, Treatment, and Survival in the Atrial Fibrillation Follow-Up Investigation of Rhythm Management (AFFIRM) Study

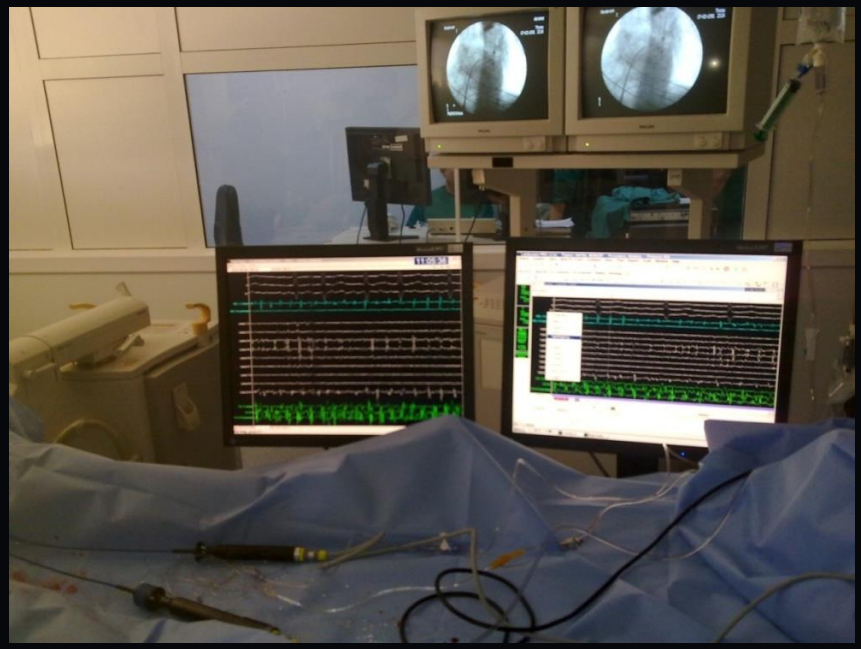
The AFFIRM Investigators*

However, a post-hoc on-treatment analysis of the AFFIRM study revealed that the presence of sinus rhythm was associated with a significant reduction in mortality, whereas the use of antiarrhythmic drugs increased mortality by 49%,[108] suggesting that the beneficial effect of sinus rhythm restoration on survival might be offset by the adverse effects of antiarrhythmic drugs. Previously, the

Europace (2012) 14, 528—606
doi:10.1093/europace/eus027

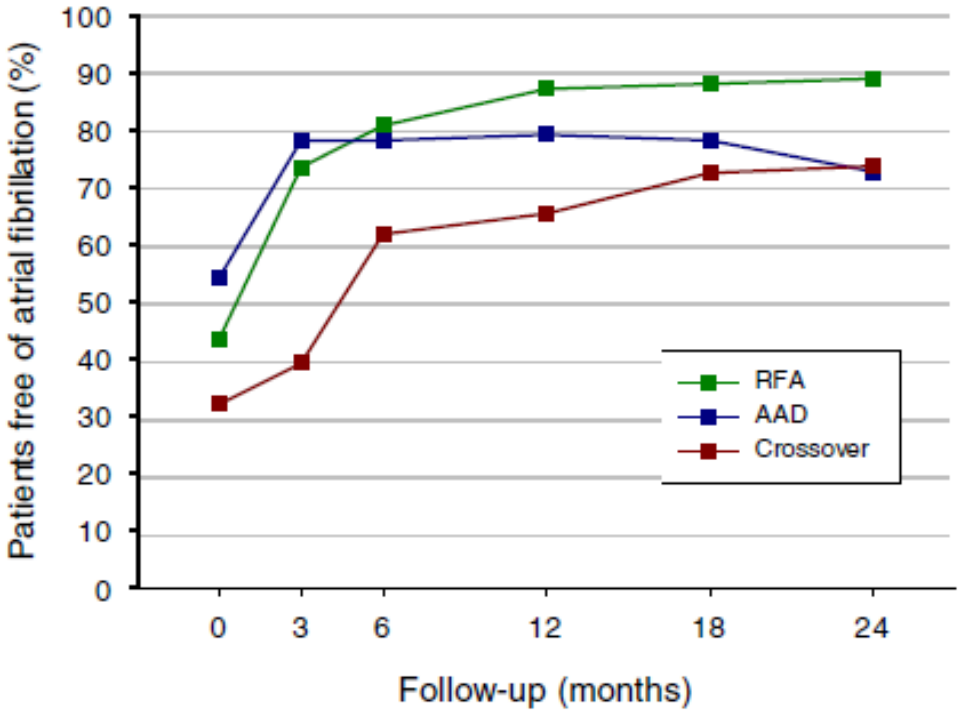
HRS/EHRA/ECAS EXPERT CONSENSUS STATEMENT

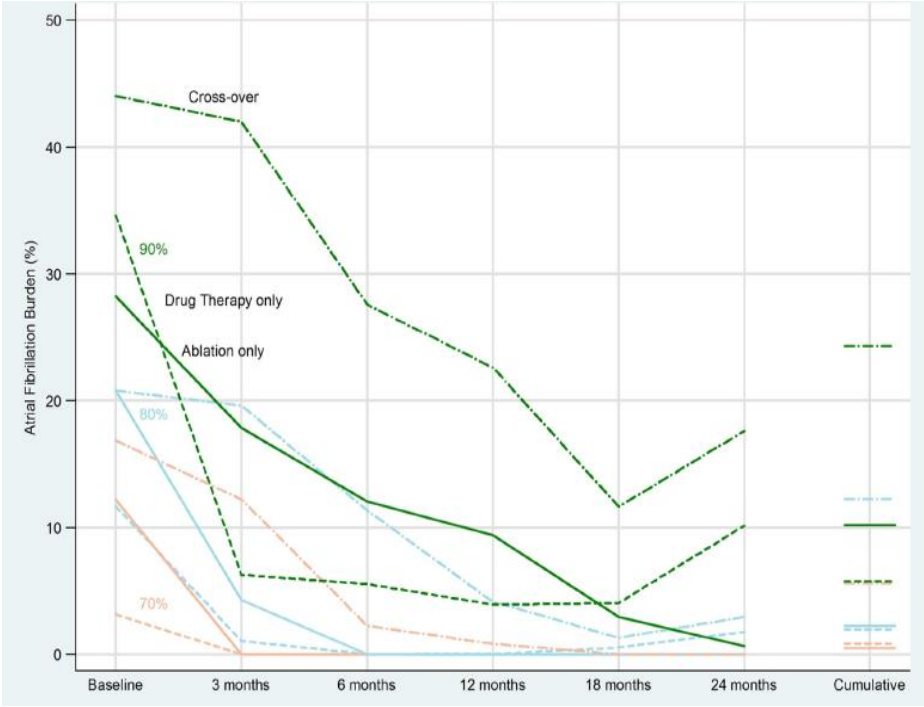
L'ablation par radiofréquence fait elle mieux que les anti arythmiques ?



