6ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΕΝΩΣΗΣ ΕΛΕΥΘΕΡΟΕΠΑΓΓΕΛΜΑΤΙΩΝ ΚΑΡΔΙΟΛΟΓΩΝ ΕΛΛΑΔΟΣ

ΚΟΛΠΙΚΗ ΜΑΡΜΑΡΥΓΗ

ΝΕΟΤΕΡΕΣ ΕΞΕΛΙΞΕΙΣ

Δημήτριος Λυσίτσας, MD, PhD, MRCP
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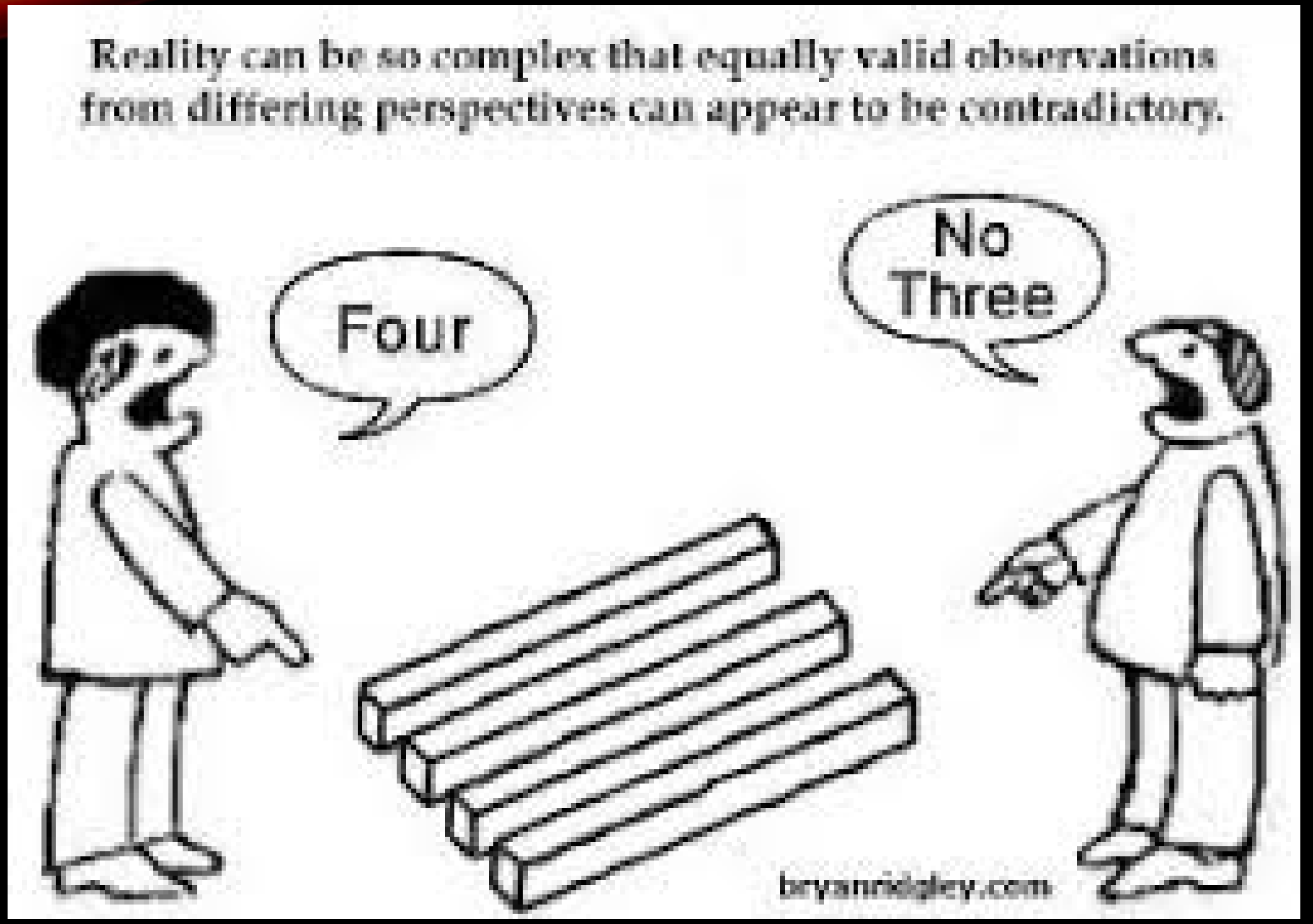
Θεσσαλονίκη

ΔΗΛΩΣΗ ΣΥΜΦΕΡΟΝΤΩΝ

- Lecture and educational fees:
  - Biosense, St Jude, Boston Scientific, Pfizer, Boehringer-Ingelheim, Medtronic


Reality can be so complex that equally valid observations from differing perspectives can appear to be contradictory.
Four
No Three
bryanridgley.com

ΕΠΙΔΗΜΙΟΛΟΓΙΑ

...don't wait to anticoagulate

In the next 4 hours
10 people
with atrial fibrillation (AF) will suffer a stroke in the UK

3 will go home

5 will end up needing residential care for the rest of their lives

2 will die

x5
People with AF have a five-fold higher stroke risk than those without

Every year
7,000 strokes

2,000 premature deaths
could be avoided through effective detection and protection with anticoagulant drugs

250,000
people are believed to be undiagnosed with AF currently in the UK

800,000
people are currently diagnosed with AF

Prevalence of AF increases with age...
in UK population **1.6%**
aged 50-59 **0.5%**
aged 80-90 **9%**

From the age of 55 the likelyhood of developing AF is...
1 in 4
1 in 5

Each year approximately **1** in **20** people with AF will have a stroke because they are not anticoagulated

Mortality rate from stroke for people with AF is double that of people with normal heart rhythm

15% of all strokes are caused by AF

Each AF related stroke cost the NHS
£12,000 in the first year alone

Nearly 50% of people with AF are not effectively protected against stroke because
...they do not have an AF diagnosis.
...are on aspirin or are not on anticoagulation at all.
...labile INR.

230,000
people with AF still at risk of stroke because treated with aspirin monotherapy instead of anticoagulants

Anticoagulation is
3 times
more effective at preventing AF related stroke than aspirin

An estimated **3 people** from each GP practice in the West of England AHSN will suffer an AF related stroke per year

