Επιτυχής επέμβαση κατάλυσης κολπικής μαρμαρυγής σε ασθενή με CHADS-VASc score ≤1. Μηδέν άγαν;

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24-25 Απριλίου 2015
Αθήνα, Ξενοδοχείο Divani Caravel

Δήλωση συμφερόντων

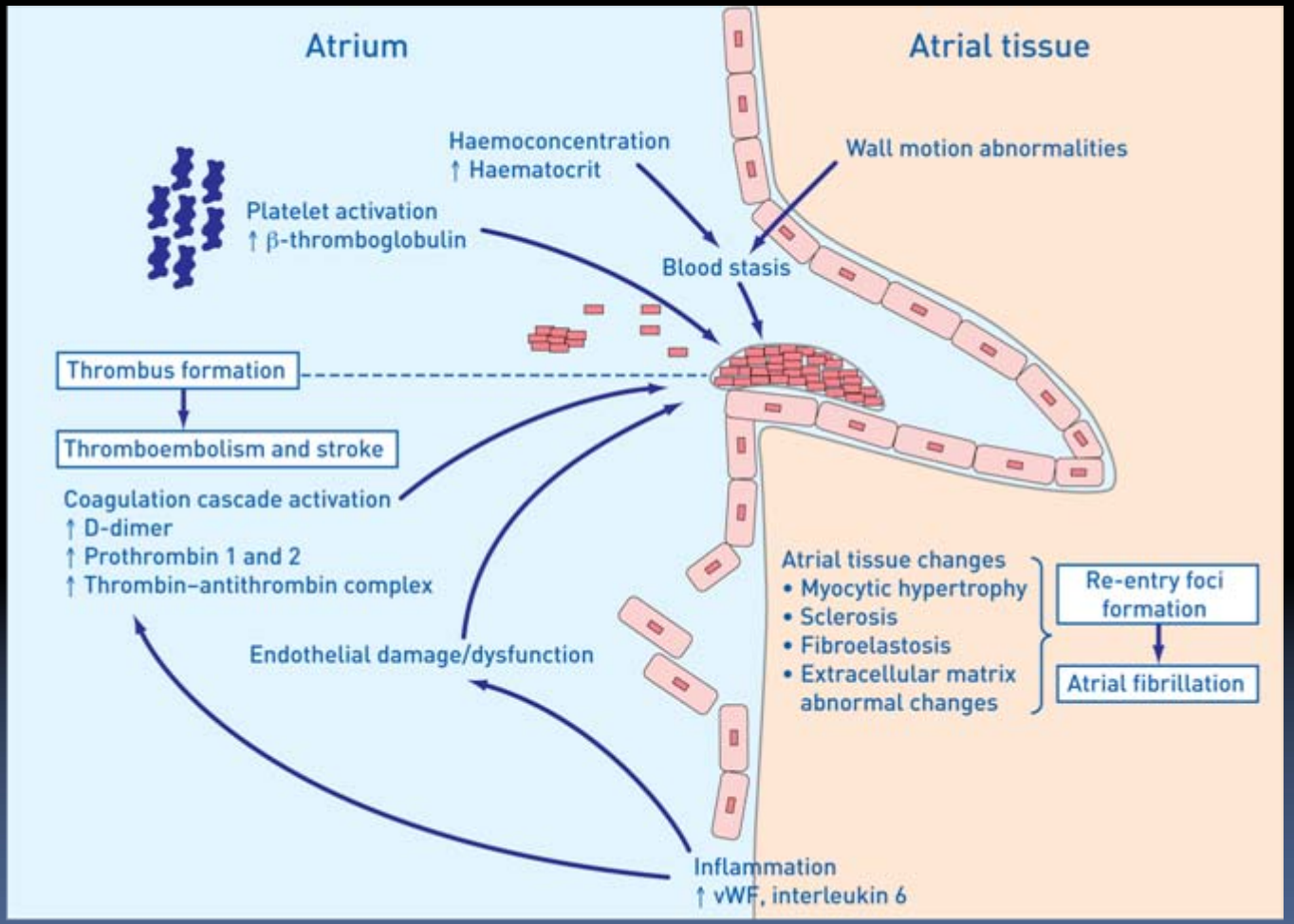
Ο ομιλητής έχει λάβει ερευνητικά κονδύλια, αμοιβές για συμμετοχή σε συμβουλευτικά σώματα και αμοιβές για ομιλίες σε εκπαιδευτικά σεμινάρια, στην Ελλάδα και στο εξωτερικό, από τις κάτωθι φαρμακευτικές εταιρείες:

- *AstraZeneca, Bard, Bayer Healthcare, Boehringer Ingelheim, Boston Scientific, Bristol-Myers Squibb, ELPEN, Galenica, Lilly, Medtronic, Menarini, MSD, Pfizer, Sanofi, Servier, StJude, Vianex.*

Μηχανισμοί θρομβογένεσης στην ΚΜ

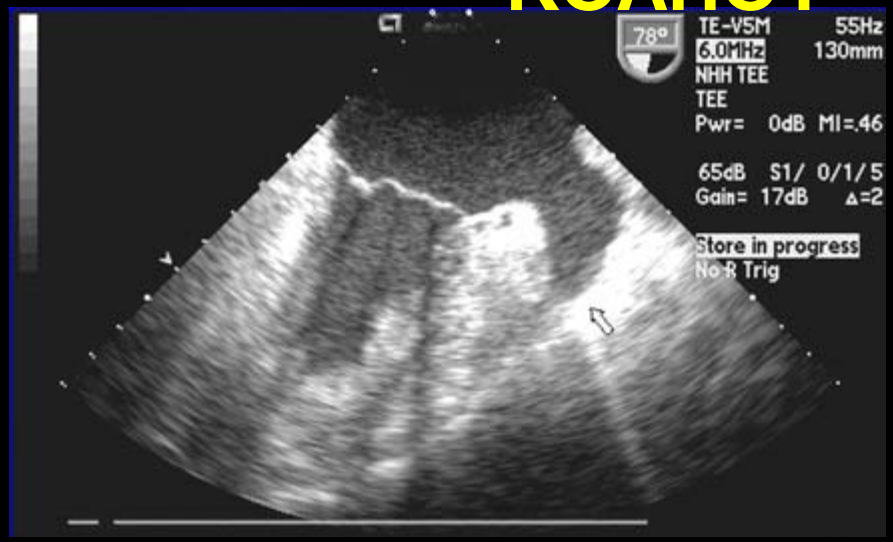
Παράγοντες που ευνοούν τη στάση στον ΑΚ

1. Διάταση ΑΚ
2. Μειωμένες ταχύτητες στο ωτίο
3. Δυσλειτουργία ΑΚ
4. Επίπεδα ινωδογόνου
5. Αιματοκρίτης



Watson T et al. Lancet 2009;373:155–66

ΤΟ ΩΤΙΟ ΤΟΥ ΑΡΙΣΤΕΡΟΥ ΚΟΛΠΟΥ

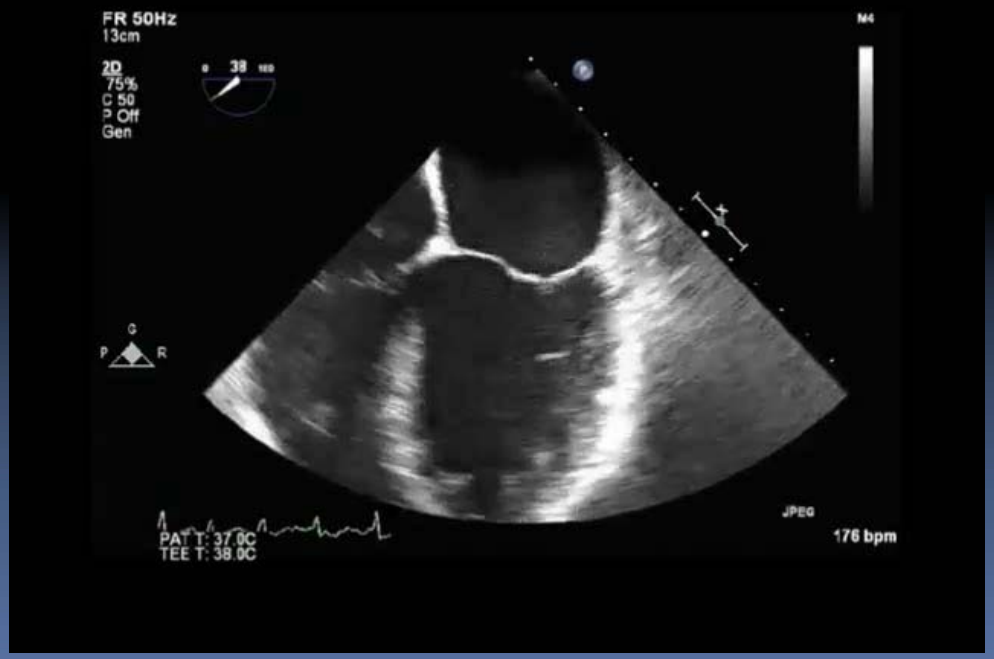


«~90% of atrial thrombi occur in the LAA»

Blackshear JL, Odell JA. Ann Thorac Surg 1996;61:755–9

«Increased LAA width and length correlates with thromboembolic risk»

