

# Κατάλυση σε ασθενείς με μακροχρονίως εμμένουσα κοιλιακή μαρμαρυγή: αρχικά μόνο PVI;

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Α Καρδιολογική Κλινική/Ηλεκτροφυσιολογίας Βηματοδότησης  
«Ερρίκος Ντυνάν» Hospital Center, Αθήνα



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## Presenter Disclosure Information

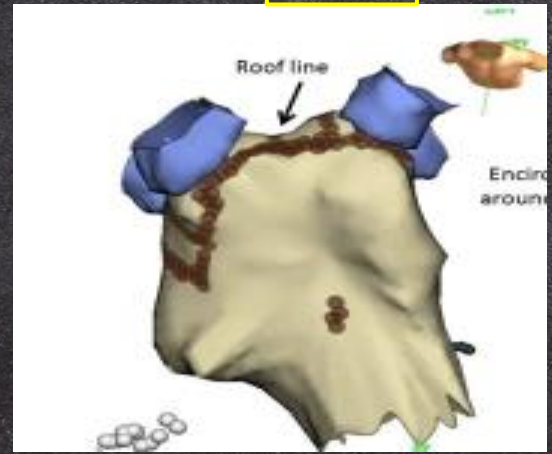
*The presenter has received honoraria for participation in lectures and advisory boards from the following pharmaceutical and biotechnology companies:*

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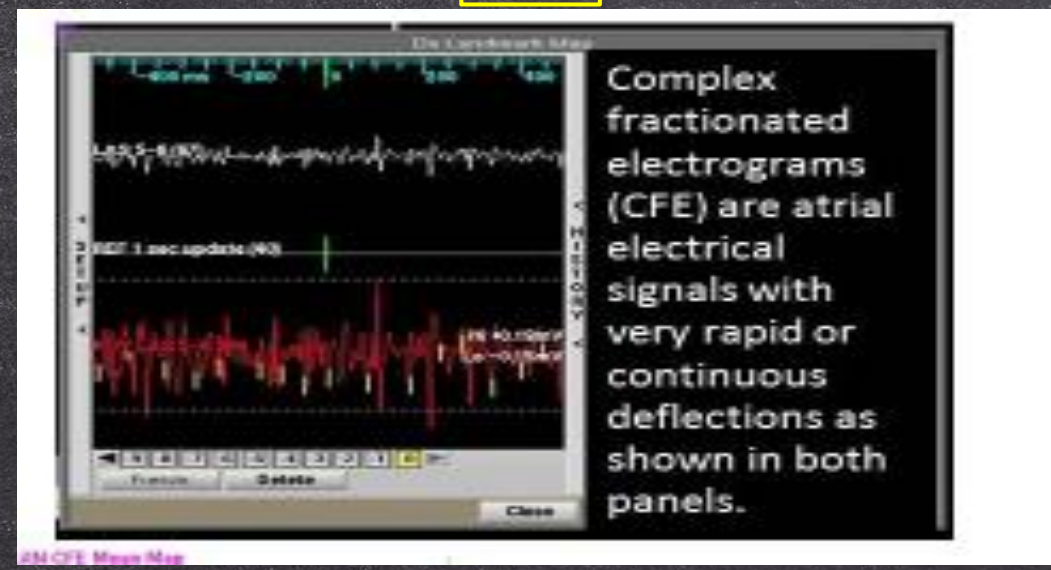
# Κατάλυση εμμένουσας Κολπικής Μαρμαρυγής

*What to do beyond PVI isolation?*

## LINES



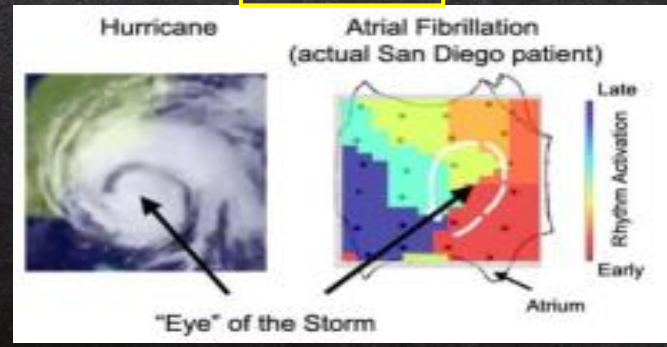
## CAFE



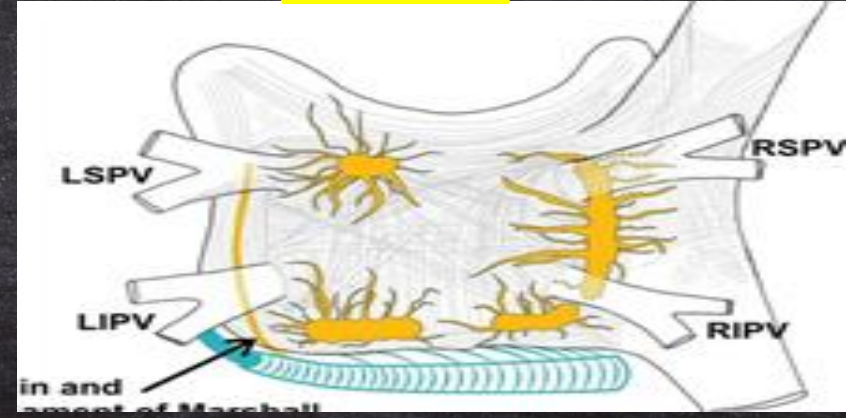
## Non-PV triggers



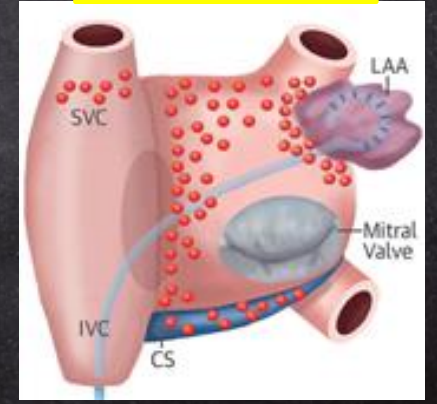
## ROTORS



## GANGLIA



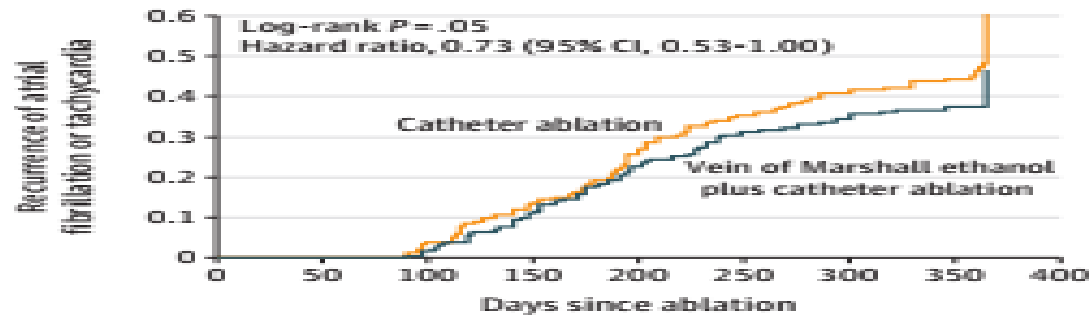
## LAA isolation



# Effect of Catheter Ablation With Vein of Marshall Ethanol Infusion vs Catheter Ablation Alone on Persistent Atrial Fibrillation

## The VENUS Randomized Clinical Trial

**A** Atrial fibrillation or tachycardia occurrence after single procedure in as-randomized analysis



**Table 3. Adverse Events**

	Vein of Marshall-catheter ablation as randomized (n = 185)	Catheter ablation (n = 158)	Vein of Marshall-catheter ablation as treated (n = 155)
Intraprocedural pericardial effusion	2	1	1
Subacute pericardial effusion requiring drainage	2	2	2
Subacute pericardial effusion/pericarditis not requiring drainage	11	6	10
Vascular access complications			
Hematoma	3	6	3
Pseudoaneurysm	0	2	0
Stroke	1	2	1
Transient ischemic attack	2	2	1
Fluid overload	10	2	7
Pneumonia	3	4	2
Atrioesophageal fistula	0	0	0
Death	4 <sup>a</sup>	2 <sup>b</sup>	3 <sup>c</sup>

**IMPORTANCE** Catheter ablation of persistent atrial fibrillation (AF) has limited success. Procedural strategies beyond pulmonary vein isolation have failed to consistently improve results. The vein of Marshall contains innervation and AF triggers that can be ablated by retrograde ethanol infusion.

**OBJECTIVE** To determine whether vein of Marshall ethanol infusion could improve ablation results in persistent AF when added to catheter ablation.

**DESIGN, SETTING, AND PARTICIPANTS** The Vein of Marshall Ethanol for Untreated Persistent AF (VENUS) trial was an investigator-initiated, National Institutes of Health-funded, randomized, single-blinded trial conducted in 12 centers in the United States. Patients (N = 350) with persistent AF referred for first ablation were enrolled from October 2013 through June 2018. Follow-up concluded in June 2019.

**INTERVENTIONS** Patients were randomly assigned to catheter ablation alone (n = 158) or catheter ablation combined with vein of Marshall ethanol infusion (n = 185) in a 1:1.15 ratio to accommodate for 15% technical vein of Marshall ethanol infusion failures.

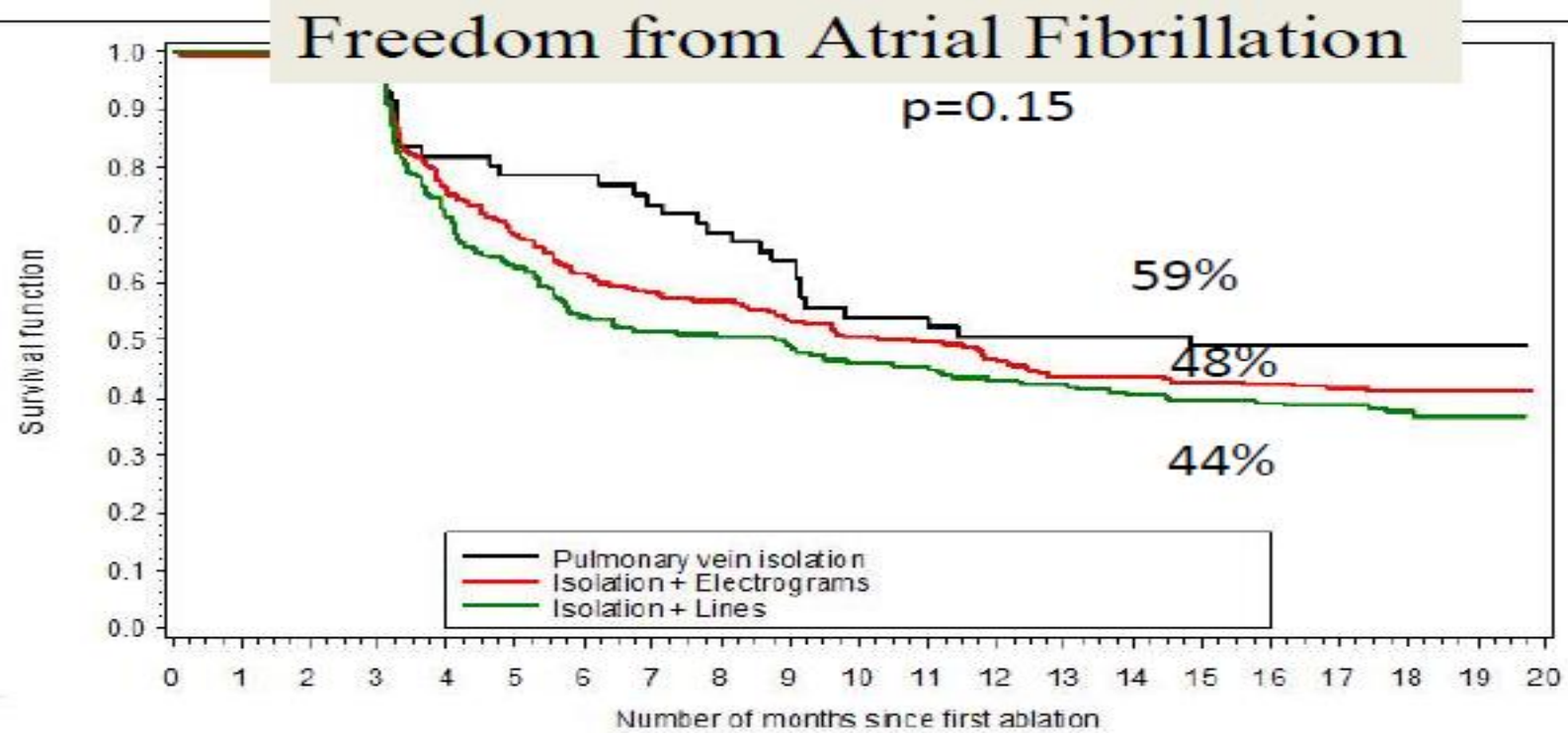
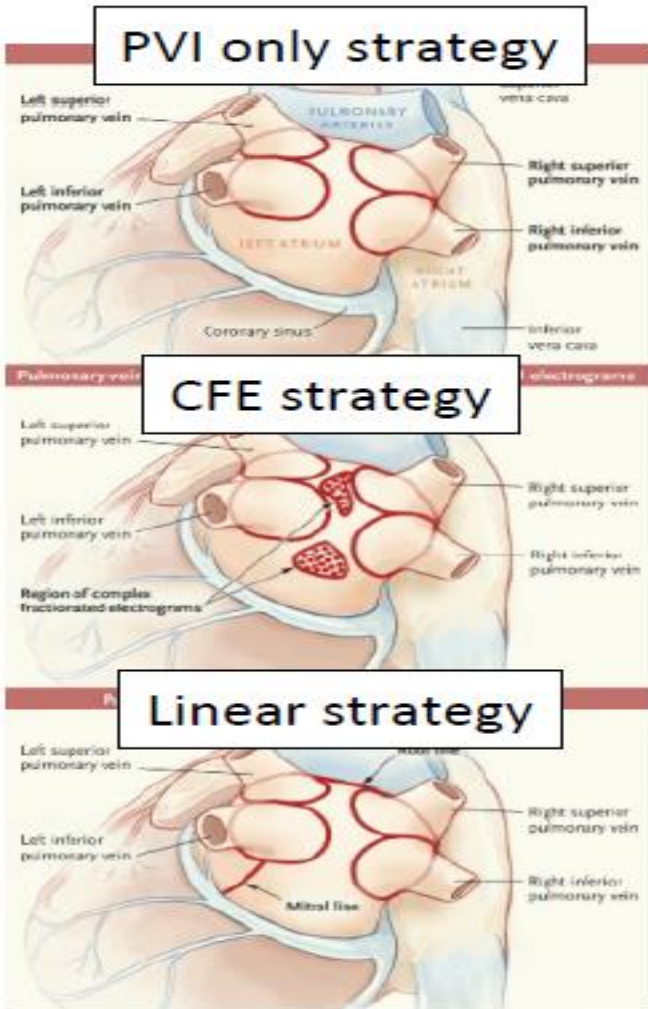
**MAIN OUTCOMES AND MEASURES** The primary outcome was freedom from AF or atrial tachycardia for longer than 30 seconds after a single procedure, without antiarrhythmic drugs, at both 6 and 12 months. Outcome assessment was blinded to randomization treatment. There were 12 secondary outcomes, including AF burden, freedom from AF after multiple procedures, perimitral block, and others.