West of England Academic Health Science Network

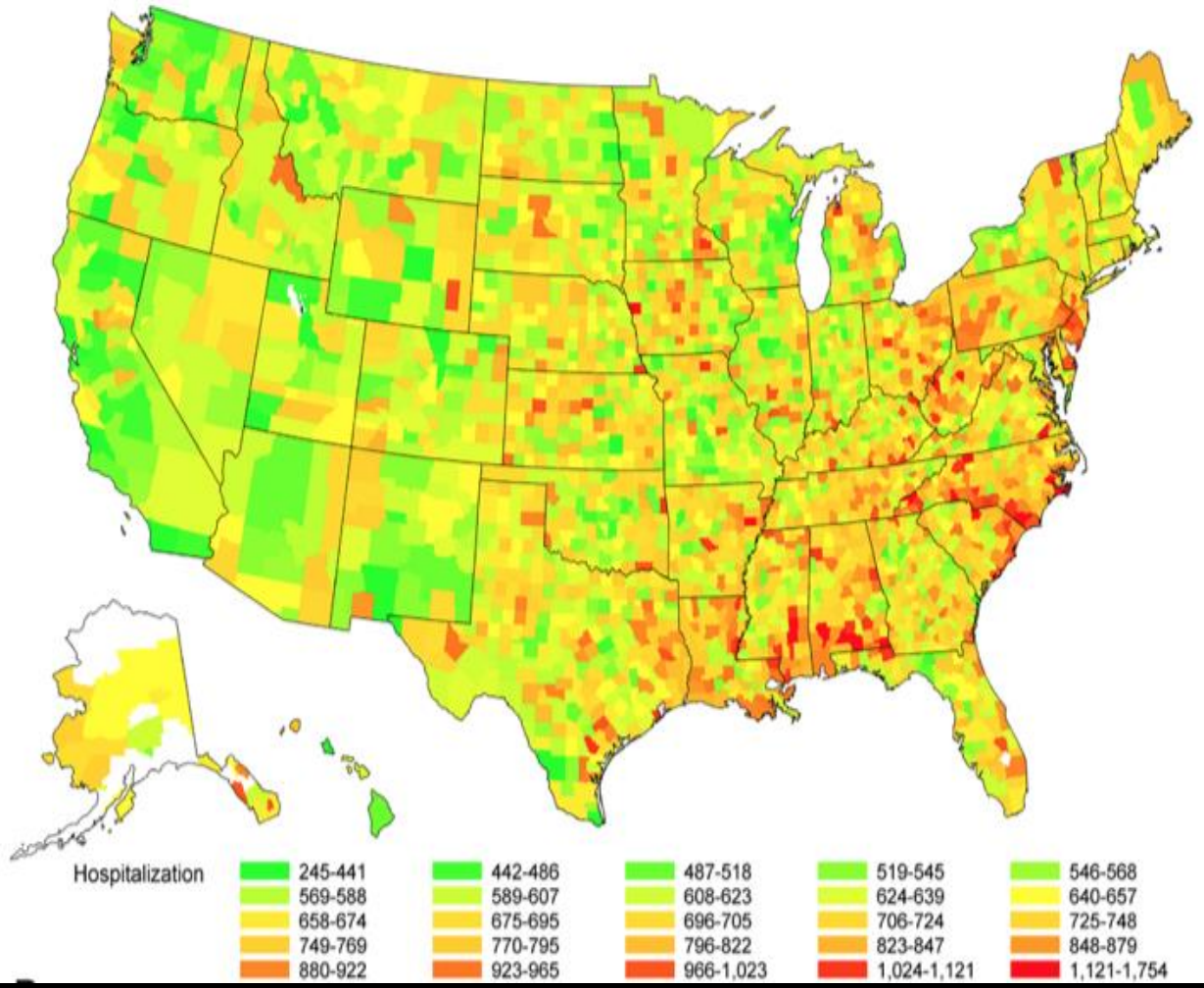
The West of England Academic Health Science Network (WEAHSN) is a vibrant and diverse network of providers of NHS care, universities and NHS commissioners working with a wide range of partners to accelerate the spread of innovative, evidence-based practice to improve health and care quality. The Network covers Bath and North East Somerset, Bristol, Gloucestershire, North Somerset, South Gloucestershire, Swindon and Wiltshire.

Contact **West of England AHSN** for more information
www.weahsn.net | **0117 900 2604**

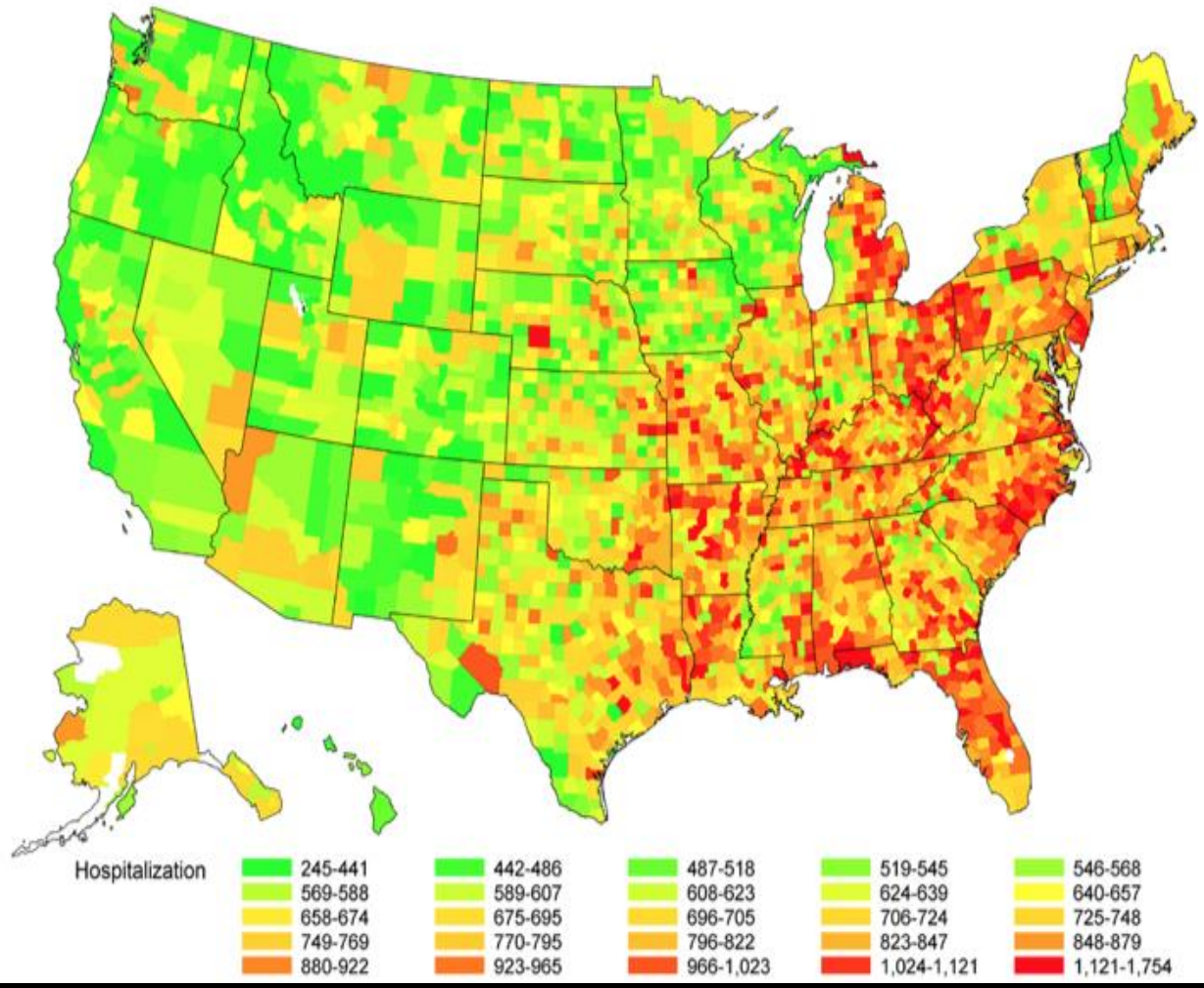
Sources: NICE clinical guideline 36 June 2006. Fuster V et al. Circulation 2006;114:e257–354 & Eur Heart J 2006;27:1979–2030; Atrial Fibrillation Investigators. Arch Intern Med 1994;154:1449–57; Carlson M. Medscape Cardiology 2004;8; Lip GYH, Lim HS. Lancet Neurol 2007;6:981–93; NHS Improvement June 2009. Hart RG et al. Ann Intern Med 2007;146:857–67. NICE Costing Report. NICE Clinical Guideline no. 36, July 2006. Heeringa J et al. Eur Heart J 2006;27:949–53

National Trends in Atrial Fibrillation Hospitalization, Readmission, and Mortality for Medicare Beneficiaries, 1999–2013

Risk-standardized hospitalizations in 1999 (per 100,000 person-years)



Risk-standardized hospitalizations in 2013 (per 100,000 person-years)



AF SCREENING
THE CHANGING LANDSCAPE

Guidelines:
Definition of AF and Screening Recommendations

An irregular pulse should always raise the suspicion of AF, but an ECG recording is necessary to diagnose AF. Any arrhythmia that has the ECG characteristics of AF and lasts sufficiently long for a 12-lead ECG to be recorded, or at least 30 s on a rhythm strip, should be considered as AF

ESC (2016)[1]

"In patients over 65 years, opportunistic screening for AF is recommended by pulse palpation, or ECG rhythm strip" (IB)

AHA/ACC /HRS (2014)[2]

*"The **physical exam suggests AF by the presence of an irregular pulse**…an ECG is the essential tool in confirming the diagnosis"*

EU and US guidelines suggest pulse palpation during physical exams, but otherwise do not recommend widespread screening for AF.