Stöllberger C et al. Ann Intern Med 1998;128:630–8



Στην ΚΜ το μέγεθος ….μετράει

Journal of the American College of Cardiology

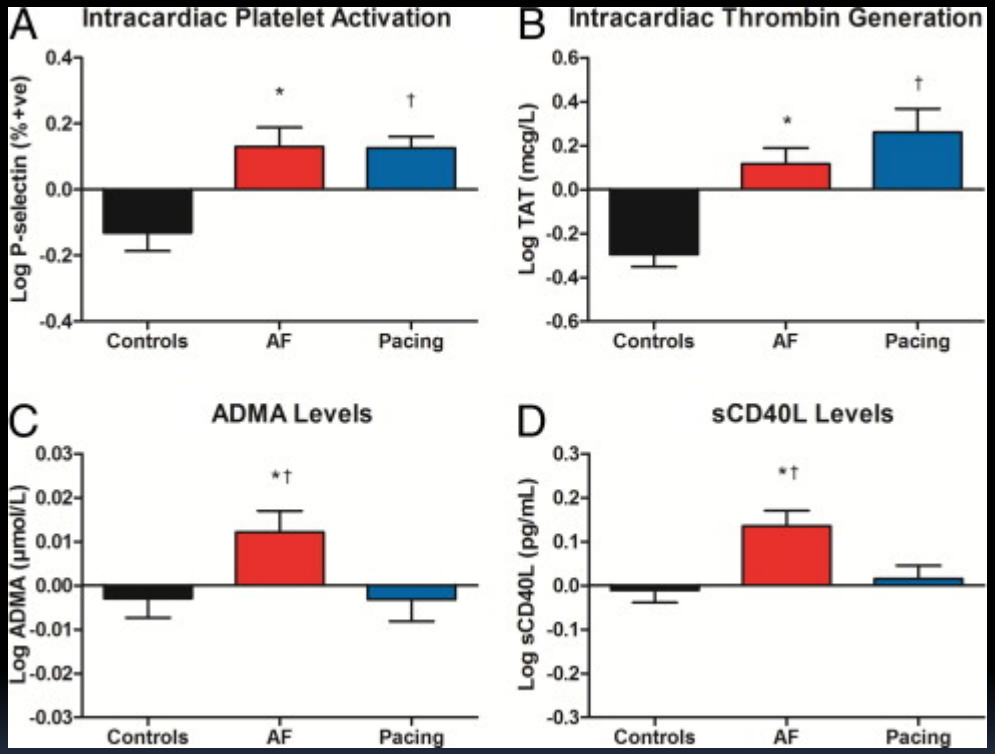
Available online 16 January 2013

In Press, Corrected Proof — Note to users

Effect of Atrial Fibrillation on Atrial Thrombogenesis in Humans: Impact of Rate and Rhythm

Lim H., et al. JACC 2013

55 patients with AF who underwent catheter ablation while in sinus rhythm; 20 patients were induced into AF, 20 patients were atrial paced at 150 beats/min, and 15 were control patients. Blood samples were taken from the LA, right atrium, and femoral vein at baseline and at 15 min in all 3 groups



(Platelet activation (P-selectin) was measured by flow cytometry. Thrombin generation (thrombin-antithrombin [TAT] complex), endothelial dysfunction (asymmetric dimethylarginine [ADMA]), and platelet-derived inflammation (soluble CD40 ligand [sCD40L]) were measured using enzyme-linked immunosorbent assay.)

Conclusions

Rapid atrial rates and AF in humans both result in increased platelet activation and thrombin generation. Prothrombotic activation occurs to a greater extent in the human LA compared with systemic circulation. AF additionally induces endothelial dysfunction and inflammation. These findings suggest that although rapid atrial rates increase the thrombogenic risk, AF may further potentiate this risk.

ΕΛΛΗΝΙΚΗ ΚΑΡΔΙΟΛΟΓΙΚΗ ΕΤΑΙΡΕΙΑ
HELLENIC CARDIOLOGICAL SOCIETY

33ο ΠΑΝΕΛΛΗΝΙΟ ΚΑΡΔΙΟΛΟΓΙΚΟ ΣΥΝΕΔΡΙΟ

ΕΚΕΦΕ 'Δημόκριτος'
Αγία Παρασκευή

Εισαγωγική μελέτη ερυθροκυττάρων και αιμοπεταλίων ασθενών στην κατάλυση με καθετήρα με προηγμένες απεικονιστικές τεχνικές νανοτεχνολογίας: αναζήτηση διαγνωστικών μορφολογικών κυτταρικών δεικτών

Δ. Σταμόπουλος[1,*], Ε. Μάνιος[1], Ν. Μπακιρτζή[2], Σ. Τζέης[3], Γ. Ανδρικόπουλος[3], Ν. Μπούκος[1], Π. Μπουζιώτη[4]

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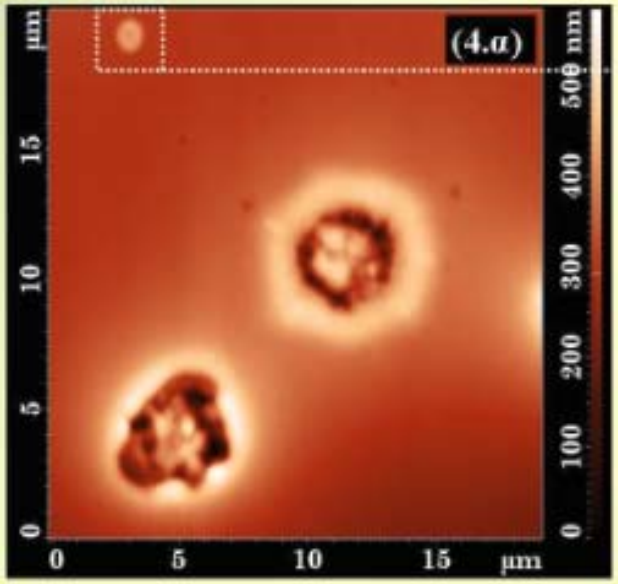
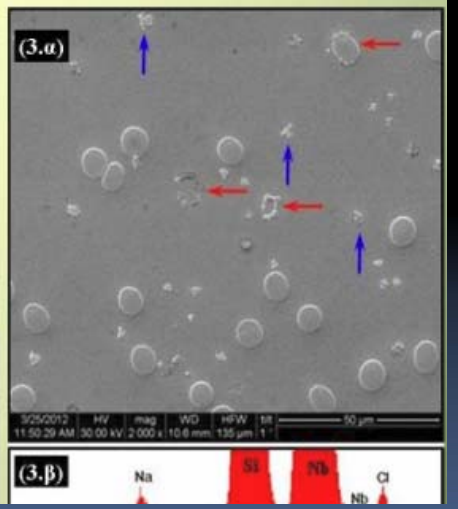
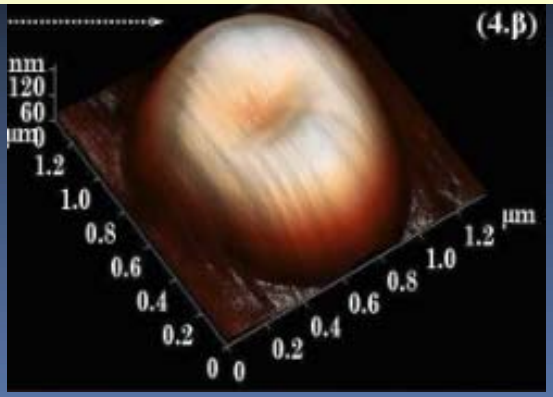
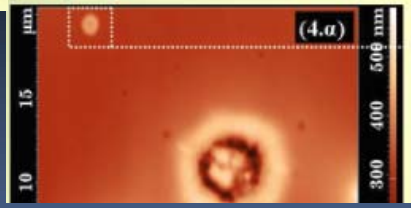
* e-mail: densta@ims.demokritos.gr

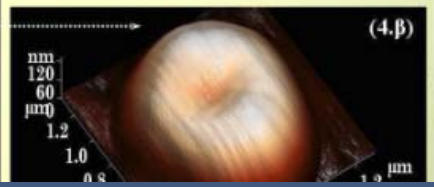


ΑΠΟΤΕΛΕΣΜΑΤΑ: Στους 2 εκ των 5 ασθενών δεν παρατηρήθηκαν μεταβολές στα αΕΚ και στα αΑΠ των δειγμάτων προ-ΚΚ, επί-ΚΚ και μετά-ΚΚ. Στους υπόλοιπους ασθενείς παρατηρήθηκαν (α) [3 ασθενείς] κρυσταλοποίηση βιολογικού υλικού τόσο στο πλάσμα όσο και σε περικυτταρικές στοιβάδες στα ΕΚ και ΑΠ, Εικόνα 3.α (ΜΗΣ, κάθετα και οριζόντια βέλη, αντίστοιχα) το οποίο συνίσταται από ηλεκτρολύτες, Εικόνα 3.β (ΦΕΔΑ-Χ), με εντονότερη παρουσία περικυτταρικών στοιβάδων στο δείγμα επί-ΚΚ και (β) [2 ασθενείς] ύπαρξη κυρίως σφαιροειδών αλλά και κυλινδροειδών μικρο/νανο-μετρικών κυστιδίων (ΜΝΚ) ερυθροκυτταρικής/αιμοπεταλιακής προέλευσης, Εικόνες 4.α-4.β (ΜΑΔ), χωρίς στατιστικά σημαντική μεταβολή στα δείγματα προ-ΚΚ, επί-ΚΚ και μετά-ΚΚ.





