ΕΤΑΙΡΕΙΑ ΜΕΛΕΤΗΣ ΚΑΙ ΕΡΕΥΝΑΣ ΤΗΣ ΚΑΡΔΙΑΚΗΣ ΑΝΕΠΑΡΚΕΙΑΣ

25ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ

Καρδιακής Ανεπάρκειας

Νεότερα δεδομένα για την κατάλυση της κολπικής μαρμαρυγής στην Προχωρημένη Καρδιακή Ανεπάρκεια

Είμαστε έτοιμοι;

Γιώργος Ανδρικόπουλος, MD, PhD, FESC, FEHRA
Α Καρδιολογική Κλινική/Ηλεκτροφυσιολογίας Βηματοδότησης
«Ερρίκος Ντυνάν» Hospital Center, Αθήνα

Presenter Disclosure Information

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

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

OXI

Intersection of atrial fibrillation and heart failure with mildly reduced and preserved ejection fraction in >400 000 participants in the Get With The Guidelines-Heart Failure Registry

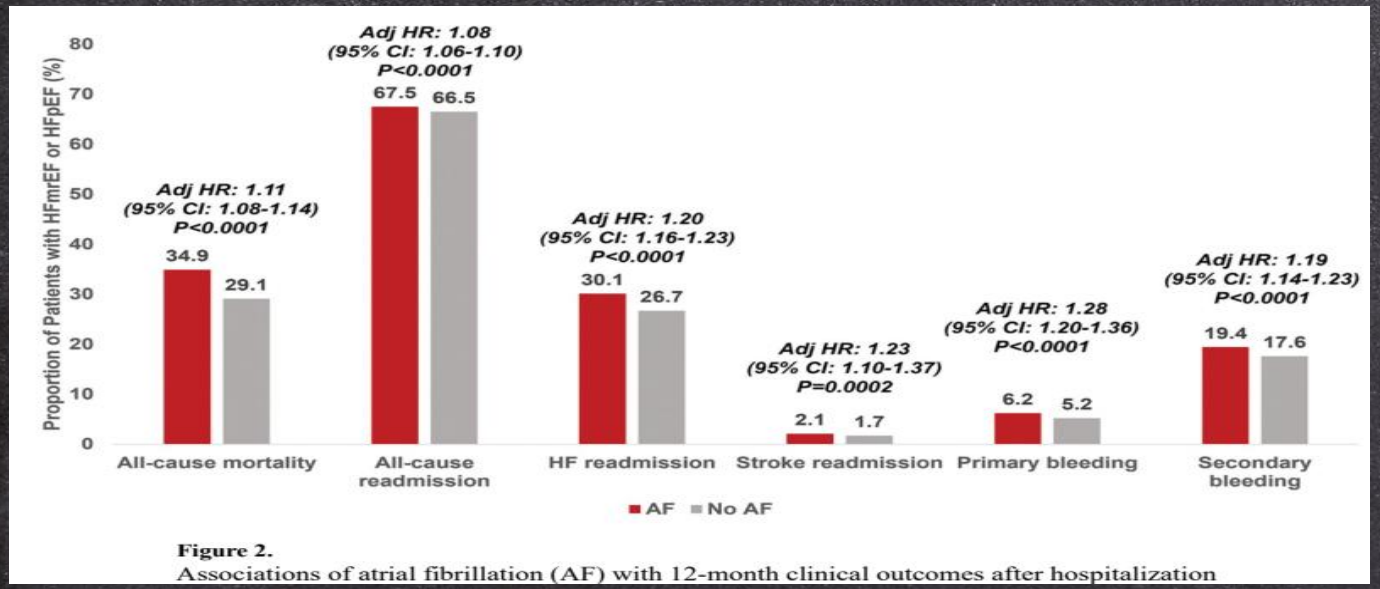


Figure 2.
Associations of atrial fibrillation (AF) with 12-month clinical outcomes after hospitalization

"Anti-arrhythmic drug use after heart failure hospitalization was low (**18%**) and increased modestly over time. Amiodarone accounted for **71%** of total anti-arrhythmic drug prescriptions."

2703 (2.6%) underwent cardioversion and 428 (0.4%) underwent AF ablation during their HF hospitalization.

Patel R., et al. Eur J Heart Fail. 2023 January ; 25(1): 63–73

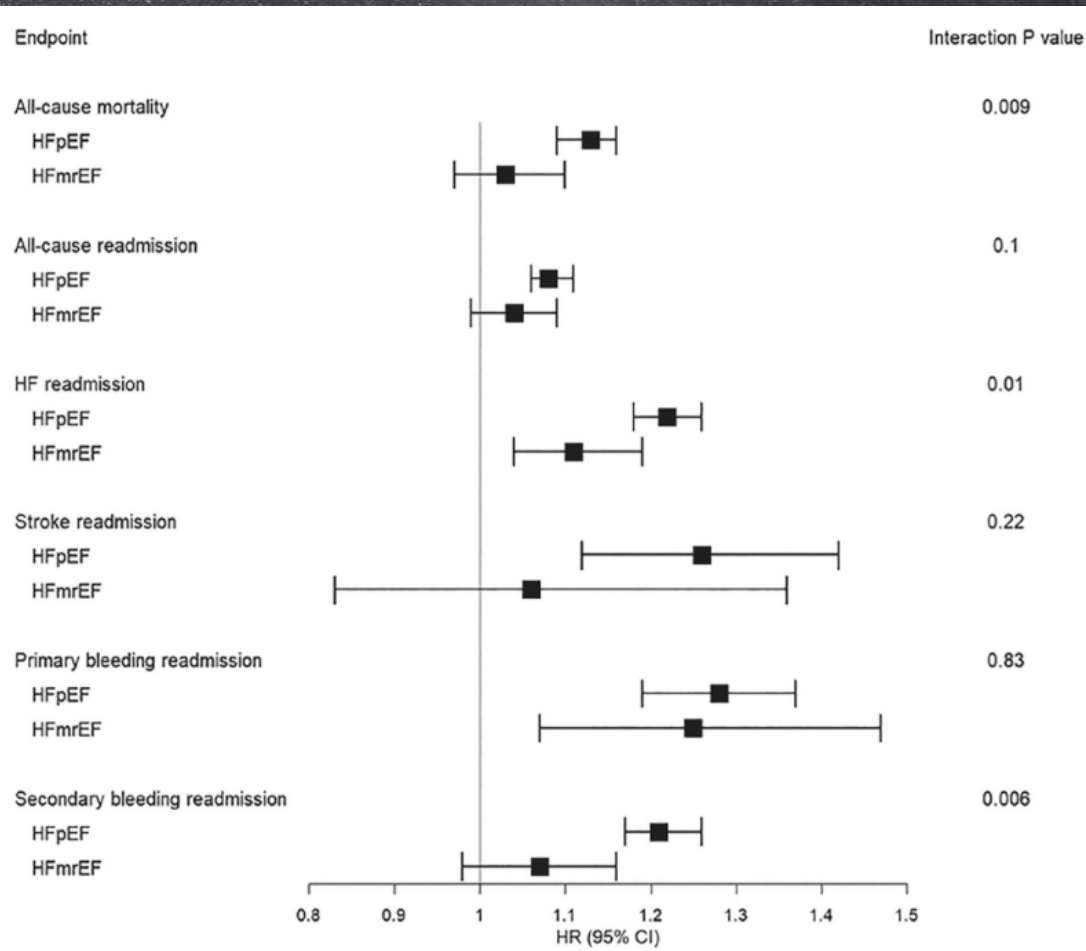
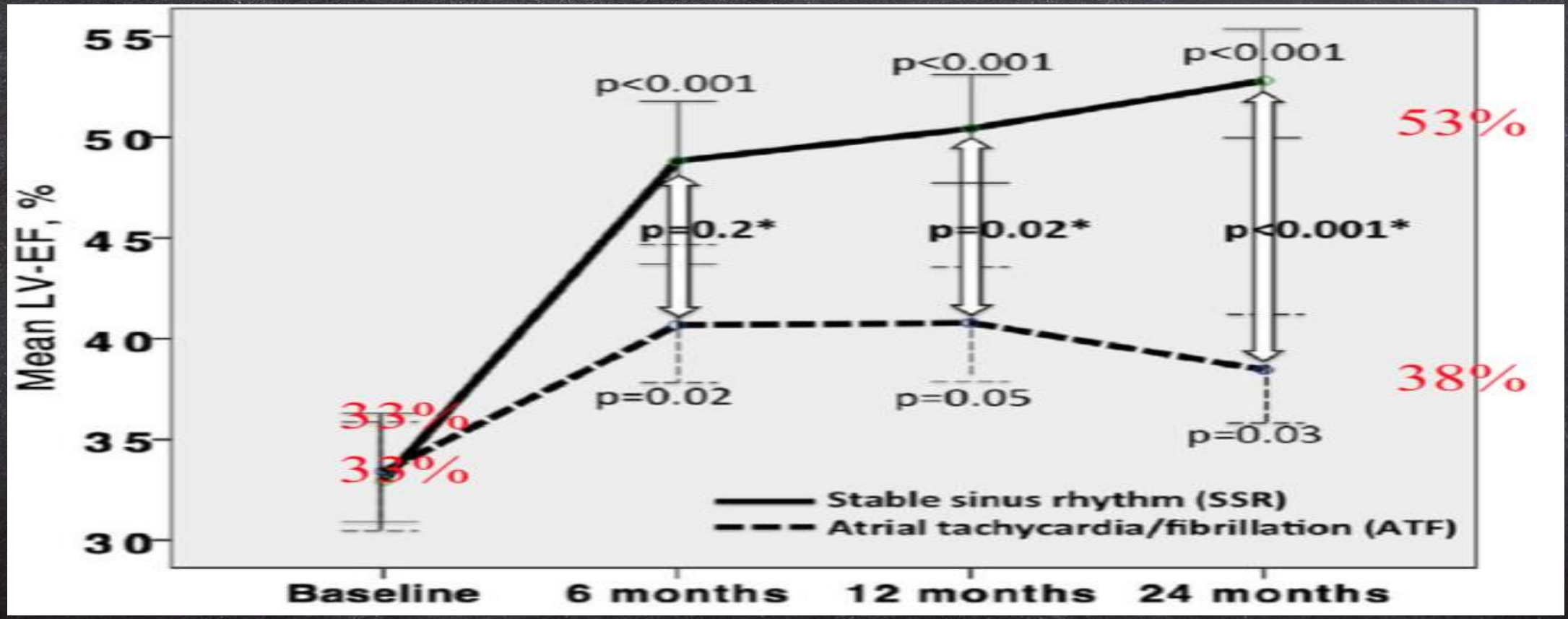


Figure 3.
Associations of atrial fibrillation with clinical outcomes by heart failure (HF) subtype. CI, confidence interval; HFmrEF, heart failure with mildly reduced ejection fraction; HFpEF, heart failure with preserved ejection fraction; HR, hazard ratio.

Η ΚΟΛΠΙΚΗ ΜΑΡΜΑΡΥΓΗ ΕΙΝΑΙ ΚΑΘΟΡΙΣΤΙΚΟΣ ΠΑΡΑΓΩΝ ΣΤΗ ΦΥΣΙΚΗ ΠΟΡΕΙΑ ΤΗΣ ΚΑΡΔΙΑΚΗΣ ΑΝΕΠΑΡΚΕΙΑΣ

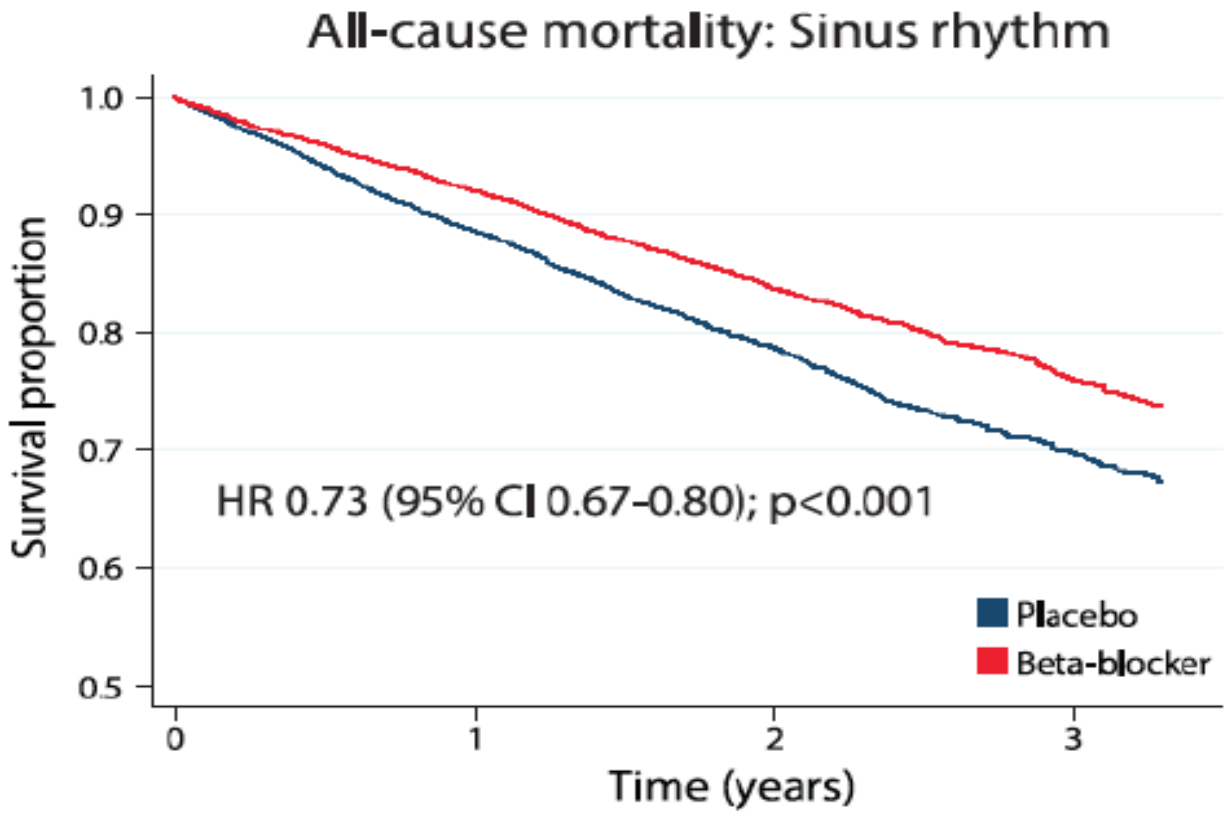
Variable	Group	Baseline	6 mo	12 mo	24 mo	*P*
LVEF (%)	Total	33 ± 6	46 ± 14	47 ± 13	48 ± 13	<.001
	SSR	33 ± 6	49 ± 13	50 ± 12*	53 ± 10*	<.001
	ATF	33 ± 6	41 ± 14	41 ± 12*	38 ± 12*	<.001