1. Kirchhof P et al. Eur Heart J 2016; Europace. **2016** Aug 27. pii: euw295. [Epub ahead of print].
2. January CT et al. *Circulation*. 2014;130:2071-2104.

OVERVIEW OF SELECTED AF SCREENING STUDIES WITH SINGLE STATIC MEASUREMENTS

Study (first author)	Method	N	Design	Total AF detected % (n)	Newly diagnosed AF % (n)
Systematic review* (Lowres)[1]	Multiple methods	>67 772 (all); >18 189 (≥65 yrs)	30 studies in GP or outpatient clinics or population screening	All: 2.3% Age ≥65: 4.4%	All: 1.0% Age ≥65: 1.4%
SAFE (Hobbs)[2]		14 802 (all); 4936 (std prac); 4933 (opp); 4933 (syst)	Patients aged ≥65 years in primary care	8.9% (std prac) 8.5% (opp) 8.4% (syst)	1.04%/yr (std prac); 1.64%/yr (opp); 1.62%/yr (syst)
SEARCH-AF (Lowres)[3]		1000	In-pharmacy screening of persons aged ≥65 years; all screened by both pulse palpation and AliveCor	AliveCor†: 6.7% (67)	AliveCor†: 1.5% (15)
(Tieleman)[4]		676	Persons coming to primary care office for flu vaccination, mean age 74±7.1	8.1% (55)	1.6% (11)
(Kaasenbrood)[5]		3269	Persons coming to primary care office for flu vaccination, mean age 69.4±8.9	3.7% (121)	1.1% (37)

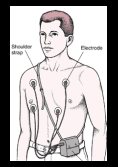
 12-lead EKG  Pulse palpation  AliveCor®  MyDiagnostick

*This included the OFRECE-AF study, Deif et al, Fitzmaurice et al, and Engdahl et al, among others. †This detection rate is for the interpretation of the EKG by the AliveCor predictive algorithm. Opp: opportunistic screening arm; std prac: standard practice; syst: systematic screening arm.

1. Lowres N et al. Thromb Haemost. 2013;110:213-222; 2. Hobbs FDR et al. Health Technol Assess. 2005:9:1-74; 3. Lowres N et al. Thromb Haemost. 2014;111:1167-1176; 4. Tieleman RG et al. Europace. 2014;16:1291-1295; 5. Kaasenbrood F et al. Europace. 2016;doi:10.1093/europace/euv426

OVERVIEW OF SELECTED AF SCREENING STUDIES WITH EXTENDED MEASUREMENTS: REPEAT STATIC VS. CONTINUOUS

Study (first author)	Method	N	Design	Total AF detected % (n)	Newly diagnosed AF % (n)
STROKESTOP[1] (Svennberg)	 	7173	• Community-wide screening of persons aged 75–76 • One 12-lead index EKG followed by twice-daily Zenicor thumb EKG for 2 weeks*	12.3% (884)	12-lead index EKG: 0.5% (37) Zenicor: 3.0% (218)
STUDY-AF[2] (Turakhia)		75	• Patients from outpatient clinics at VA • Aged ≥55 with ≥2 risk factors for AF (CHD, HF, HTN, diabetes, sleep apnea) • Known AF patients were excluded • 14-day continuous Zio® patch screening†	5.3% (4)	5.3% (4)

 12-lead EKG

 Zenicor thumb EKG

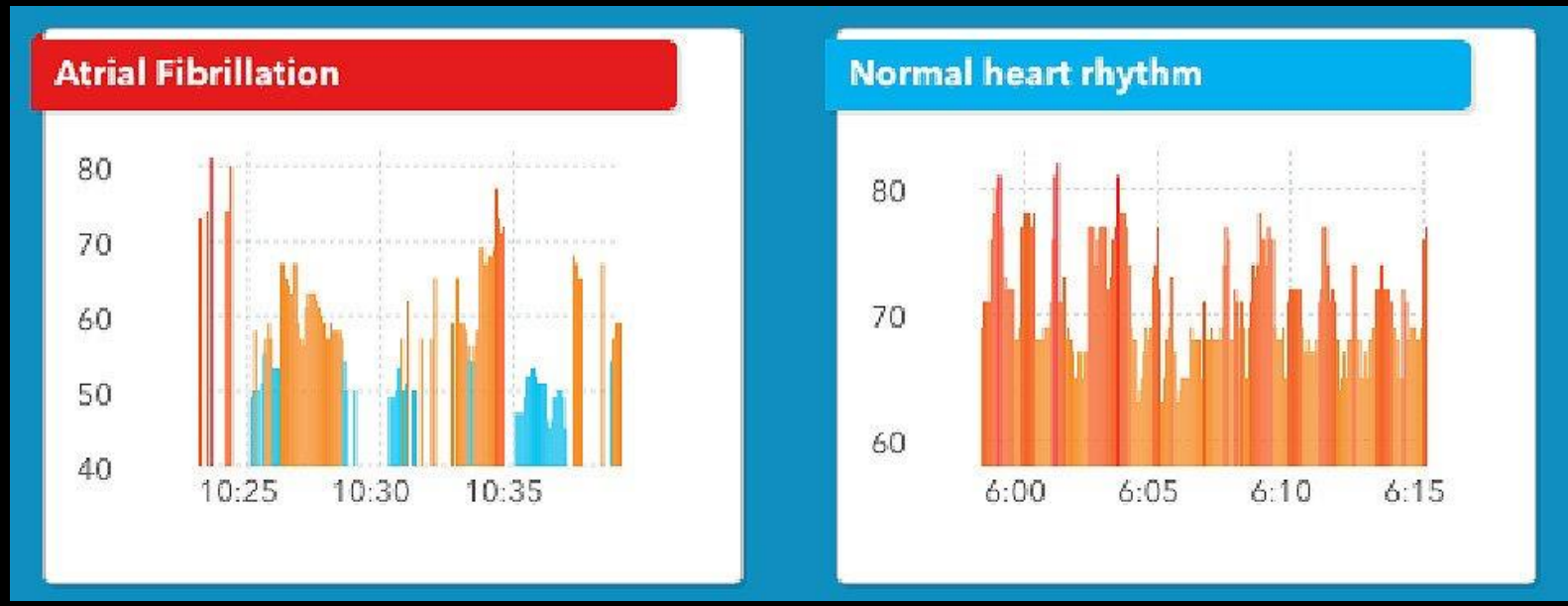
 Zio® patch

*AF was defined as one 30-second recording or a minimum of 2 similar episodes lasting 10–29 seconds.
†Each AF episode was defined as the presence of ≥30 seconds of continuous AF during monitoring.

1. Svennberg E et al. Circulation 2015;131:2176-2184.
2. Turakhia M et al. Clin Cardiol 2015;38:285-292.

APPLE HEART STUDY

- 419,297 participants
- 24,626 were 65 years or older
- 2161 individuals notified (0.5%)
- PPV 84%



the future may be the patients test themselves and send the [results] to us....

ACC 2019

ΠΙΟ ΑΠΛΑ ……ΠΙΟ ΦΘΗΝΑ

Ζακέτα να πάρεις…..και να ελέγξεις και το σφυγμό σου

Relationships of Overt and Silent Brain Lesions With Cognitive Function in Patients With Atrial Fibrillation

OBJECTIVES This study sought to assess the relationships between cognitive function and vascular brain lesions in patients with AF.