Radiofrequency catheter ablation maintains its efficacy better than antiarrhythmic medication in patients with paroxysmal atrial fibrillation: On-treatment analysis of the randomized controlled MANTRA-PAF trial☆,☆☆

M.J. Pekka Raatikainen [a,*], Antti Hakalahti [b], Paavo Uusimaa [b], Jens Cosedis Nielsen [c], Arne Johannessen [d], Gerhard Hindricks [e], Håkan Walfridsson [f], Steen Pehrson [g], Anders Englund [h], Juha Hartikainen [i], Ole Kongstad [j], Leif Spange Mortensen [k], Peter Steen Hansen [c], for the MANTRA-PAF investigators



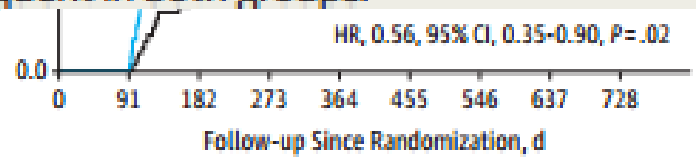


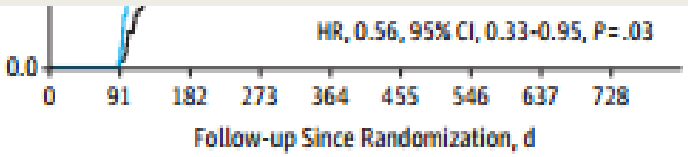
Radiofrequency Ablation vs Antiarrhythmic Drugs as First-Line Treatment of Paroxysmal Atrial Fibrillation (RAAFT-2)

A Randomized Trial

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

CONCLUSIONS AND RELEVANCE Among patients with paroxysmal AF without previous antiarrhythmic drug treatment, radiofrequency ablation compared with antiarrhythmic drugs resulted in a lower rate of recurrent atrial tachyarrhythmias at 2 years. However, recurrence was frequent in both groups.





No. at risk

Antiarrhythmic drug	61	61	35	25	21	18	17	17	12
Radiofrequency catheter ablation	66	66	46	39	32	30	28	27	18

Antiarrhythmic drug	61	61	40	32	28	25	24	24	18
Radiofrequency catheter ablation	66	66	50	47	38	36	34	33	23

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

Radiofrequency ablation vs. antiarrhythmic drug therapy as first line treatment of symptomatic atrial fibrillation: systematic review and meta-analysis

Antti Hakalahti[1]*, Fausto Biancari[2], Jens Cosedis Nielsen[3], and M.J. Pekka Raatikainen[4,5]

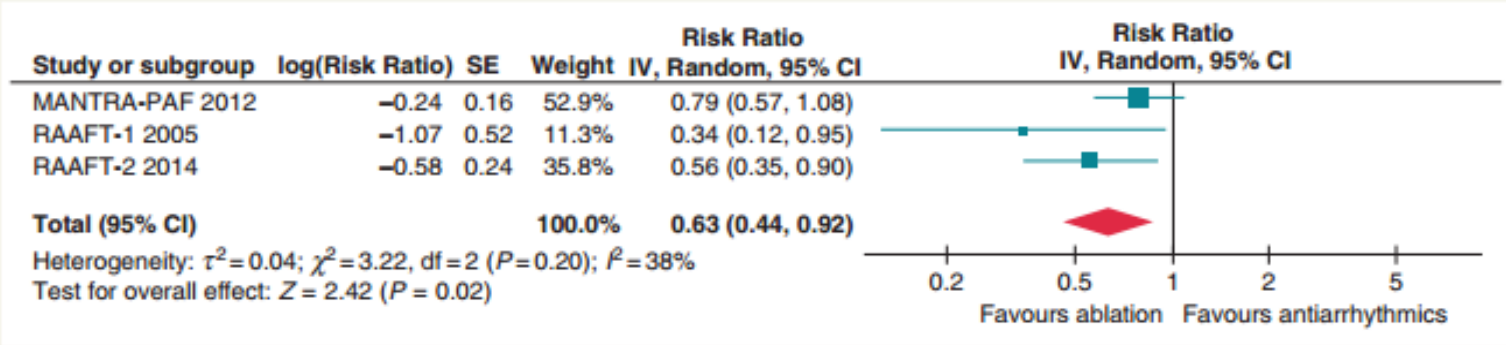


Figure 2 Forest plot showing the risk of recurrence of atrial fibrillation after radiofrequency ablation or antiarrhythmic drug treatment in three randomized studies. RAAFT-2 study included also the occurrence of atrial tachycardia and flutter.