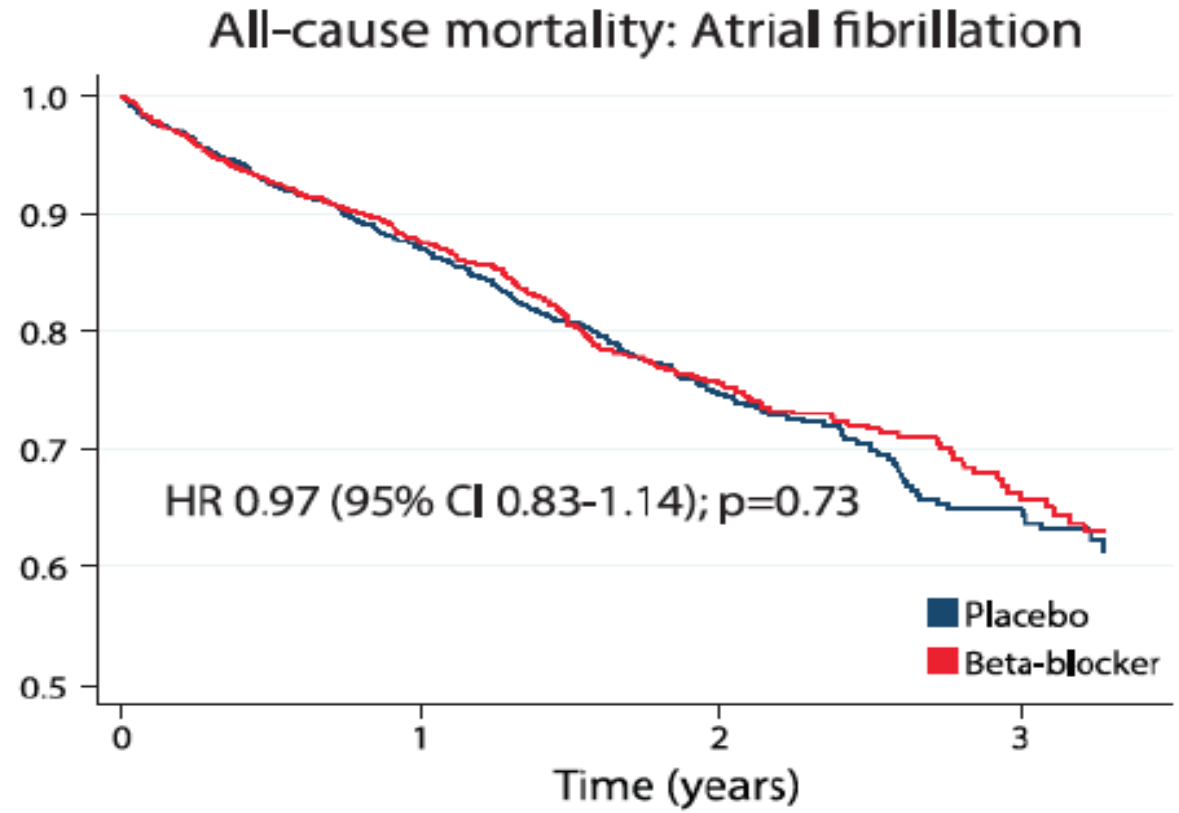


Nedios and Hindricks et al. Heart Rhythm 2014;11:344-351

Efficacy of β blockers in patients with heart failure plus AFib: an individual-patient data meta-analysis

Kotecha et al. Lancet 2014





Number at risk

Beta-blocker	7123	5014	1798	722	1521	997	331	113
Placebo	6819	4604	1530	561	1542	1020	346	115

Digoxin-associated mortality: a systematic review and meta-analysis of the literature

Mate Vamos, Julia W. Erath, and Stefan H. Hohnloser*

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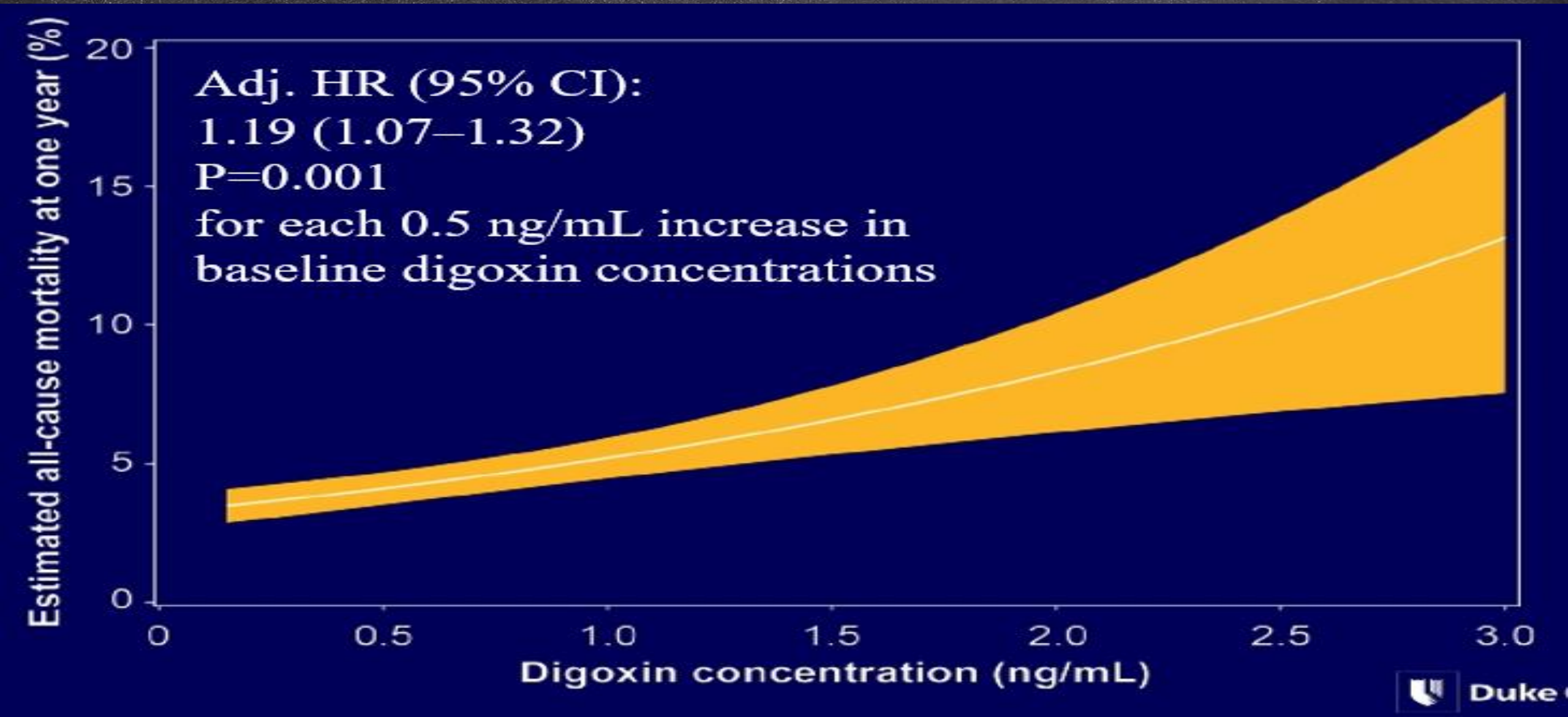
Received 22 January 2015; revised 16 March 2015; accepted 8 April 2015; online publish-ahead-of-print 4 May 2015

There are conflicting data regarding the effect of digoxin use on mortality in patients with atrial fibrillation (AF) or with congestive heart failure (CHF). The aim of this meta-analysis was to provide detailed analysis of the currently available study reports. We performed a MEDLINE and a COCHRANE search (1993–2014) of the English literature dealing with the effects of digoxin on all-cause-mortality in subjects with AF or CHF. Only full-sized articles published in peer-reviewed journals were considered for this meta-analysis. A total of 19 reports were identified. Nine reports dealt with AF patients, seven with patients suffering from CHF, and three with both clinical conditions. Based on the analysis of adjusted mortality results of all 19 studies comprising 326 426 patients, digoxin use was associated with an increased relative risk of all-cause mortality [Hazard ratio (HR) 1.21, 95% confidence interval (CI), 1.07 to 1.38, $P < 0.01$]. Compared with subjects not receiving glycosides, digoxin was associated with a 29% increased mortality risk (HR 1.29; 95% CI, 1.21 to 1.39) in the subgroup of publications comprising 235 047 AF patients. Among 91.379 heart failure patients, digoxin-associated mortality risk increased by 14% (HR 1.14, 95% CI, 1.06 to 1.22). The present systematic review and meta-analysis of all available data sources suggest that digoxin use is associated with an increased mortality risk, particularly among patients suffering from AF.

Clinical perspective

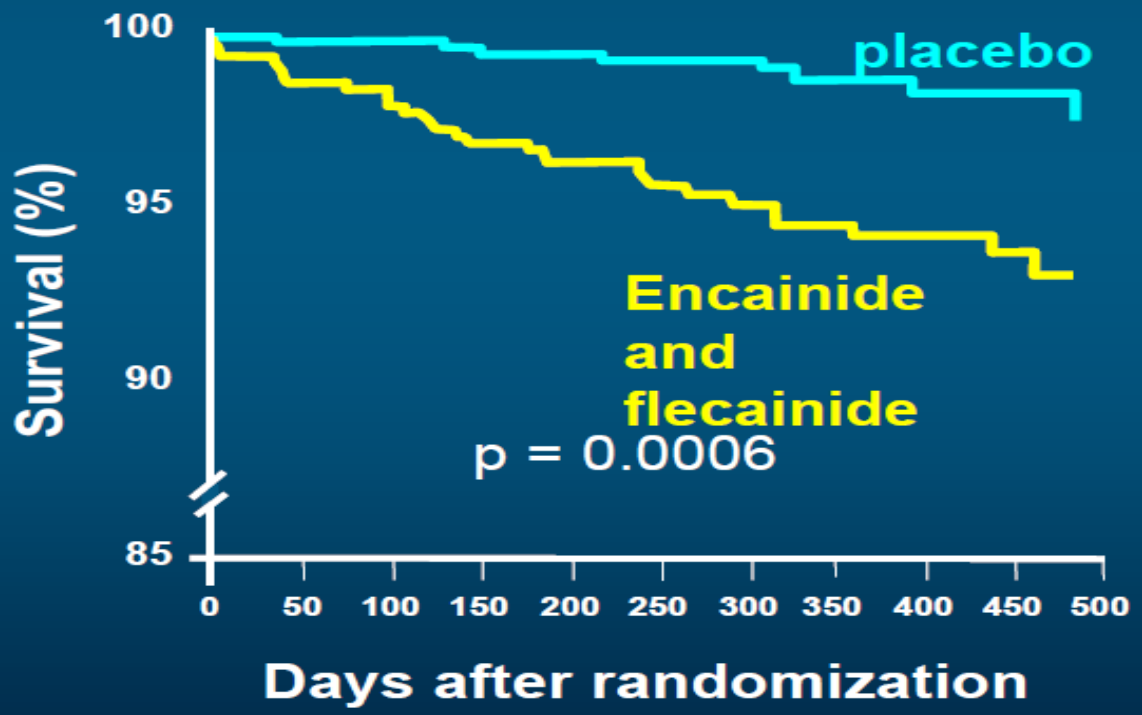
This systematic review and meta-analysis of the current literature indicates that digoxin therapy is associated with increased mortality in patients treated for atrial fibrillation or for heart failure. Our data call for randomized trials of dose-adjusted digoxin therapy in these two clinical entities under contemporary conditions.

Adjusted Mortality by Digoxin Concentration in the ARISTOTLE study



Pro-arrhythmia with Class IC AADs

- Class IC drugs (**encainide/flecainide**) increases mortality from arrhythmia in patients with ischaemic heart disease



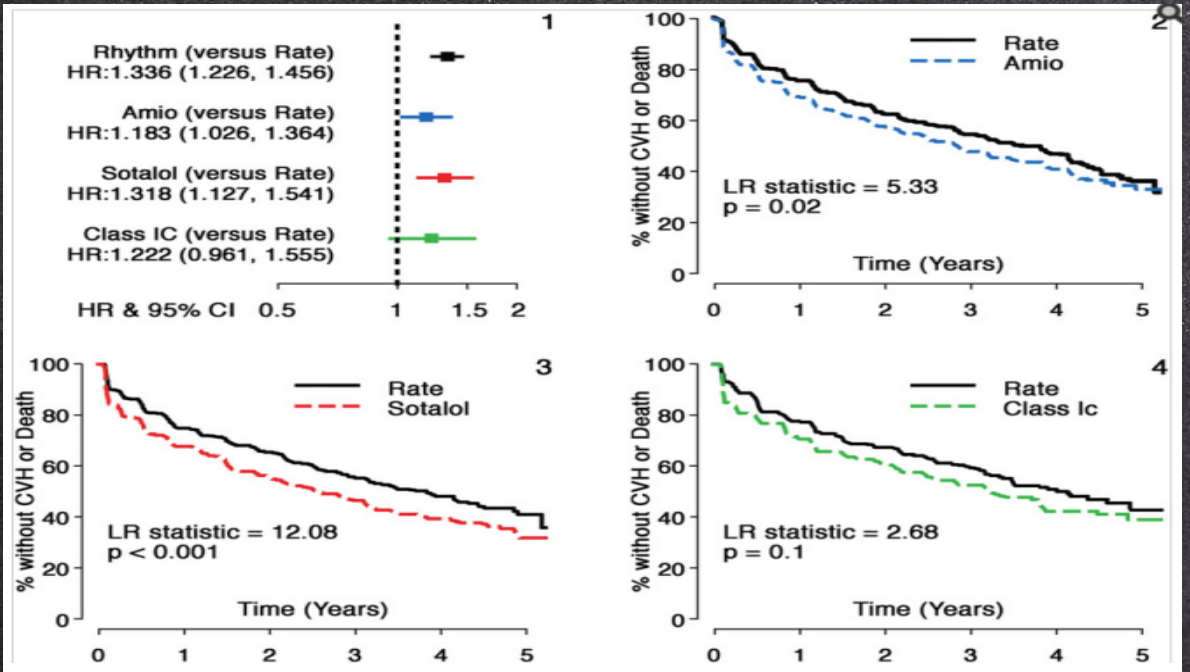
Outcome	Placebo	Active Drug
Death + CA	26	63
Nonfatal MI	33	19
New/ Unstable AP	88	65
All Events	147	147

CAST=Cardiac Arrhythmia Suppression Trial

CAST Investigators. N Engl J Med 1989; 321: 406–12

Greenberg HM, Br Heart J. 1995;74:631-5

Cardiovascular Outcomes in the AFFIRM Trial: An Assessment of Individual Antiarrhythmic Drug Therapies compared to Rate Control Using Propensity Score Matched Analyses



Comparison of Composite Principal Outcome: Individual Antirarrhythmic Drugs versus Rate

Hazard ratios and Kaplan Meier survival analyses comparing individual antiarrhythmic drugs (AADs) with matched rate cohorts for the composite principal outcome (Time to First CV Hospitalization or Death).