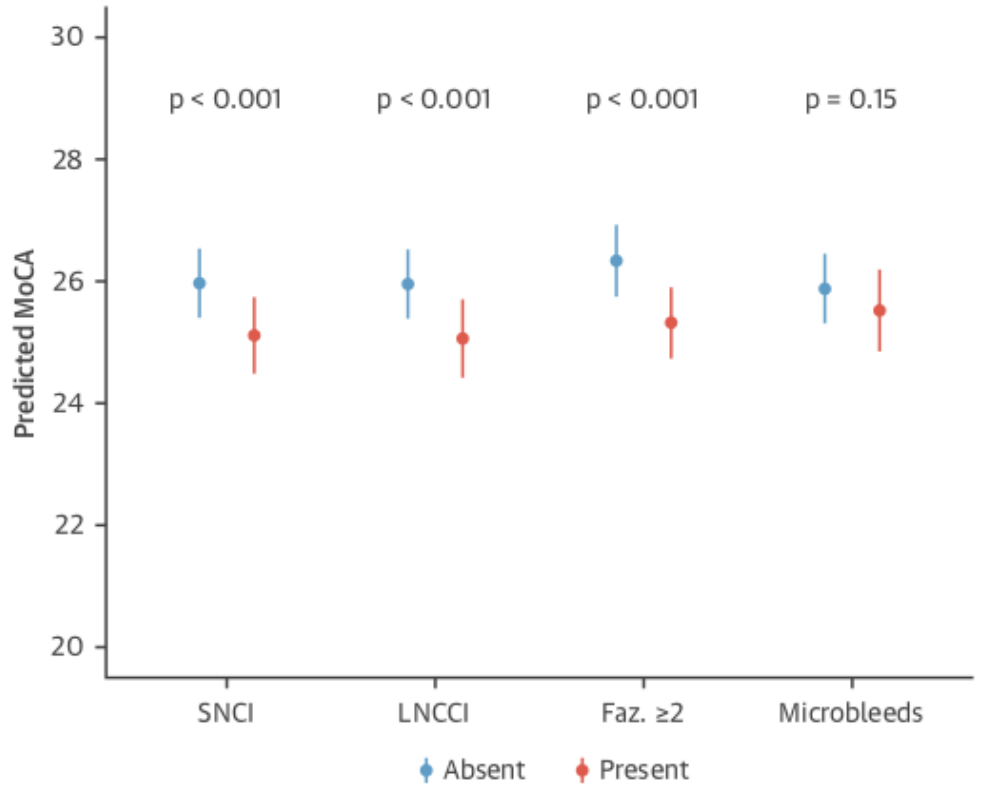
METHODS Patients with known AF were enrolled in a multicenter study in Switzerland. Brain magnetic resonance imaging (MRI) and cognitive testing using the Montreal Cognitive Assessment (MoCA) were performed in all participants. Large noncortical or cortical infarcts (LNCCIs), small noncortical infarcts (SNCIs), microbleeds, and white matter lesions were quantified by a central core laboratory. Clinically silent infarcts were defined as infarcts on brain MRI in patients without a clinical history of stroke or transient ischemic attack.

Conen et al, JACC 2019

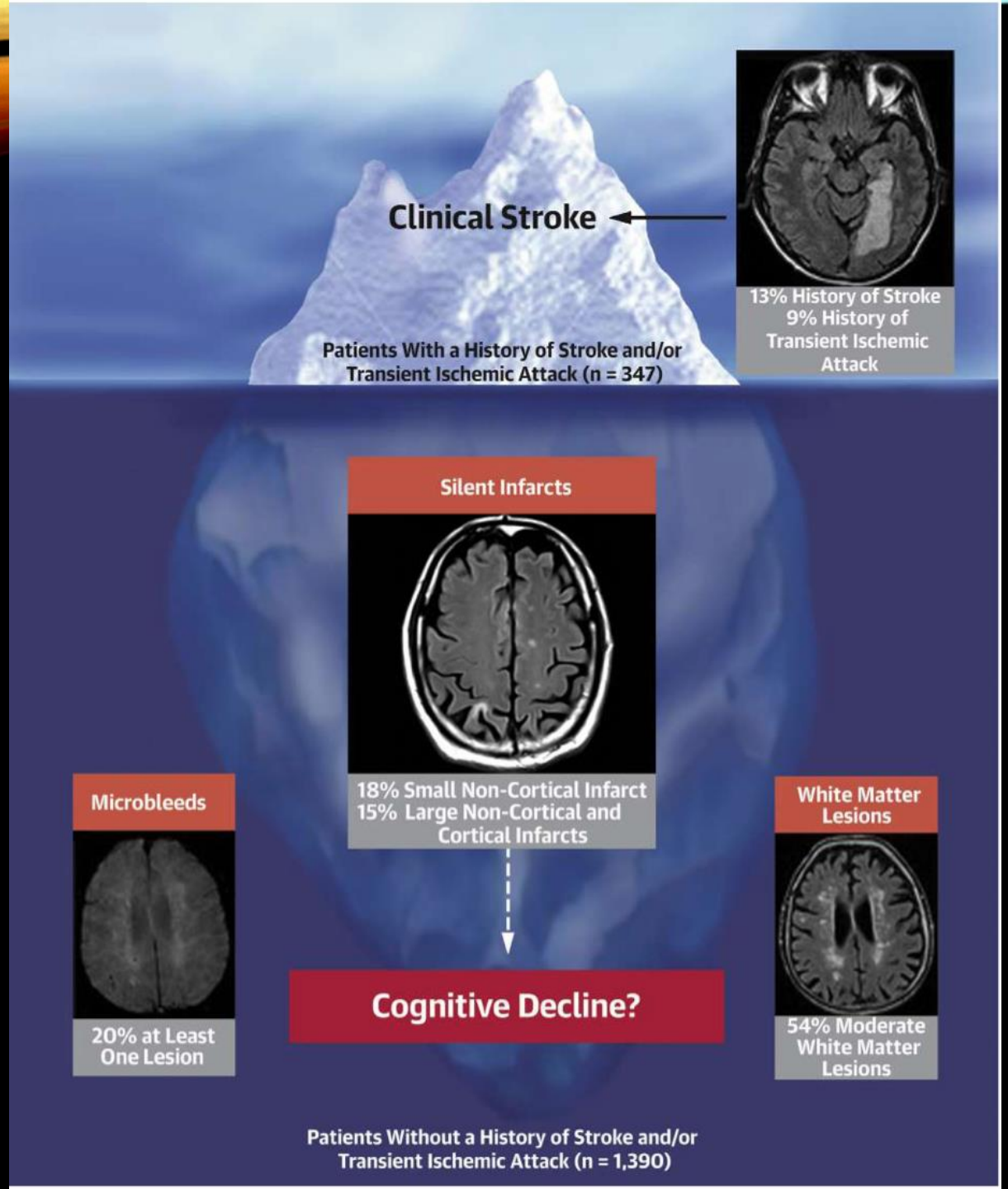
	All Patients (N = 1,737)	No History of Stroke/TIA (n = 1,390)	History of Stroke/TIA (n = 347)	p Value*
Age, yrs	73 ± 8	72 ± 9	75 ± 7	<0.001
Female	477 (28)	369 (27)	108 (31)	0.10
Body mass index, kg/m^2	27.7 ± 4.8	27.8 ± 4.8	27.3 ± 4.7	0.10
Blood pressure, mm Hg	135 ± 19/79 ± 12	135 ± 18/79 ± 12	135 ± 19/78 ± 12	0.69/0.12
History of hypertension	1,197 (69)	939 (68)	258 (74)	0.017
History of diabetes mellitus	265 (15)	197 (14)	68 (20)	0.015
Smoking status				0.73
Current	168 (10)	138 (10)	30 (9)	
Past	871 (50)	697 (50)	174 (50)	
Never	695 (40)	552 (40)	143 (41)	
Education level†				0.43
Basic	203 (12)	157 (11)	46 (13)	
Middle	850 (49)	677 (49)	173 (50)	
Advanced	684 (39)	556 (40)	128 (37)	
Atrial fibrillation type				0.012
Paroxysmal	797 (46)	623 (45)	174 (50)	
Persistent	524 (30)	442 (32)	82 (24)	
Permanent	416 (24)	325 (23)	91 (26)	
History of coronary artery disease	462 (27)	363 (26)	99 (29)	0.40
History of clinical stroke	230 (13)	0 (0)	230 (66)	—
History of TIA	159 (9)	0 (0)	159 (46)	—
History of heart failure	376 (22)	295 (21)	81 (23)	0.44
History of major bleeding	97 (6)	72 (5)	25 (7)	0.18
CHA_2DS_2-VASc score	3.3 ± 1.7	2.8 ± 1.4	5.3 ± 1.3	<0.001
Oral anticoagulation	1,560 (90)	1,236 (89)	324 (93)	0.019
Direct oral anticoagulants	929 (54)	741 (53)	188 (54)	0.82
Vitamin K antagonists	631 (36)	495 (36)	136 (39)	0.24
Antiplatelet therapy	309 (18)	237 (17)	72 (21)	0.12