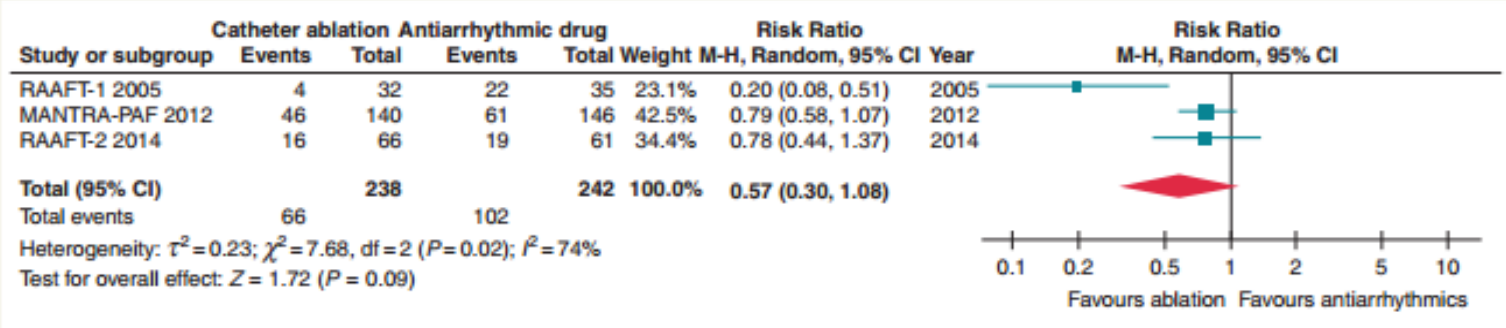
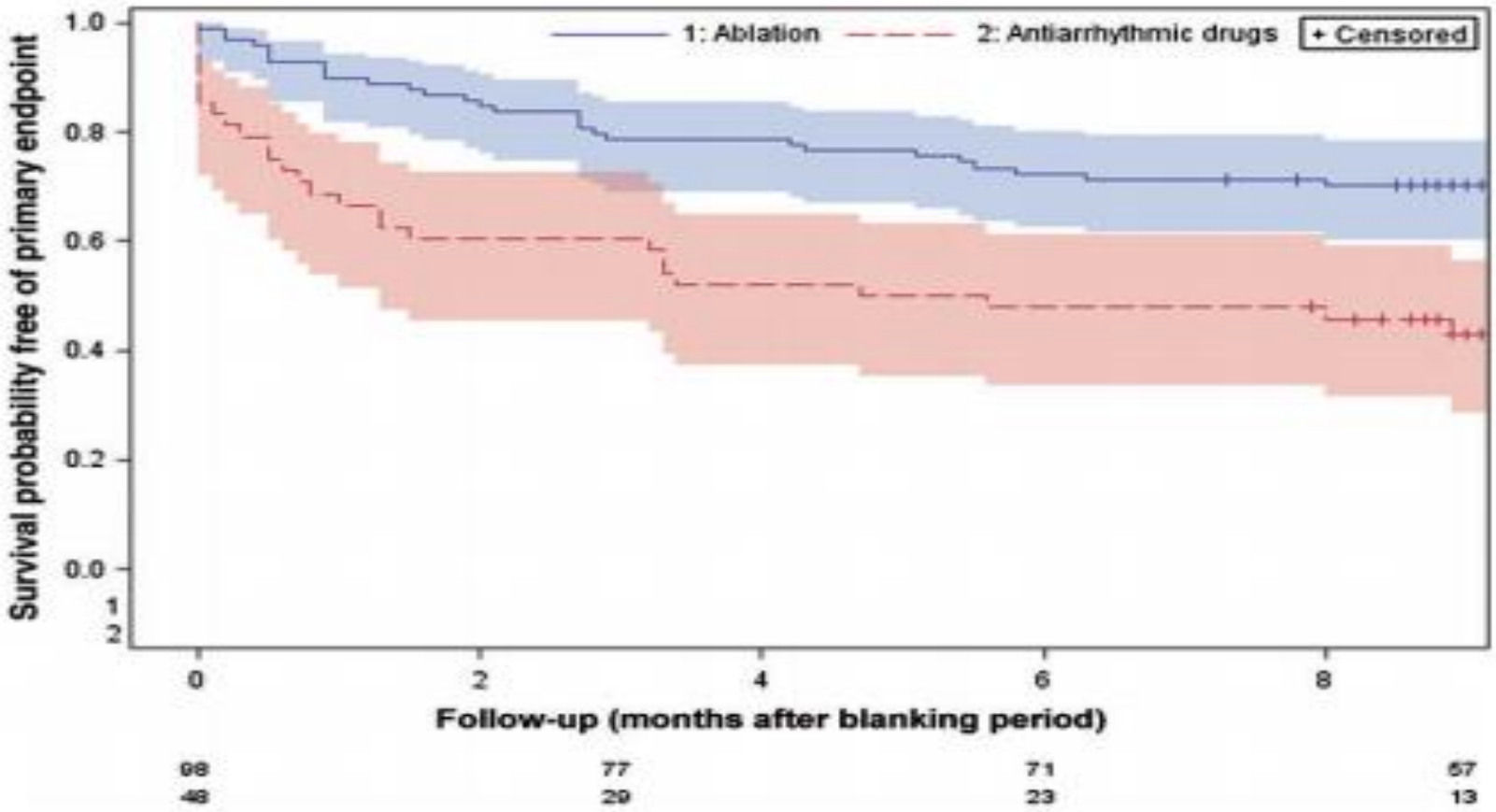


Figure 3 Forest plot showing the risk of symptomatic atrial fibrillation after radiofrequency ablation or antiarrhythmic drug treatment in three randomized studies.

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



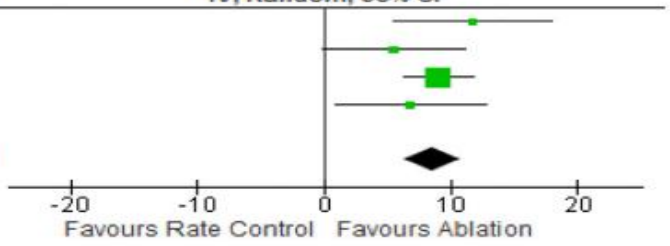
Dans l'insuffisance cardiaque…

Catheter Ablation for Atrial Fibrillation in Heart Failure Patients: A Meta-Analysis of Randomized Controlled Trials

A. Change in LVEF

Study or Subgroup	Ablation Mean	Ablation SD	Ablation Total	Rate Control Mean	Rate Control SD	Rate Control Total	Weight	Mean Difference IV, Random, 95% CI
Hunter 2014	8.1	12.5	26	-3.6	9.7	24	12.0%	11.70 [5.52, 17.88]
Jones 2013	10.9	11.5	24	5.4	8.5	26	14.3%	5.50 [-0.14, 11.14]
Khan 2008	8	8	41	-1	4	40	60.7%	9.00 [6.26, 11.74]
MacDonald 2011	8.2	12	20	1.4	5.9	18	13.0%	6.80 [0.88, 12.72]
Total (95% CI)			**111**			**108**	**100.0%**	**8.53 [6.40, 10.67]**