Results—729 amiodarone patients, 606 sotalol patients & 268 class 1C patients were matched. The composite outcome of mortality or CV hospitalizations (CVH) showed better outcomes with Rate compared to amiodarone (Hazard Ratio [HR] 1.18, 95% confidence intervals {CI}:1.03–1.36, p=0.02), sotalol (HR=1.32, CI: 1.13–1.54, p<0.001) and class 1C (HR=1.22, CI: 0.97–1.56, p=0.10). There was a non-significant increase in mortality with amiodarone (HR=1.20, CI: 0.94–1.53, p=0.15) with the risk of non-CV death, being significantly higher with amiodarone versus Rate. (HR=1.11, CI: 1.01–1.24, p=0.04). First CVH event rates at 3 years were 47% for amiodarone, 50% for sotalol and 44% for class 1C versus 40%, 40% and 36% respectively for Rate (amiodarone HR=1.20,CI:1.03–1.40,p=0.02, sotalol HR=1.364, CI:1.16–1.611, p<0.001, class 1C HR=1.24,CI:0.96–1.60,p=0.09). Time to CVH with intensive care unit stay (ICUH) or death was shorter with amiodarone (HR=1.22, CI: 1.02–1.46, p=0.03).

- Potential benefit of rhythm control offset by antiarrhythmic drug toxicity

Conclusions—

1. In AFFIRM, composite mortality and CVH outcomes differed for Rate and AADs due to differences in CVH; CVH event rates during follow-up were high for all cohorts, but they were higher for all groups on AADs.
2. Death, ICUH and non-CV death were more frequent with amiodarone.

Saksena S., et al. JACC 2011

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 FEBRUARY 1, 2018 VOL. 378 NO. 5

Catheter Ablation for Atrial Fibrillation with Heart Failure

Nassir F. Marrouche, M.D., Johannes Brachmann, M.D., Dietrich Andresen, M.D., Jürgen Siebels, M.D., Lucas Boersma, M.D., Luc Jordaens, M.D., Béla Merkely, M.D., Evgeny Pokushalov, M.D., Prashanthan Sanders, M.D., Jochen Proff, B.S., Heribert Schunkert, M.D., Hildegard Christ, M.D., Jürgen Vogt, M.D., and Dietmar Bänsch, M.D., for the CASTLE-AF Investigators*

ABSTRACT

BACKGROUND

Mortality and morbidity are higher among patients with atrial fibrillation and heart failure than among those with heart failure alone. Catheter ablation for atrial fibrillation has been proposed as a means of improving outcomes among patients with heart failure who are otherwise receiving appropriate treatment.

From the Comprehensive Arrhythmia Research and Management Center, Division of Cardiovascular Medicine, School of Medicine, University of Utah Health, Salt Lake City (N.F.M.); Klinikum Coburg, Coburg (J.B.), Kardiologie an den Ev. Elisa-

The NEW ENGLAND JOURNAL of MEDICINE

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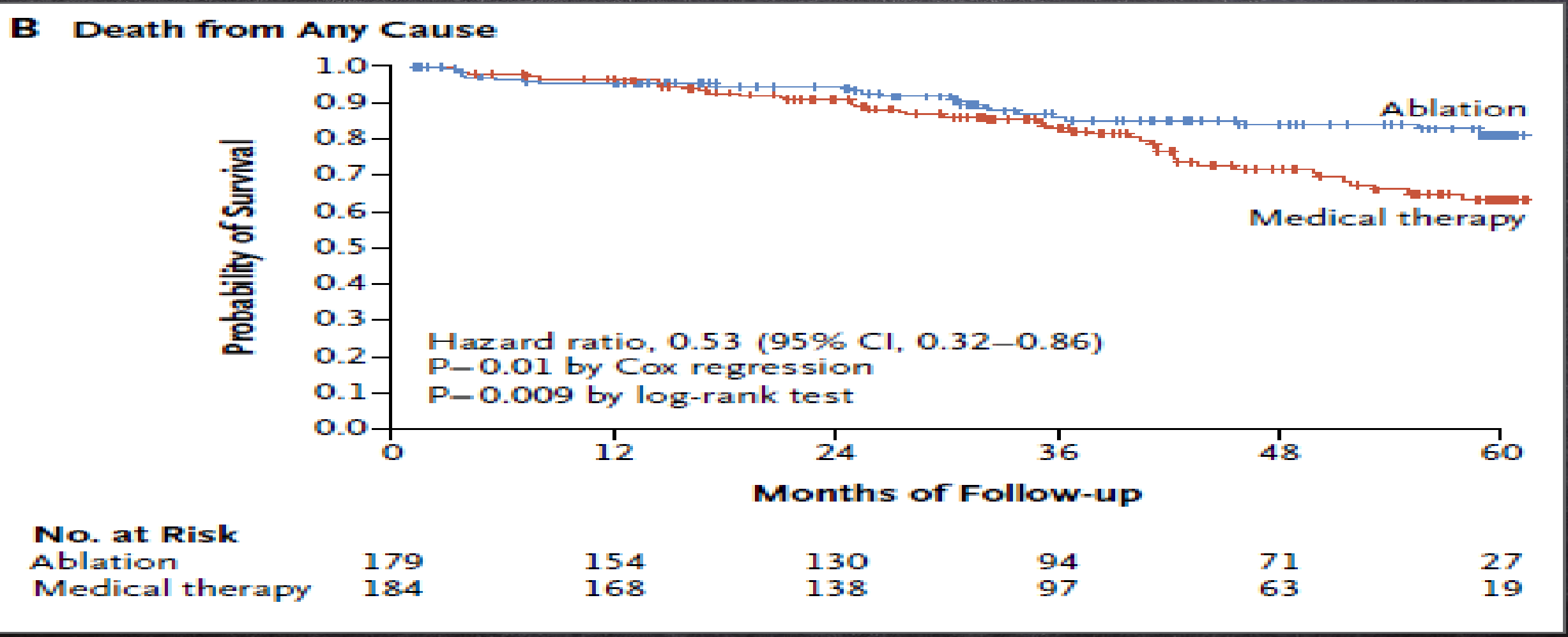


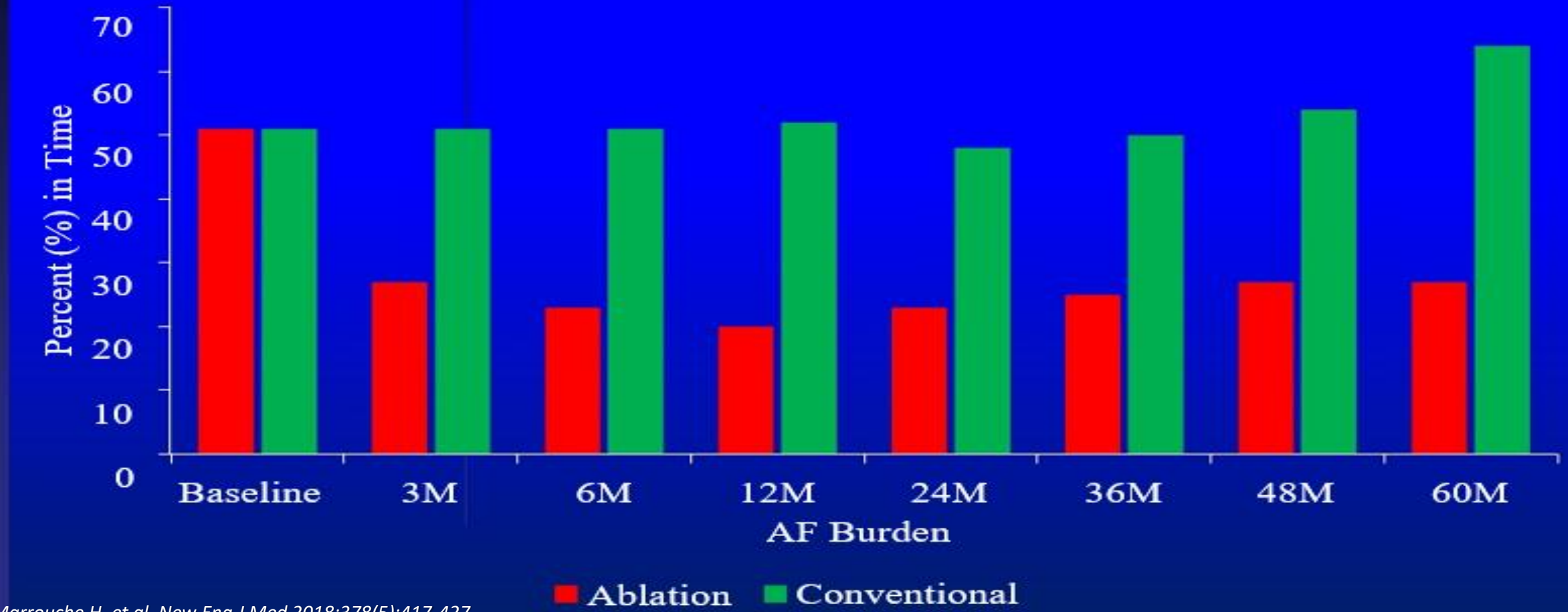
Marrouche H, et al. New Eng J Med 2018:378(5);417-427

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 FEBRUARY 1, 2018 VOL. 378 NO. 5

Catheter Ablation for Atrial Fibrillation with Heart Failure

AF Burden Derived from Memory of Implanted Devices



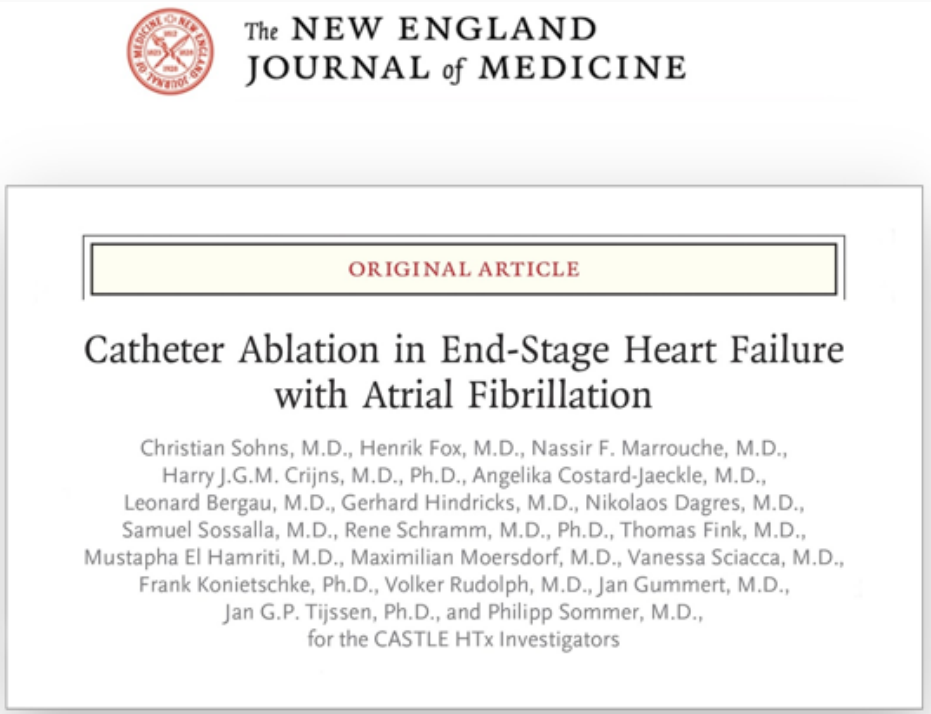
Marrouche H, et al. New Eng J Med 2018:378(5);417-427

CASTLE-HTx

Catheter Ablation versus Medical Therapy to Treat Atrial Fibrillation in End-stage Heart Failure

Christian Sohns, Maximilian Mörsdorf, Harry Crijns,
Jan Tijssen and Philipp Sommer; for the CASTLE-HTx I

Amsterdam, August 27th 2023



Main inclusion & exclusion criteria

Inclusion

- **Symptomatic atrial fibrillation**
- **Potential candidates for HTx**
- **LVEF ≤ 35%**
- **NYHA class ≥ II**
- **Device with telemonitoring**