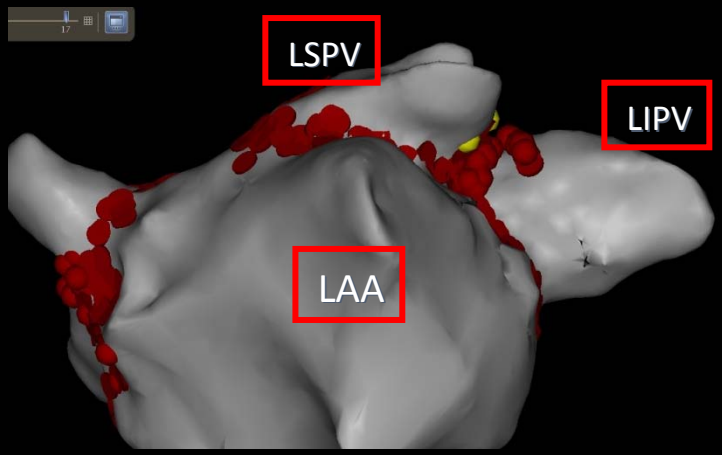


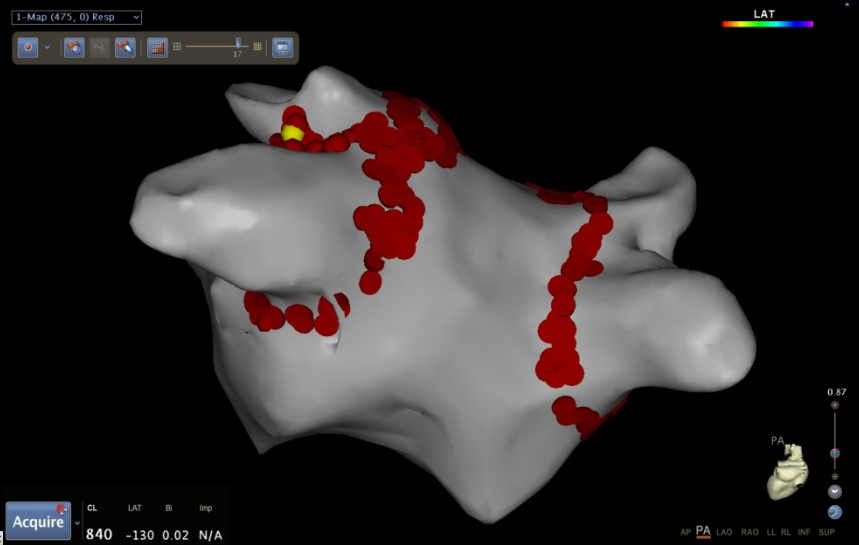


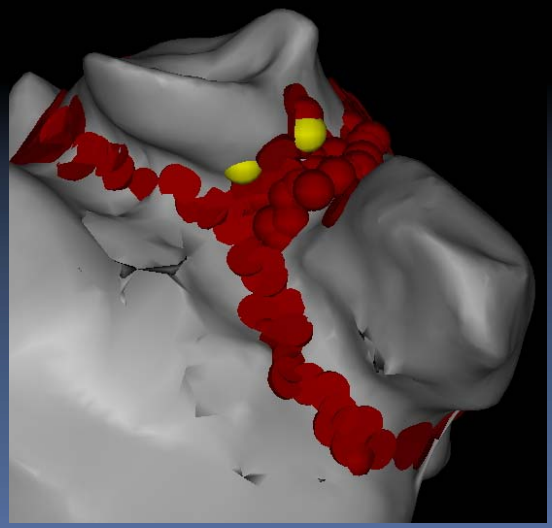
ΣΥΜΠΕΡΑΣΜΑΤΑ: Τα εισαγωγικά αυτά δεδομένα μορφολογικής και στοιχειακής τοπογραφίας ΜΑΔ, ΜΗΣ και ΦΕΔΑ-Χ υποδεικνύουν ότι στην ΚΚ δεν υπάρχει σημαντική ενεργοποίηση/τροποποίηση των ΕΚ και ΑΠ. Εντούτοις, η παρουσία περικυτταρικών στοιβάδων κρυσταλοποιημένων ηλεκτρολυτών υποδηλώνει την πιθανή μεταβολή της βιοχημικής τους λειτουργίας. Η παρατήρηση ΜΝΚ είναι σημαντική μιας και μοντέρνες εισηγήσεις τα προτείνουν ως προγνωστικούς δείκτες για την εξέλιξη καρδιαγγειακών νοσημάτων [5].

Αιτιοπαθογένεια Κολπικής Μαρμαρυγής

Ο ρόλος των πυροδοτών στις πνευμονικές φλέβες







Αρχείο Γ.Ανδρικόπουλου, Απρίλιος 2012

ΕΙΝΑΙ ΤΟ ABLATION ΘΕΡΑΠΕΙΑ ΠΡΩΤΗΣ ΓΡΑΜΜΗΣ;

2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation

TABLE 2: CONSENSUS INDICATIONS FOR CATHETER AND SURGICAL ABLATION of AF

	CLASS	LEVEL
INDICATIONS FOR CATHETER ABLATION of AF		
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

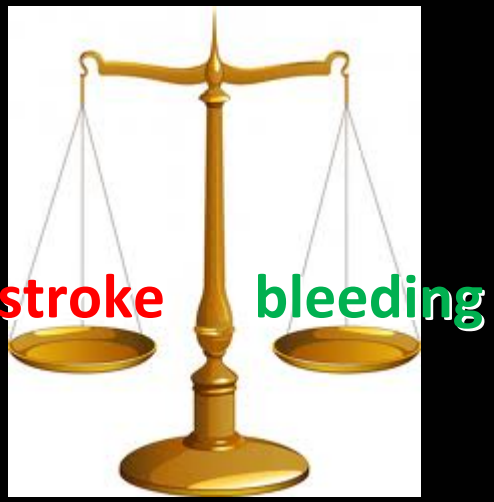
Wazni OM, et al. Radiofrequency ablation vs antiarrhythmic drugs as first-line treatment of symptomatic atrial fibrillation: a randomized trial. J Am Med Assoc 2005;293:2634–40

Kirchhof P, et al. Early and comprehensive management of atrial fibrillation: executive summary of the proceedings from the 2nd AFNET-EHRA consensus conference 'research perspectives in AF'. Europace 2009;11:860–85.

ESC Guidelines for the Management of Patients With Atrial Fibrillation

(b) Risk factor-based approach expressed as a point based scoring system, with the acronym CHA_2DS_2-VASc
(Note: maximum score is 9 since age may contribute 0, 1, or 2 points)

Risk factor	Score
Congestive heart failure/LV dysfunction	1
Hypertension	1
Age ≥75	2
Diabetes mellitus	1
Stroke/TIA/thrombo-embolism	2
Vascular disease[a]	1
Age 65–74	1
Sex category (i.e. female sex)	1
Maximum score	**9**



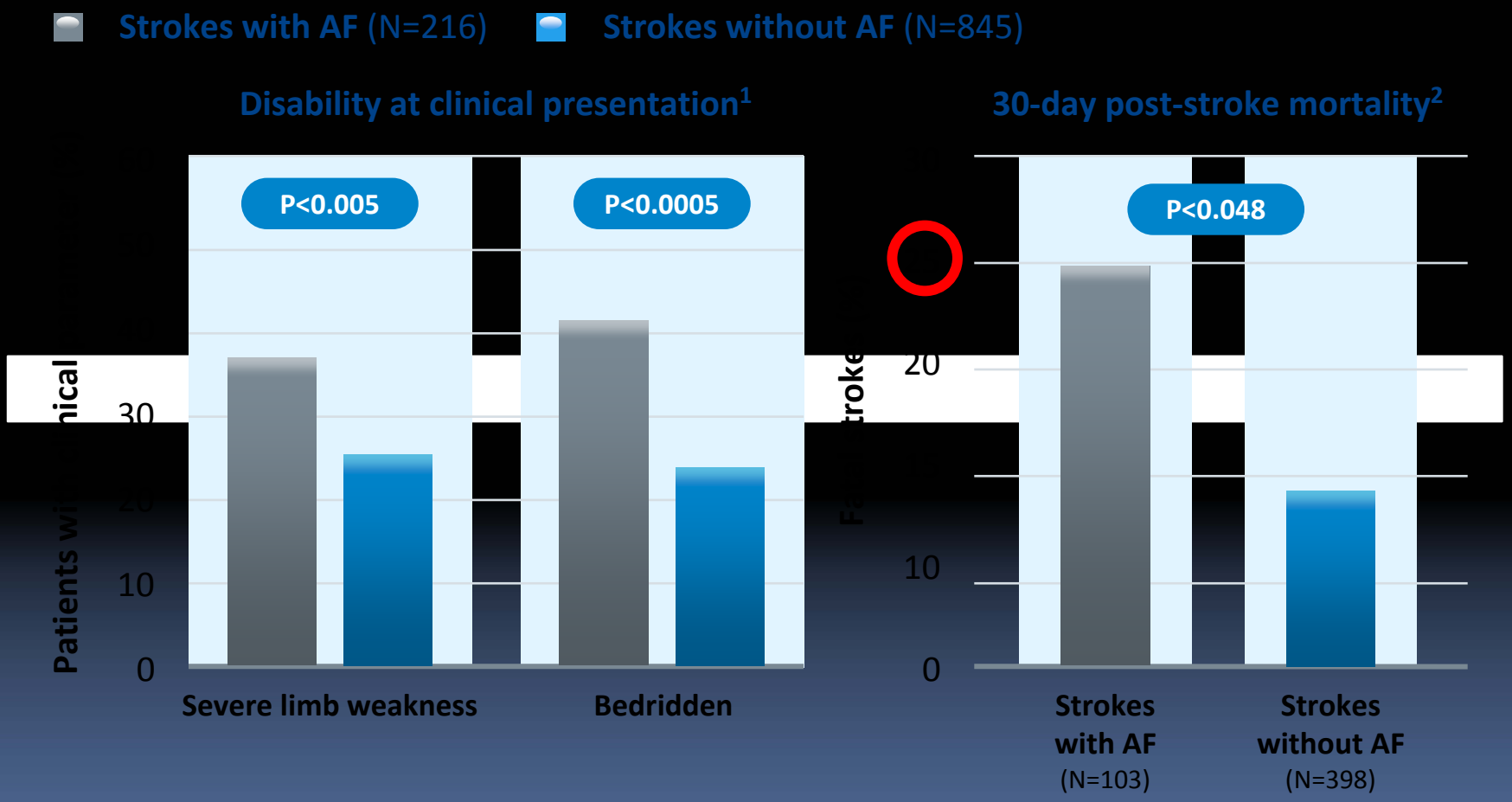
HAS-BLED risk criteria	Score
Hypertension	1
Abnormal renal or liver function (1 point each)	1 or 2
Stroke	1
Bleeding	1
Labile INRs	1
Elderly (e.g. age >65 yrs)	1
Drugs or alcohol (1 point each)	1 or 2

(c) Adjusted stroke rate according to CHA_2DS_2-VASc score

CHA_2DS_2-VASc score	Patients (n=7329)	Adjusted stroke rate (%/year)[b]
0	1	0%
1	422	1.3%
2	1230	2.2%
3	1730	3.2%
4	1718	4.0%
5	1159	6.7%
6	679	9.8%
7	294	9.6%
8	82	6.7%
9	14	15.2%

HAS-BLED total score	N	Number of bleeds	Bleeds per 100 patient-yrs*
0	798	9	1.13
1	1286	13	1.02
2	744	14	1.88
3	187	7	3.74
4	46	4	8.70
5	8	1	12.5