**RESULTS** Of the 343 randomized patients (mean [SD] age, 66.5 [9.7] years; 261 men), 316 (92.1%) completed the trial. Vein of Marshall ethanol was successfully delivered in 155 of 185 patients. At 6 and 12 months, the proportion of patients with freedom from AF/atrial tachycardia after a single procedure was 49.2% (91/185) in the catheter ablation combined with vein of Marshall ethanol infusion group compared with 38% (60/158) in the catheter ablation alone group (difference, 11.2% [95% CI, 0.8%-21.7%]; P = .04). Of the 12 secondary outcomes, 9 were not significantly different, but AF burden (zero burden in 78.3% vs 67.9%; difference, 10.4% [95% CI, 2.9%-17.9%]; P = .01), freedom from AF after multiple procedures (65.2% vs 53.8%; difference, 11.4% [95% CI, 0.6%-22.2%]; P = .04), and success achieving perimitral block (80.6% vs 51.3%; difference, 29.3% [95% CI, 19.3%-39.3%]; P < .001) were significantly improved in vein of Marshall-treated patients. Adverse events were similar between groups.

**CONCLUSIONS AND RELEVANCE** Among patients with persistent AF, addition of vein of Marshall ethanol infusion to catheter ablation, compared with catheter ablation alone, increased the likelihood of remaining free of AF or atrial tachycardia at 6 and 12 months. Further research is needed to assess longer-term efficacy.

# Catheter Ablation for Persistent AF

The STAR AF 2 - Randomized Trial (n=589)



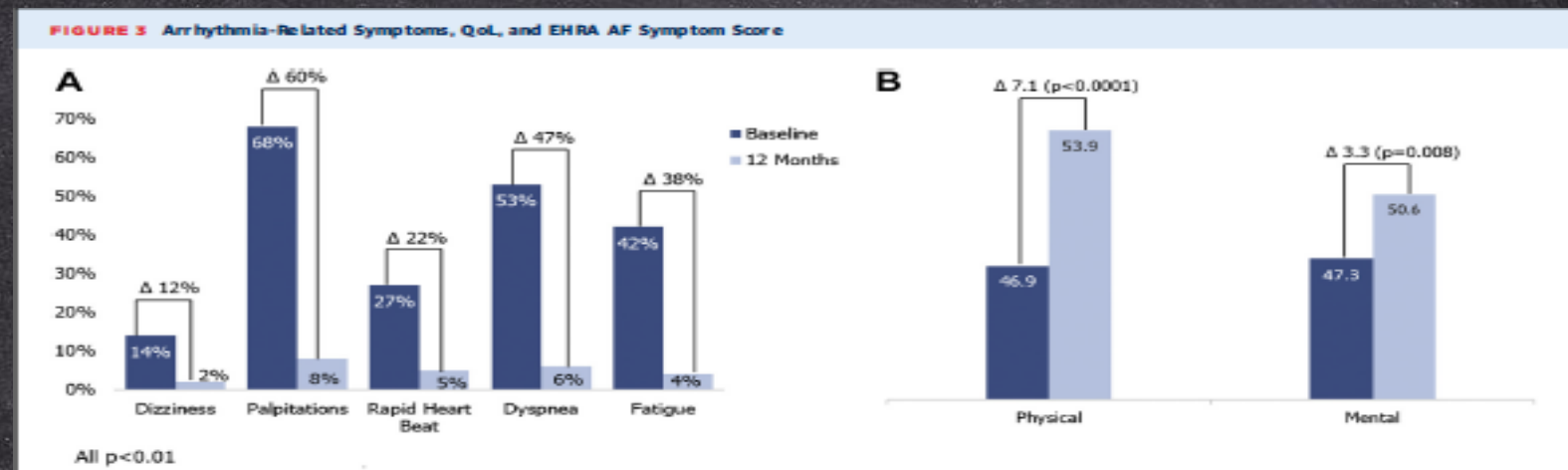
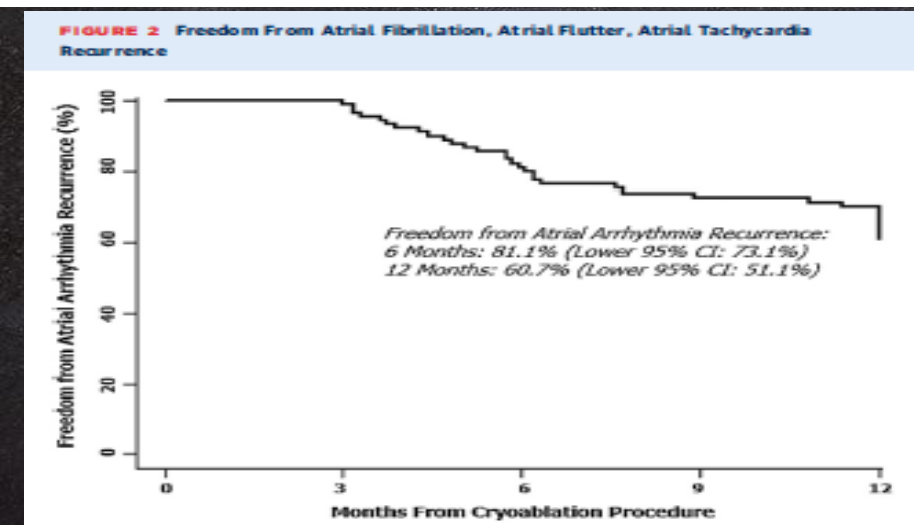
**No. at Risk**

Pulmonary vein isolation	61	60	50	41	36	23
Isolation + Electrograms	244	242	161	137	124	72
Isolation + Lines	244	240	152	133	115	57

# Single-Procedure Outcomes and Quality-of-Life Improvement 12 Months Post-Cryoballoon Ablation in Persistent Atrial Fibrillation

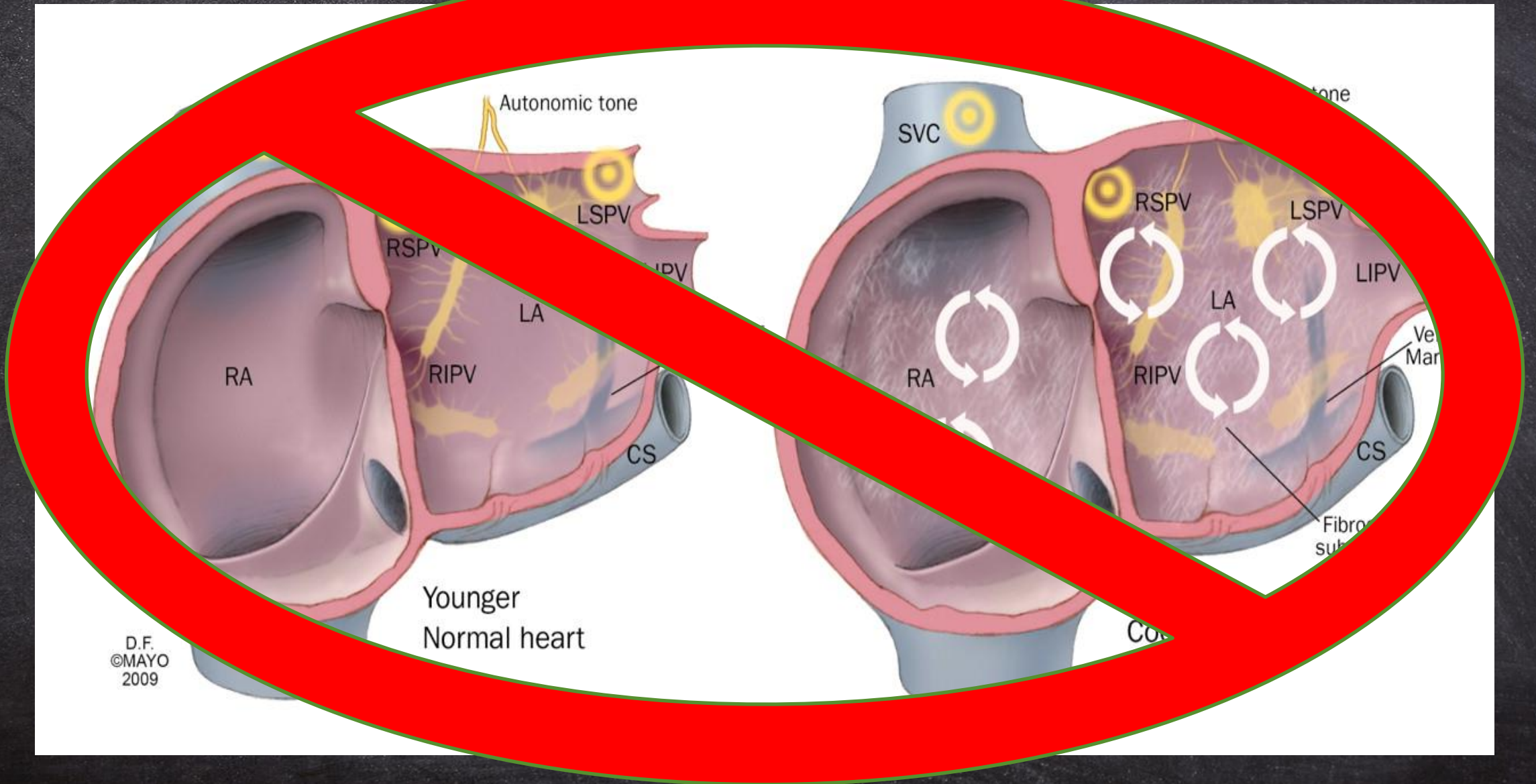
## Results From the Multicenter CRYO4PERSISTENT AF Trial

Serge Boveda, MD,<sup>a</sup> Andreas Metzner, MD,<sup>b</sup> Dinh Q. Nguyen, MD,<sup>c</sup> K.R. Julian Chun, MD,<sup>d</sup> Konrad Goehl, MD,<sup>e</sup> George Noelker, MD,<sup>f</sup> Jean-Claude Deharo, MD,<sup>g</sup> George Andrikopoulos, MD,<sup>h</sup> Tillman Dahme, MD,<sup>i</sup> Nicolas Lellouche, MD,<sup>j</sup> Pascal Defaye, MD<sup>k</sup> (JACC Electrophysiology in press 2018)



**CONCLUSIONS** Cryoballoon ablation for treatment of PerAF demonstrated 61% single-procedure success at 12 months post-ablation in addition to significant reduction in arrhythmia-related symptoms and improved quality of life. (Cryoballoon Ablation for Early Persistent Atrial Fibrillation [Cryo4 Persistent AF]; NCT02213731). (J Am Coll Cardiol EP 2018; ■:■-■) © 2018 The Authors. Published by Elsevier on behalf of the American College of Cardiology Foundation. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