TABLE 2 Prevalence of Vascular Brain Lesions Detected on Brain Magnetic Resonance Imaging

	Prevalence	Volume, mm^3	Number
All patients (N = 1,737)			
Small noncortical infarcts	368 (21)	63 [30–163]	1 [1–3]
Large noncortical or cortical infarcts	387 (22)	1,623 [255–7,314]	1 [1–2]
Microbleeds	372 (22)	-	1 [1–2]
White matter lesions	1,715 (99)	3,918 [1,439–9783]	23 [11–41]
Fazekas scale ≥2	928 (54)		
Patients without a history of stroke or TIA (n = 1,390)			
Small noncortical infarcts	245 (18)	57 [30–141]	2 [1–3]
Large noncortical or cortical infarcts	201 (15)	525 [162–3,396]	1 [1–2]
Microbleeds	272 (20)	-	1 [1–2]
White matter lesions	1,372 (99)	3,512 [1,323–8,669]	21 [10–40]
Fazekas scale ≥2	694 (50)		



Relationships of Overt and Silent Brain Lesions With Cognitive Function in Patients With Atrial Fibrillation


Clinical Stroke
13% History of Stroke
9% History of Transient Ischemic Attack
Patients With a History of Stroke and/or Transient Ischemic Attack (n = 347)
Silent Infarcts
18% Small Non-Cortical Infarct
15% Large Non-Cortical and Cortical Infarcts
Microbleeds
20% at Least One Lesion
White Matter Lesions
54% Moderate White Matter Lesions
Cognitive Decline?
Patients Without a History of Stroke and/or Transient Ischemic Attack (n = 1,390)

ΑΣΘΕΝΕΙΣ ΜΕ ΚΑΡΔΙΑΚΗ ΑΝΕΠΑΡΚΕΙΑ ΚΑΙ ΚΟΛΠΙΚΗ ΜΑΡΜΑΡΥΓΗ

CASTLE-AF

CATHETER ABLATION VERSUS STANDARD CONVENTIONAL TREATMENT IN PATIENTS WITH LEFT VENTRICULAR DYSFUNCTION AND ATRIAL FIBRILLATION

The CASTLE-AF trial

CARMA

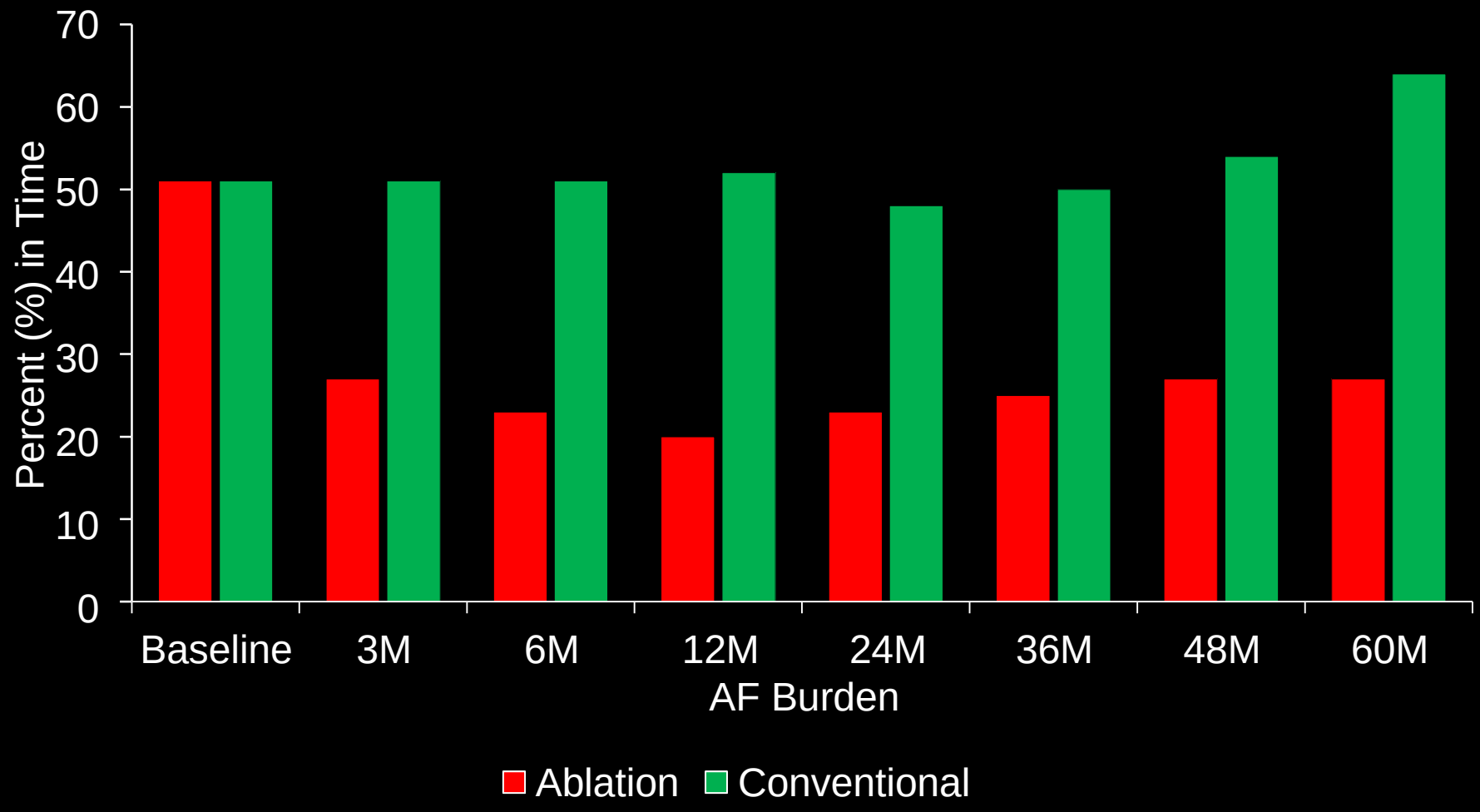
CASTLE-AF
RATIONALE AND OBJECTIVE

- Study the effectiveness of *catheter ablation* of atrial fibrillation in patients with heart failure in *improving hard primary endpoints of mortality and heart failure progression* when compared to conventional standard treatment