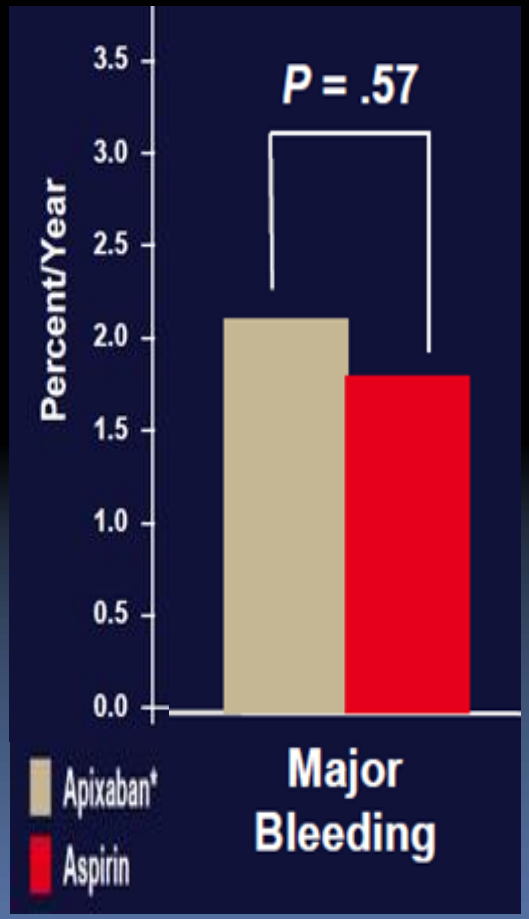
AF-RELATED STROKES ARE ASSOCIATED WITH GREATER DISABILITY AND A HIGHER MORTALITY RATE



Dulli DA, et al. Neuroepidemiology 2003;22:118-123

Major bleeding events with aspirin are similar to those caused by VKAs and NOACs

AVERROES study



Birmingham Atrial Fibrillation Treatment of the Aged Study (BAFTA, *Mant et al., Lancet 2007*)

	Warfarin		Aspirin		Warfarin vs aspirin	
	N	Risk per year	N	Risk per year	RR (95% CI)	p
Death						
All causes	107	8·0%	108	8·4%	0·95 (0·72–1·26)	0·73
Fatal primary endpoint	15	1·1%	23	1·8%	0·63 (0·31–1·26)	0·16
Other vascular death*	41	3·1%	34	2·7%	1·16 (0·72–1·88)	0·53
Non-vascular death*	51	3·8%	51	4·0%	0·96 (0·64–1·45)	0·84
Secondary vascular outcomes (fatal and non-fatal)						
All strokes	33	2·5%	61	4·9%	0·52 (0·33–0·80)	0·002
All strokes plus TIA	40	3·1%	70	5·7%	0·55 (0·36–0·82)	0·002
Myocardial infarction	15	1·1%	15	1·2%	0·96 (0·44–2·11)	0·91
Heart failure	38	2·9%	23	1·8%	1·59 (0·92–2·79)	0·08
Other vascular events†	34	2·6%	45	3·7%	0·71 (0·44–1·13)	0·13
All non-stroke vascular events	78	6·1%	76	6·3%	0·97 (0·70–1·35)	0·84
Haemorrhage (fatal and non-fatal)						
Major extracranial haemorrhage	18	1·4%	20	1·6%	0·87 (0·43–1·73)	0·67
Other hospital admission for haemorrhage	24	1·8%	19	1·5%	1·22 (0·64–2·36)	0·52
All major haemorrhages (including intracranial and haemorrhagic stroke)	25	1·9%	25	2·0%	0·96 (0·53–1·75)	0·90
Composite outcomes						
Major vascular events (stroke, myocardial infarction, pulmonary embolus,‡ vascular death)	76	5·9%	100	8·1%	0·73 (0·53–0·99)	0·03
Primary events plus major haemorrhage	39	3·0%	64	5·1%	0·59 (0·38–0·89)	0·008

Analyses are censored at first event, so the composite outcomes are not the sum of the individual categories of event. *Includes deaths that occurred after non-fatal primary endpoints, including four deaths from stroke (as 'other vascular death'). †Other events leading to hospital admission or death, such as angina, deep vein thrombosis, acute bowel ischaemia, pulmonary embolism, acute arrhythmia, and elective vascular surgery. ‡There were five pulmonary emboli, one in the warfarin group and four in the aspirin group.

European Heart Journal Advance Access published December 12, 2014

European Heart Journal
doi:10.1093/eurheartj/ehu463

CLINICAL RESEARCH
Thrombosis and antithrombotic therapy

Clinical outcomes and management associated with major bleeding in patients with atrial fibrillation treated with apixaban or warfarin: insights from the ARISTOTLE trial

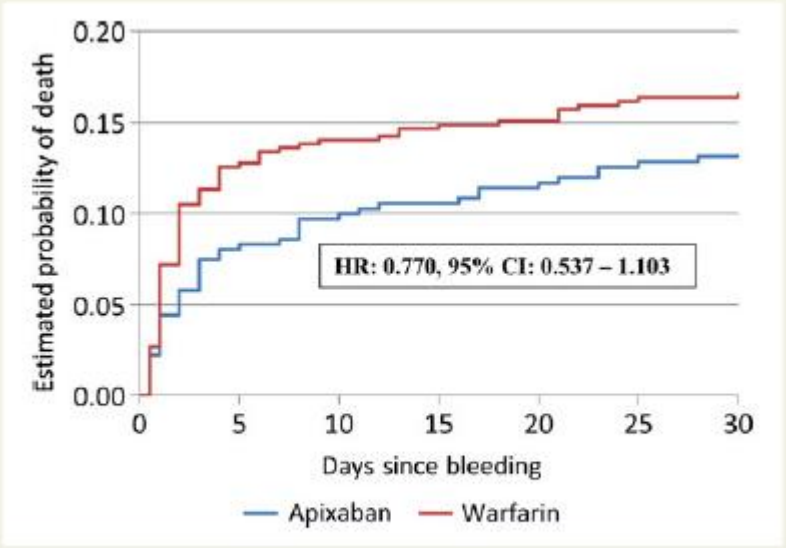


Figure 2 All cause death after major bleeding (intra-cranial and non-intra-cranial) by randomized treatment.

models. The excess risk associated with bleeding was evaluated by separate time-dependent indicators for intracranial (ICH) and non-intracranial haemorrhage. Major bleeding occurred in 848 individuals (4.7%), of whom 126 (14.9%) died within 30 days. Of 176 patients with an ICH, 76 (43.2%) died, and of the 695 patients with major non-ICH, 64 (9.2%) died within 30 days of the bleeding. The risk of death, ischaemic stroke, or MI was increased roughly 12-fold after a major non-ICH bleeding event within 30 days. Corresponding risk of death following an ICH was markedly increased, with HR 121.5 (95% CI 91.3–161.8) as was stroke or MI with HR 21.95 (95% CI 9.88–48.81), respectively. Among patients with major bleeds, 20.8% received vitamin K and/or related medications (fresh frozen plasma, coagulation factors, factor VIIa) to stop bleeding within 3 days, and 37% received blood transfusion. There was no interaction between apixaban and warfarin and major bleeding on the risk of death, stroke, or MI.

Conclusion Major bleeding was associated with substantially increased risk of death, ischaemic stroke, or MI, especially following ICH, and this risk was similarly elevated regardless of treatment with apixaban or warfarin. These results underscore the importance of preventing bleeding in anti-coagulated patients.

European Heart Journal (2015) 36, 288–296
doi:10.1093/eurheartj/ehu359

CLINICAL RESEARCH
Atrial fibrillation

Higher risk of death and stroke in patients with persistent vs. paroxysmal atrial fibrillation: results from the ROCKET-AF Trial

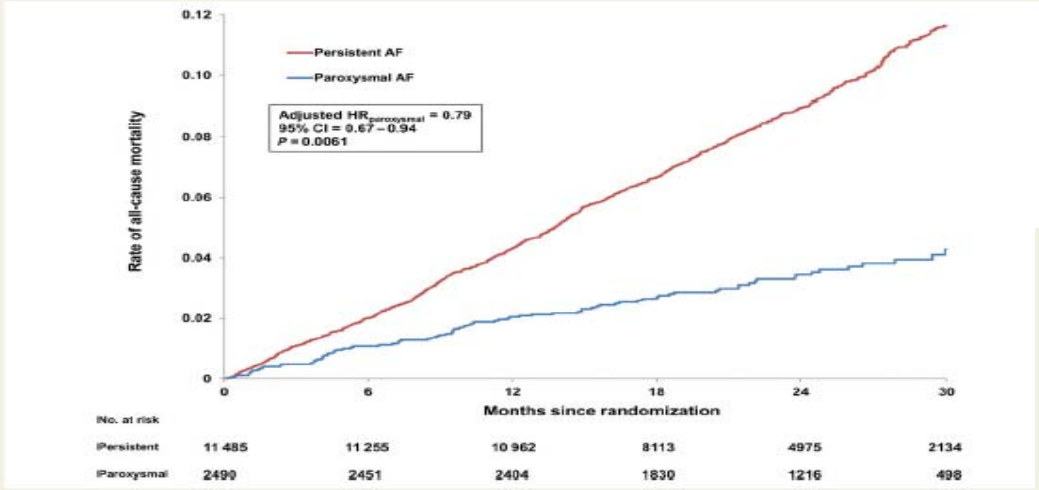


Figure 1 Unadjusted Kaplan–Meier event curves for all-cause mortality, by atrial fibrillation type at baseline. AF, atrial fibrillation, HR, hazard ra
CI, confidence interval.