# Paroxysmal vs Persistent AF



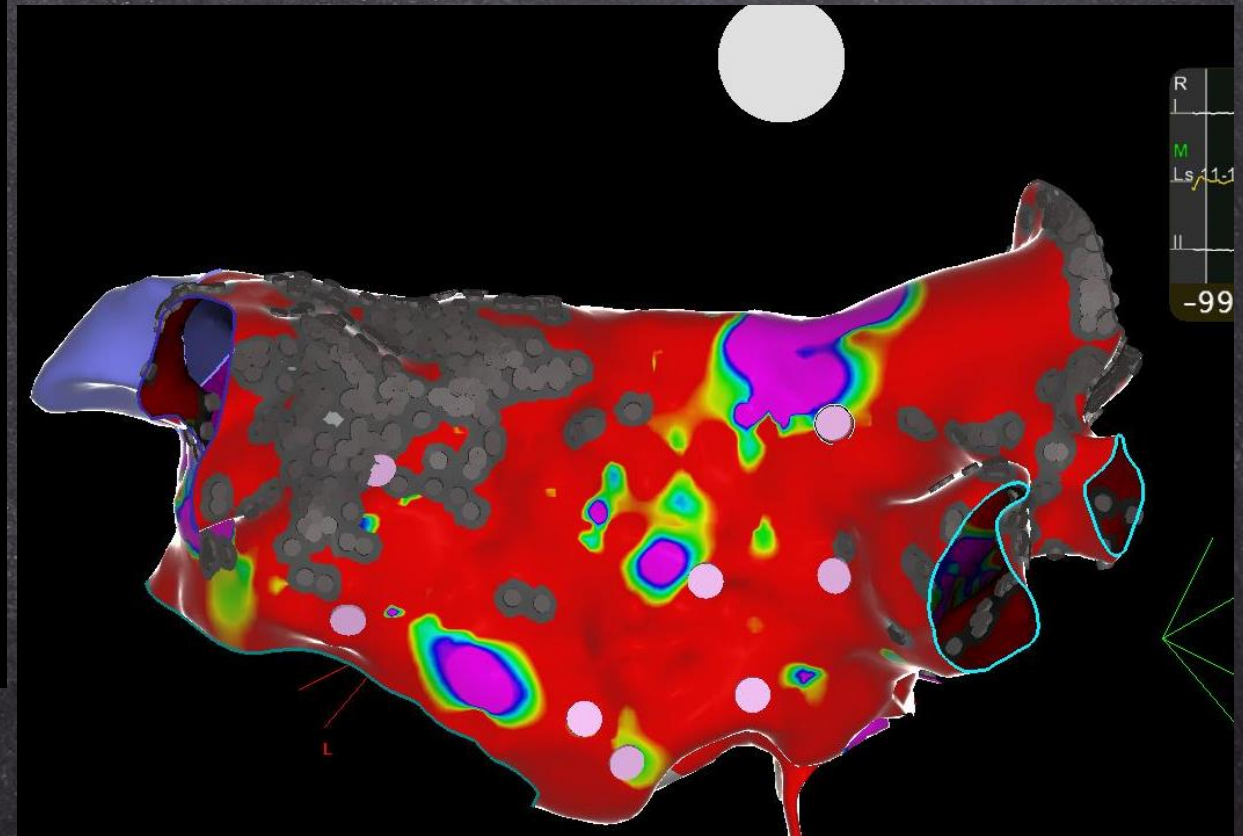
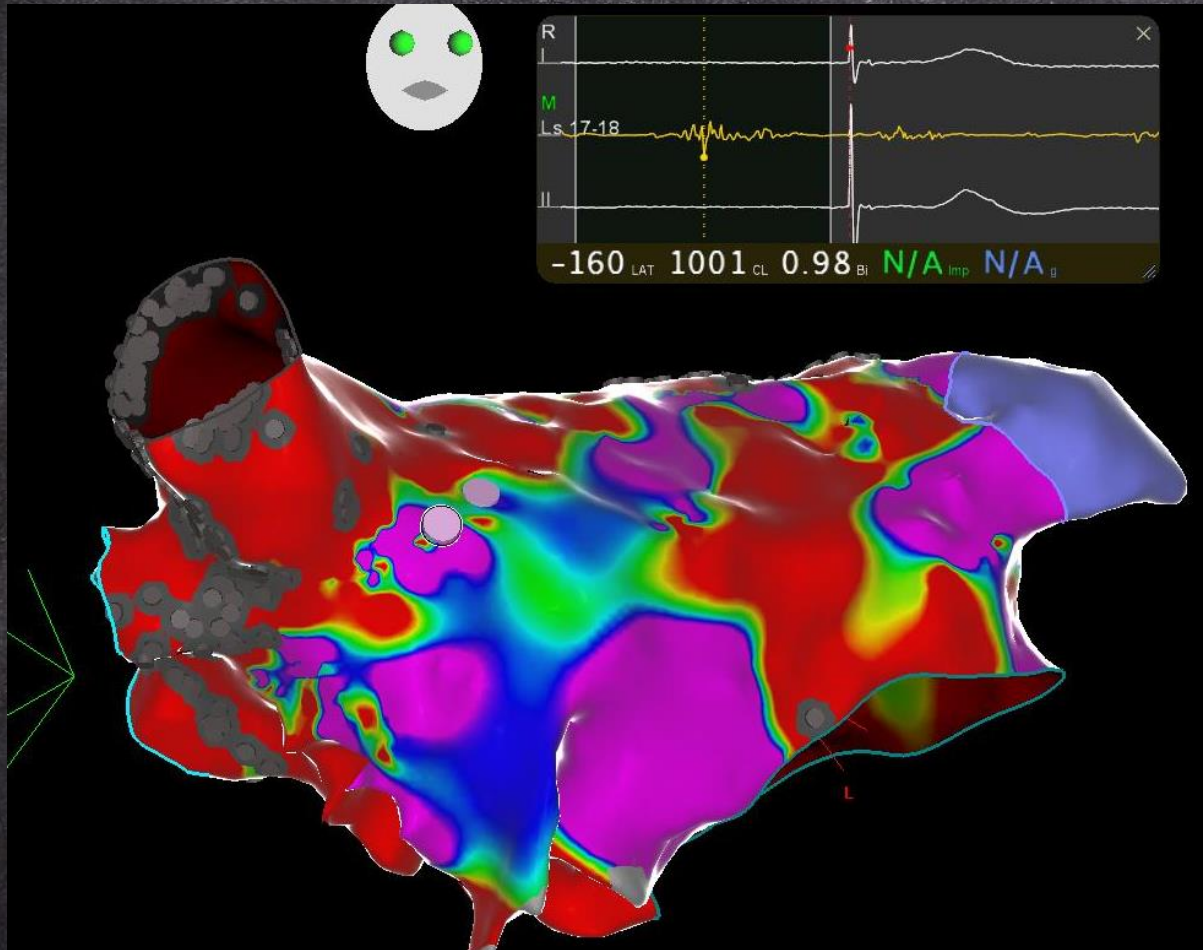
Ασθενής 60 ετών, ναυτικός, χωρίς οργανική καρδιοπάθεια με ΑΚ=42, προσήλθε με ΚΜ πιθανώς από έτους

Ασθενής 68 ετών, παχύσαρκος (130 Kg), χωρίς οργανική καρδιοπάθεια με ΑΚ=48, προσήλθε με ΚΜ από έτους. Εμμένουσα κολπική μαρμαρυγή το 2018.

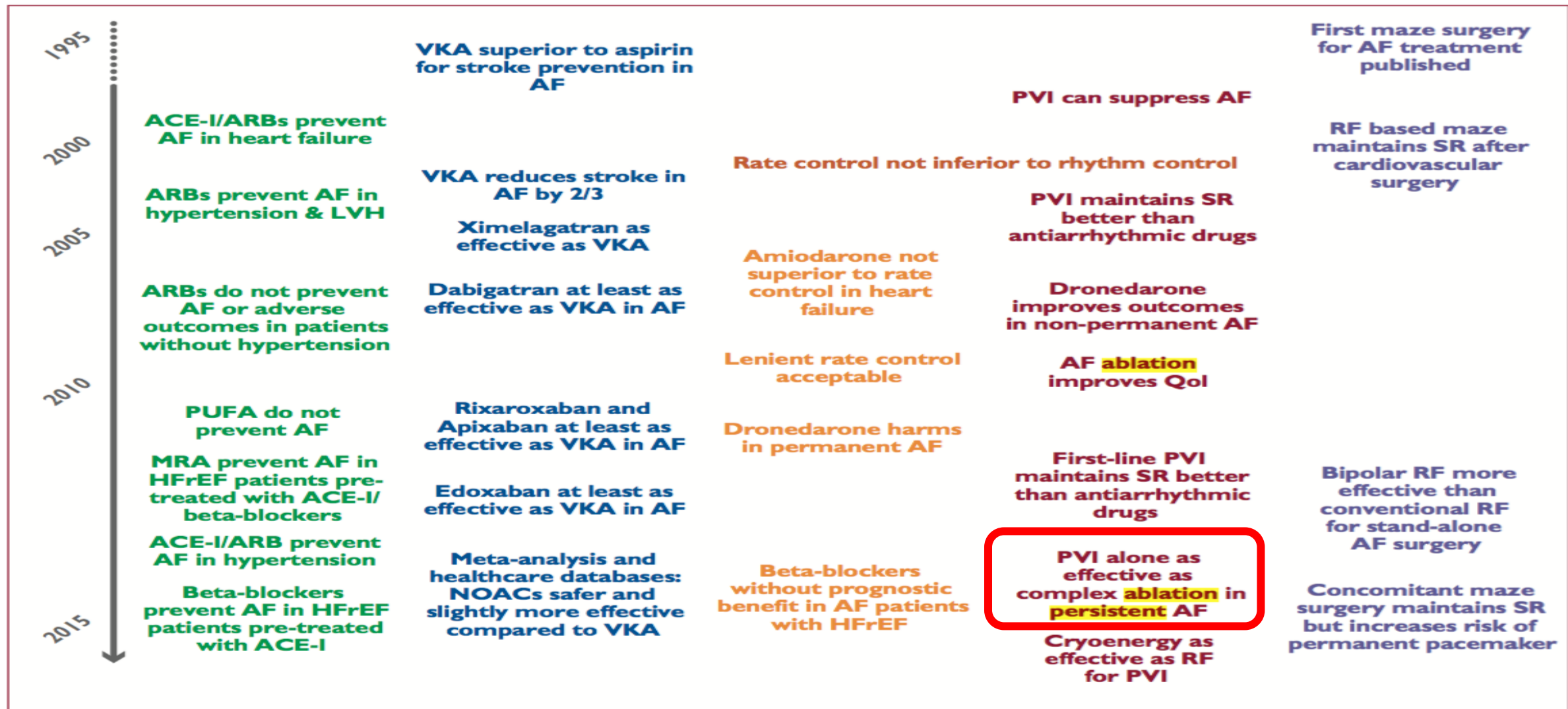




# ΕΜΜΕΝΟΥΣΑ ΚΟΛΠΙΚΗ ΜΑΡΜΑΡΥΓΗ ΣΕ ΑΣΘΕΝΗ ΜΕ ΑΡΡΥΘΜΙΟΓΟΝΟ ΜΥΟΚΑΡΔΙΟΠΑΘΕΙΑ ΠΟΥ ΠΡΟΣΗΛΘΕ ΓΙΑ ΚΑΤΑΛΥΣΗ ΜΕΤΑ ΤΟ 1<sup>ο</sup> ΕΠΕΙΣΟΔΙΟ ΕΜΜΕΝΟΥΣΑΣ ΚΟΛΠΙΚΗΣ ΜΑΡΜΑΡΥΓΗΣ



# 2016 ESC/EACTS Guidelines for the management of atrial fibrillation



ACE-I = angiotensin-converting enzyme inhibitor; AF = atrial fibrillation; ARB = angiotensin receptor blocker; HF = heart failure; HFrEF = heart failure with reduced ejection fraction; LVH = left ventricular hypertrophy; NOAC = non-vitamin K antagonist oral anticoagulant; PUFA = polyunsaturated fatty acid; PVI = pulmonary vein isolation; QoL = quality of life; RF = radiofrequency; SR = sinus rhythm; VKA = vitamin K antagonist.

**Figure 1** Timeline of findings from landmark trials in atrial fibrillation management, including treatment of concomitant conditions and prevention (green), anticoagulation (blue), rate control therapy (orange), rhythm control therapy (red), and atrial fibrillation surgery (purple).

# Repeat catheter ablation for recurrent atrial fibrillation: Electrophysiologic findings and clinical outcomes

<sup>1</sup>Division of Cardiology, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

<sup>2</sup>Department of Biostatistics, Johns Hopkins University Bloomberg School of Public Health, Baltimore, Maryland, USA

- ❖ 300 patients who underwent their first repeat AF ablations for symptomatic, recurrent AF
- ❖ All repeat ablations were performed using RF energy, 78% RF for 1<sup>st</sup> ablation
- ❖ 67% at SR before repeat ablation

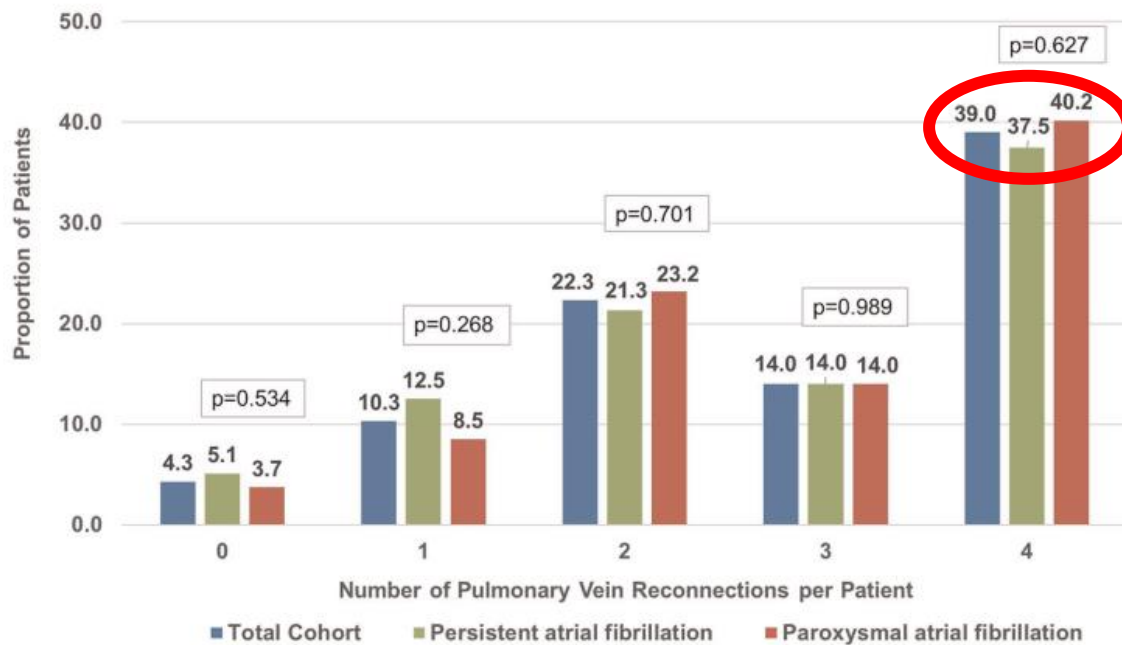


FIGURE 1 Number of pulmonary vein reconnections per patient discovered during repeat ablation for all patients and stratified by persistent versus paroxysmal atrial fibrillation at presentation for repeat ablation

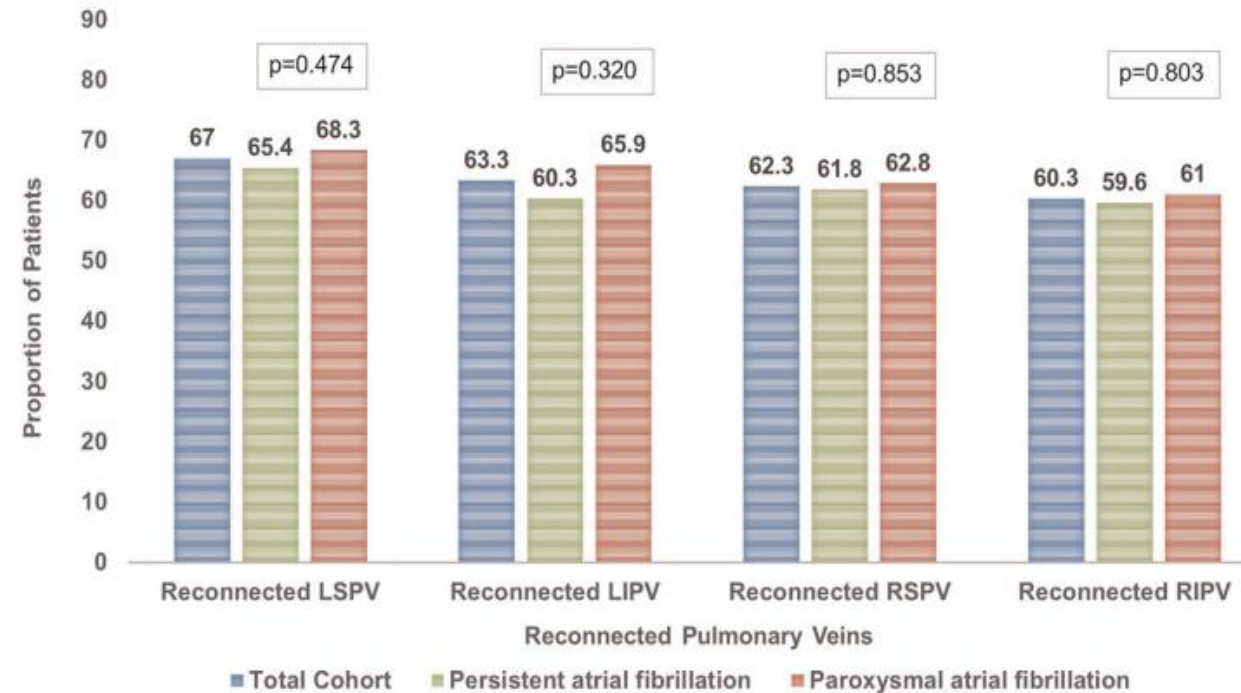


FIGURE 2 Anatomic distribution of pulmonary vein reconnections discovered during repeat ablation

**“During repeat ablation, at least one PV reconnection was found in 257 (85.6%) patients, while 159 (53%) had three to four reconnections”**

# Repeat catheter ablation for recurrent atrial fibrillation: Electrophysiologic findings and clinical outcomes

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## 3.5 | Repeat AF ablation strategies

All repeat ablations were performed using RF energy. Re-isolation of the PVs was performed in all patients, with additional non-PV ablation in 171 (57%) patients. The most common non-PV lesions involved the LA roof (n = 89, 29.7%), CTI (n = 64, 21.3%), LA posterior wall (n = 51, 17%), and the mitral isthmus (n = 26, 8.7%).