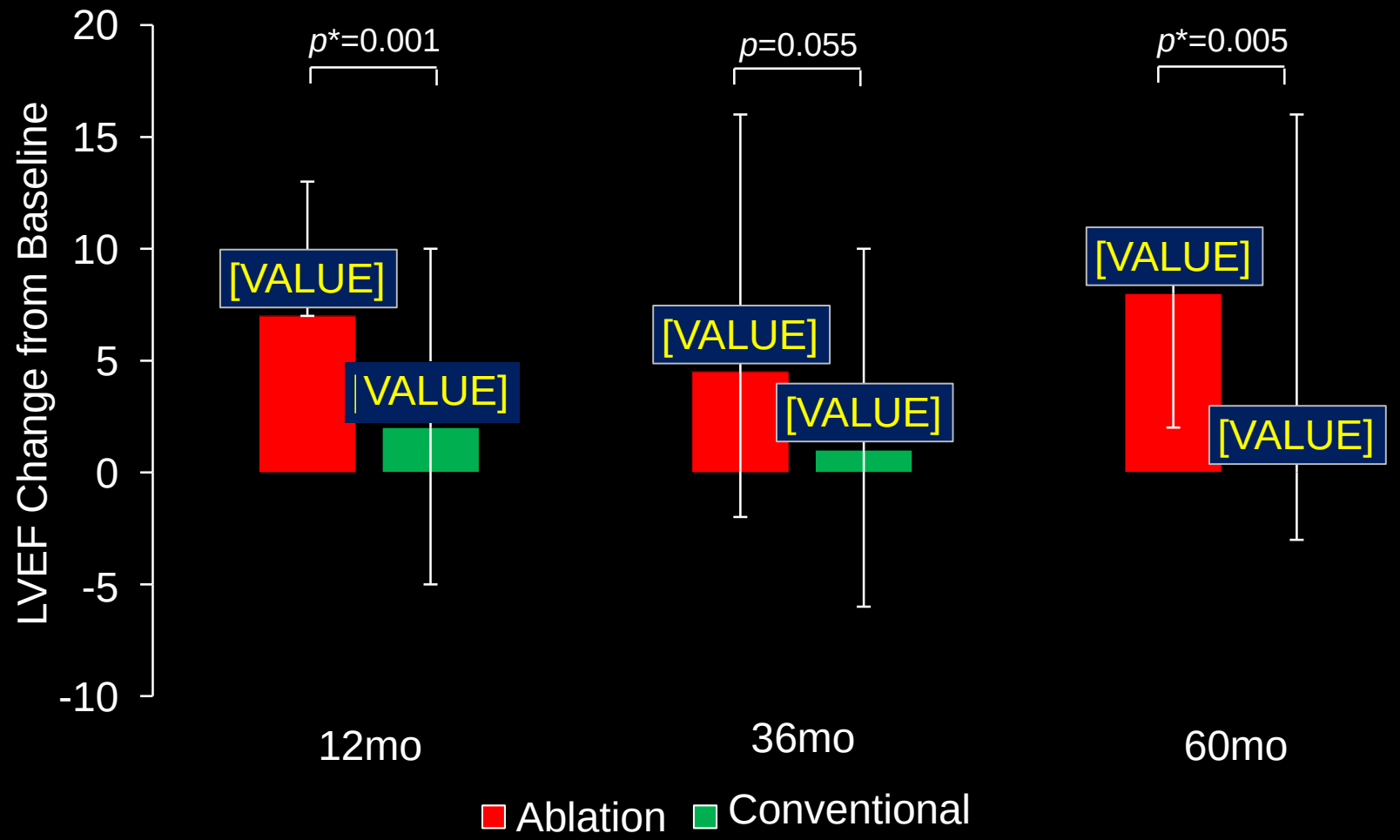
BASELINE CHARACTERISTICSCASTLE AF

	Ablation group (179 patients)	Conventional group (184 patients)
Age – years	64 (5671)	64 (5673.5)
New York Heart Association class		
I (%)	11	11
II (%)	58	61
III (%)	29	27
IV (%)	2	1
Left ventricular ejection fraction – %	32.5 (25.038.0)	31.5 (27.037.0)
Current type of atrial fibrillation		
Paroxysmal (%)	30	35
Persistent (%)	70	65
CRTD implanted (%)	27	28
ICD implanted (%)	73	72

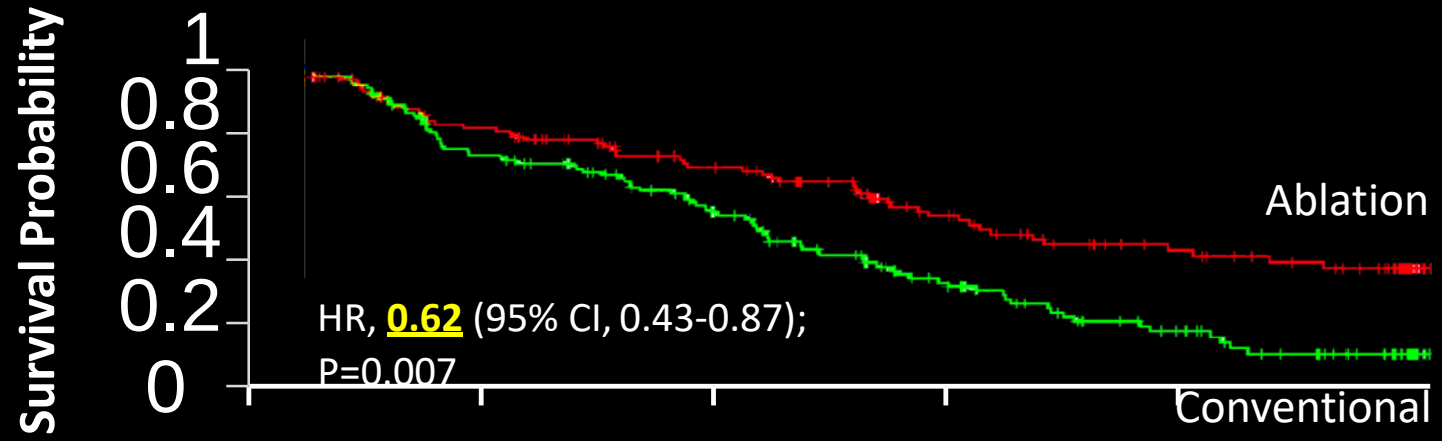
AF Burden Derived from Memory of Implanted Devices



Absolute change in LVEF from baseline



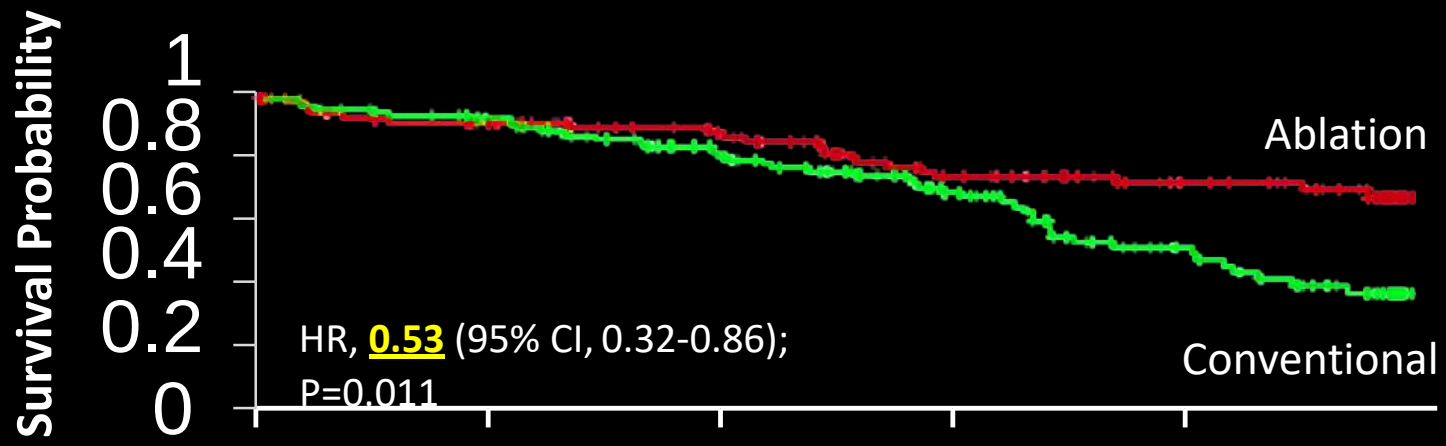
Primary Composite Endpoint



Risk Reduction 38%

Patients at Risk						
Ablation	179	141	114	76	58	22
Conventional	184	145	111	70	48	12