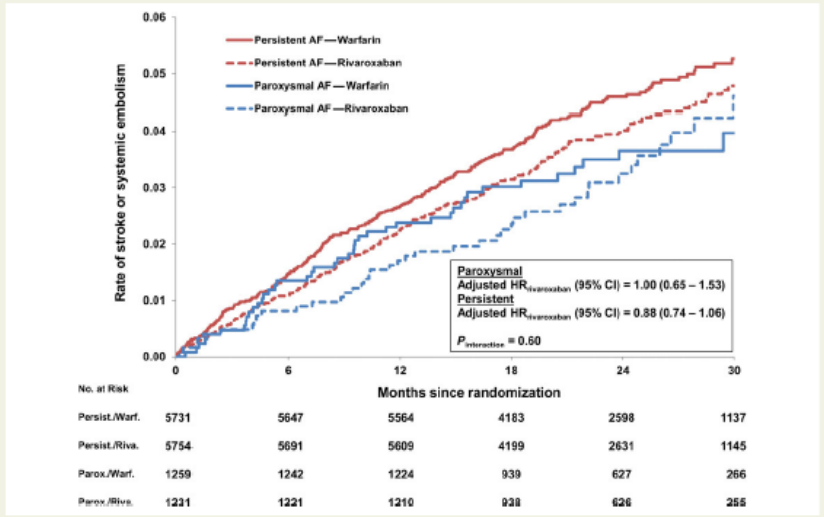


Figure 3 Unadjusted Kaplan–Meier event curves for stroke or systemic embolism, by atrial fibrillation type and treatment assignment. AF, atrial fibrillation; HR, hazard ratio, CI, confidence interval.

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

Atrial Fibrillation in Patients with Cryptogenic Stroke

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

AF Detection	Detection Rate, %
30-day monitor	16.1
Control – 24-h monitor	3.2

Gladstone DJ, et al. *N Engl J Med*. 2014;370:2467-2477.[42]

Accuracy of patient perception of their prevailing rhythm: A comparative analysis of monitor data and questionnaire responses in patients with atrial fibrillation

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BACKGROUND Atrial fibrillation (AF) guidelines recommend that symptom relief be a primary goal in management. However, patient perception of their prevailing rhythm is often inaccurate, complicating symptom-targeted treatment.

OBJECTIVE The purpose of this study was to evaluate the accuracy of patient perception of their prevailing rhythm and identify factors that predict inaccuracies.

METHODS Demographic and health status data were captured by questionnaires for 458 outpatients with documented AF. AF burden (%) was captured by 1-week continuous heart monitors. Patients estimated the length and frequency of their AF episodes by completing the AF Symptom Severity questionnaire. Patient reports were compared to AF burden, and outliers were identified and broken into 2 groups: patients with AF burden $<10\%$ who indicated near-continuous AF (overestimators) and patients with AF burden $>90\%$ who estimated little to no AF (underestimators). Multinomial logistic regression was used to identify predictors of inaccuracies (over- or underestimators).

RESULTS By continuous monitor, 15% of patients were found to be over- or underestimators. Persistent AF, female sex, older age, anxiety, and depression were predictive of inaccurate patient perception. Persistent AF, female sex, and older age were predictive of underestimating, while mood disorders (anxiety and depression) were predictive of overestimating. The prevalence of underestimators was nearly twice that of overestimators.

CONCLUSION Sex, age, and mood disorders are among factors that lead to inaccurate patient perception of their prevailing rhythm in patients with AF. Such modulating factors should be considered when evaluating treatment strategies. Consideration should be given to more liberal use of heart monitors in these patient populations to better target therapy.

KEYWORDS Atrial fibrillation; Symptoms; Quality of life

ABBREVIATIONS **AF** = atrial fibrillation; **HADS** = Hospital Anxiety and Depression Scale; **PAC** = premature atrial contraction; **PHQ-9** = Patient Health Questionnaire; **QoL** = quality of life

(Heart Rhythm 2015;0:-1–8)

Anticoagulation after Catheter Ablation of Atrial Fibrillation Guided by Implantable Cardiac Monitors

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Table I.

Baseline Characteristics of the Study Cohort

Demographics	Total (n = 65)
Age (years)	63 ± 10
Female gender (%)	21 (32)
Paroxysmal AF (%)	39 (60)
$CHADS_2$ score	1.9 ± 1.0
CHA_2DS_2-VASc score	2.8 ± 1.5
HAS-BLED score	2.3 ± 1.2
Coronary artery disease (%)†	20 (31)
Medication	
Phenprocoumon (%)	37 (57)
Rivaroxaban (%)	8 (12)
Dabigatran (%)	7 (11)
β-Blocker (%)	60 (92)
ACE-inhibitor (%)	33 (51)
AT1-inhibitor (%)	11 (17)
Statin (%)	39 (60)
Calcium channel blockers (%)	17 (26)
Diuretic (%)	19 (29)
Flecainide (%)	3 (5)
Dronedarone (%)	11 (17)
Amiodarone (%)	5 (8)

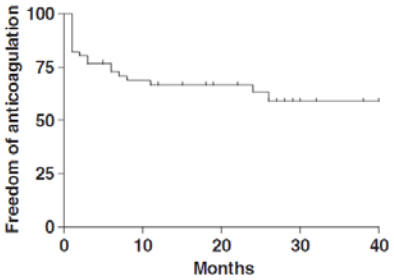
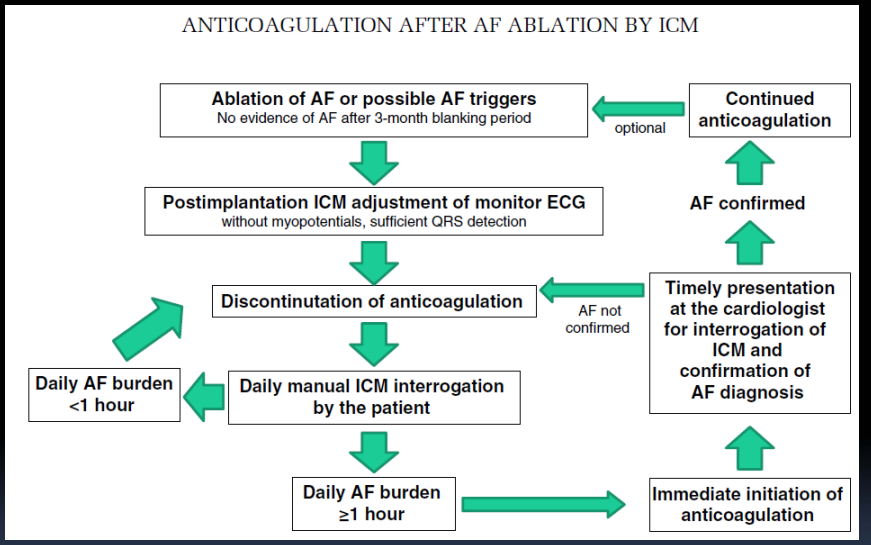


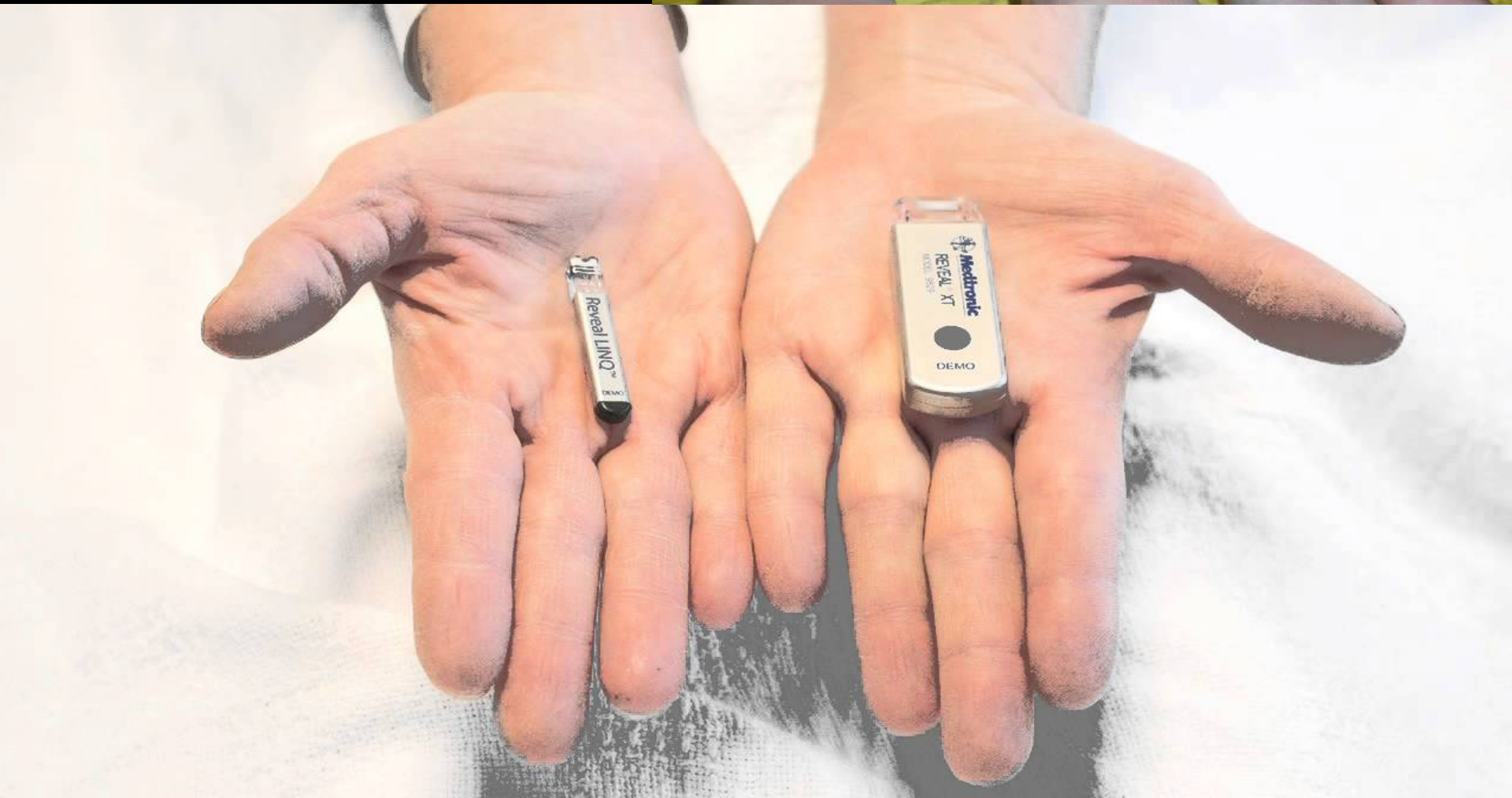
Figure 2. *Kaplan-Meier curve displaying freedom from oral anticoagulation during follow-up in the 49 patients undergoing atrial fibrillation ablation.*