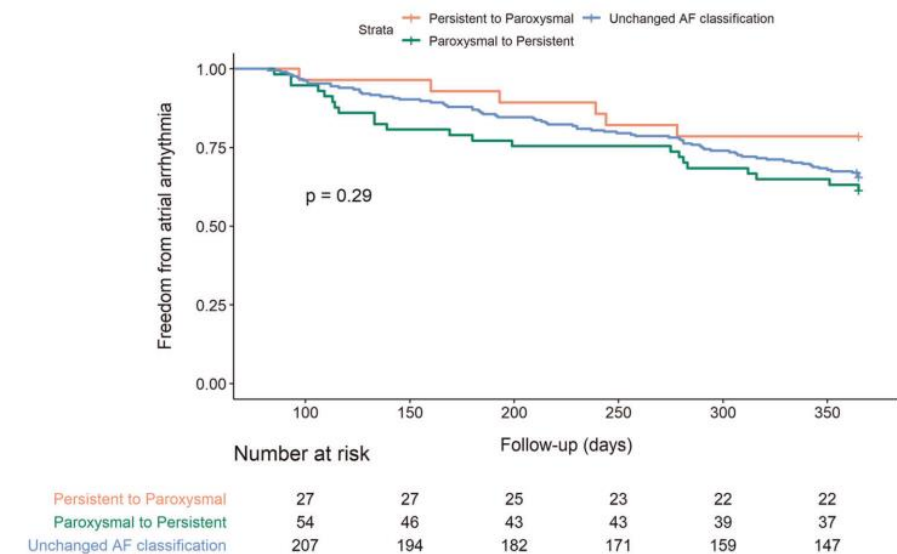
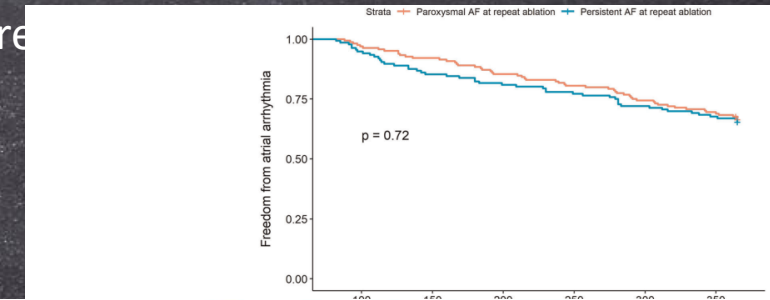
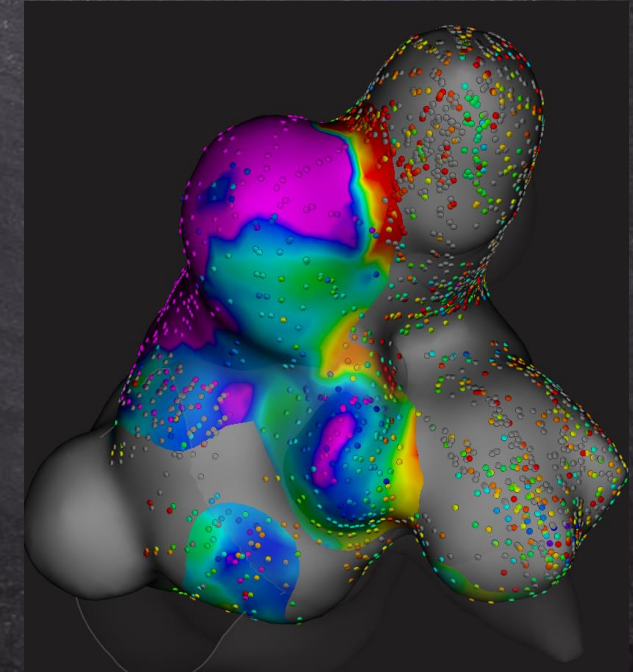
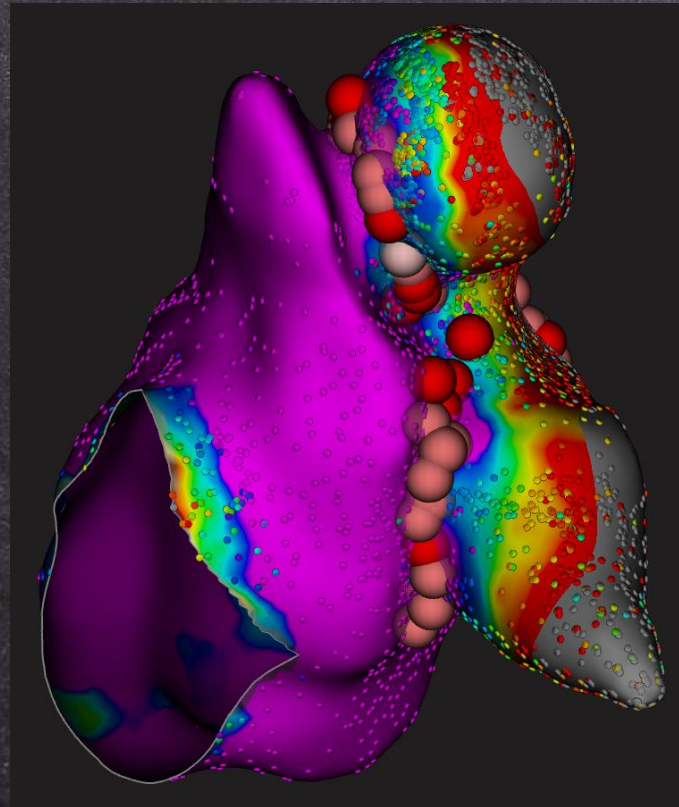
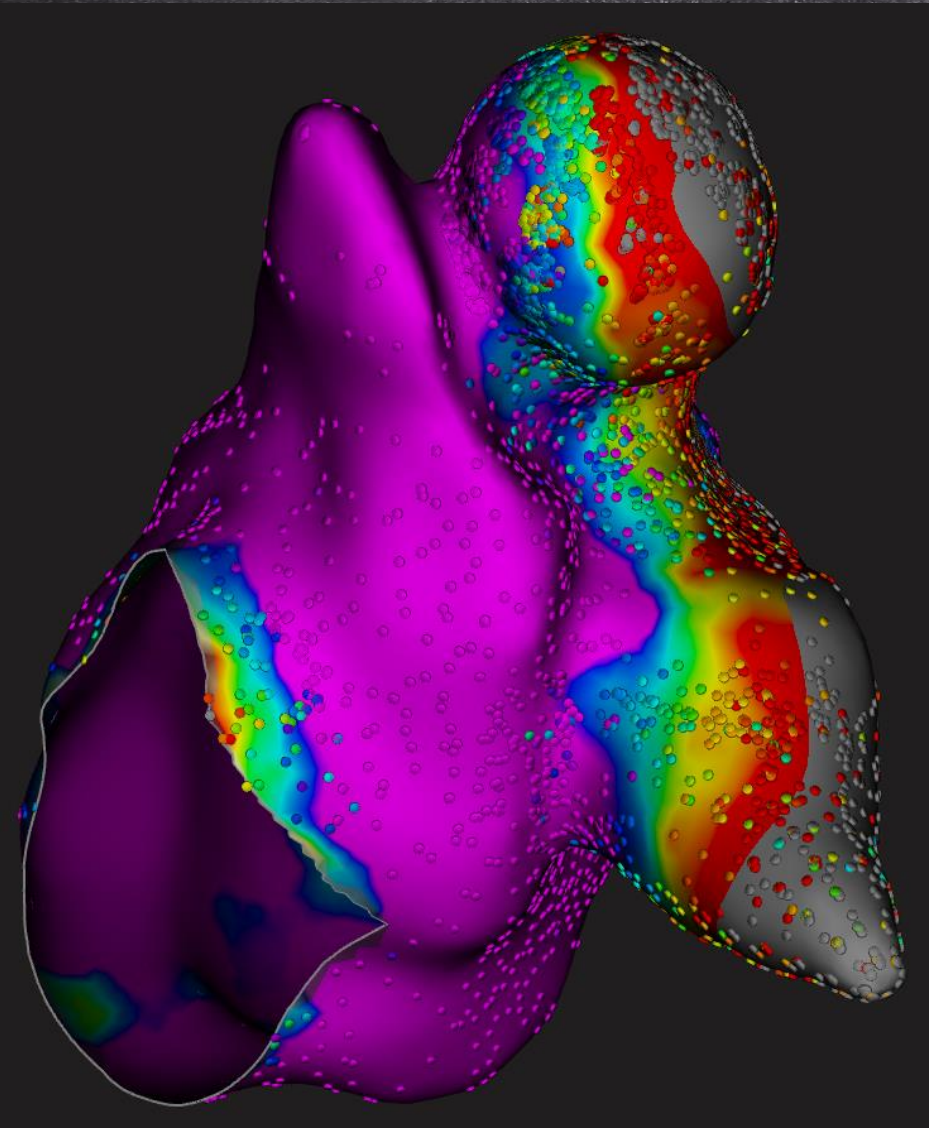


FIGURE 5 Kaplan-Meier survival curve of patients free of atrial arrhythmia at 1-year follow-up after repeat ablation, by a change in atrial fibrillation classification from index to repeat ablation

**During repeat ablation, at least one PV reconnection was found in 257 (85.6%) patients, while 159 (53%) had three to four reconnections**

Ασθενής 38 ετών με εμμένουσα ΚΜ αγνώστου ενάρξεως, διάταση ΑΡ κόλπου και συχνές υποτροπές ΚΜ και ΚΤ μετά το πρώτο ablation (9/2022 - PFA)



# Ασθενής, 60 ετών, προσέρχεται για επέμβαση κατάλυσης ΚΜ αγνώστου χρόνου ενάρξεως Παρουσιάζει προοδευτική δύσπνοια προσπαθείας και ΚΕΑΚ=40% (ΑΚ=50 mm)

Εικόνες από Χαρτογράφηση του ΑΚ,  
(4 μήνες ΜΕΤΑ το 1<sup>ο</sup> ablation)

ΤΜΗΜΑ ΗΛΕΚΤΡΟΦΥΣΙΟΛΟΓΙΑΣ  
ΒΗΜΑΤΟΛΟΤΗΣΗΣ

Δ/ΝΤΗΣ : Γ. ΑΝΔΡΙΚΟΠΟΥΛΟΣ, MD, PhD

## ΗΛΕΚΤΡΟΦΥΣΙΟΛΟΓΙΚΗ ΜΕΛΕΤΗ/ΚΑΤΑΛΥΣΗ

Αν. Διευθυντής :  
Σ. ΠΑΣΤΡΩΜΑΣ  
Α. ΣΥΚΙΩΤΗΣ

Όνοματεπώνυμο:

**Ιστορικό ασθενούς:** Ασθενής 60 ετών με εμμένουσα κολπική μαρμαρυγή, προσήλθε για επέμβαση κατάλυσης.

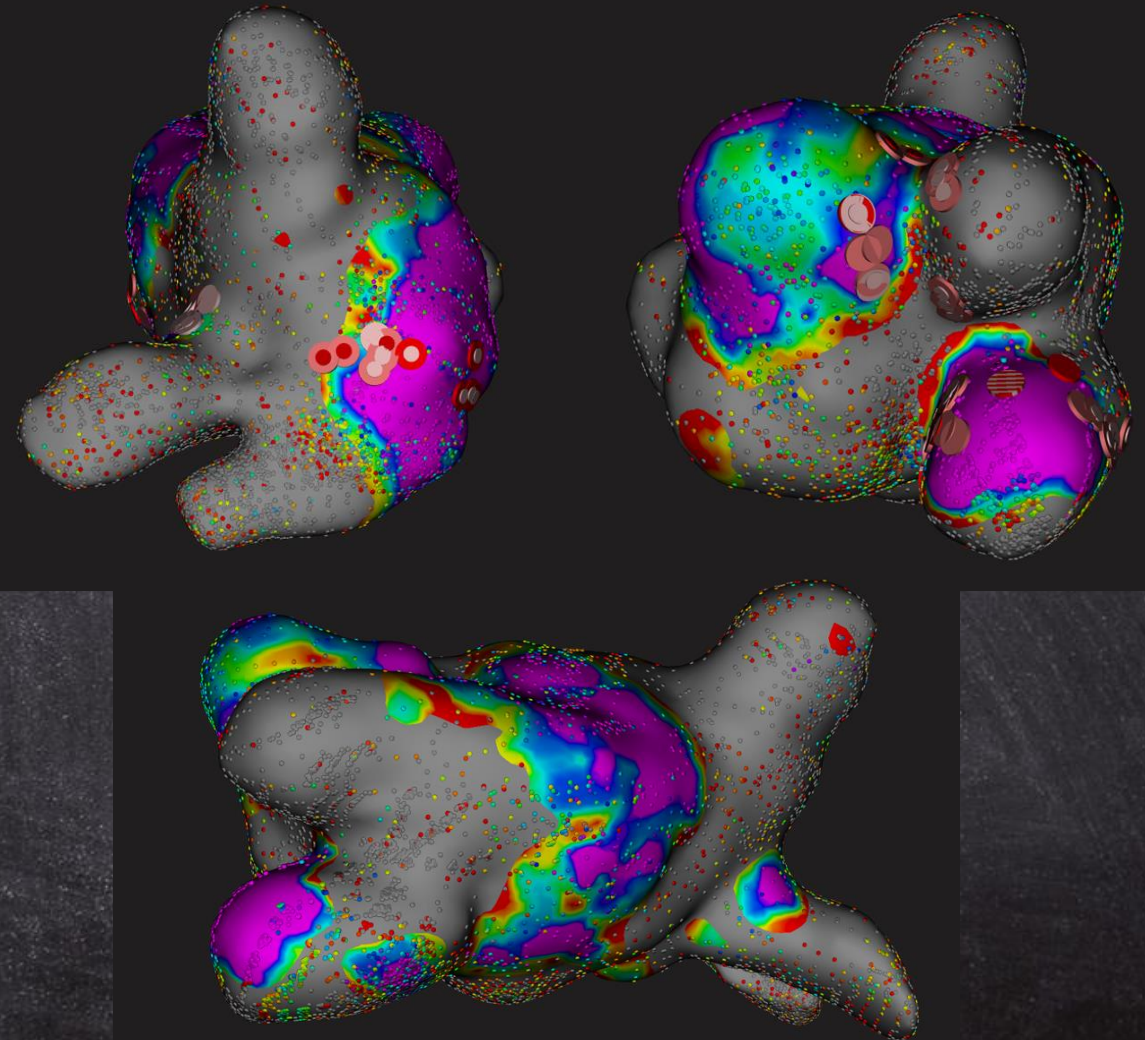
**Περιγραφή επέμβασης:** Υπό άσηπτες συνθήκες και τοπική αναισθησία, παρακέντηση κατά Seldinger και τοποθέτηση 2 θηκαριών (6F και 11F) στη δεξιά μηριαία φλέβα. Προώθηση και τοποθέτηση πηδαλιουχομένου δεκαπολικού ηλεκτροδίου στο στεφανιαίο κόλπο. Η ασθενής εισήλθε στο αιμοδυναμικό εργαστήριο σε κολπική μαρμαρυγή. Διενεργήθηκε κολπική διαφραγματοστομία ανεπίπλεκτα. Στη συνέχεια προωθήθηκε πηδαλιουχομένο θηκάρι (FARADRIVE) και διενεργήθηκε φλεβογραφία των πνευμονικών φλεβών που έδειξε δύο αριστερές και δύο δεξιές πνευμονικές φλέβες. Με τη χρήση του καθετήρα κατάλυσης παλμικού πεδίου FARAWAVE και του συστήματος FARAPULSE πραγματοποιήθηκε χορήγηση ηλεκτρικών παλμών υψηλής τάσης και βραχείας διάρκειας (pulsed-field ablation) σε όλες τις πνευμονικές φλέβες, με επιτυχή απομόνωσή τους. Στο τέλος της επέμβασης πραγματοποιήθηκε ηλεκτρική ανάταξη σε φλεβοκομβικό ρυθμό.

Η ασθενής εξήλθε της επέμβασης με οδηγίες για αντιπηκτική αγωγή.

### Συμπέρασμα

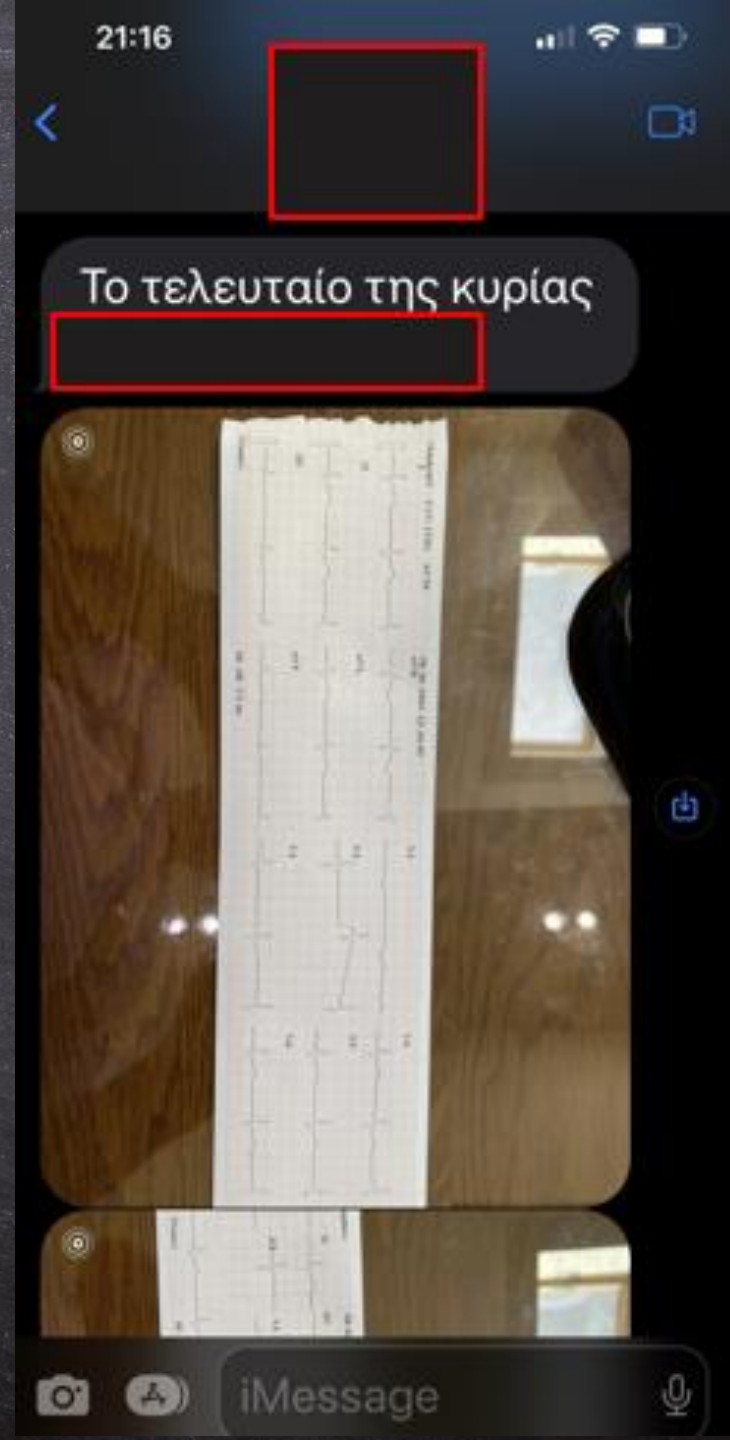
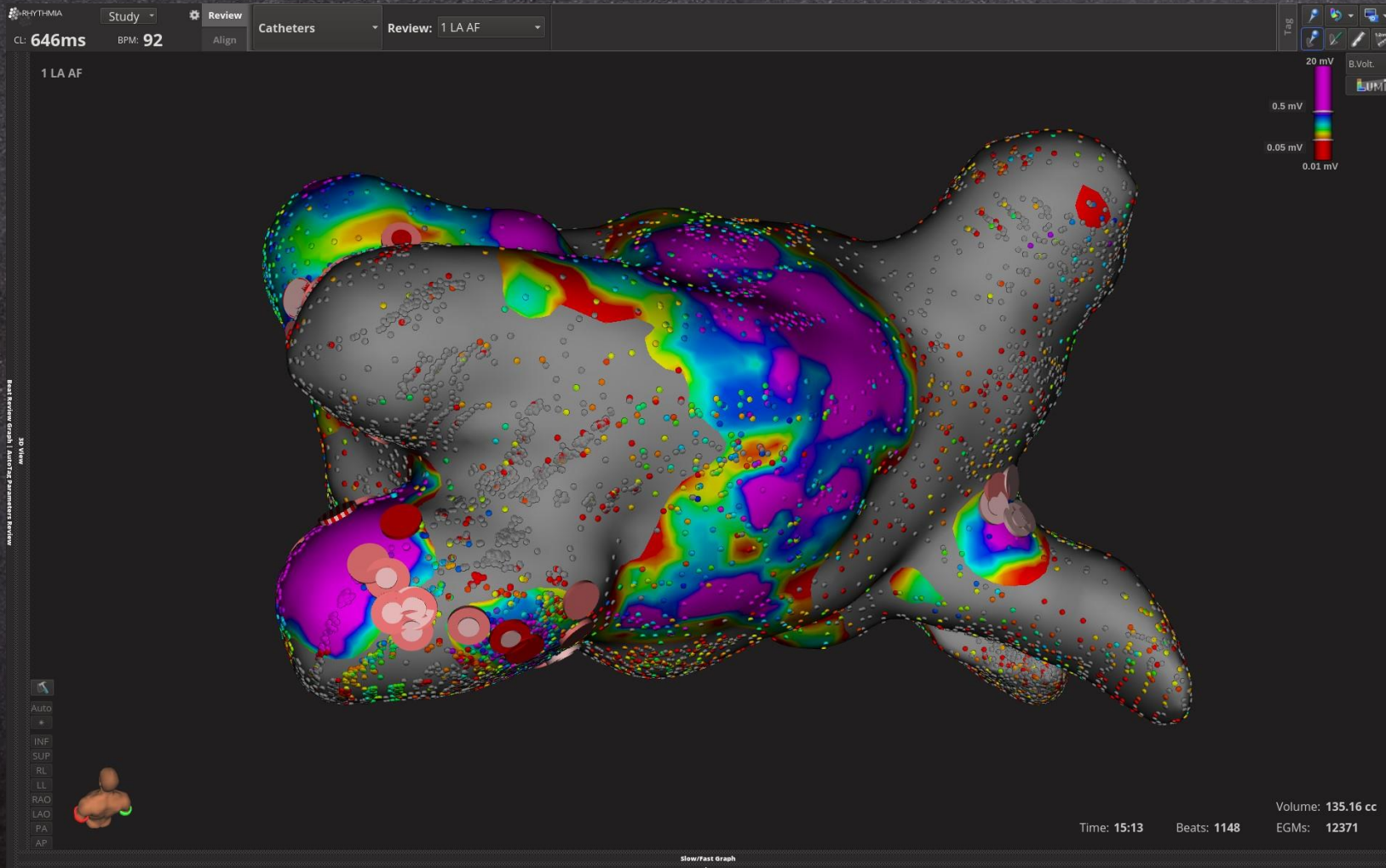
Απομόνωση των πνευμονικών φλεβών, σε ασθενή με εμμένουσα κολπική μαρμαρυγή, με σύστημα κατάλυσης παλμικού πεδίου.

Επιμελητής Β':  
Κ. ΤΑΜΠΑΚΗΣ



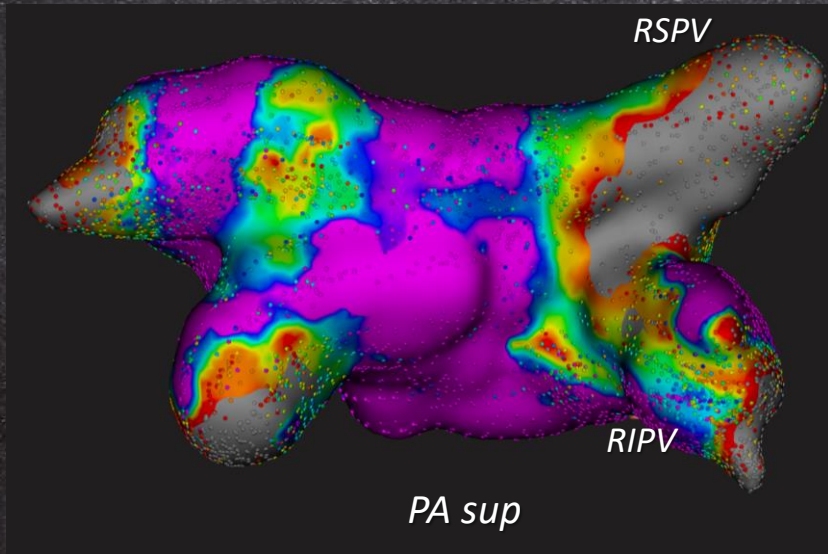
Ασθενής, 60 ετών, προσέρχεται για επέμβαση κατάλυσης ΚΜ αγνώστου χρόνου ενάρξεως  
Παρουσιάζει προοδευτική δύσπνοια προσπαθείας και ΚΕΑΚ=40% (ΑΚ=50 μμ)

Προσέρχεται 4 μήνες μετά για 2<sup>η</sup> επέμβαση κατάλυσης (με RF)

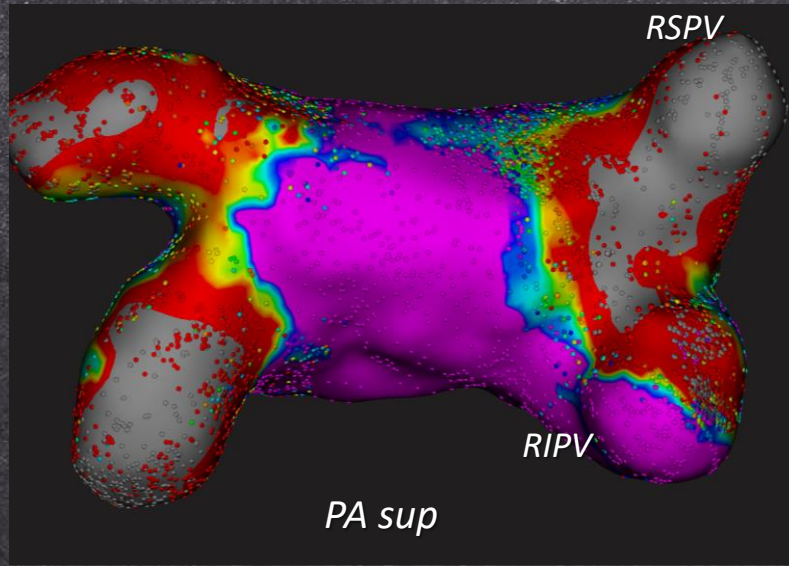


Ασθενής 33 ετών προσέρχεται προ 1,5 έτος με αγνώστου ενάρξεως ΚΜ  
3/2022 Cryoablation - 7/2022 RF ablation (Rhythmia) - 5/4/2023 PFA