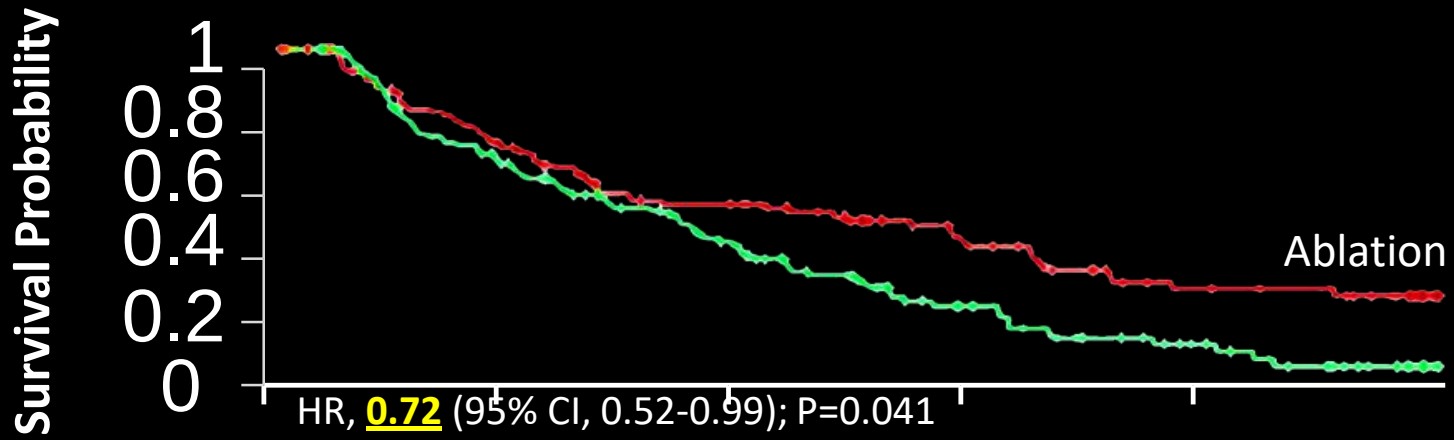
ALL-CAUSE MORTALITY



Risk Reduction47%

Patients at Risk						
Ablation	179	154	130	94	71	27
Conventional	184	168	138	97	63	19

Cardiovascular Hospitalization



Risk Reduction 28%

Patients at Risk						
Ablation	179	127	95	60	42	17
Conventional	184	131	91	52	33	8

CONCLUSION CASTLE AF

- ***Catheter ablation*** of atrial fibrillation in patients with heart failure is associated with ***improved all-cause mortality*** and ***fewer admissions for worsening heart failure*** when compared to conventional standard of care treatment
- ***Catheter ablation*** of atrial fibrillation in patients with heart failure is also associated with ***improved cardiovascular mortality*** and ***hospitalization*** when compared to conventional standard of care treatment

RECURRENCE OF ATRIAL ARRHYTHMIAS IN THE CATHETER ABLATION VERSUS ANTIARRHYTHMIC DRUG THERAPY FOR ATRIAL FIBRILLATION (CABANA) TRIAL

Jeanne E. Poole MD, George Johnson BSEE, Kristi H. Monahan RN, Hoss Rostami BSMSE, Adam Silverstein MS, Hussein Al-Khalidi PhD, Mauri Wilson RN, Yves Rosenberg MD, MPH, Tristram D. Bahnson MD, Richard A. Robb PhD, Daniel B. Mark MD, MPH, Kerry L. Lee PhD, Douglas L. Packer MD for the CABANA Investigators and ECG Rhythm Core Lab

CABANA Trial Design

Enroll patients with *new onset* or *under-treated* paroxysmal, persistent, or longstanding persistent AF who *warrant therapy*

Key Inclusion Criteria
- ≥65 years of age
- <65 years of age with ≥1 CVA/CV risk factor
- Eligible for ablation and
- ≥2 rhythm or rate control drugs