Exclusion

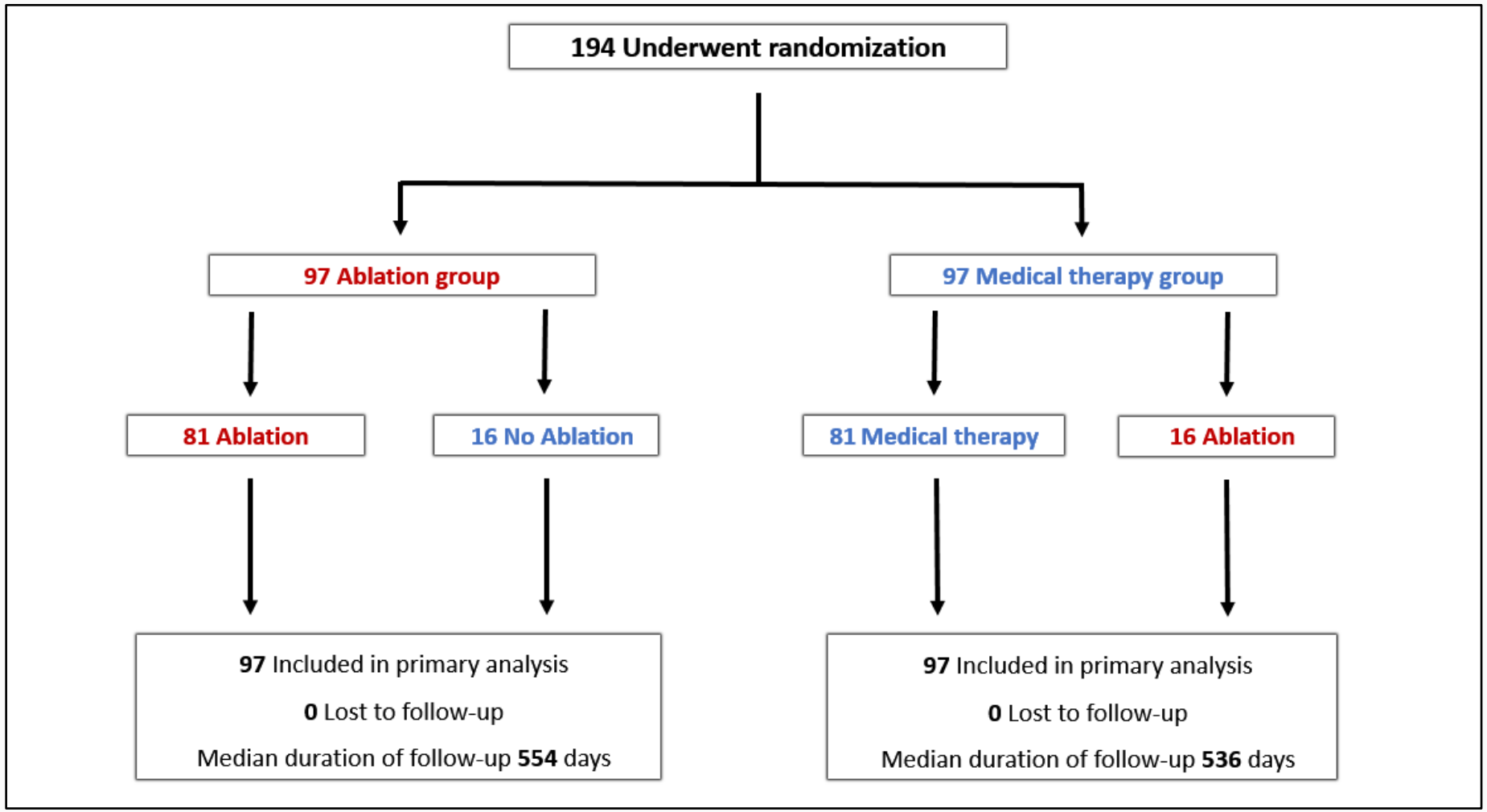
- **LA diameter >6 cm**
- **previous AF ablation**
- **Listed as ‘high urgent’ for HTx**
- **Cardiac assist device implanted**
- **Planend cardiovascular intervention**
- **Life expectancy ≤12 months**
- **Requirement for dialysis due to end-stage renal failure**

Sohns C et al. ESC Heart Failure 2020

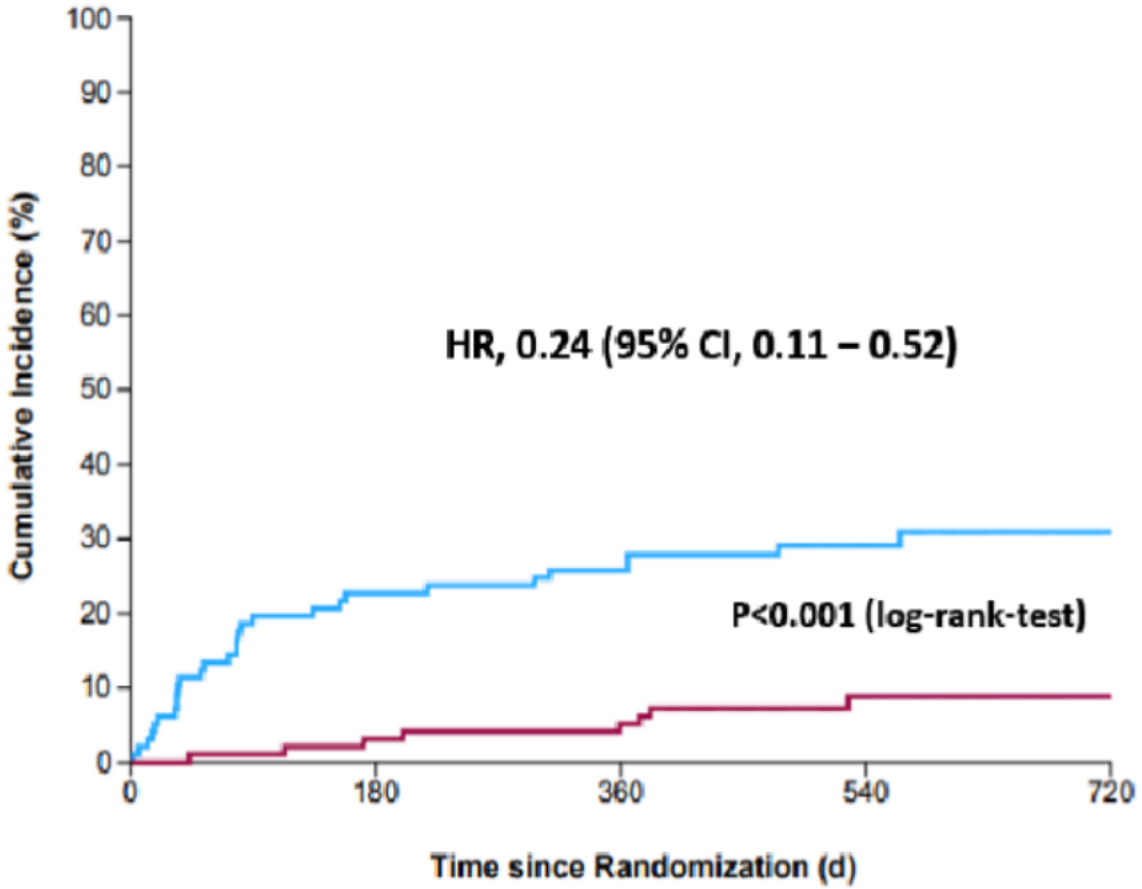
Patient characteristics

	Ablation Group (N=97)	Medical Therapy Group (N=97)
Age [years]	62±12	65±10
Male sex no. (%)	85 (88)	72 (74)
NYHA functional class [no. (%)]		
II	33 (34)	28 (29)
III	52 (54)	54 (56)
IV	12 (12)	15 (15)
Left ventricular ejection fraction (%)	29±6	25±6
Type of atrial fibrillation [no. (%)]		
Paroxysmal	28 (29)	31 (32)
Persistent	69 (71)	66 (68)
Cause of heart failure [no. (%)]		
Ischemic	37 (38)	39 (40)
Non-ischemic	60 (62)	58 (60)
Left atrial diameter (mm)	49±6	48±8
6-min walk test		
Distance (m)	308±69	299±66
Medications [no. (%)]		
Amiodarone	44 (45)	46 (47)
Beta-blocker	93 (96)	91 (94)
Diuretics	71 (73)	76 (78)
ACE inhibitor or ARB	31 (32)	40 (41)
MRA	45 (46)	53 (55)
Sacubitril-valsartan	66 (68)	57 (59)
SGLT2 inhibitor	23 (24)	24 (25)

Treatment

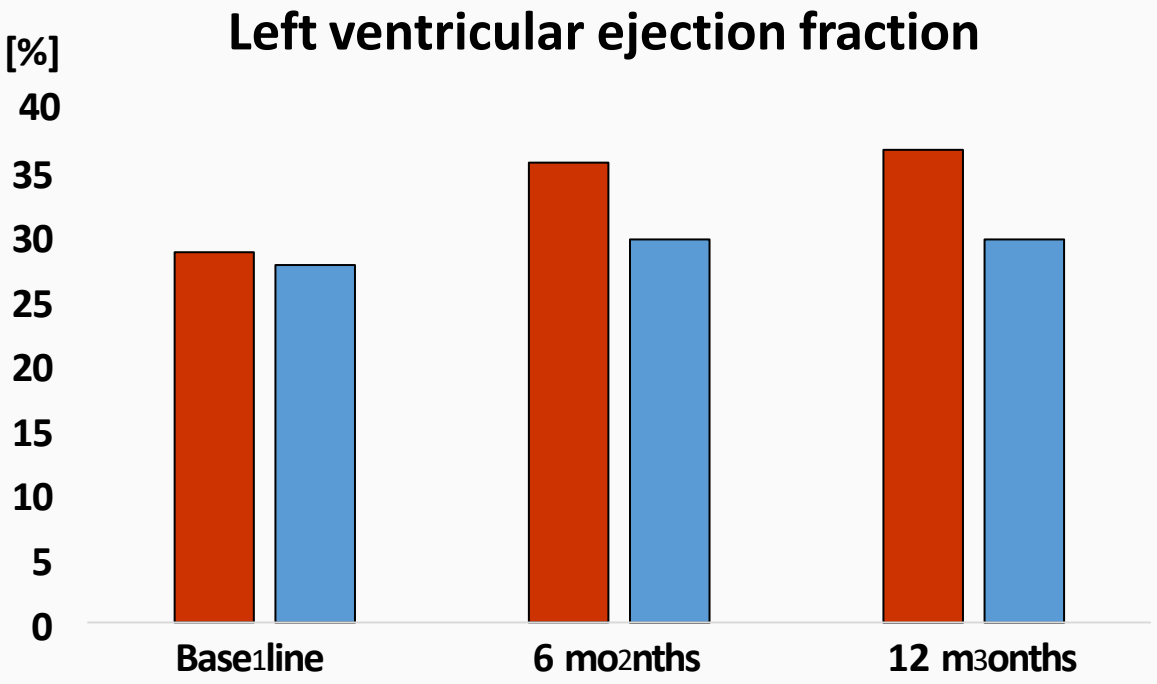

194 Underwent randomization
97 Ablation group
97 Medical therapy group
81 Ablation
16 No Ablation
81 Medical therapy
16 Ablation
97 Included in primary analysis
0 Lost to follow-up
Median duration of follow-up 554 days
97 Included in primary analysis
0 Lost to follow-up
Median duration of follow-up 536 days