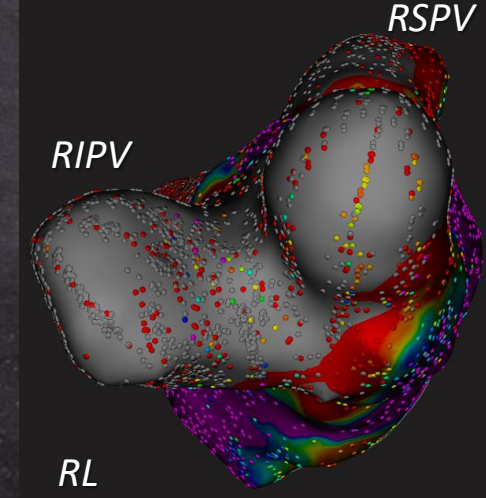
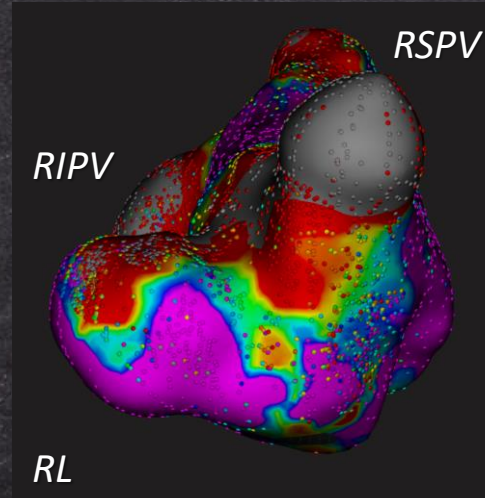
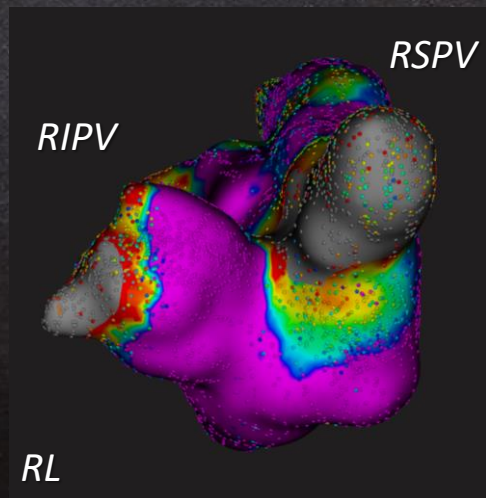
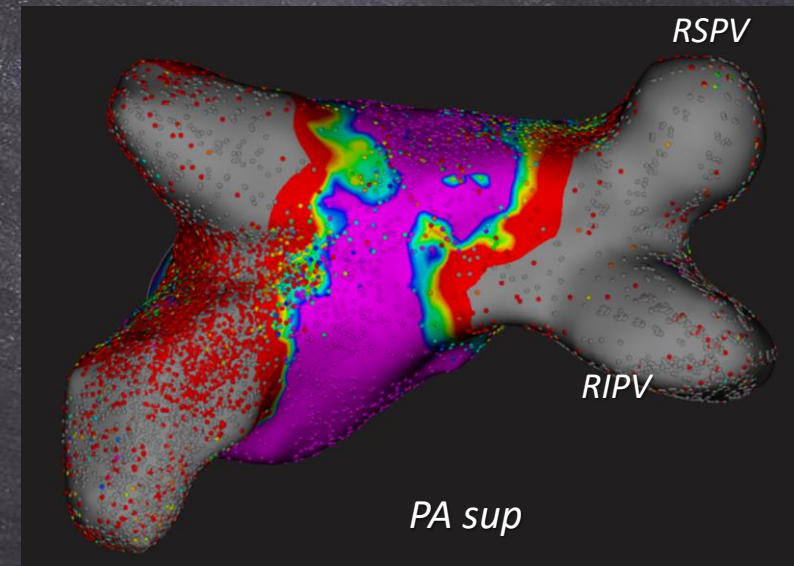
Χάρτης πριν το RF ablation  
(4 μήνες μετά το cryoablation)



Χάρτης πριν το PFA ablation  
(8 μήνες μετά το RF ablation)



Χάρτης μετά το PFA ablation  
(8 μήνες μετά το RF ablation)



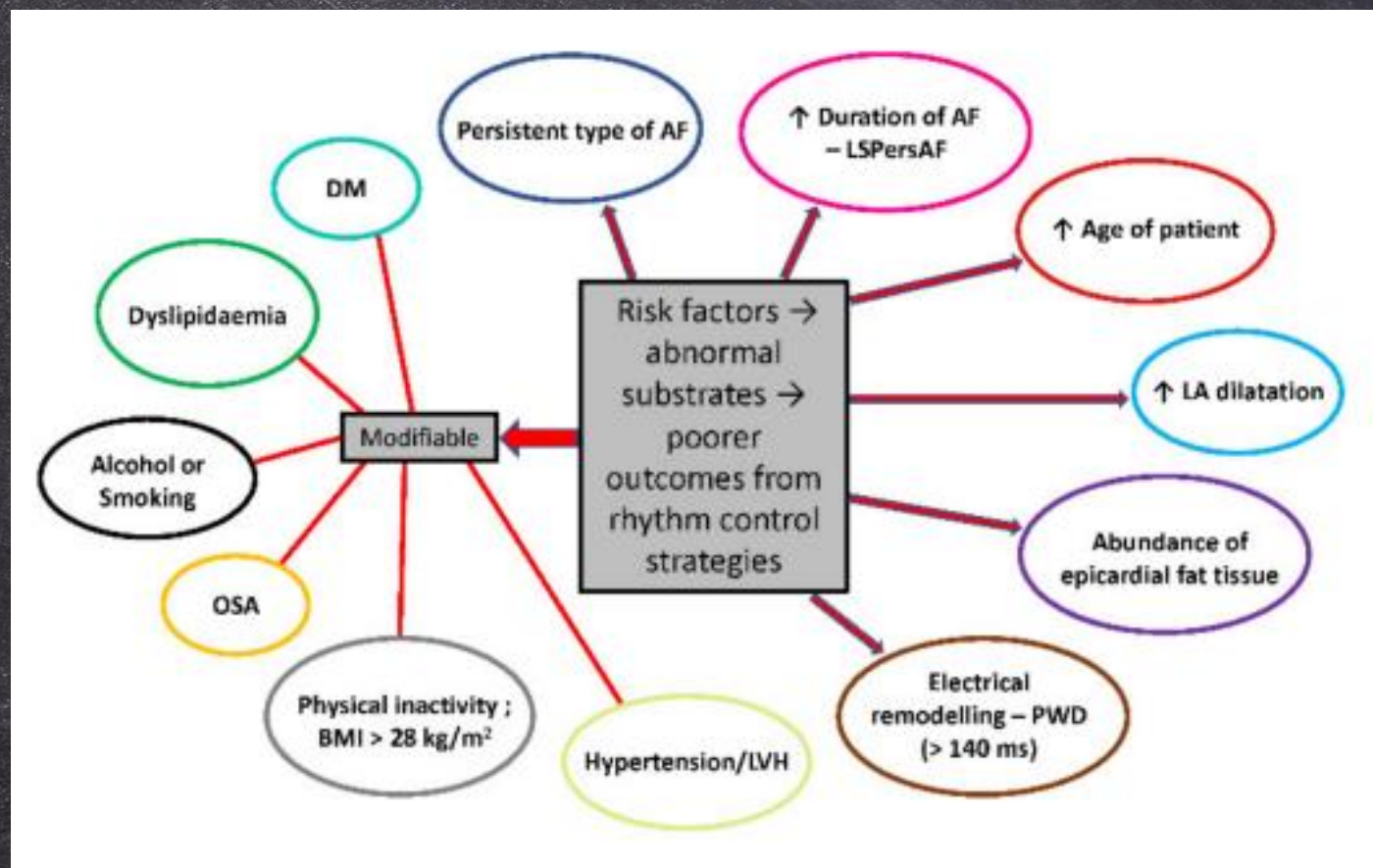


Review

## Persistent Atrial Fibrillation: The Role of Left Atrial Posterior Wall Isolation and Ablation Strategies

Riyaz A. Kaba <sup>1,2,\*</sup>, Aziz Momin <sup>1,2</sup> and John Camm <sup>1</sup>

“Myocytes within the left atrial posterior wall have unique electrophysiological properties that may be intrinsically suited to initiate or sustain AF. These cells are characterised by having larger late sodium currents and smaller potassium currents [23]. The intracellular calcium transient and content within the sarcoplasmic reticulum are high. In effect, the cells of the posterior wall have  
(i) a low resting membrane potential;  
(ii) short action potential duration;  
(iii) the shortest refractory period of any cell in the heart.”



**Figure 1.** Risk factors for perpetuation of AF. Modifiable risk factors are highlighted separately. LSPersAF, long-standing persistent AF; LA, left atrium; PWD, p-wave duration; LVH, left ventricular hypertrophy; BMI, body mass index; OSA, obstructive sleep apnoea; DM, diabetes mellitus.

Review

## Persistent Atrial Fibrillation: The Role of Left Atrial Posterior Wall Isolation and Ablation Strategies

 Riyaz A. Kaba <sup>1,2,\*</sup>, Aziz Momin <sup>1,2</sup> and John Camm <sup>1</sup> 

**Table 2.** Posterior wall (PW) connection rates in studies comparing pulmonary vein isolation (PVI) to PVI + PW isolation.

Study	Posterior Wall Strategy	Follow-Up Time	Population Evaluated for Reconnection	Reconnection Rates in PW Ablation Group
Bai et al. 2016	Debulking with RF	3-months	All patients	37.5% <sup>1</sup>
Lee et al. 2015	Linear ablation with RF	16.2 ± 8.8 months	Recurrent patients	50%
Tamborero et al. 2009	Linear ablation with RF	9.8 ± 4.3 months	Recurrent patients	67%
Tokioka et al. 2020	Linear ablation with RF	1–6 months	Recurrent patients	65.2%

<sup>1</sup> Includes pulmonary vein and PW reconnections; PVI: pulmonary vein isolation; PW: posterior wall; RF: radiofrequency.

“Evidence of endocardial–epicardial dissociation in atrial fibrillation may also limit the effectiveness of endocardial posterior wall isolation, especially when considered in the context of suboptimal transmural. Endocardial–epicardial dissociation, as evidenced by asynchronous activation of the epicardial and endocardial surfaces, was initially demonstrated in animal [50] and computational models [51]. More recently, real-time mapping has shown there may be up to 50–55% asynchronous activation between the epicardial and endocardial surfaces in patients with AF”

## Original Investigation

January 10, 2023

# Effect of Catheter Ablation Using Pulmonary Vein Isolation With vs Without Posterior Left Atrial Wall Isolation on Atrial Arrhythmia Recurrence in Patients With Persistent Atrial Fibrillation

## The CAPLA Randomized Clinical Trial

Mean procedural times (142 [SD, 69] vs 121 [SD, 57] minutes,  $P < .001$ ) and ablation times (34 [SD, 21] vs 28 [SD, 12] minutes,  $P < .001$ ) were **significantly shorter for PVI alone**. There were **6 complications for PVI with PWI and 4 for PVI alone**

**Question** Does adding posterior wall isolation (PWI) to pulmonary vein isolation (PVI) improve success in patients with persistent atrial fibrillation (AF) undergoing first-time catheter ablation?

**Findings** In this randomized clinical trial that included 338 patients with persistent AF, there was no significant difference in 12-month freedom from recurrent atrial arrhythmia after a single procedure and without antiarrhythmic medication among those with PVI and PWI compared with PVI alone (52.4% vs 53.6%, respectively; hazard ratio, 0.99).

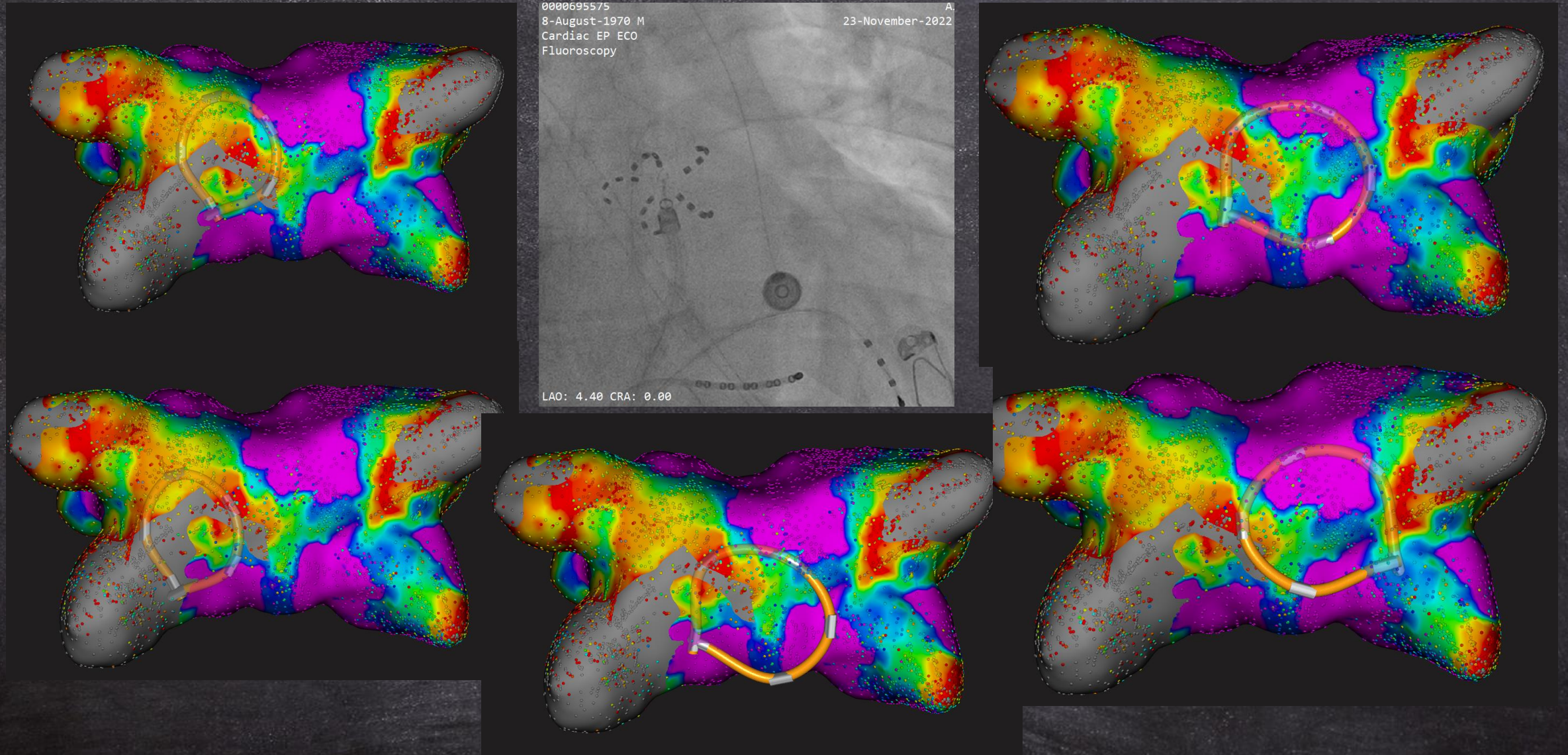
**Meaning** Among patients with persistent AF undergoing first-time catheter ablation, the addition of PWI to PVI did not improve freedom from atrial arrhythmias compared with PVI alone.