No Exclusion Criteria Identified

R
1:1

Ablation Therapy (1108)
Primary ablation:
- PVI/WACA

Ancillary ablation:
- Linear lesions
- CFAE

Anticoagulation

Drug Therapy (1096)
- Rate Control or
- Rhythm Control
- Anticoagulation

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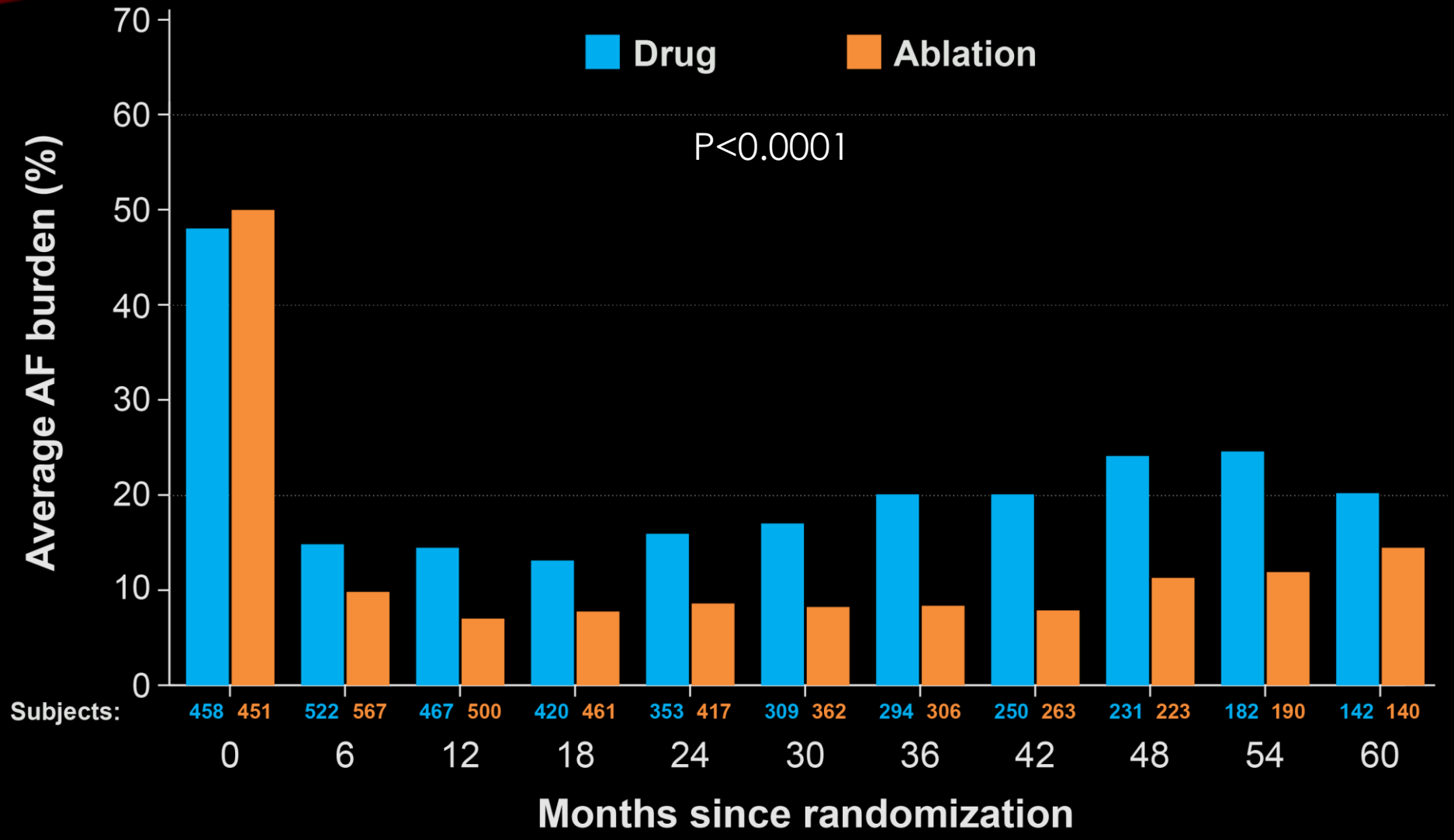
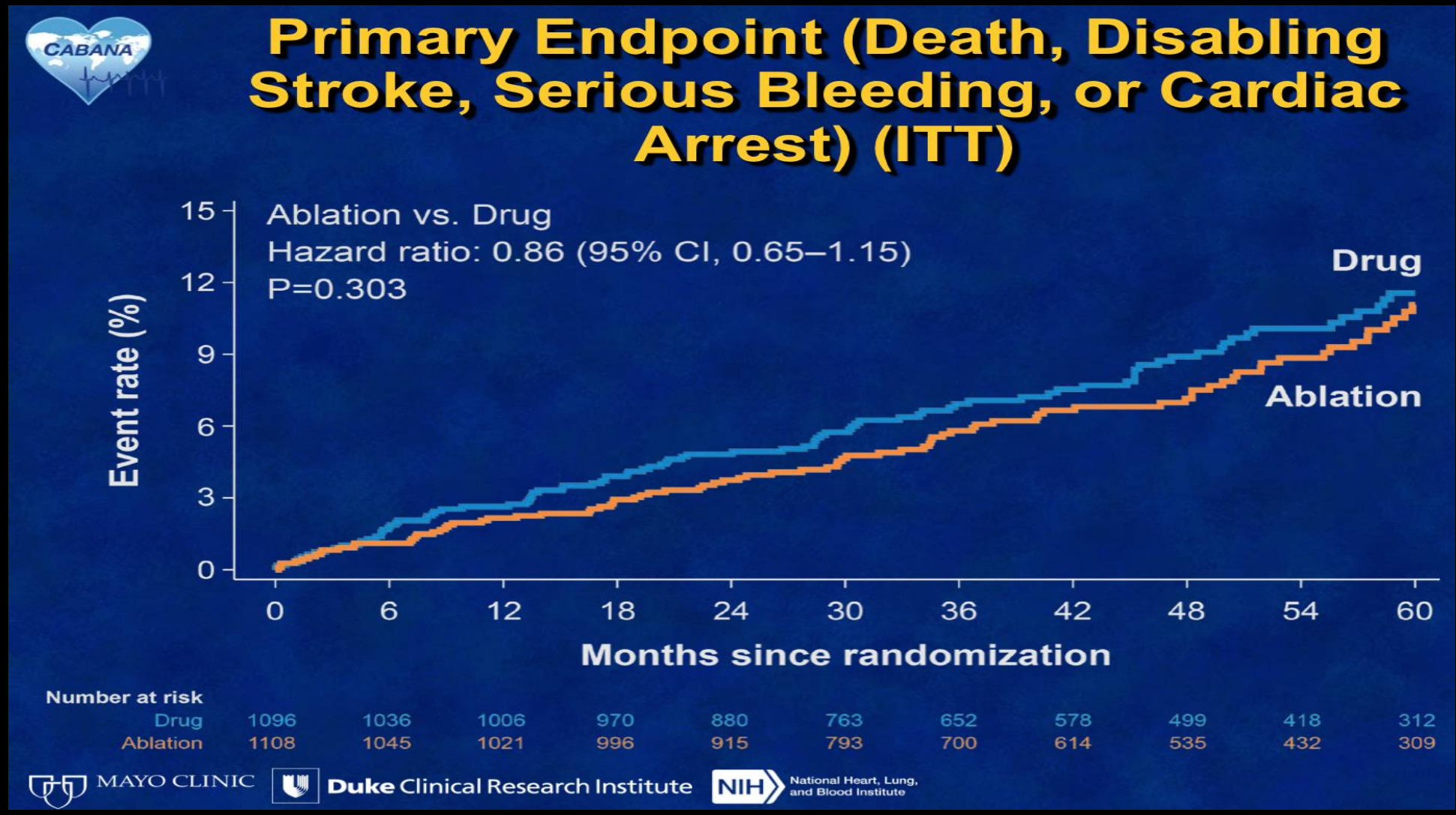
PERCENT AF BURDEN - HOLTER ANALYSIS



*Cabana study recording system only

CABANA


CABANA
Primary Endpoint (Death, Disabling Stroke, Serious Bleeding, or Cardiac Arrest) (ITT)
Ablation vs. Drug
Hazard ratio: 0.86 (95% CI, 0.65–1.15)
P=0.303
Drug
Ablation
Event rate (%)
15
12
9
6
3
0
0
6
12
18
24
30
36
42
48
54
60
Months since randomization
Number at risk
Drug 1096 1036 1006 970 880 763 652 578 499 418 312
Ablation 1108 1045 1021 996 915 793 700 614 535 432 309
MAYO CLINIC
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NIH
National Heart, Lung, and Blood Institute

CABANA

Primary and Secondary Outcomes as Randomized (ITT)

	Ablation N = 1108	Drug N = 1096	Hazard Ratio (95% CI)	P-Value
Primary Outcome				
Composite:	89 (8.0%)	101 (9.2%)	0.86 (0.65, 1.15)	0.30
Death	58 (5.2%)	67 (6.1%)	0.85 (0.60, 1.21)	0.38
Disabling stroke	3 (0.3%)	7 (0.6%)	0.42 (0.11, 1.62)	0.19
Serious bleeding	36 (3.2%)	36 (3.3%)	0.98 (0.62, 1.56)	0.93
Cardiac arrest	7 (0.6%	11 (1.0%)	0.62 (0.24, 1.61)	0.33
Secondary Outcomes				
All-cause mortality	58 (5.2%)	67 (6.1%)	0.85 (0.60, 1.21)	0.38
Death or CV hospitalization	573 (51.7%)	637 (58.1%)	0.83 (0.74, 0.93)	0.001

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CABANA

Primary and Secondary Outcomes (Treatment Received)*

	Ablation (N = 1307)	Drug (N = 897)	Hazard Ratio (95% CI)	P-Value
Primary Outcome	92 (7.0%)	98 (10.9%)	0.67 (0.50, 0.89)	0.006
Secondary Outcomes				
All-cause mortality	58 (4.4%)	67 (7.5%)	0.60 (0.42, 0.86)	0.005
Death or CV hospitalization	538 (41.2%)	672 (74.9%)	0.83 (0.74, 0.94)	0.002

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*pre-specified

Conclusion of the CABANA Trial

- Ablation did not produce a significant reduction in the primary endpoint and all-cause mortality.
- The results were affected by cross-overs in both directions and lower than expected event rates.
- Ablation significantly reduced mortality or CV hospitalization by 17% compared to drug therapy.
- There also was a significant 47% reduction in recurrent AF with ablation compared to drug therapy.
- A 33% reduction in the primary endpoint and 40% mortality risk reduction was present when patients actually *underwent* ablation *(treatment received)*.
- Ablation is an acceptable treatment strategy for treating AF with low adverse event rates even in higher risk patients.

Μπορείς να βρεις το το Λάθος;

1 2 3 4 5 6 7 8 9