Results: *During a follow-up time of 32 ± 12 months (126 patient-years), 41 of the 65 patients (63%) had an AF burden <1 h/day and were able to stay off OAC. Twenty-one patients (32%) had to reinitiate OAC due to an AF burden ≥1 hour and three patients due to other reasons. No stroke, transitory ischemic attack, or other thromboembolic event was observed during follow-up.*

Conclusions: *Rhythm monitoring by ICM in patients who have stopped OAC after catheter ablation of AF or ablation of possible AF triggers seems to be a safe and promising method to monitor for AF recurrence. Within 1.3 years after ablation, about two-thirds of patients were able to stay off OAC. (PACE 2015; 00:1–6)*

Η Λύση;



Natural History and Long-Term Outcomes of Ablated Atrial Fibrillation

Ayman A. Hussein, MD; Walid I. Saliba, MD; David O. Martin, MD; Mandeep Bhargava, MD;

Long-Term Anticoagulation in Patients With Successful Ablation

Of 587 patients with no arrhythmia recurrence in the year after ablation, warfarin was stopped in 449 patients (76.5%) with CHADS score of ≤2. Of those, 207 patients (46.1%) had a CHADS score of 0; 191 (42.5%) had a CHADS score of 1; and 51 (11.4%) had a CHADS score of 2. Of all 587 patients, 164 had a CHADS score of 2, but only 51 of those were considered for discontinuation of warfarin (31.1%). Warfarin

cessation. Over a median follow-up of 44 months (range, 35 to 46), only 1 patient (0.06% per year) had an ischemic stroke with minimal residual deficit. A 70-year-old woman with hypertension, PAF, and left atrial scarring was off warfarin with no documented late recurrence. At last follow-up, 388 patients (66.1%) were off warfarin (386 with no recurrence after a single ablation and 20 with no recurrence after repeat ablation).

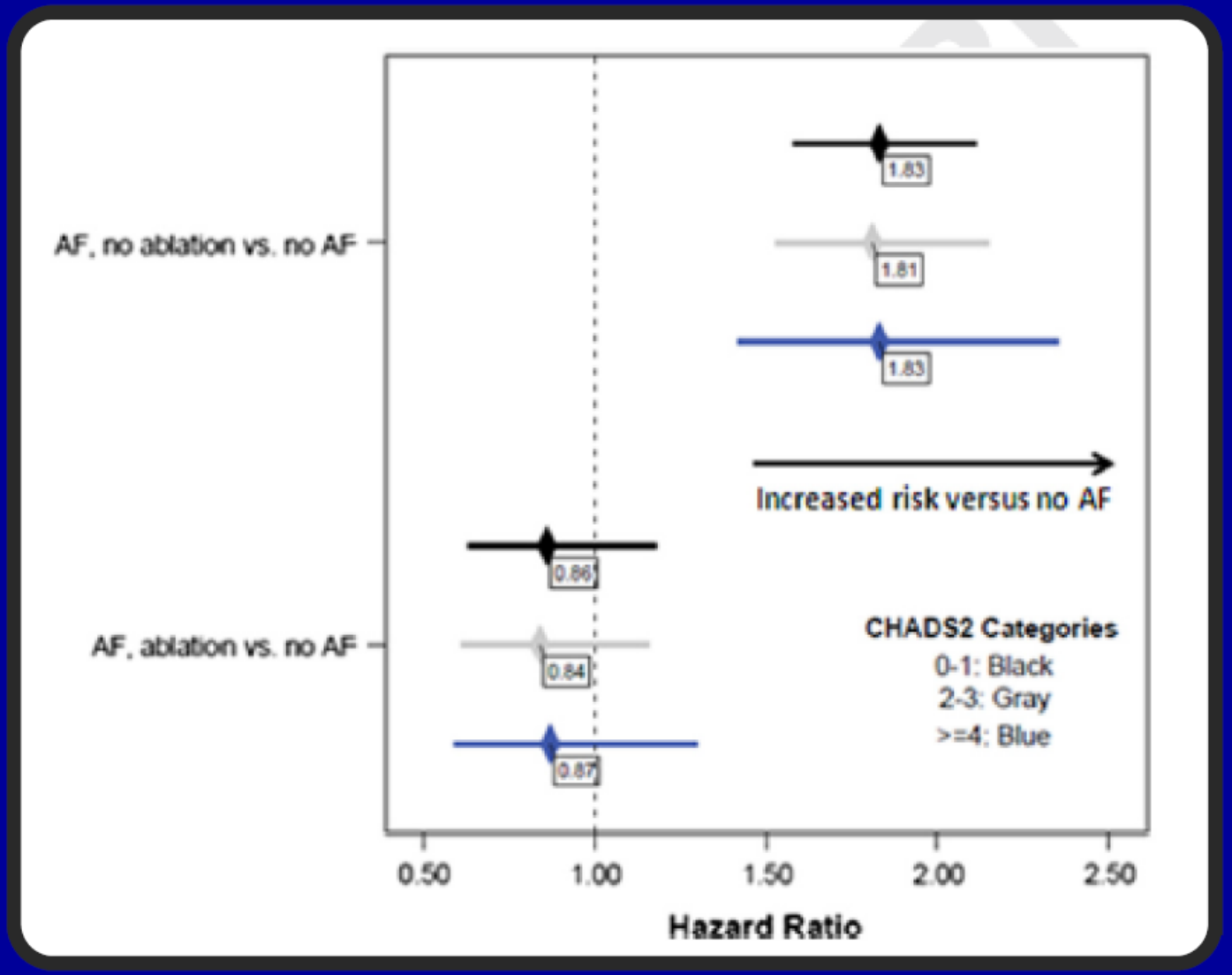
Table 4. Procedure-Related Complications

Complications	No. (%)
Arteriovenous fistula	1 (0.1%)
Tamponade	2 (0.20%)
Ischemic stroke, reversible	3 (0.29%)
Hematomas, required intervention	3 (0.29%)
Hematomas, no intervention needed	4 (0.39%)
Pericardial effusion, asymptomatic	1 (0.1%)
Pulmonary vein stenosis, asymptomatic	6 (0.59%)

Total number of procedures=1019.

Circ Arrhythm Electrophysiol. 2011;4:271-278

Risk reduction for stroke after AF ablation



Bunch, Heart Rhythm 2013, July

Thromboembolic Events 7–11 Years after Catheter Ablation of Atrial Fibrillation

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Background: *The results of catheter ablation of atrial fibrillation (AF) beyond 6 years remain unknown. The goal of this study is to assess the risk of thromboembolic events (TEs) and outcomes of AF ablation at long-term follow-up (FU).*

Methods: *All patients who had AF ablation from 2002 until 2005 in our center were contacted for a FU including a questionnaire, cardiac rhythm monitoring, and transthoracic echocardiography.*

Results: *Among the 264 eligible patients, 164 (62%) completed the study. The mean FU was 9.1 years (7.7–10.5). Seven patients had a TE during FU (event ratio 0.41 per 100 patient years [PY]) and their mean CHA2DS2-VASc score was 3.1 ± 1.3. Two patients died from stroke (0.14 per 100 PY) and five of the seven were considered in sinus rhythm (SR) and were off anticoagulation at the time of event. Prior to ablation, 13 patients had history of TE, and only one had a TE during FU. Overall, 14 deaths were documented (0.58 per 100 PY). Stable SR was present in 111 patients (68% of 164 patients) after 1.5 ± 0.6 procedures/patient. Univariate analysis showed that dyslipidemia (odds ratio [OR] = 2.95, P = 0.003), CHA2DS2-VASc ≥2 (OR = 3.22, P = 0.001), and amiodarone (OR = 5.64, P < 0.001) were predictors of long-term recurrence. Multivariate analysis showed that only CHA2DS2-VASc ≥2 (OR = 2.67, P = 0.023) and amiodarone (OR = 4.62, P = 0.001) were predictors.*

Conclusions: *Our study shows low TE rates 9 years after ablation of AF that are lower than published data for AF patients with anticoagulation only. AF patients with a CHA2DS2-VASc ≥2 should, however, be maintained on anticoagulation. (PACE 2015; 38:499–506)*

Atrial fibrillation ablation patients have long-term stroke rates similar to patients without atrial fibrillation regardless of CHADS2 score

T. Jared Bunch, MD,[*] Heidi T. May, PhD, MSPH,[*] Tami L. Bair, BS,[*] J. Peter Weiss, MD,[*] Brian G. Crandall, MD,[*] Jeffrey S. Osborn, MD,[*] Charles Mallender, MD,[*] Jeffrey L. Anderson, MD,[*†] Brent J. Muhlestein, MD,[*†] Donald L. Lappe, MD,[*] John D. Day, MD, FHRS[*]

From the [*]Intermountain Heart Institute, Intermountain Medical Center, Murray, Utah, and [†]Department of Medicine, University of Utah, Salt Lake City, Utah.