**Results** Among 338 patients randomized (median age, 65.6 [IQR, 13.1] years; 76.9% men), 330 (97.6%) completed the study. After 12 months, 89 patients (52.4%) assigned to PVI with PWI were free from recurrent atrial arrhythmia without antiarrhythmic medication after a single procedure, compared with 91 (53.6%) assigned to PVI alone (between-group difference, -1.2%; hazard ratio [HR], 0.99 [95% CI, 0.73-1.36];  $P = .98$ ). Of the secondary end points, 9 showed no significant difference, including freedom

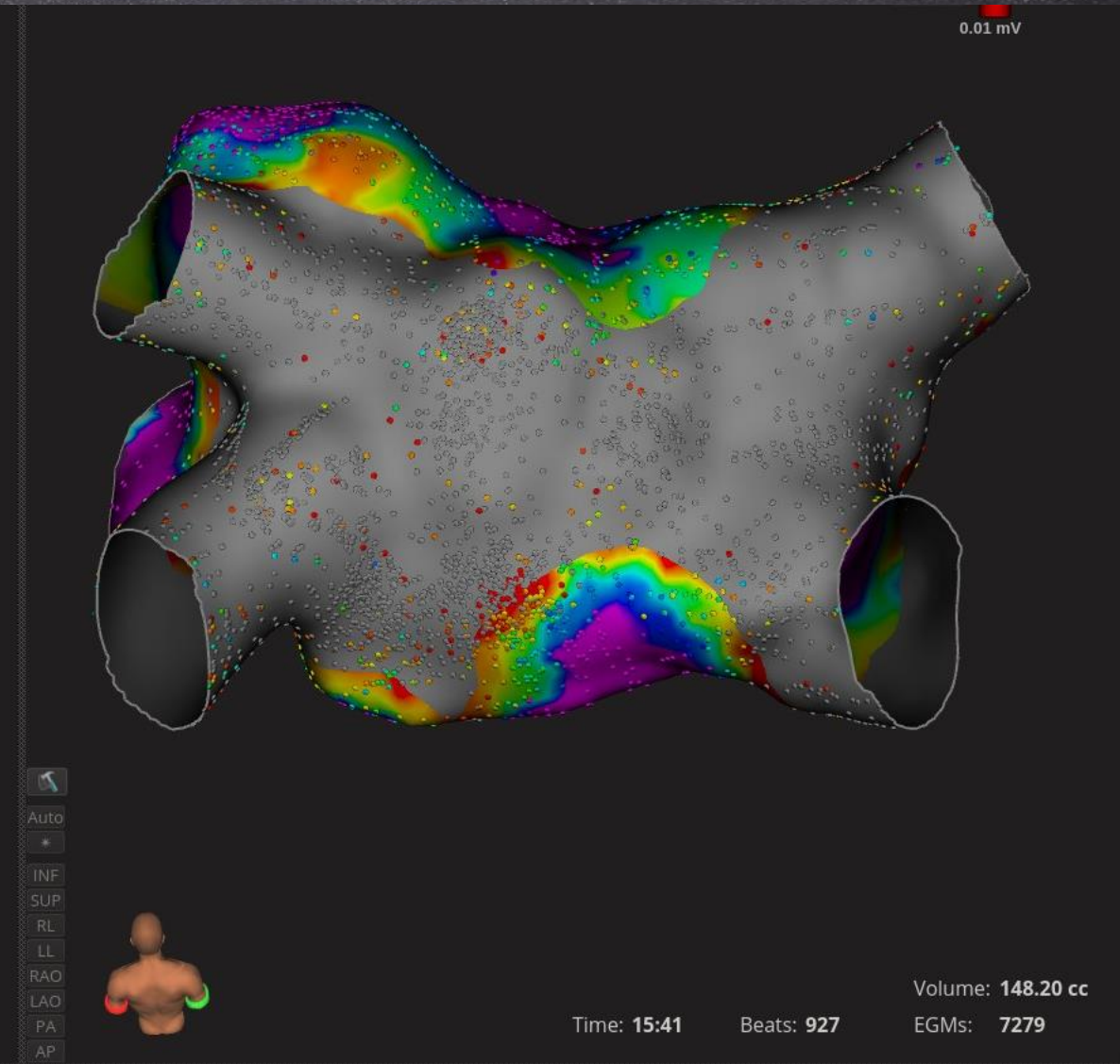
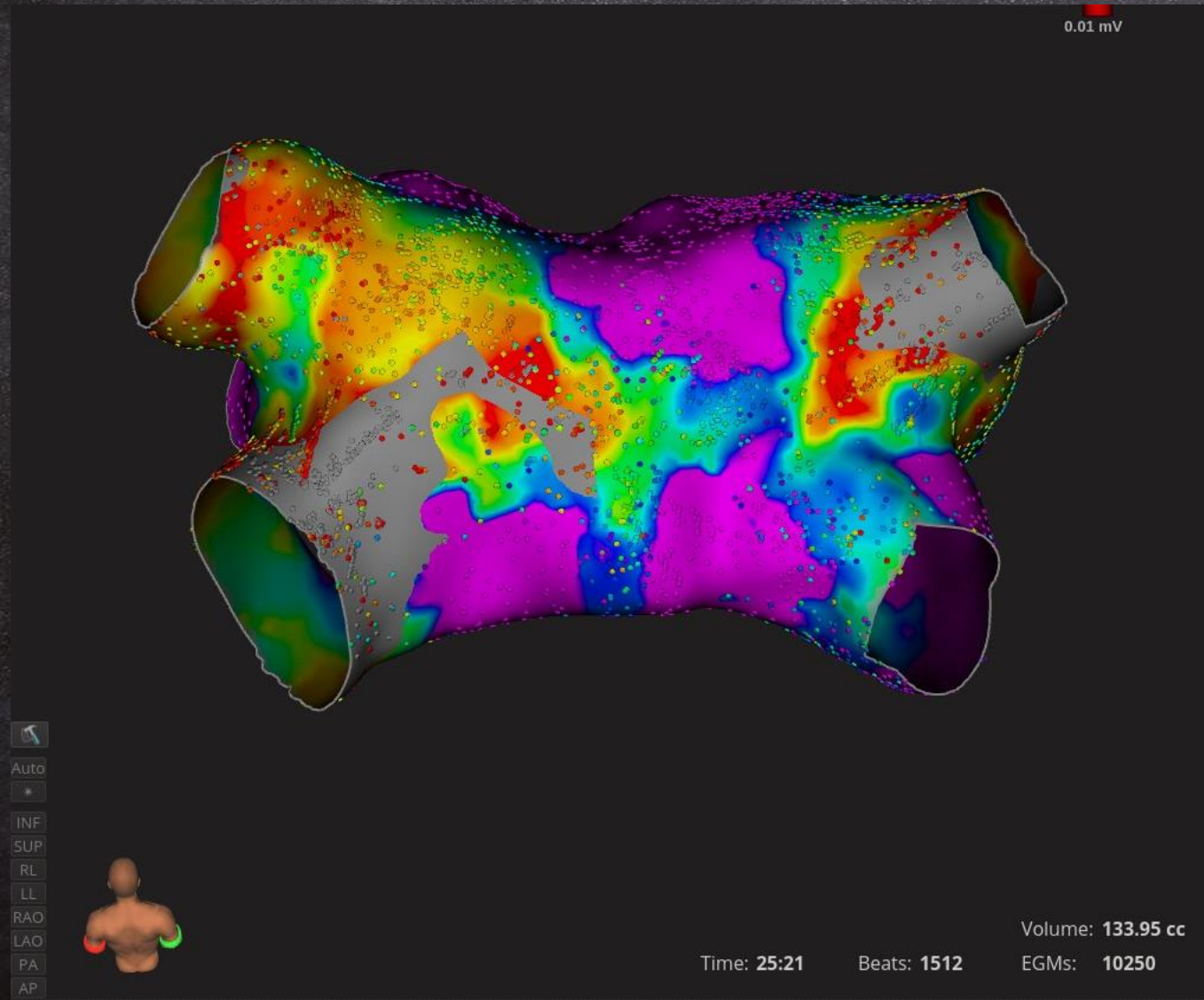
CAPLA reminds *all* clinicians that before accepting new approaches, especially more aggressive ones, testing in adequately powered, well-conducted randomized trials ought to be required. This trial strengthens my belief that the greatest advance in all of medicine has been the discovery of the randomized trial.

(comments by [John Mandrola](#), Louisville, Kentucky)

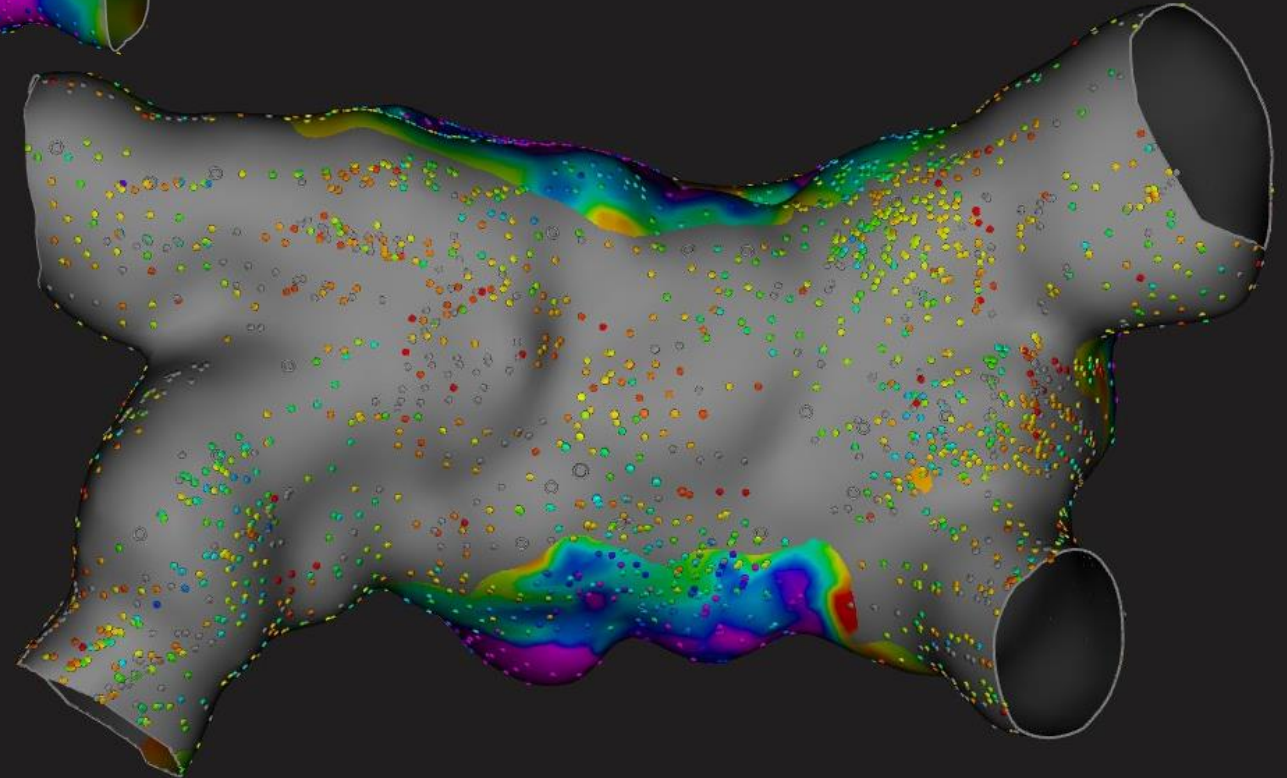
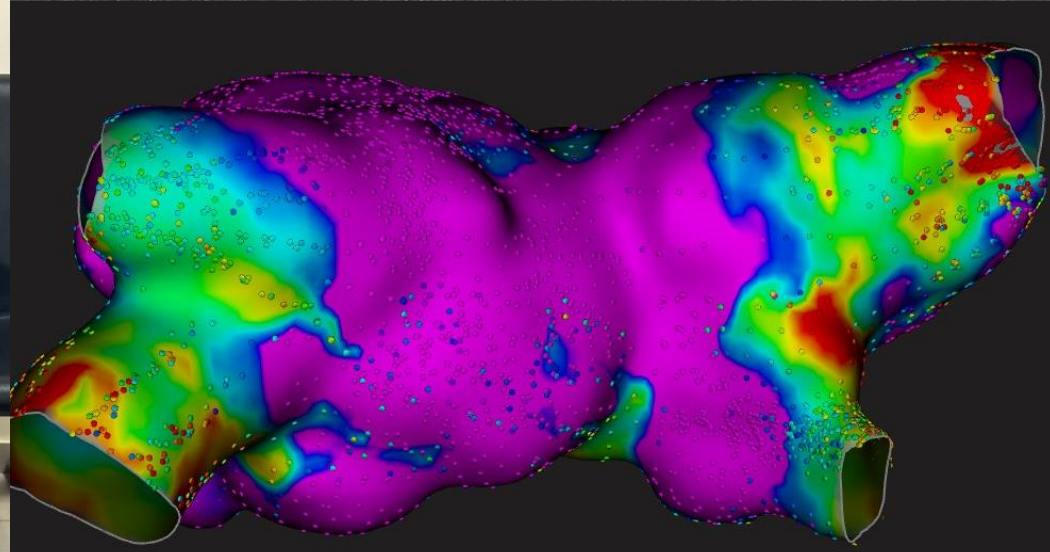
Ασθενής 52 ετών, απουσία οργανικής καρδιοπάθειας, συχνά επεισόδια ρυθμικής ταχυκαρδίας τελευταίο 6μηνο  
AF ablation 2016 (cryo – άλλο κέντρο) - AF ablation 2019 (RF Rhythmia – Ερρίκος Ντυνάν)