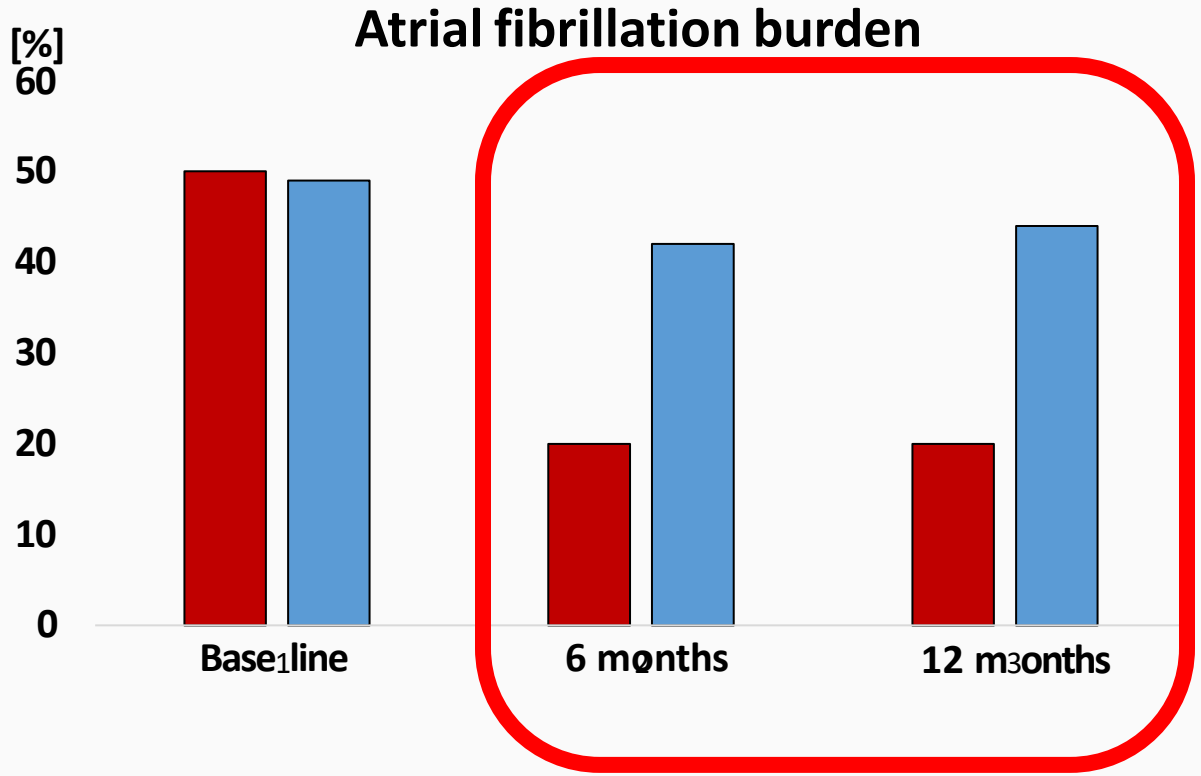
Primary end-point



No. at Risk					
Medical Therapy	97	75	72	41	12
Ablation	97	94	88	50	20

Impact on left ventricular function and AF burden



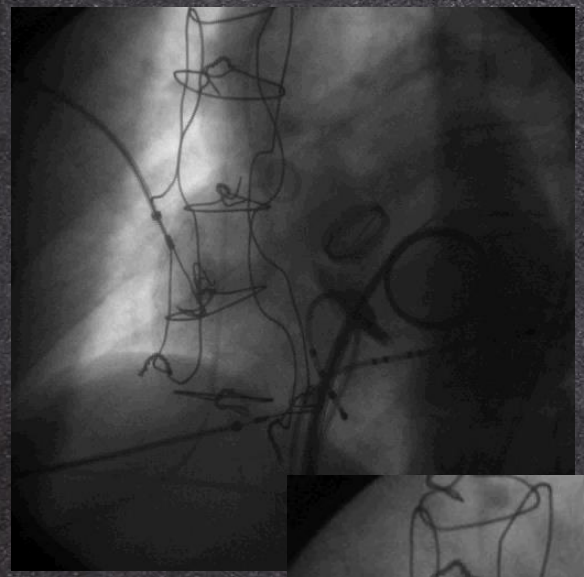


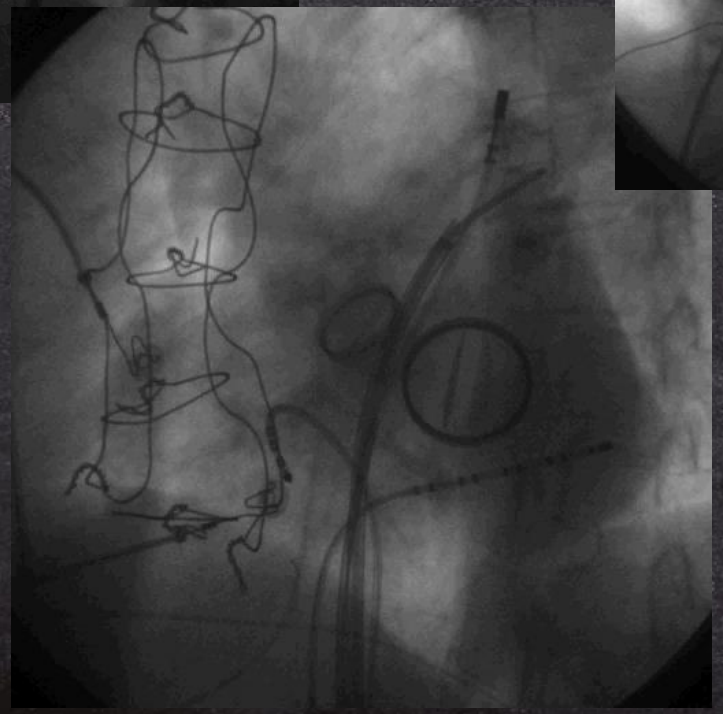
Ablation vs. **Medical therapy**

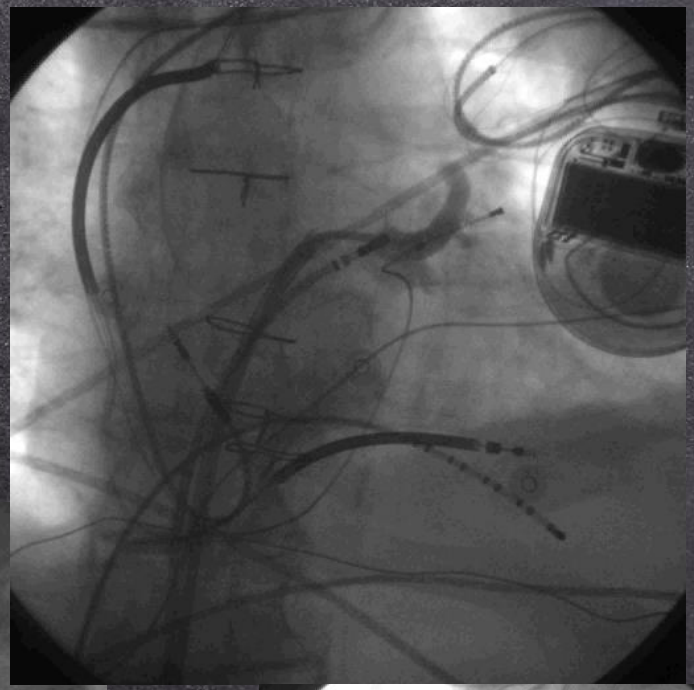
AF Ablation in patients with complex anatomy and uncertain long-term prognosis

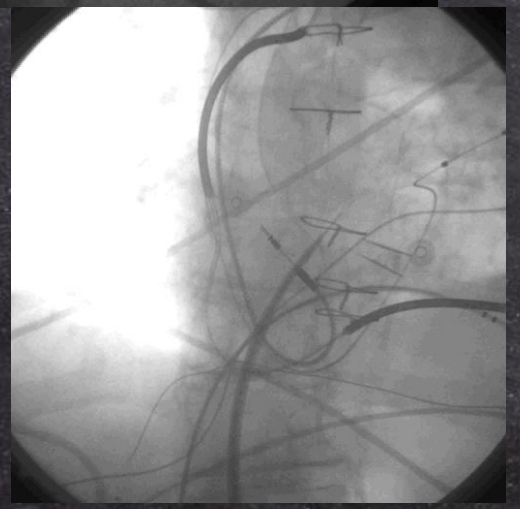
(is ablation a wise choice?)

2 valves+intraoperative ablation









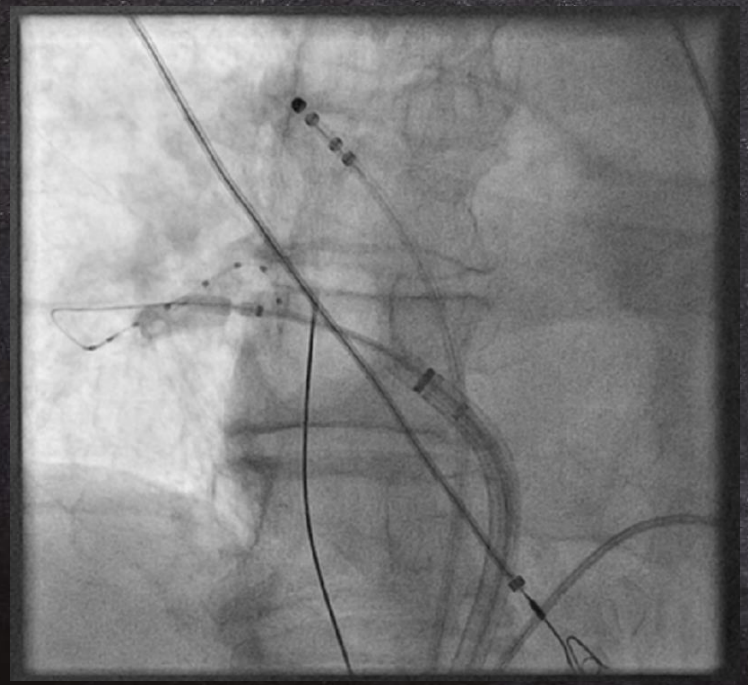
CRTD, LVEF=25%, MVR

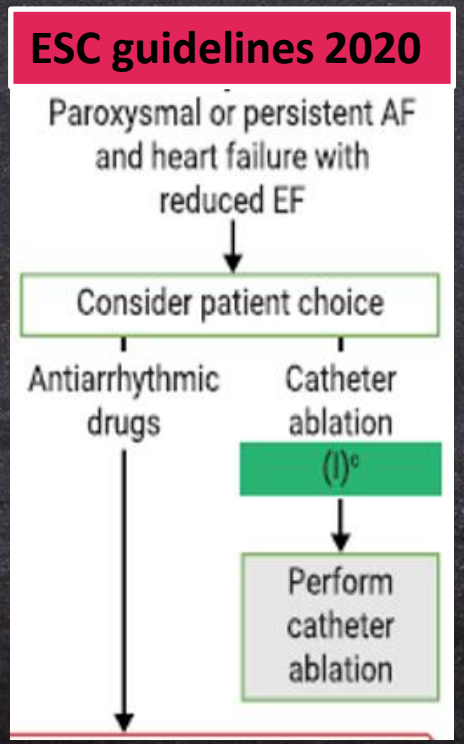
- Ασθενής, Ιατρός,
- ΚΕΑΚ=25%,
- NYHA II-III με SR,
- Σοβαρή επιδείνωση ΚΑ επί ΚΜ,
- ΑΚ=55 mm,
- MR (2-3/4)

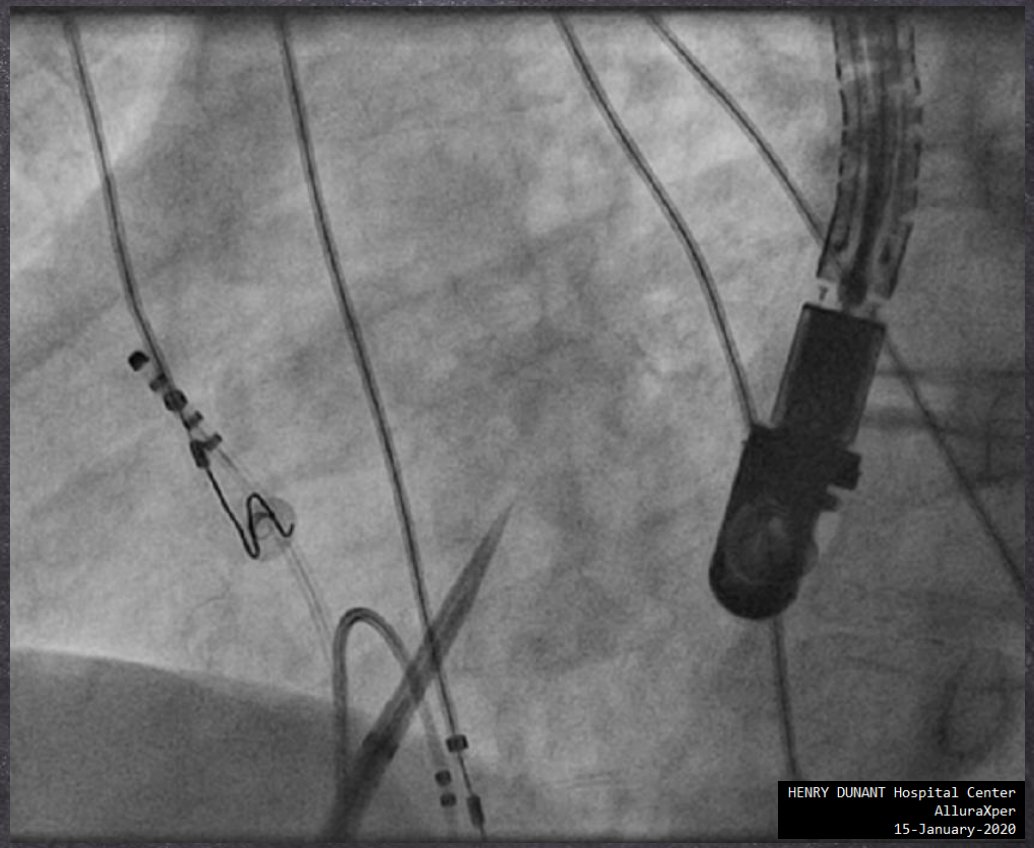
G.Andrikopoulos, Henry Dunant Hospital, 2011

Ασθενής 72 ετών, άντρας, με αγνώστου ενάρξεως κολπική μαρμαρυγή, επιδεινούμενη κλινική συνδρομή καρδιακής ανεπάρκειας (ΚΕΑΚ<20%). Βρίσκεται σε NYHA στάδιο II-III, έχει πολύ καλή νευρομυική συνιστώσα και παρουσιάζει καρδιακή συχνότητα >100 BPM εν ηρεμία και ΣΑΠ=90 mmHg λαμβάνοντας τρυγική μετοπρολόλη 50 mg X 3.

- 72 ετών, άντρας
- Εμμένουσα ΚΜ
- ΚΕΑΚ ≤ 20%
- Πολύ καλή νευρομυική συνιστώσα
- ΣΑΠ=90 mmHg
- Μετοπρολόλη 50 mg X 3