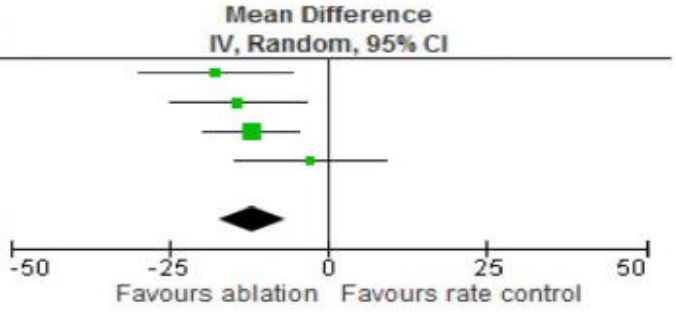
Heterogeneity: Tau² = 0.00; Chi² = 2.56, df = 3 (P = 0.46); I² = 0%
Test for overall effect: Z = 7.83 (P < 0.00001)



B. Change in MLWHF.

Study or Subgroup	Ablation Mean	Ablation SD	Ablation Total	Rate Control Mean	Rate Control SD	Rate Control Total	Weight	Mean Difference IV, Random, 95% CI
Hunter 2014	-18	21.99	26	-0.2	21.47	24	17.9%	-17.80 [-29.85, -5.75]
Jones 2013	-19.58	22.32	24	-5.35	15.71	26	22.0%	-14.23 [-25.01, -3.45]
Khan 2008	-19	21	41	-7	12.59	40	41.8%	-12.00 [-19.52, -4.48]
MacDonald 2011	-5.7	19.7	20	-2.8	17.9	18	18.2%	-2.90 [-14.85, 9.05]
Total (95% CI)			**111**			**108**	**100.0%**	**-11.88 [-17.15, -6.60]**

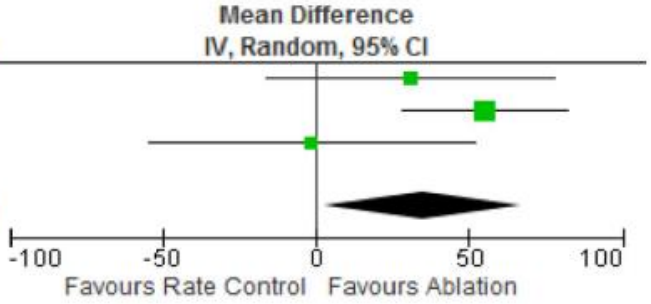
Heterogeneity: Tau² = 2.57; Chi² = 3.28, df = 3 (P = 0.35); I² = 8%
Test for overall effect: Z = 4.41 (P < 0.0001)



C. Change in 6-Minute Walk Test Distance.

Study or Subgroup	Ablation Mean	Ablation SD	Ablation Total	Control Mean	Control SD	Control Total	Weight	Mean Difference IV, Random, 95% CI
Jones 2013	21	103.7	26	-10	65.19	26	28.2%	31.00 [-16.08, 78.08]
Khan 2008	71	78.48	41	16	40.2	40	47.9%	55.00 [27.94, 82.06]
MacDonald 2011	20.1	76.5	17	21.4	77.4	15	23.9%	-1.30 [-54.75, 52.15]
Total (95% CI)			**84**			**81**	**100.0%**	**34.76 [2.87, 66.65]**

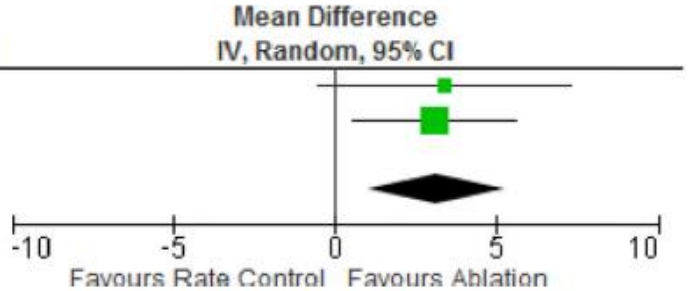
Heterogeneity: Tau² = 362.12; Chi² = 3.61, df = 2 (P = 0.16); I² = 45%
Test for overall effect: Z = 2.14 (P = 0.03)



D. Change in Peak VO_2.

Study or Subgroup	Ablation Mean	Ablation SD	Ablation Total	Rate Control Mean	Rate Control SD	Rate Control Total	Weight	Mean Difference IV, Random, 95% CI
Hunter 2014	1.4	7.05	26	-2	7.1	24	29.1%	3.40 [-0.53, 7.33]
Jones 2013	2.13	5.52	24	-0.94	3.13	26	70.9%	3.07 [0.56, 5.58]
Total (95% CI)			**50**			**50**	**100.0%**	**3.17 [1.05, 5.28]**

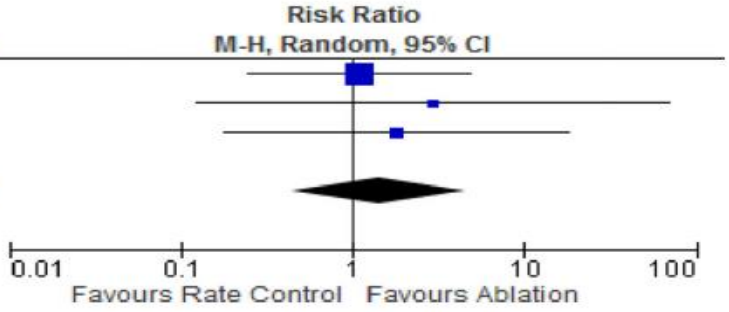
Heterogeneity: Tau² = 0.00; Chi² = 0.02, df = 1 (P = 0.89); I² = 0%
Test for overall effect: Z = 2.93 (P = 0.003)