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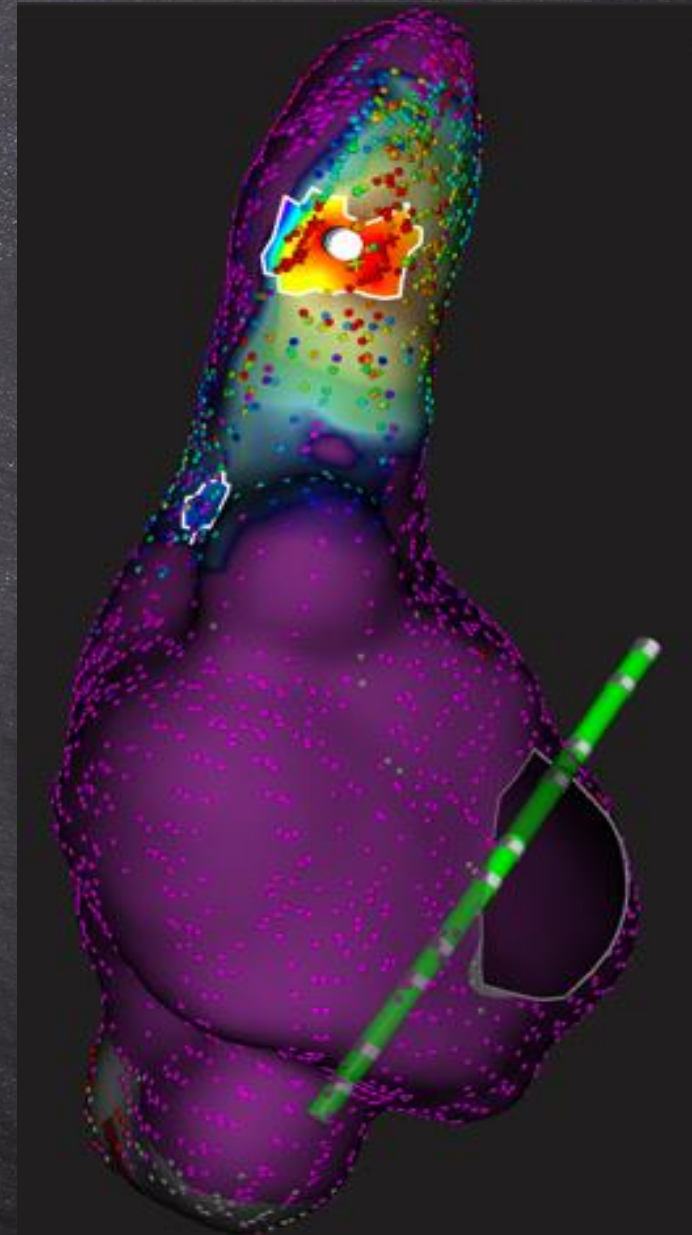
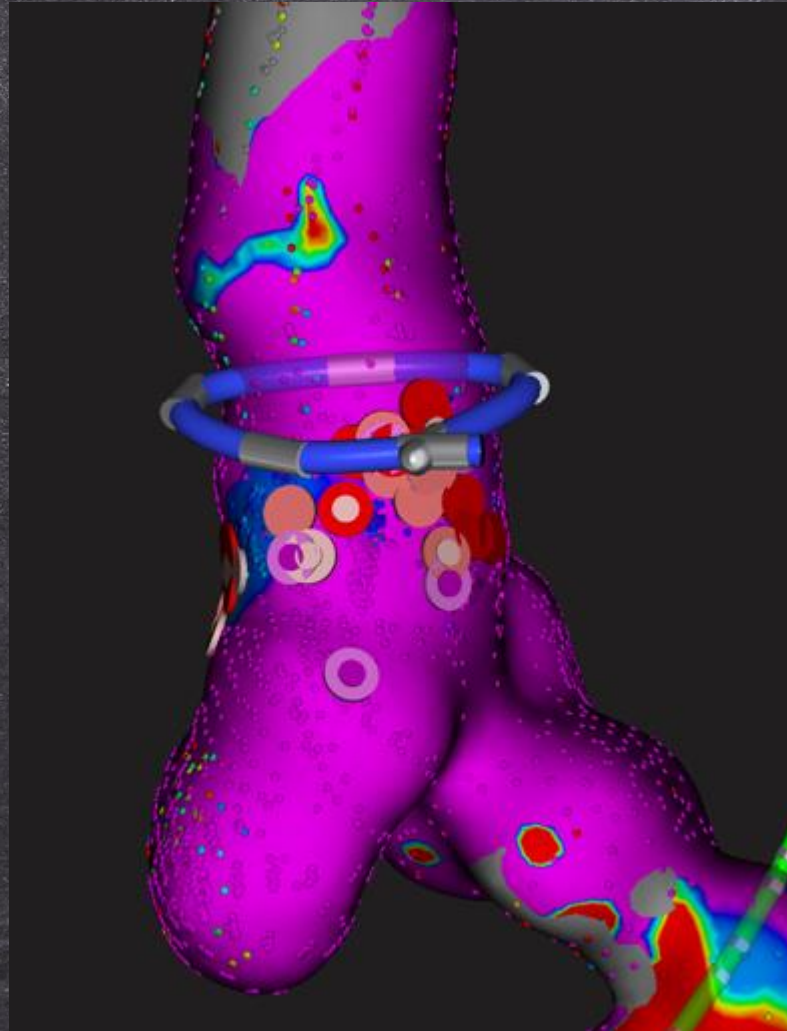


# Posterior Wall Isolation – NOW FEASIBLE




Ερρίκος Ντυνάν Hospital Center,  
Σεπτέμβριος 2023

Ασθενής 40 ετών με συχνές κρίσεις NQRS ταχυκαρδίας που είχε χαρακτηριστεί «απρόσφορη φλεβοκομβική ταχυκαρδία κατά τη διάρκεια των πολλών νοσηλείών της

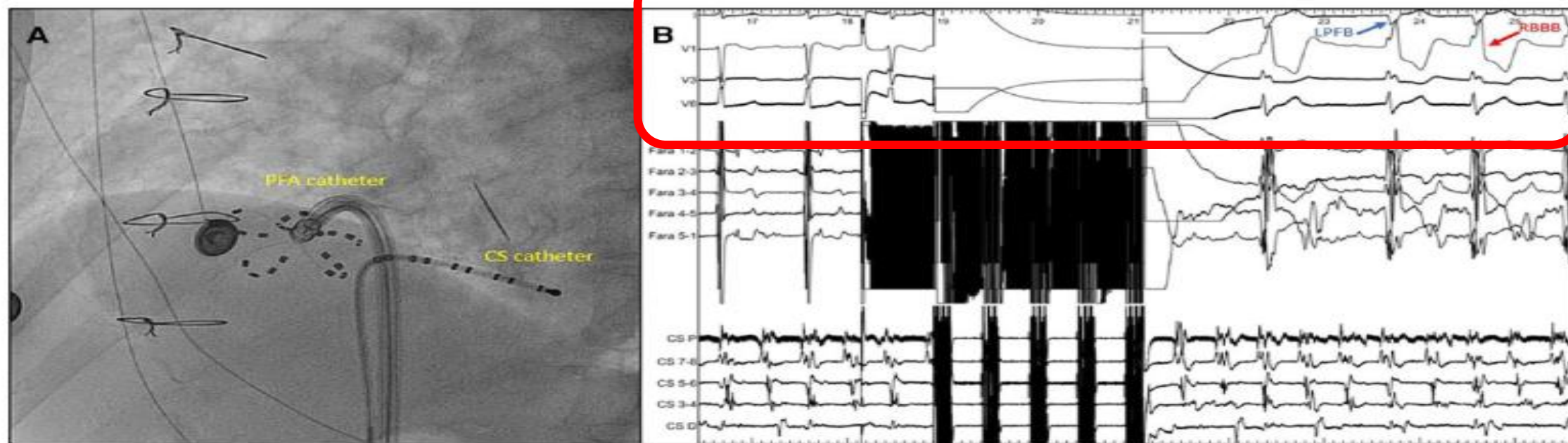


# Transient conduction disturbances acutely after pulsed-field cavotricuspid isthmus ablation: a case report

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**Figure 2** (A) After administration of 2 mg of intravenous nitroglycerine, a single pulsed-field application (with a peak voltage of 2.0 kV), in flower configuration, was delivered at the lateral annular portion of the cavotricuspid isthmus. (B) Acute occurrence of RBBB and LPFB without flutter termination. CS, coronary sinus; PFA, pulsed-field ablation; RBBB, right bundle branch block; LPFB, left posterior fascicular block.



# Hybrid Ablation Versus Repeated Catheter Ablation in Persistent Atrial Fibrillation: A Randomized Controlled Trial

**Methods:** Forty-one ablation-naive patients with (long-standing)-persAF were randomized to HA (n = 19) or CA (n = 22) and received pulmonary vein isolation, posterior left atrial wall isolation and, if needed, a cavotricuspid isthmus ablation. The primary efficacy endpoint was freedom from any atrial tachyarrhythmia >5 minutes off antiarrhythmic drugs after 12 months. The primary and secondary safety endpoints included major and minor complications and the total number of serious adverse events.

**Results:** After 12 months, the freedom of atrial tachyarrhythmias off antiarrhythmic drugs was higher in the HA group compared with the CA group (89% vs 41%, P = 0.002). There was 1 pericarditis requiring pericardiocentesis and 1 femoral arteriovenous-fistula in the HA group. In the CA arm, 1 bleeding from the femoral artery occurred. There were no deaths, strokes, need for pacemaker implantation, or conversions to sternotomy, and the number of (serious) adverse events was comparable between groups (21% vs 14%, P = 0.685).

**Conclusions:** Hybrid AF ablation is an efficacious and safe procedure and results in better outcomes than catheter ablation for the treatment of patients with persistent AF. (Hybrid Versus Catheter Ablation in Persistent AF [HARTCAP-AF]; NCT02441738).

# Hybrid AF Convergent Procedure Vs Endocardial Catheter Ablation Alone for the Treatment of Drug Refractory Persistent and Longstanding Persistent AF (CONVERGE Trial)

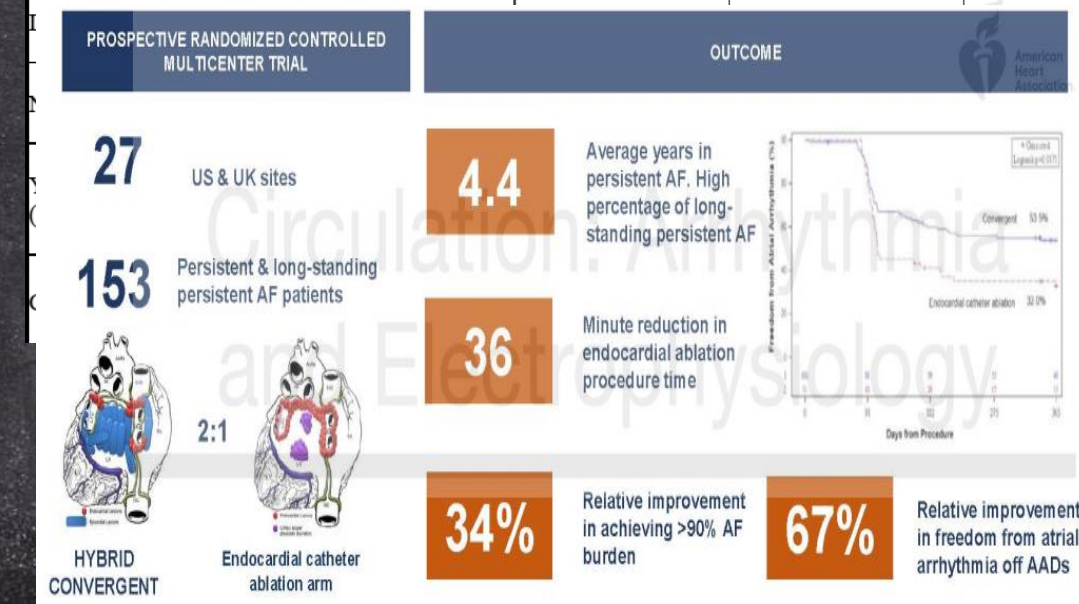
**Table 4:** Freedom from atrial arrhythmia (AF/AFL/AT) from 3-months through 12-months stratified by AAD usage

Parameter	Hybrid Convergent ablation arm	Endocardial catheter ablation arm	Absolute Difference (Risk Ratio)	p-value
Absent Class I/III AADs, % (n)*	53.5% (53/99)	32.0% (16/50)	21.5% (RR = 1.67)	<b>0.0128</b>
Absent Class I/III AADs or Absent new or increased dosage of previously failed AADs, % (n)†	67.7% (67/99)	50.0% (25/50)	17.7% (RR = 1.35)	<b>0.0360</b>
With or without AADs, % (n)	76.8% (76/99)	60.0% (30/50)	16.8% (RR = 1.28)	<b>0.0329</b>

## Primary Safety Events

There were no cardiac perforations, AEFs or deaths. A total of 2.9% (3/102) subjects reported MAE within 7 days post-procedure; one stroke, one excessive bleeding and one excessive bleeding with late pericardial effusion. After day 7 and through 30 days, an additional five (5/102; 4.9%) subjects reported MAEs; three pericardial effusions, one phrenic nerve injury, and one transient ischemic attack. These pre-specified MAEs were not reported in the catheter ablation arm (0% vs 7.8%, Fisher's exact p-value = 0.0525)

Characteristic	Hybrid Convergent Procedure (N = 102)	Endocardial Catheter Ablation (N = 51)	P-value
Age (Mean ± SD)	63.7 ± 9.6	65.1 ± 6.7	NS
Male, n (%)	80 (78%)	27 (53%)	0.0016*
BMI (kg/m <sup>2</sup> ) (Mean ± SD)	32.9 ± 5.9	35.1 ± 7.1	NS
Left atrial diameter (Mean ± SD)	4.4 ± 0.6	4.3 ± 0.6	NS



# CTI PFA ablation

Henry Dunant H

31-October-2022

[REDACTED]  
4-October-1953 F  
Cardiac EP ECO  
EP 7.5 fps

HENRY DUNANT Hospital Center  
AlluraXper  
14-November-2022 10:42:02

LAO: 38.60 CAU: 0.55  
XA  
LittleEndianExplicit  
Images: 1/3  
Series: 20

900 mA 76.56kV  
Zoom: 165%  
WL: 128 WW: 256

[REDACTED]  
4-January-1989 M  
Left Coronary 7.5 fps Low

RAO: 3.70 CRA: 1.40  
XA

JPEGLossless:Non-hierarchical-1stOrderPrediction  
Images: 1/3  
Series: 26

554 mA  
Zoo  
WL: 128

**9<sup>ο</sup>**  
**WORKSHOP**

# Αρρυθμιών & Βηματοδότησης

- Ενδιαφέροντα ηλεκτροκαρδιογραφήματα
- Αντιπαραθέσεις
- Ενδιαφέροντα περιστατικά
- Εξελίξεις στην αντιμετώπιση των αρρυθμιών

**SAVE THE DATE**

**9<sup>ο</sup> Workshop Αρρυθμιών & Βηματοδότησης**

8 – 10 Δεκεμβρίου 2023 | Divani Caravel, Αθήνα