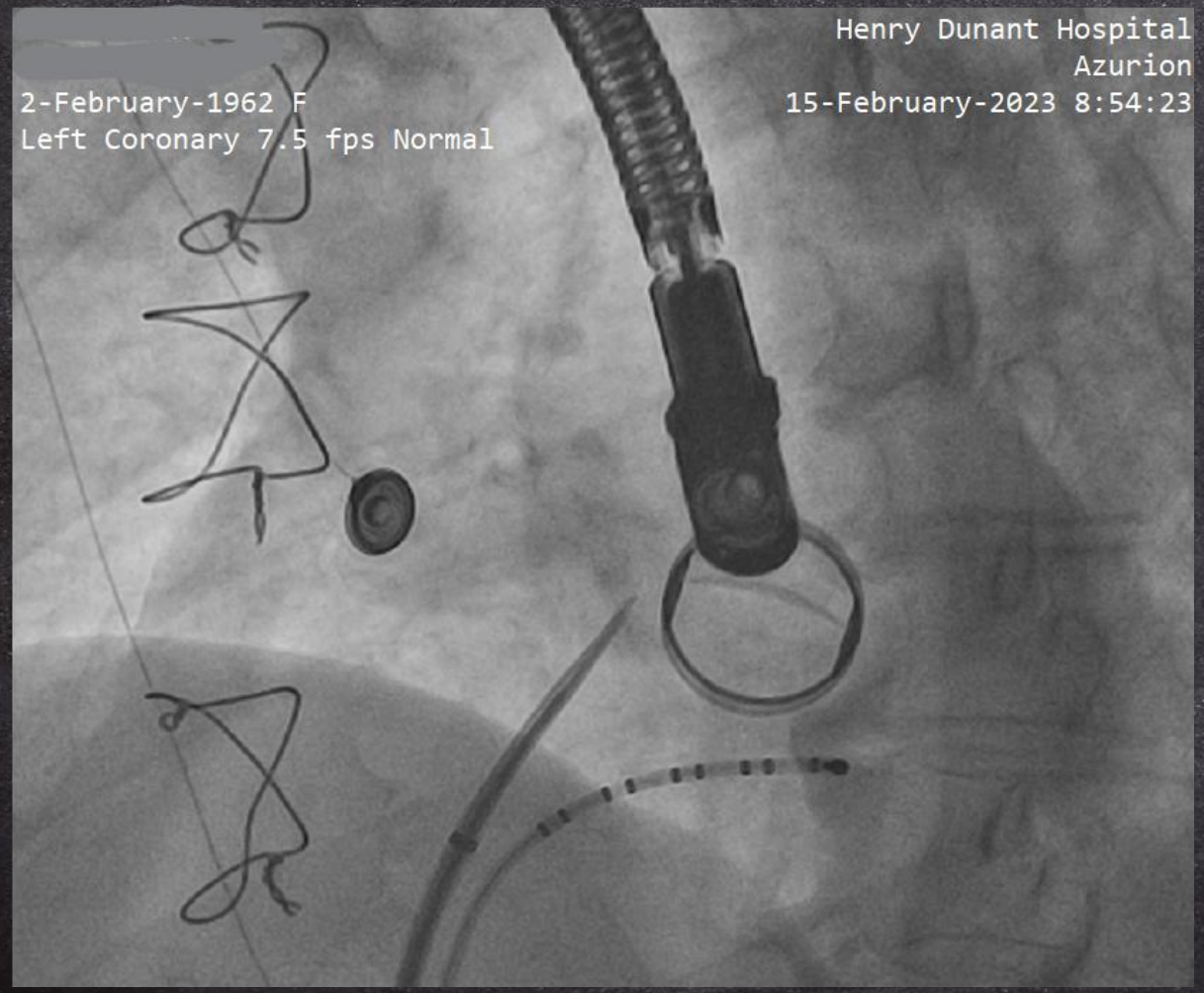


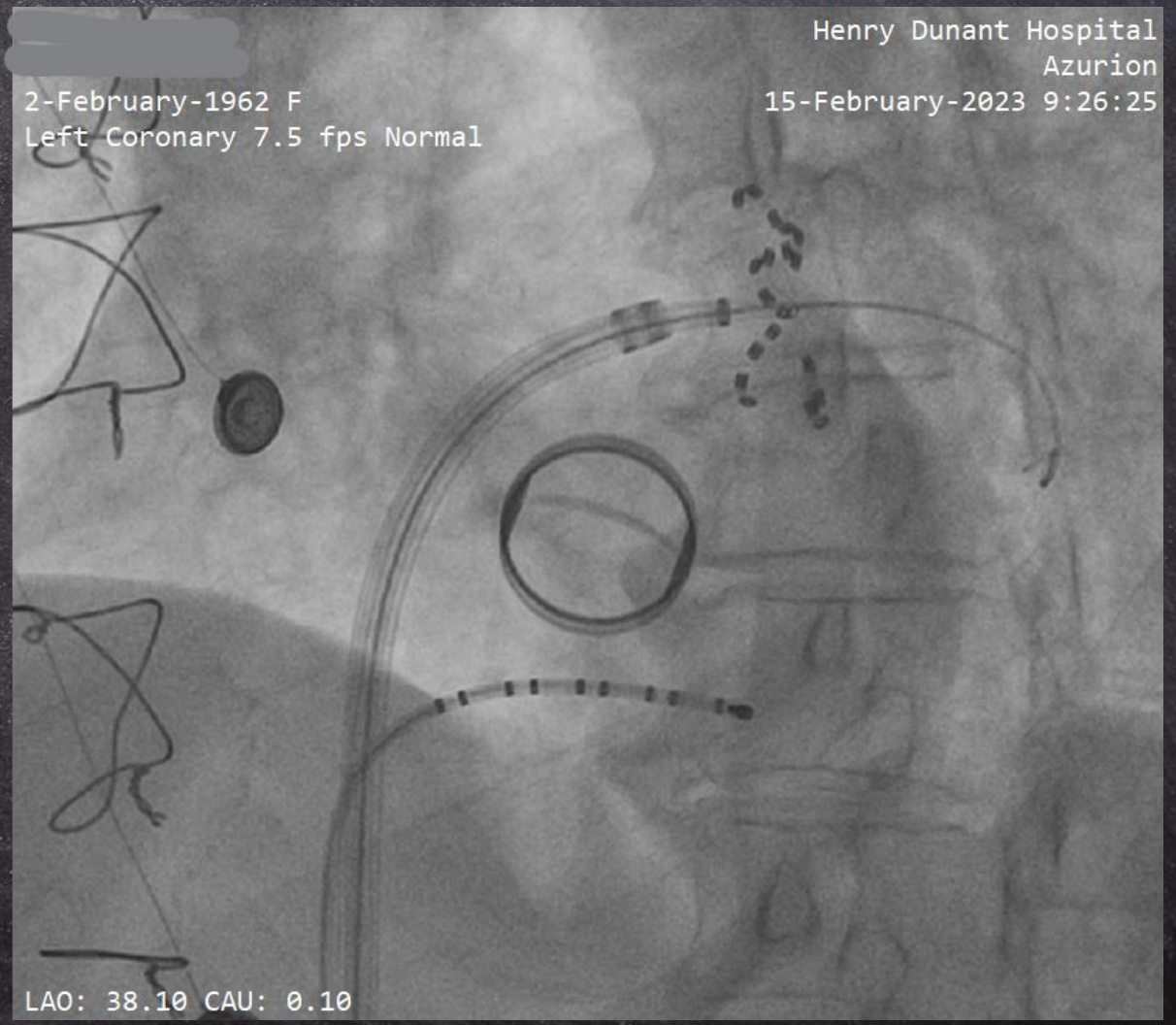




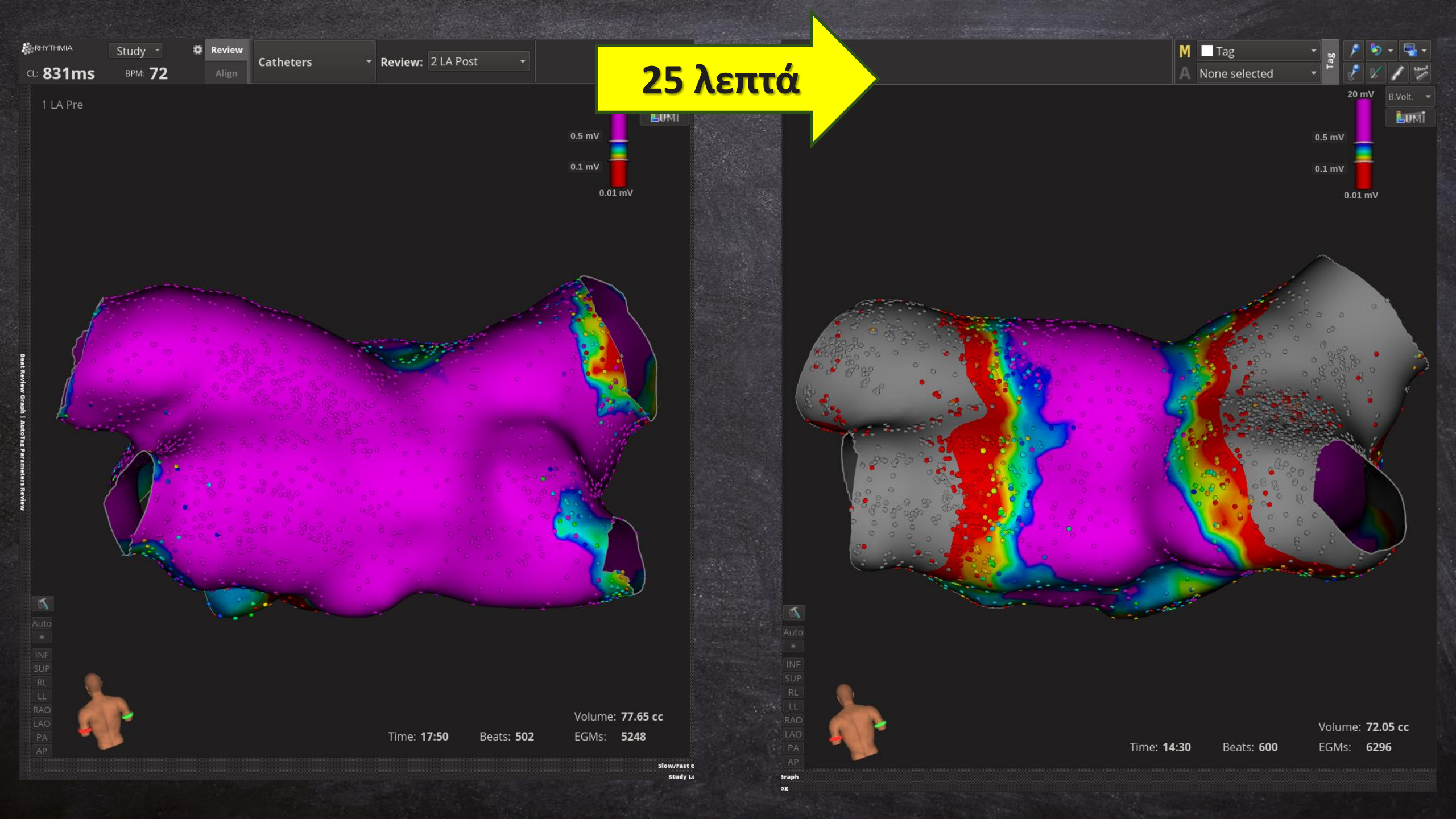
Αρχείο Γ.Ανδρικόπουλου, Ερρίκος Ντυνάν Hospital Center Jan2020

Ασθενής 61 ετών, με προσθετική μιτροειδούς, με ΑΚ=52 mm και ΚΕΑΚ υποφυσιολογικό με μεγάλη μείωσή του κατά τις περιόδους με εμμένουσα ΚΜ