C. Heart Failure Re-admissions.

Study or Subgroup	Ablation Events	Ablation Total	Rate Control Events	Rate Control Total	Weight	Risk Ratio M-H, Random, 95% CI
Jones 2013	3	24	3	26	60.8%	1.08 [0.24, 4.86]
Khan 2008	1	41	0	40	13.6%	2.93 [0.12, 69.83]
MacDonald 2011	2	20	1	18	25.6%	1.80 [0.18, 18.21]
Total (95% CI)		**85**		**84**	**100.0%**	**1.41 [0.44, 4.55]**
Total events	6		4			

Heterogeneity: Tau² = 0.00; Chi² = 0.37, df = 2 (P = 0.83); I² = 0%
Test for overall effect: Z = 0.58 (P = 0.56)



Catheter ablation of symptomatic paroxysmal AF is recommended to improve AF symptoms in patients who have symptomatic recurrences of AF on antiarrhythmic drug therapy (amiodarone, dronedarone, flecainide, propafenone, sotalol) and who prefer further rhythm control therapy, when performed by an electrophysiologist who has received appropriate training and is performing the procedure in an experienced centre.	I	A
Catheter ablation of AF should be considered as first-line therapy to prevent recurrent AF and to improve symptoms in selected patients with symptomatic paroxysmal AF as an alternative to antiarrhythmic drug therapy, considering patient choice, benefit, and risk.	IIa	B
AF ablation should be considered in symptomatic patients with AF and heart failure with reduced ejection fraction to improve symptoms and cardiac function when tachycardiomyopathy is suspected.	IIa	C
Catheter or surgical ablation should be considered in patients with symptomatic persistent or long-standing persistent AF refractory to AAD therapy to improve symptoms, considering patient choice, benefit and risk, supported by an AF Heart Team.	IIa	C

European Heart Journal - doi:10.1093/eurheartj/ehw210

Complications…

- Rare généralement **(5-7%)**
- Mortalité péri-procédurale **< 0,2%**
- Durée d'hospitalisation moyenne (EORP) est de **3 jours** (2-4j)

Europace (2012) **14**, 1094–1103
doi:10.1093/europace/eus153

Updated Worldwide Survey on the Methods, Efficacy, and Safety of Catheter Ablation for Human Atrial Fibrillation

Riccardo Cappato, MD; Hugh Calkins, MD; Shih-Ann Chen, MD; Wyn Davies, MD;

20 825 procedures
16 309 patients

Table 7. Major Complications in the Overall Population

Type of Complication	No. of Patients	Rate, %
Death	25	0.15
Tamponade	213	1.31
Pneumothorax	15	0.09
Hemothorax	4	0.02
Sepsis, abscesses, or endocarditis	2	0.01
Permanent diaphragmatic paralysis	28	0.17
Total femoral pseudoaneurysm	152	0.93
Total artero-venous fistulae	88	0.54
Valve damage/requiring surgery	11/7	0.07
Atrium-esophageal fistulae	6	0.04
Stroke	37	0.23
Transient ischemic attack	115	0.71
PV stenoses requiring intervention	48	0.29
Total	741	4.54

Complications of Atrial Fibrillation Ablation in a High-Volume Center in 1,000 Procedures: Still Cause for Concern?

NIKOLAOS DAGRES, M.D.,* GERHARD HINDRICKS, M.D., PH.D.,†

	n = 1,000 procedures
Death immediately associated with the procedure	0
Death of unclear cause	2 (0.2%)
Atrial-esophageal fistula	2 (0.2%)
Thromboembolic complications	4 (0.4%)
Stroke	3 (0.3%)
Transient ischemic attack	1 (0.1%)
Tamponade	13 (1.3%)
Percutaneous drainage	11 (1.1%)
Surgically treated	2 (0.2%)
Severe pulmonary vein stenosis	1 (0.1%)
Endocarditis	2 (0.2%)
Retroperitoneal hematoma	1 (0.1%)
Deep vein thrombosis	1 (0.1%)
Aspiration with or without pneumonia	2 (0.2%)
Femoral pseudoaneurysm	9 (0.9%)
Conservatively treated	4 (0.4%)
Treated with thrombin injection	3 (0.3%)
Surgically treated*	2 (0.2%)
Arteriovenous fistula	3 (0.3%)
Conservatively treated	2 (0.2%)
Surgically treated*	1 (0.1%)
Total	39 (3.9%)

Left Atrial Catheter Ablation and Ischemic Stroke

Karl Georg Haeusler, MD; Paulus Kirchhof, MD, FESC, FHRS; Matthias Endres, MD

Table 1. Left Atrial Catheter Ablation–Associated Periprocedural Stroke Risk According to Recent Registries and Cohort Studies Using Almost Exclusively Radiofrequency Ablation

Reference, Year	Stroke	TIA	Σ Stroke	N	Follow-Up	Anticoagulation‡
46, 2009	0.10%	0%	0.10%	3052	1 d	ACT 350–450 s + INR ≥1.8
38, 2010	†	†	0.60%	6454	2 d	ACT ≥350 s ± INR ≥2
19, 2010	0.82%	0.03%	0.85%	3060	2 d	ACT 250–450 s*
17, 2008	†	†	1.09%	641	1 d	ACT 300–400 s*
18, 2007	0.40%	0.10%	0.50%	1011	1–2 d	ACT 300–400 s*
20, 2009	†	†	1.39%	721	6 d	ACT 300–400 s*
16, 2009	0.30%	0.10%	0.40%	1000	8 d	ACT target of 300 s*
13, 2010	0.23%	0.71%	0.94%	20 825	†	ACT 200–350 s (79.4%)†

Table 2. Silent Stroke Rate Detected by 1.5-T Magnetic Resonance Imaging Within Days After Left Atrial Catheter Ablation According to Cohort Studies