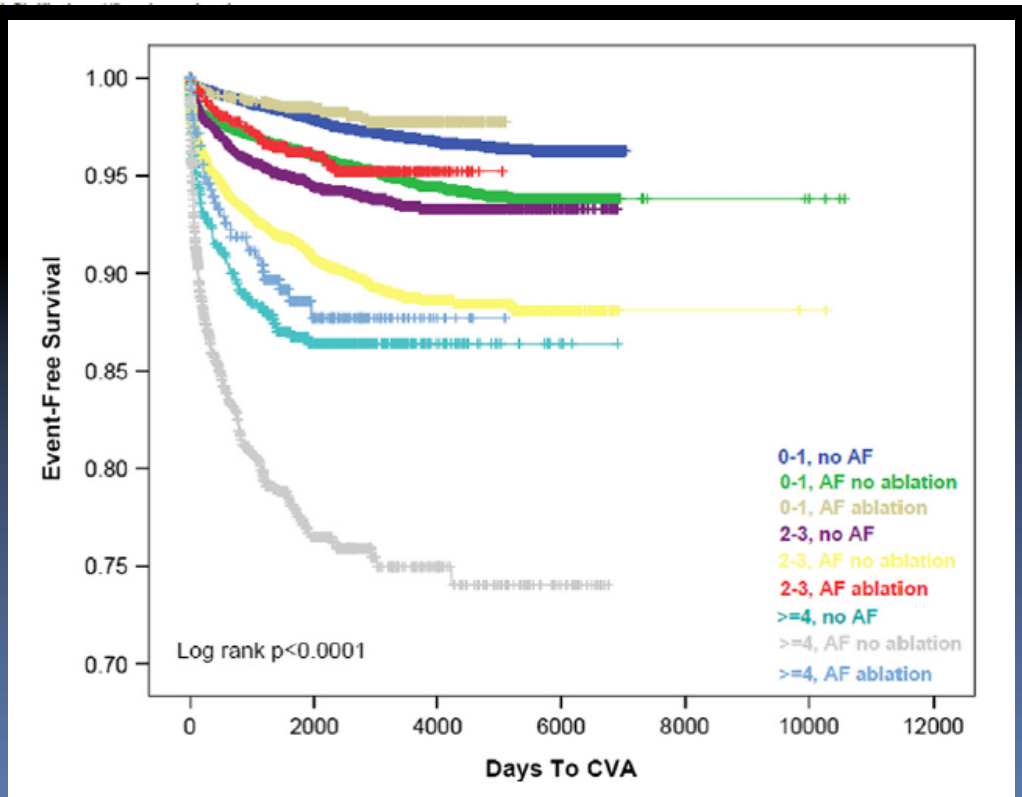
Patients were enrolled from the large ongoing prospective Intermountain Atrial Fibrillation Study and were followed for at least 3 years

Table 1 Baseline demographics of the study population

Characteristic	No AF (n = 16,848)	AF, no ablation (n = 16,848)	AF, ablation (n = 4212)
Age (y)	64.1 ± 13.0	66.0 ± 13.3	64.8 ± 12.7
Sex: male	60.8%	60.8%	60.8%
Hyperlipidemia	58.4%	37.3%	44.0%
Hypertension	41.2%	45.3%	47.8%
Diabetes	19.0%	21.1%	16.3%
Heart failure	14.5%	23.6%	29.5%
Renal failure	5.6%	7.8%	7.5%
MI history	10.0%	6.4%	6.4%
TIA history	4.0%	4.2%	4.6%
CVA history	4.4%	6.3%	4.5%
Valve history	10.9%	14.8%	27.7%
CHADS2 score			
0	41.0%	35.7%	38.7%
1	28.3%	26.6%	24.9%
2	17.9%	18.2%	16.5%
3	8.6%	11.5%	12.2%
4	2.9%	5.1%	5.2%
5	1.2%	2.3%	2.0%
6	0.2%	0.6%	0.5%
EF (n = 10,004)	60.0 ± 16.0	56.1 ± 15.9	51.3 ± 13.8

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



Heart Rhythm2013;10:1272–1277

Risk of stroke after catheter ablation versus cardioversion for atrial fibrillation: A propensity-matched study of 24,244 patients

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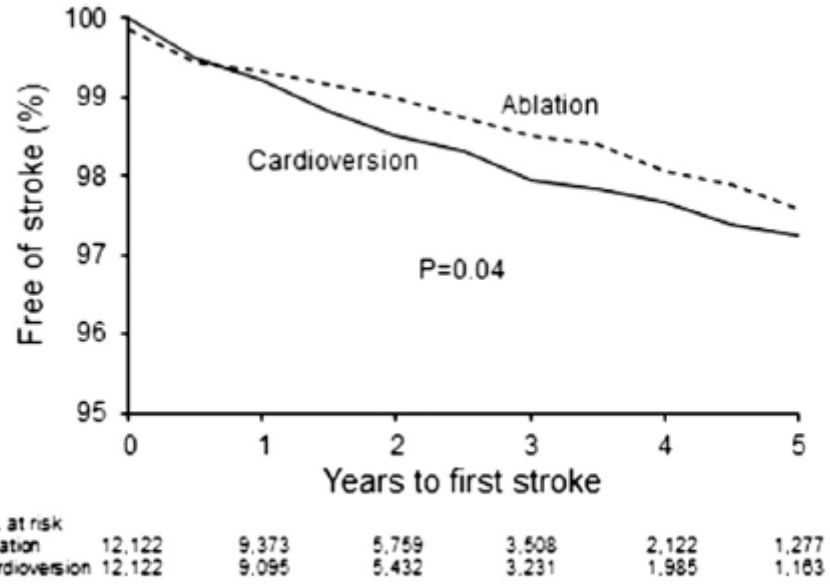


Figure 2 Unadjusted survival free from stroke (excluding transient ischemic attack) after ablation or cardioversion.

periprocedural incident stroke (within 30 days of ablation or cardioversion) as well as total strokes between the 2 groups.

RESULTS A total of 24,244 patients (12,122 patients undergoing ablation and 12,122 patients undergoing cardioversion) were included in the analysis. Incident periprocedural stroke or TIA occurred in 0.5% of the ablation group and 0.3% of the cardioversion group ($P = .04$). There was a significant initial risk of stroke/TIA with ablation within the first 30 days (rate ratio 1.53; $P = .05$). After 30 days, this risk was significantly lower in the ablation group (rate ratio 0.78; $P = .03$).

CONCLUSION In patients with AF, there is a small periprocedural stroke risk with ablation in comparison to cardioversion. However, over longer-term follow-up, ablation is associated with a slightly lower rate of stroke.

KEYWORDS Atrial fibrillation; Ablation; Cardioversion; Stroke; TIA

ABBREVIATIONS **AF** = atrial fibrillation; **CPT-4** = Current Procedural Terminology, Version 4; ***ICD-9-CM*** = *International Classification of Diseases, Ninth Revision, Clinical Modification*; **PS** = propensity score; **RR** = rate ratio; **TIA** = transient ischemic attack

(Heart Rhythm 2015;0:-1–8)

JACC Journals

From: Aggressive Risk Factor Reduction Study for Atrial Fibrillation and Implications for the Outcome of Ablation: The ARREST-AF Cohort Study

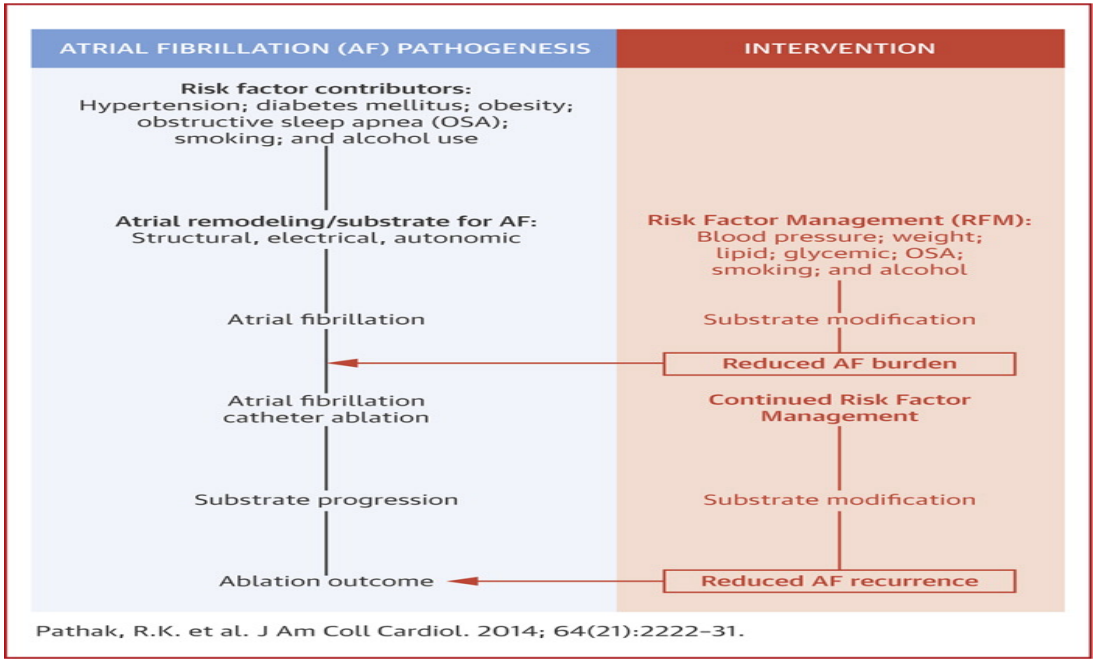


Figure Legend:

Impact of Risk Factor and Weight Management on AF Ablation Outcomes The schematic demonstrates the natural progression of the atrial fibrillation (AF) substrate and its impact on the maintenance of sinus rhythm (blue). Risk factor management has been demonstrated to reduce the burden of AF and also improve the outcomes of catheter ablation (salmon).

RESULTS: There were no differences in baseline characteristics, number of procedures, or follow-up duration between the groups (p = NS). RFM resulted in greater reductions in weight ($p = 0.002$) and blood pressure ($p = 0.006$), and better glycemic control ($p = 0.001$) and lipid profiles ($p = 0.01$). At follow-up, AF frequency, duration, symptoms, and symptom severity decreased more in the RFM group compared with the control group (all $p < 0.001$). Single-procedure drug-unassisted arrhythmia-free survival was greater in RFM patients compared with control subjects ($p < 0.001$). Multiple-procedure arrhythmia-free survival was markedly better in RFM patients compared with control subjects ($p < 0.001$), with 16% and 42.4%, respectively, using antiarrhythmic drugs ($p = 0.004$). On multivariate analysis, type of AF ($p < 0.001$) and RFM (hazard ratio 4.8 [95% confidence interval: 2.04 to 11.4]; $p < 0.001$) were independent predictors of arrhythmia-free survival.

CONCLUSIONS: Aggressive RFM improved the long-term success of AF ablation. This study underscores the importance of therapy directed at the primary promoters of the AF substrate to facilitate rhythm control strategies.