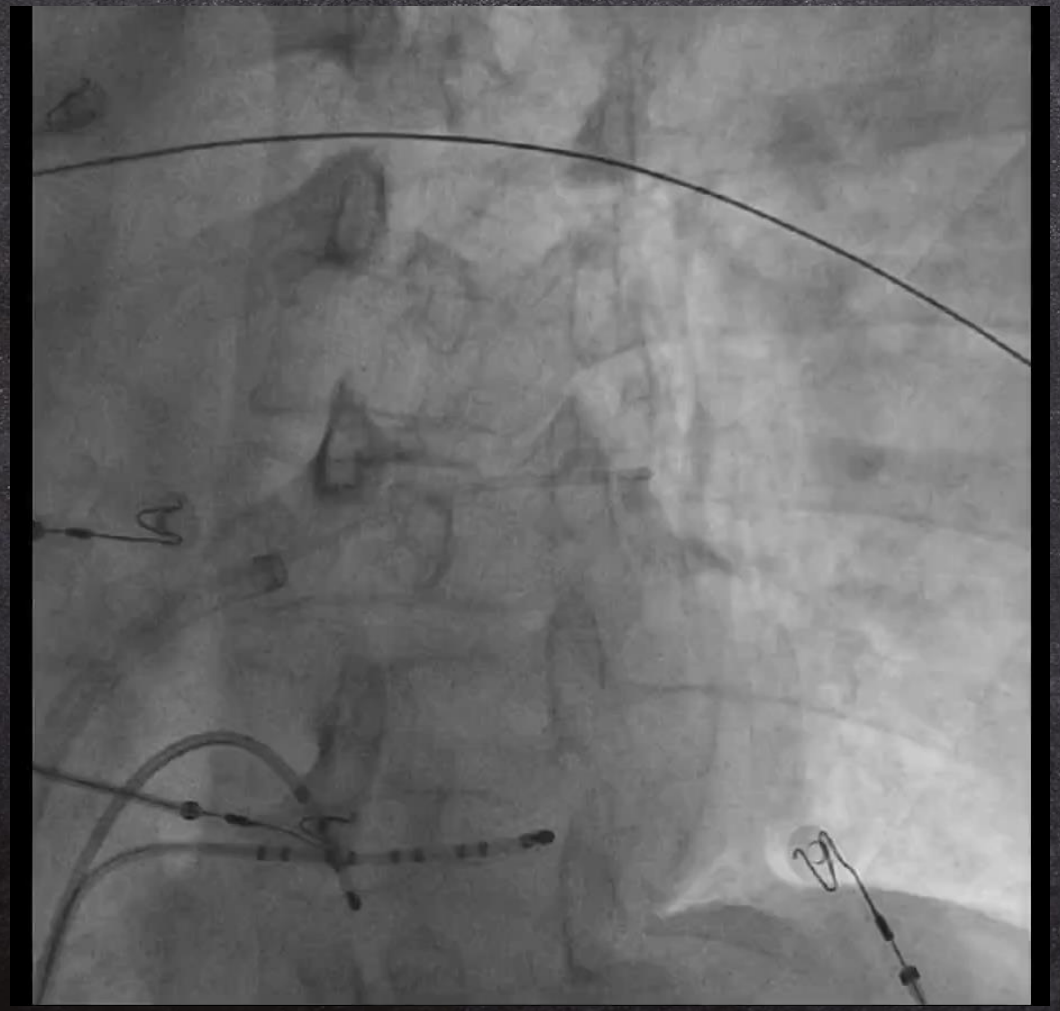


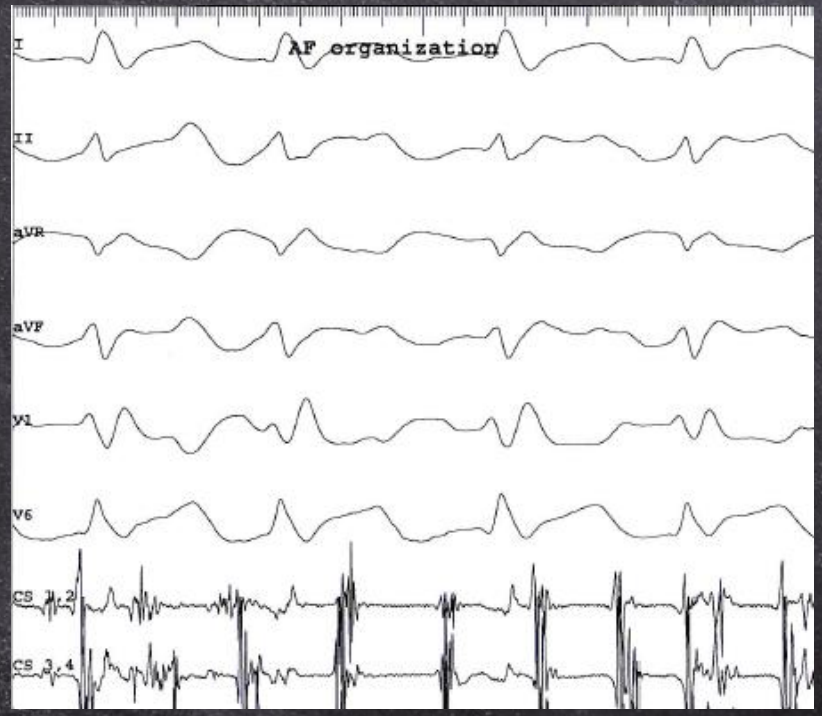


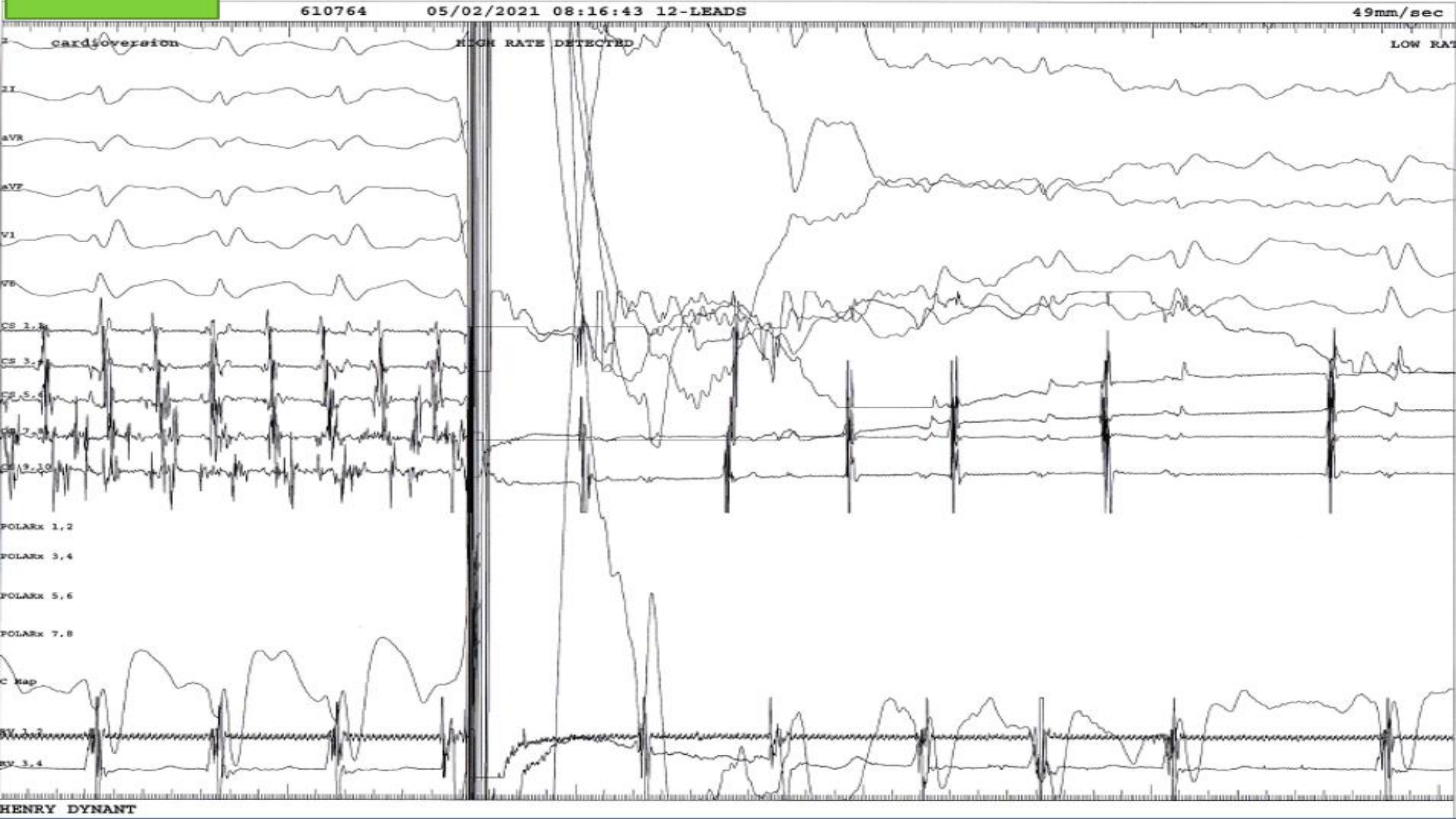
Ερρίκος Ντυνάν Hospital Center, Τετάρτη 15 Φεβρουαρίου 2023

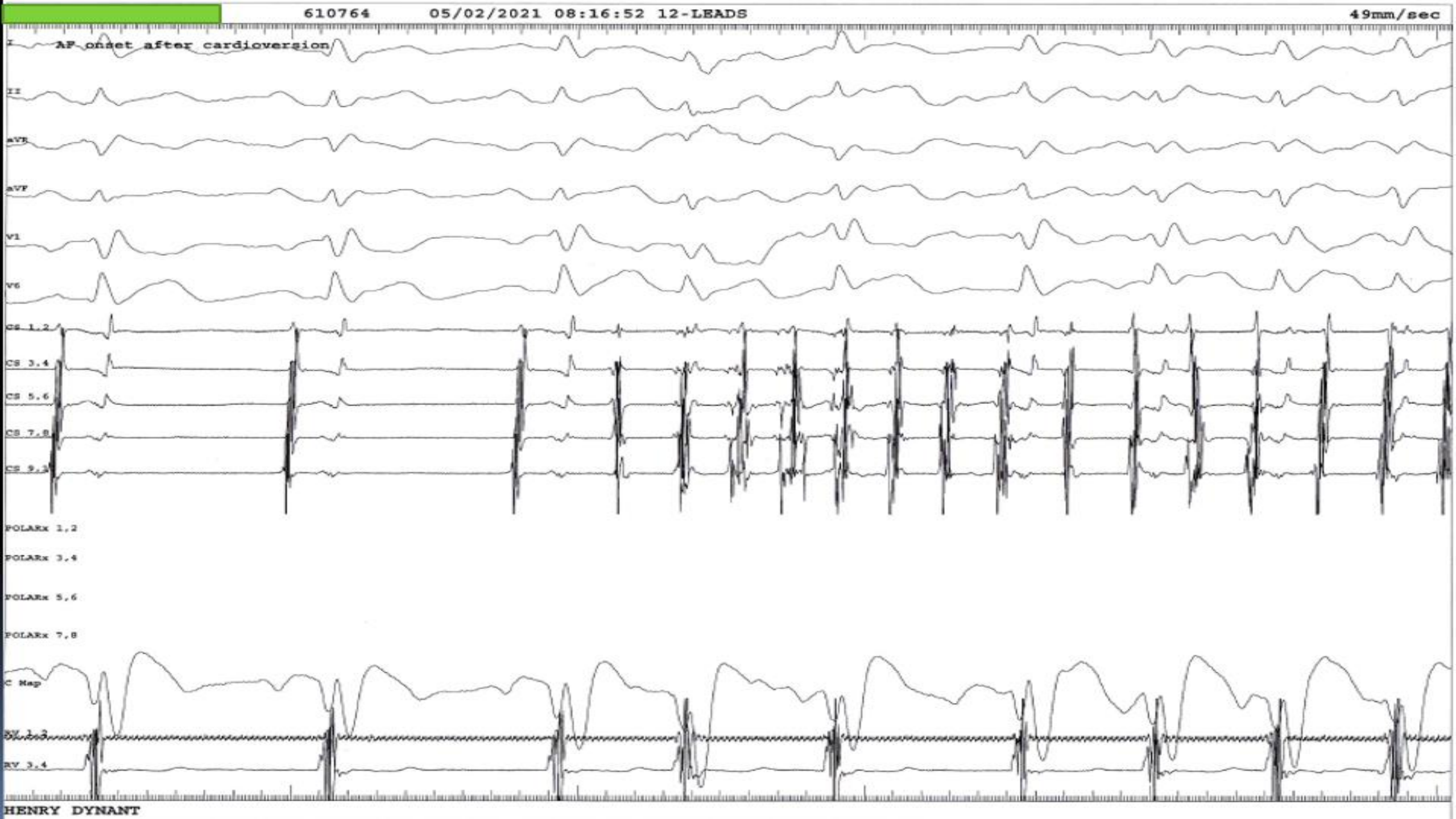

RHYTHMIA
Study
Review
CL: 831ms
BPM: 72
Align
Catheters
Review: 2 LA Post
25 λεπτά
M
Tag
A
None selected
Tag
1 LA Pre
0.5 mV
0.1 mV
0.01 mV
20 mV
B.Volt.
Auto
INF
SUP
RL
LL
RAO
LAO
PA
AP
Volume: 77.65 cc
Time: 17:50
Beats: 502
EGMs: 5248
Volume: 72.05 cc
Time: 14:30
Beats: 600
EGMs: 6296

Ασθενής 74 ετών, άντρας
αγνώστου ενάρξεως κολπική μαρμαρυγή,
Σταθερή ΣΝ και ΚΕΑΚ=45% (ΚΕΑΚ<30% με ΚΜ)
Ορθόπνοια χωρίς ΗΚΓικά και κλινικά σημεία ισχαιμίας
Καρδιακή συχνότητα 110-130 BPM εν ηρεμία
RBBB+LAH, SBP=100 mmHg

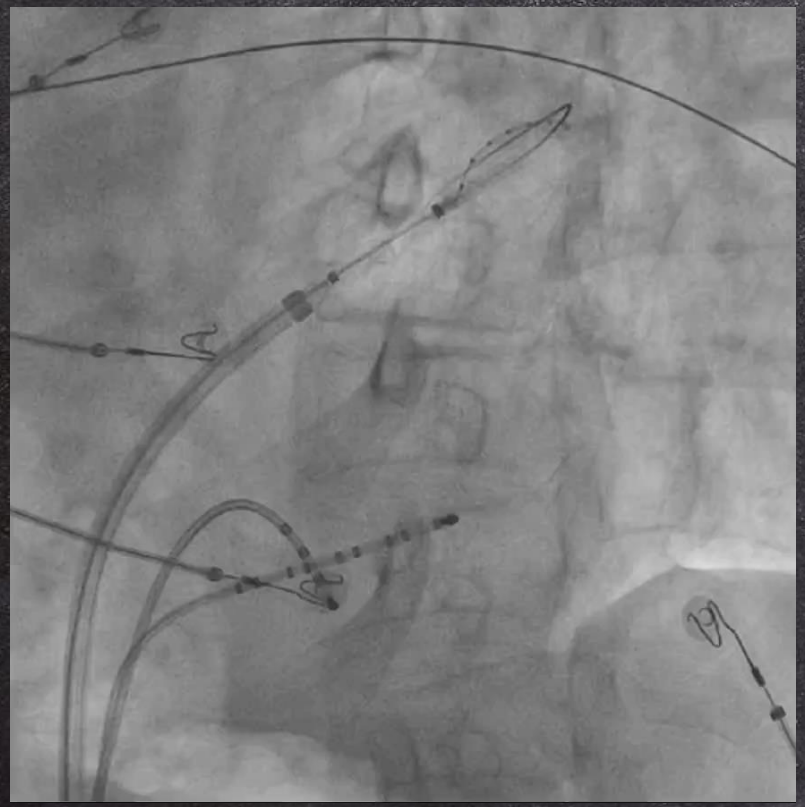


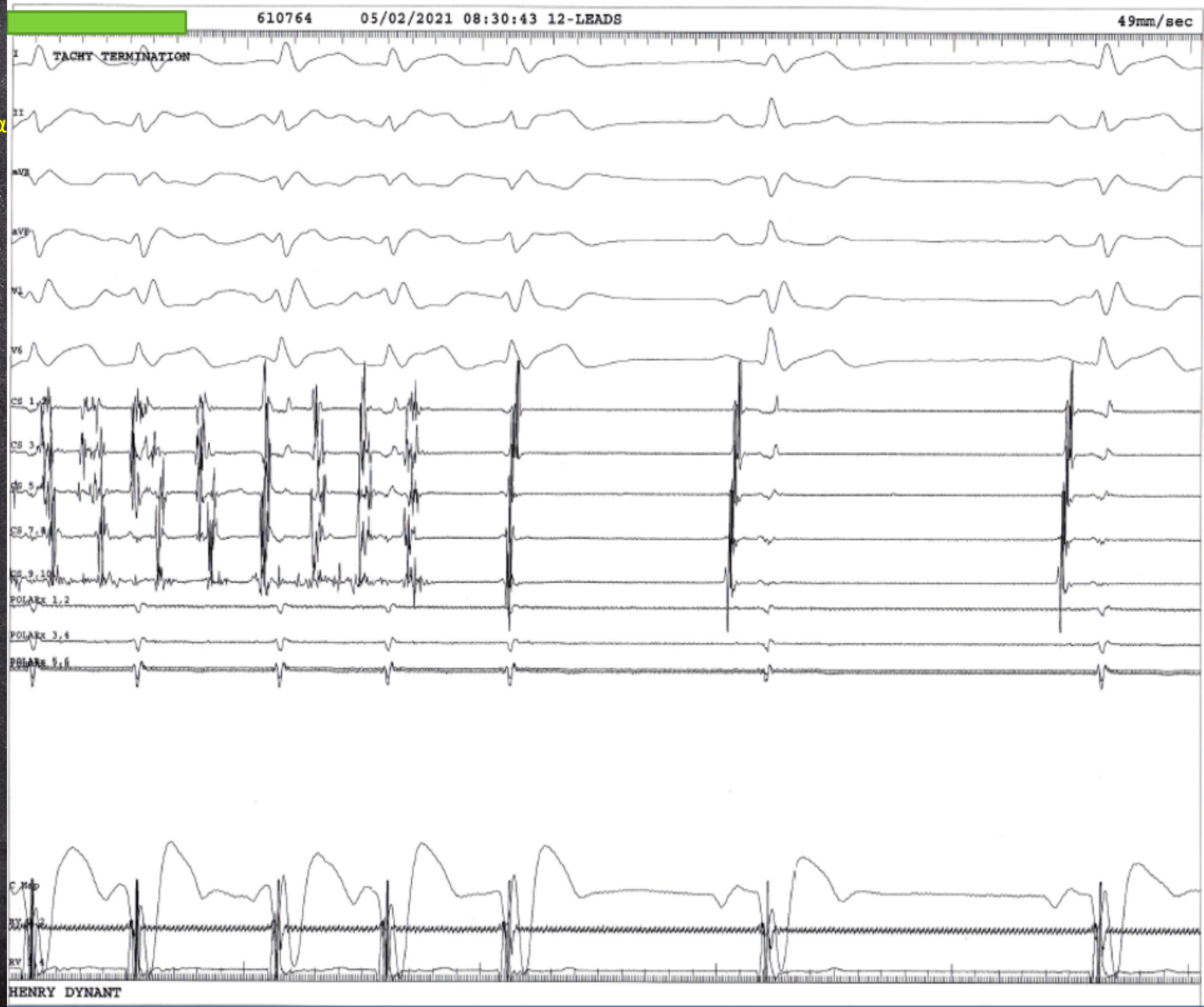



610764
05/02/2021 08:16:43 12-LEADS
49mm/sec
cardioversion
HIGH RATE DETECTED
LOW RAT
I
II
aVR
aVF
V1
V6
CS 1,2
CS 3,4
CS 5,6
CS 7,8
CS 9,10
POLARx 1,2
POLARx 3,4
POLARx 5,6
POLARx 7,8
C Map
RV 1,2
RV 3,4
HENRY DYNANT