Reference, Year	Silent Stroke	N	Follow-Up (d)	Age (y)	Male	AF Type	Heart Disease	LACA	ACT† (s)
22, 2010	11.3%	53	1	53±12 mean±SD	85%	89% paroxysmal; 11% persistent	6%	RF	>250
23, 2010	14.2%	232	1	58±10 mean±SD	78%	59% paroxysmal; 41% persistent	13%	RF	250–300
24, 2011	7.9%	89	1	46–63 range	63%	81% paroxysmal; 19% persistent	16%	49% RF, 51% cryoenergy	>300
25, 2011	9.5%	21	2–4	54±9 mean±SD	57%	"Recurrent"*	4.3%	RF,* cryoenergy*	≥300
26, 2011	14.9%	74	*	61±9 mean±SD	68%	62% paroxysmal	*	36% RF, 31% cryoenergy, 32% PVAC	>300
27, 2011	17.8%	108	1	56±9 mean±SD	67%	Paroxysmal	. . .	33% RF, 33% PVAC, 33% cryoenergy	>300

Tamponnade : ***1-2%** des cas

* **précoce** ou **retardée** « DCT » (1h-qq jours)

CORRESPONDENCE

Research Correspondence

Delayed Cardiac Tamponade After Radiofrequency Catheter Ablation of Atrial Fibrillation

A Worldwide Report

Table 1 Multivariate Analysis of the Risk for Experiencing at Least 1 Event

Factor	Regression Coefficient	Relative Risk (95% Confidence Interval)	p Value
Number of procedures >299 (n = 36)	1.61	5.03 (1.85–13.64)	0.002
Ablation catheter irrigation (n = 57)	1.02	2.77 (1.00–7.86)	0.050
Type of atrial fibrillation ablated Paroxysmal (n = 28)	1.38	3.97 (1.42–11.14)	0.009
Constant	−2.62		

Lésions œsophagiennes:

* fistules/ perforations
* observées dans **<0,5%**
* **7- 30jours** post ablation

triade ++++ :

douleur thoracique / sepsis sans foyer evident/ AVC ou AIT

	n = 1,000 procedures
Dea	0
Dea	(0.2%)
Atri	(0.2%)
Thr	(0.4%)
S	(0.3%)
T	(0.1%)
Tam	(1.3%)
P	(1.1%)
S	(0.2%)
Sev	(0.1%)
Endocarditis	2 (0.2%)
Retroperitoneal hematoma	1 (0.1%)
Deep vein thrombosis	1 (0.1%)
Aspiration with or without pneumonia	2 (0.2%)
Femoral pseudoaneurysm	9 (0.9%)
Conservatively treated	4 (0.4%)
Treated with thrombin injection	3 (0.3%)
Surgically treated*	2 (0.2%)
Arteriovenous fistula	3 (0.3%)
Conservatively treated	2 (0.2%)
Surgically treated*	1 (0.1%)
Total	39 (3.9%)

Atrial-esophageal fistula — 2 (0.2%)

Complications of Atrial Fibrillation Ablation in a High-Volume Center in 1,000 Procedures: Still Cause for Concern?

les moins graves : **1-2%**

* Sténose veines pulmonaires ++

* Complications vasculaires(pseudoanevrysme ++)

*Infection: endocardite, septicémie….

* Hémothorax, pneumothorax

*Irradiations/ Paralysie diaphragmatique…

Quels sont les résultats des premiers cas de notre série ?

L'objectif de notre travail

- Le but de ce travail est de démontrer sur une première série :
  - Faisabilité et l'inocuité de l'Ablation de FA
  - de rapporter les résultats immédiats de cette technique

Techniques d'Ablation

- Tous ont eu une isolation des veines connectées

- Dans 20 procédures, nous avons procédé à la défragmentation après l'isolement des veines

la population

ESC-EURObservational Research Programme: the Atrial Fibrillation Ablation Pilot Study, conducted by the European Heart Rhythm Association

median age was 60 years

28% were females.

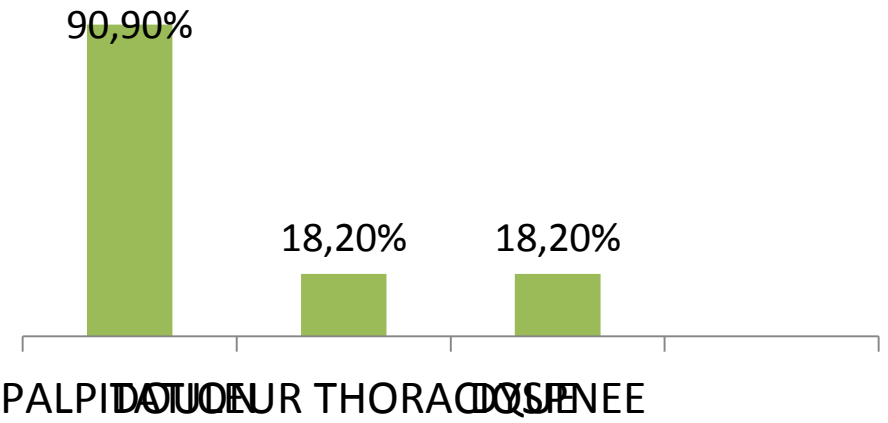
Table 2 Characteristics of atrial fibrillation (n = 1391)

Associated symptoms	85.8
Palpitations	72.3
Fatigue	41.8
Dyspnoea	37.6
Weakness	24.4
Dizziness/presyncope	13.7
Chest pain	10.4
Syncope	3.8
No symptoms	13.1
Unknown	1.1

Europace (2012) 14, 1094–1103

Notre série

- **N = 111 patients**
- Sexe ratio : 1.91
- Age : 52.8 ± 11.6 ans (variant de 15 à 75 ans)