J Am Coll Cardiol. 2014;64(21):2222-2231. doi:10.1016/j.jacc.2014.09.028

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

January, CT et al.
2014 AHA/ACC/HRS Atrial Fibrillation Guideline

Class III: Harm

1. **AF catheter ablation should not be performed in patients who cannot be treated with anticoagulant therapy during and following the procedure.** *(Level of Evidence: C)*
2. **AF catheter ablation to restore sinus rhythm should not be performed with the sole intent of obviating the need for anticoagulation.** *(Level of Evidence: C)*

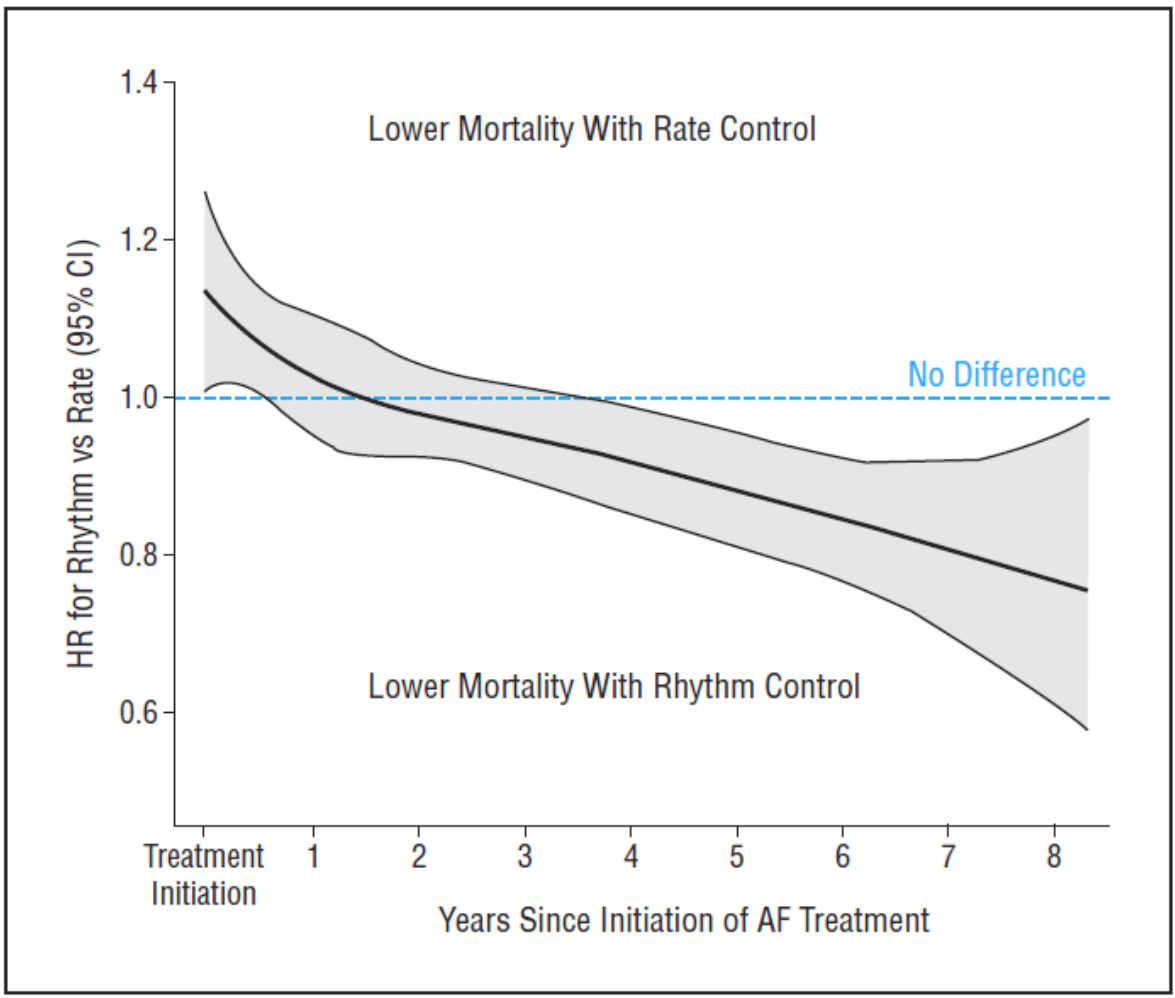
January CT, et al. 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation. Journal of the American College of Cardiology (2014), doi: 10.1016/j.jacc.2014.03.022

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

Methods: We used population-based administrative databases from Quebec, Canada, from 1999 to 2007 to select patients 66 years or older hospitalized with an AF diagnosis who did not have AF-related drug prescriptions in the year before the admission but received a prescription within 7 days of discharge. Patients were followed until death or administrative censoring. Mortality was analyzed by multivariable Cox regression.

Results: Among 26 130 patients followed for a mean (SD) period of 3.1 years (2.3 years), there were 13 237 deaths (49.5%). After adjusting for covariates, we found that the

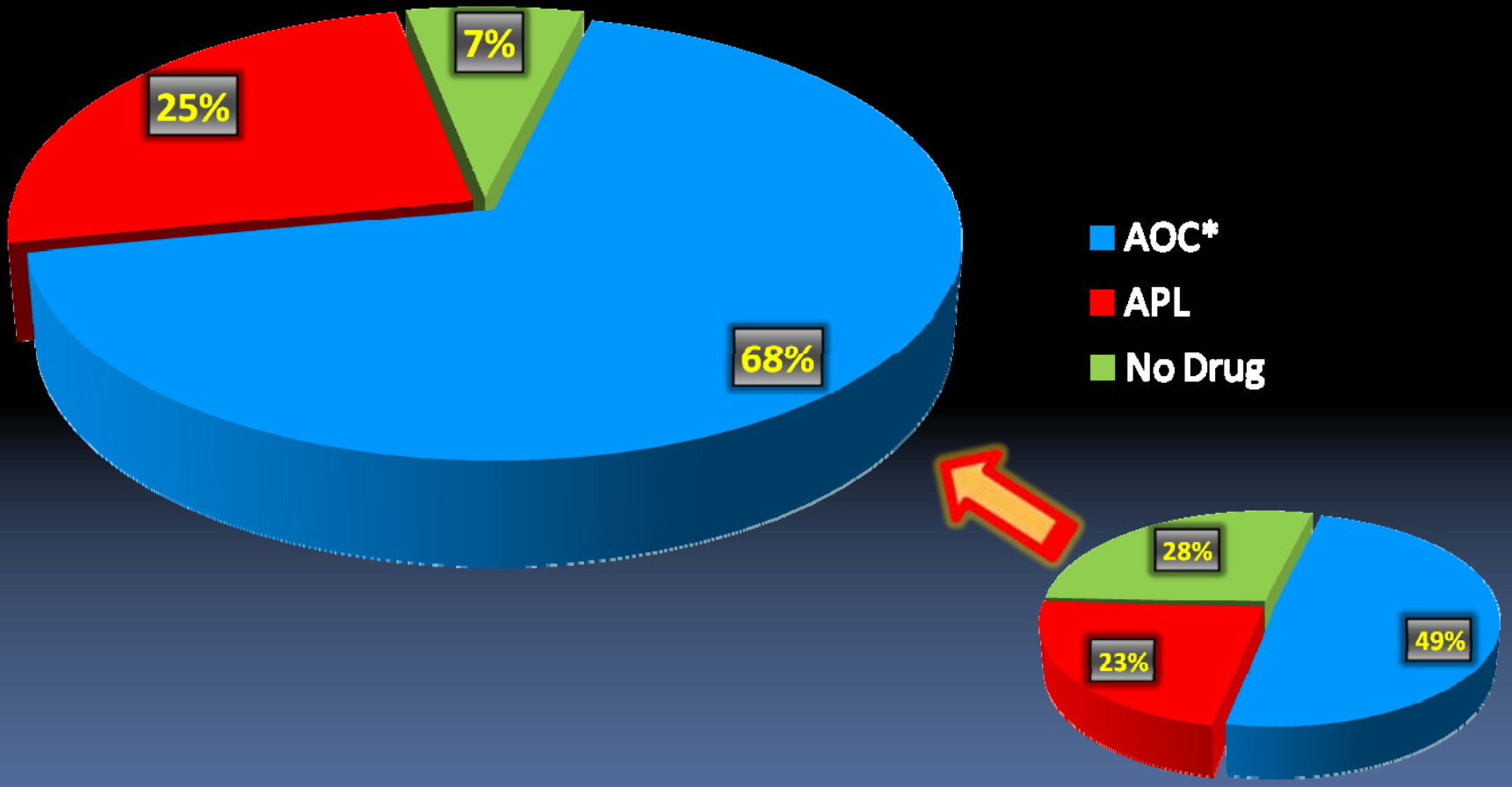
Conclusions: In this population-based sample of patients with AF, we found little difference in mortality within 4 years of treatment initiation between patients with AF initiating rhythm control therapy vs those initiating rate control therapy. However, rhythm control therapy seems to be superior in the long-term.



Ionescu-Ittu R., et al. Arch Intern Med June 2012

Management of Atrial Fibrillation in Greece: the MANAGE-AF Study

6-month follow-up

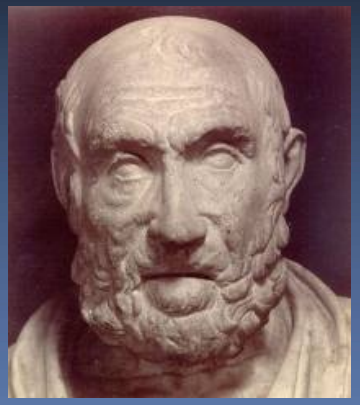


Andrikopoulos G., et al. Hell J Cardiol 2014

«ΜΗΔΕΝ ΑΓΑΝ» - «ΚΑΜΙΑ ΥΠΕΡΒΟΛΗ»

Ο Χίλων (ή Χείλων) ο Λακεδαιμόνιος (600-520 πχ), γιος του Δαμαγέτου, ήταν πολιτικός, νομοθέτης, φιλόσοφος και ελεγειακός ποιητής, που έζησε κατά τον 6ο π.χ. αιώνα και αναφέρεται ως ένας από τους Επτά Σοφούς της Αρχαίας Ελλάδας

"Οκόσα φάρμακα ουκ ιήται, σίδηρος ιήται.
Όσσα σίδηρος ουκ ιήται, πυρ ιήται,
όσσα δε πυρ ουκ ιήται ταύτα χρη νομίζειν ανίητα"



Ιπποκράτης (460-377 π.χ.)