610764
05/02/2021 08:16:52 12-LEADS
49mm/sec
AF onset after cardioversion
I
II
aVR
aVF
V1
V6
CS 1,2
CS 3,4
CS 5,6
CS 7,8
CS 9,10
POLARx 1,2
POLARx 3,4
POLARx 5,6
POLARx 7,8
C Map
RV 1,2
RV 3,4
HENRY DYNANT

Ασθενής 74 ετών, άντρας
αγνώστου ενάρξεως κολπική μαρμαρυγή,
Σταθερή ΣΝ και ΚΕΑΚ=45% (ΚΕΑΚ<30% με ΚΜ)
Ορθόπνοια χωρίς ΗΚΓικά και κλινικά σημεία ισχαιμία
Καρδιακή συχνότητα 110-130 BPM εν ηρεμία
RBBB+LAH, SBP=100 mmHg





2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

ΟΛΑ ΗΤΑΝ IIb ή III !!!

European Heart Journal Advance Access published May 20, 2016,
doi:10.1093/eurheartj/ehw128

Recommendations for a rhythm control management strategy in patients with atrial fibrillation, symptomatic heart failure (NYHA Class II–IV) and left ventricular systolic dysfunction and no evidence of acute decompensation

Recommendations	Class [a]	Level [b]	Ref [c]
Electrical cardioversion or pharmacological cardioversion with amiodarone may be considered in patients with persisting symptoms and/or signs of HF, despite OMT and adequate control of ventricular rate, to improve clinical/symptomatic status.	IIb	B	344
AF ablation may be considered in order to restore sinus rhythm to improve symptoms in patients with persisting symptoms and/or signs of HF, despite OMT and adequate control of ventricular rate, to improve clinical/symptomatic status.	IIb	B	279, 363
Amiodarone may be considered prior to (and following) successful electrical cardioversion to maintain sinus rhythm.	IIb	B	342, 360
Dronedarone is not recommended because of an increased risk of hospital admissions for cardiovascular causes and an increased risk of premature death in NYHA Class III–IV patients.	III	A	247, 347
Class I antiarrhythmic agents are not recommended because of an increased risk of premature death.	III	A	248, 364, 365

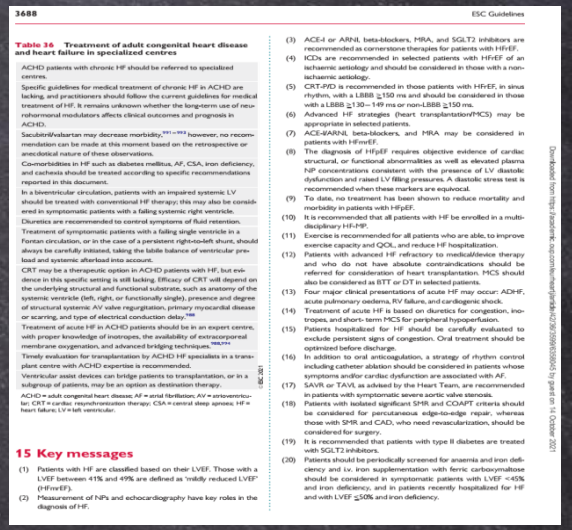
ESC European Society of Cardiology
European Heart Journal (2021) 42, 3599—3726
doi:10.1093/eurheartj/ehab368

ESC GUIDELINES

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

15 Key messages

(16) In addition to oral anticoagulation, a strategy of rhythm control including catheter ablation should be considered in patients whose symptoms and/or cardiac dysfunction are associated with AF.

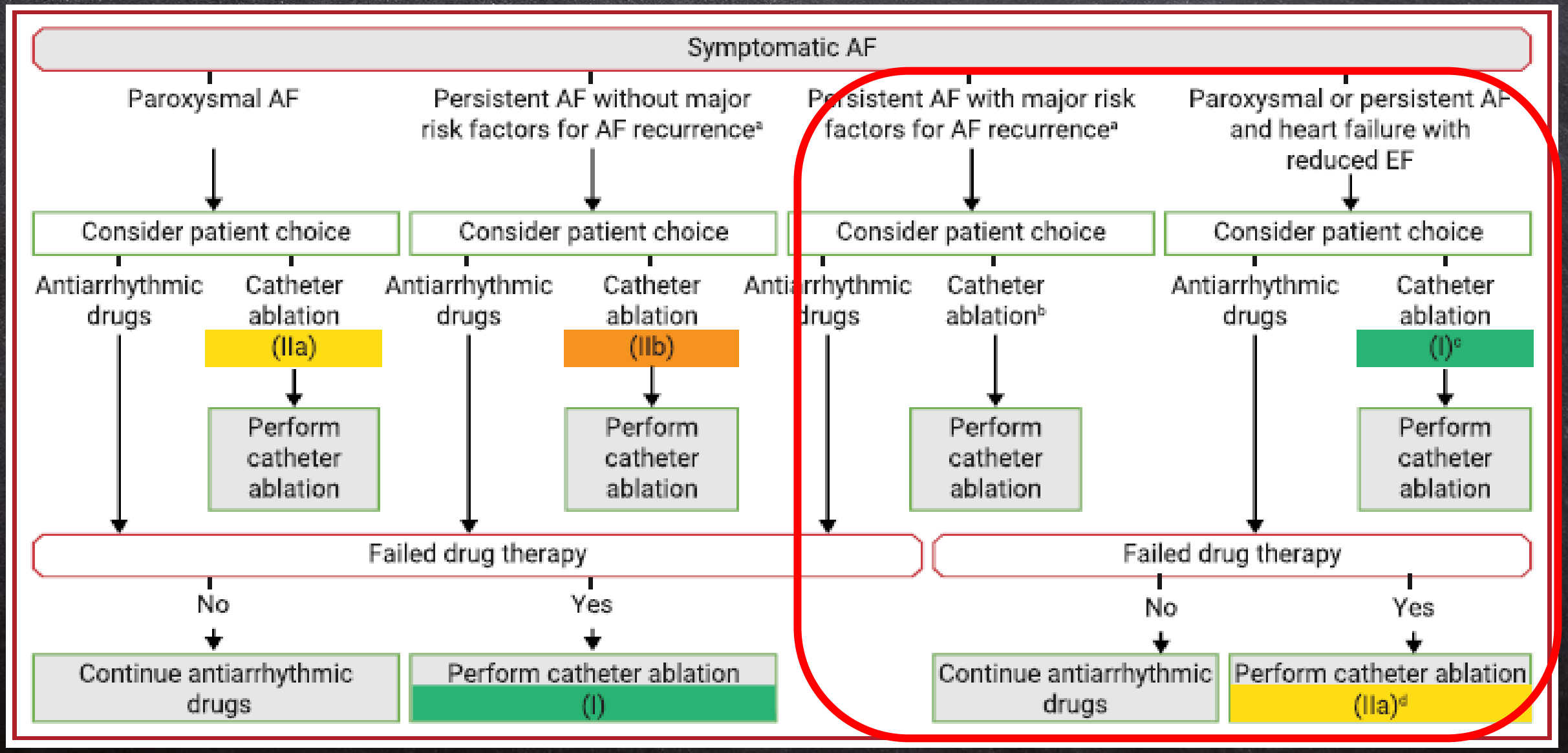


Recommendations for the treatment of atrial fibrillation in patients with heart failure

AF catheter ablation		
In cases of a clear association between paroxysmal or persistent AF and worsening of HF symptoms, which persist despite MT, catheter ablation should be considered for the prevention or treatment of AF.[552–554,557]	IIa	B

2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association of Cardio-Thoracic Surgery (EACTS)

ESC European Society of Cardiology
European Heart Journal (2020) **00**, 1–126
doi:10.1093/eurheartj/ehaa612



A proud moment

ESC European Society of Cardiology

European Heart Journal (2021) **00**, 1–128
doi:10.1093/eurheartj/ehab368

ESC GUIDELINES

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

With the special contribution of the Heart Failure Association (HFA) of the ESC

Authors/Task Force Members: Theresa A. McDonagh* (Chairperson) (United Kingdom), Marco Metra * (Chairperson) (Italy), Marianna Adamo (Task Force Coordinator) (Italy), Roy S. Gardner (Task Force Coordinator) (United Kingdom),

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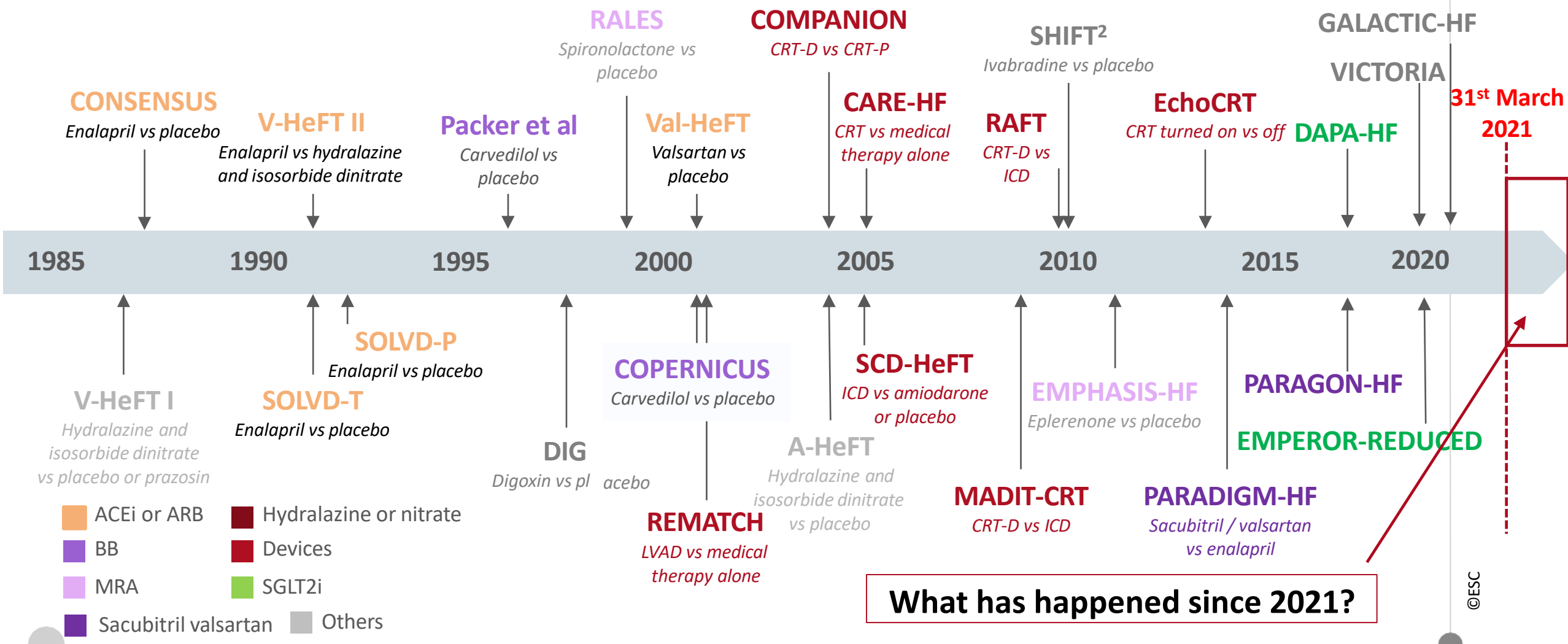
2023 Focused update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure (European Heart Journal; 2023 – doi:10.1093/eurheartj/ehad195)

In 2021, we had 34 years of heart failure therapy to consider



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2023 Focused update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure (European Heart Journal; 2023 – doi:10.1093/eurheartj/ehad195)

Κατάλυση Κολπικής Μαρμαρυγής σε Ασθενή με Προχωρημένη Καρδιακή Ανεπάρκεια

- Δυνατότητα αιμοδυναμικής υποστήριξης
- Επέμβαση κατάλυσης ΜΕ αναισθησιολόγο
- Δυνατότητα μετεπεμβατικής νοσηλείας σε ΜΑΦ/ΜΕΘ ή/και νεφρικής κάθαρσης
- ΤΑΧΥΤΗΤΑ
- ΣΟΦΡΩΣΥΝΗ

« Η κόλαση είναι οι άλλοι»

Ζαν-Πολ Σαρτρ (από το θεατρικό “Το είναι και το μηδέν”)

Η ιστορία των Γκαρσέν, Ινές και Εστέλ……
….και της επέμβασης κατάλυσης της ΚΜ στην προχωρημένη καρδιακή ανεπάρκεια

«Ο παράδεισος είναι ο ένας για τον άλλον» *συνέντευξη του Ζαν-Πολ Σαρτρ για τη φράση αυτή το 1971*