La cardiopathie sous jacente

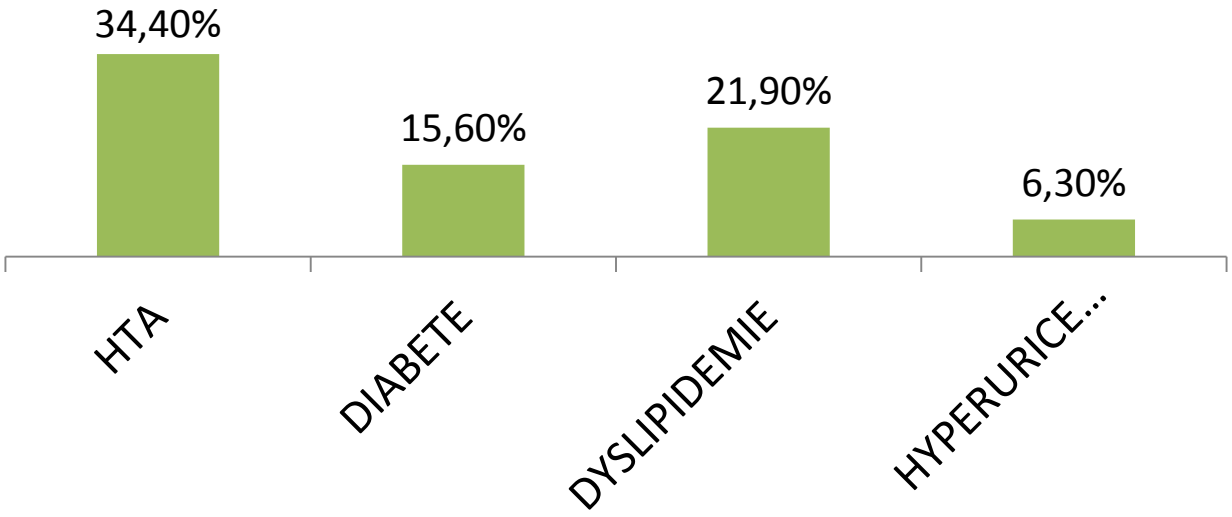
Notre série

Underlying disorder (%)	
Lone atrial fibrillation	38.2
Hypertension	27.9
Valvular heart disease	12.3
Coronary artery disease	3.6
Dilated cardiomyopathy	3.2
Hypertrophic cardiomyopathy	2.9
Chronic heart failure	2.6
Other cardiac disease	2.7
Hyperthyroidism	2.4
Chronic obstructive pulmonary disease	0.7
Not defined	3.5

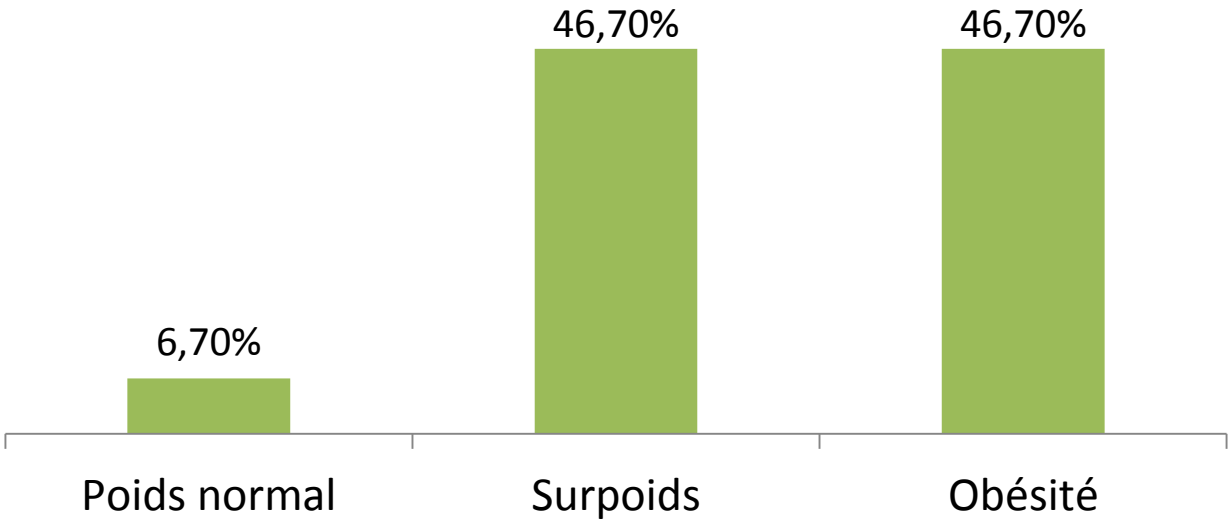
Cardiopathie sous-jacente
14.4% dont CMH (2.7%)
& Valvulopathie (4.5%)

Europace (2012) 14, 1094–1103

Facteurs de risque cardiovasculaires

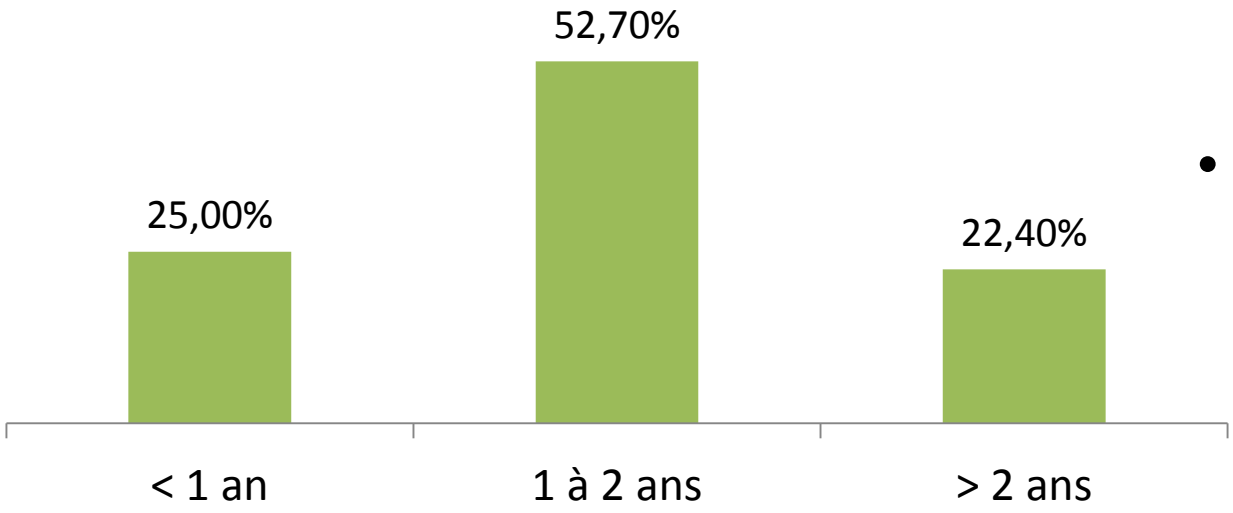


BMI : 30.1 ± 4.7 kg/m²



Ancienneté de la FA

- **Médiane : 18 mois**



- Surface de l'OG : 20.8 ± 4.7 cm²
- Type de la FA : Permanente (20.7%) versus Paroxystique (79.3%)

La procédure

Table 4 Procedural data ($n = 1391$)

	Total ($n = 1391$)
General anaesthesia during procedure (%)	21.2
Energy source (%)	
Non-irrigated radiofrequency	4.0
Radiofrequency with closed irrigation	2.2
Radiofrequency with open irrigation	77.8
Cryo	13.4
Duty-cycled radiofrequency energy	4.4
Laser balloon (endoscopic ablation system)	0.8
Procedure duration (min), median (IQR)	180 (130–220)
Fluoroscopy total time (min), median (IQR)	26 (15–4[illegible])
Transesophageal echocardiogram (%)	10.5
Intracardiac echocardiogram (%)	17.9

Notre série

Temps de scopie moyen est de **21** min +/-10 min avec des extrêmes entre 8 et 58 min

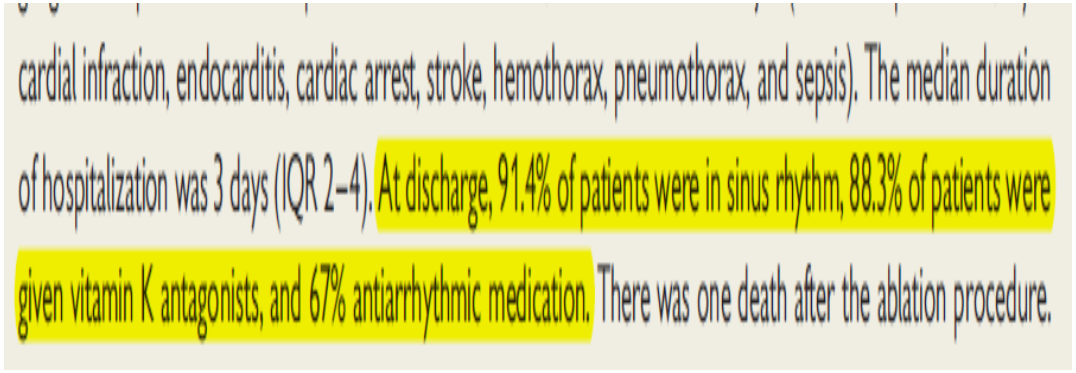
Europace (2012) 14, 1094–1103

Les complications de notre série

- Tamponnade 5,4%
- Un cas d'AIT soit 0,9% complètement régressif sans séquelles neurologiques survenu 48 heures post opératoire
- Aucune sténoses des veines pulmonaires
- Aucune fistule atriooesophagienne ni décès dans notre série

Taux de succès

ESC-EURObservational Research Programme: the Atrial Fibrillation Ablation Pilot Study, conducted by the European Heart Rhythm Association



cardial infraction, endocarditis, cardiac arrest, stroke, hemothorax, pneumothorax, and sepsis). The median duration of hospitalization was 3 days (IQR 2–4). At discharge, 91.4% of patients were in sinus rhythm, 88.3% of patients were given vitamin K antagonists, and 67% antiarrhythmic medication. There was one death after the ablation procedure.

Notre série

- Taux de succès primaire de toutes les procédures était de **84,7%**

Europace (2012) 14, 1094–1103

la récidive

Pacing Clin Electrophysiol. 2014 Jun;37(6):697-702. doi: 10.1111/pace.12387. Epub 2014 Mar 25.

Symptomatic and asymptomatic long-term recurrences following transcatheter atrial fibrillation ablation.

METHODS AND RESULTS: In total 113 consecutive patients symptomatic for paroxysmal or persistent AF were enrolled. All patients underwent pulmonary vein isolation plus left linear lesions. The insertable cardiac monitor (ICM), subcutaneously implanted during the ablation procedure, recorded the amount of AF per day (daily burden) and per last follow-up period (total AF burden). Based on symptoms and on scheduled 12-lead ECG performed during follow-up, 40 patients (35.4%) suffered AF recurrences. By means of ICM data, however, arrhythmia relapses were recorded within 75 patients (66.3%), of whom 35 (46.7%) were asymptomatic. Patients suffering symptomatic AF recurrences resulted, at univariate analysis, older (66.6 ± 8.4 years vs 61.6 ± 10.7 years) and suffering greater AF burden (88.8 ± 26.9% vs 8.0 ± 8.0%).

Récidives dans notre série

- Récidive sans traitement : 9.0%
- Récidive sous traitement : 6.3%
- Au total : la récidive (avec ou sans traitement) : 15.3%

La récidive en fonction du type de la FA

Récidive sous traitement	%	p
Type FA		
FA permanente	**17.4%**	**0.036**
FA paroxystique	**3.5%**	

Récidive sans traitement	%	p
Type FA		
FA permanente	66.7%	> 5%
FA paroxystique	36.4%	

Facteurs prédictifs de la récidive

Facteur	Récidive	Pas de récidive	p
Sexe ratio	1.75	2	> 5%
Age (ans)	53 ± 13	52 ± 11	> 5%
BMI (kg/m²)	31 ± 5	29 ± 4	> 5%
HTA	***54.5%***	***23.8%***	***0.082***
DIABETE	9.1%	19%	> 5%
HYPERURICEMIE	9.1%	4.8%	> 5%
Cardiopathie sous-jacente	**35.6%**	**10.6%**	**0.017**
Type FA FA permanente FA paroxystique	 35.3% 64.7%	 18.1% 81.9%	> 5%
Ancienneté de la FA (mois, médiane)	13.5	18	> 5%
Surface OG (cm²)	23 ± 5.6	20.5 ± 4.5	> 5%

Take home message

- L'ablation par RF est une alternative séduisante : CABANA ?
- Les anticoagulants ? NACO?
- Stratégie hybride ?
- Le rythme sinusal …oui….mais pas à n'importe quel prix

RHYTHM 2017
Arrhythmias & Heart Failure
New Insights & Technological Advances

Merci de votre attention …