31 GIORNATE CARDIOLOGICHE TORINESI

ATRIAL FIBRILLATION, SOMETHING MORE TO LEARN?

What to do if Atrial Fibrillation is asymptomatic

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Disclosures:

- Abbott (educational grant)
- Biosense Webster (consultant)

SILENT (asymptomatic) AF

Silent (asymptomatic) AF: documented AF in the absence of any symptoms or prior diagnosis often presenting with a complication related to AF e.g. stroke, heart failure, etc.

DOCUMENTED AF in the absense of any symptoms or prior diagnosis, often presenting with a complication related to AF (stroke, heart failure..).

ESC European Society of Cardiology

Europace (2017) **19**, 1556–1578
doi:10.1093/europace/eux163

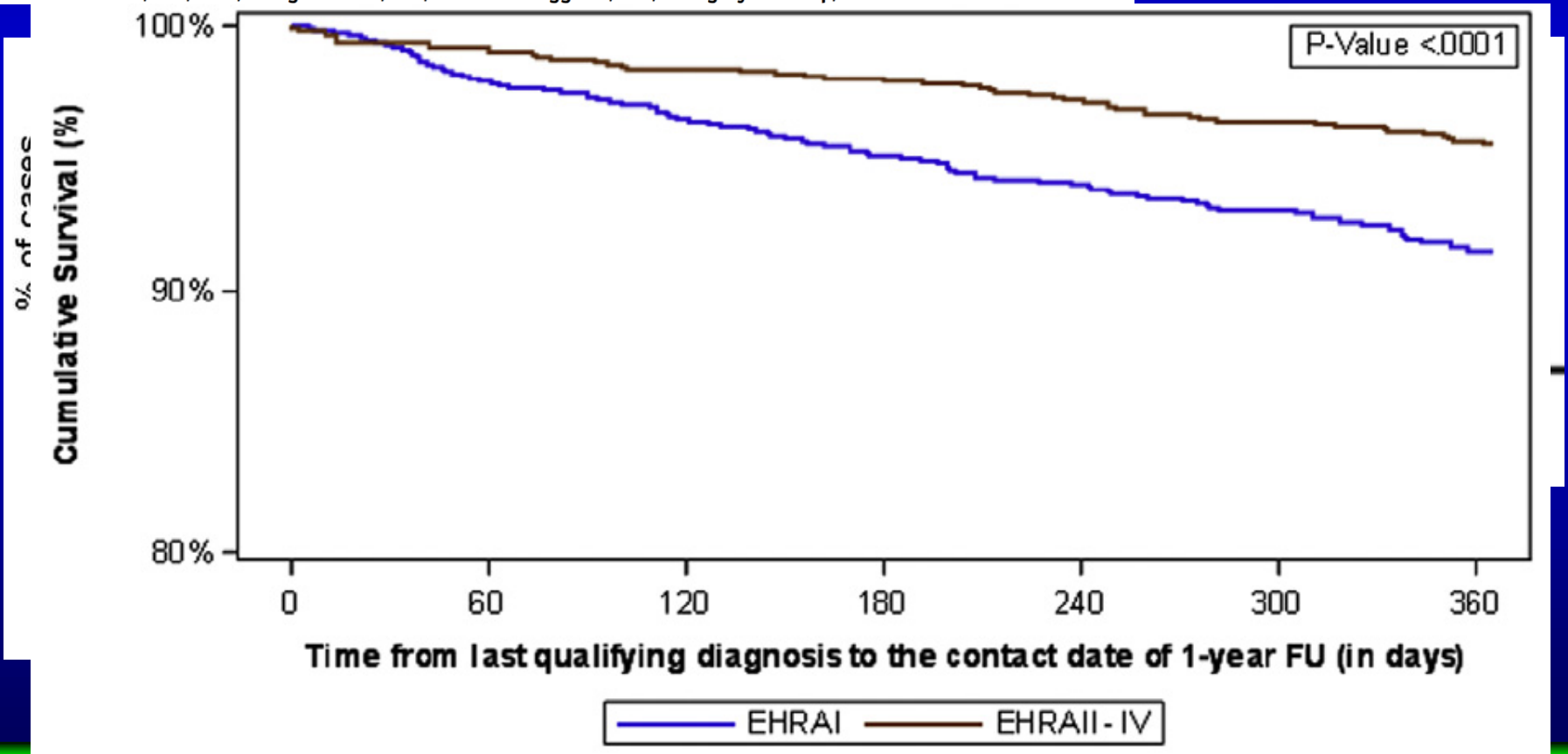
EHRA CONSENSUS DOCUMENT
2017

CLINICAL RESEARCH STUDY 2015

THE AMERICAN JOURNAL of MEDICINE®

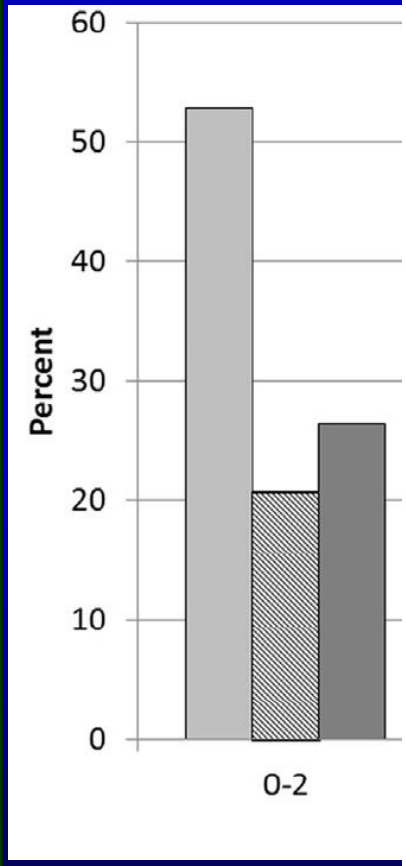
Asymptomatic Atrial Fibrillation: Clinical Correlates, Management, and Outcomes in the EORP-AF Pilot General Registry

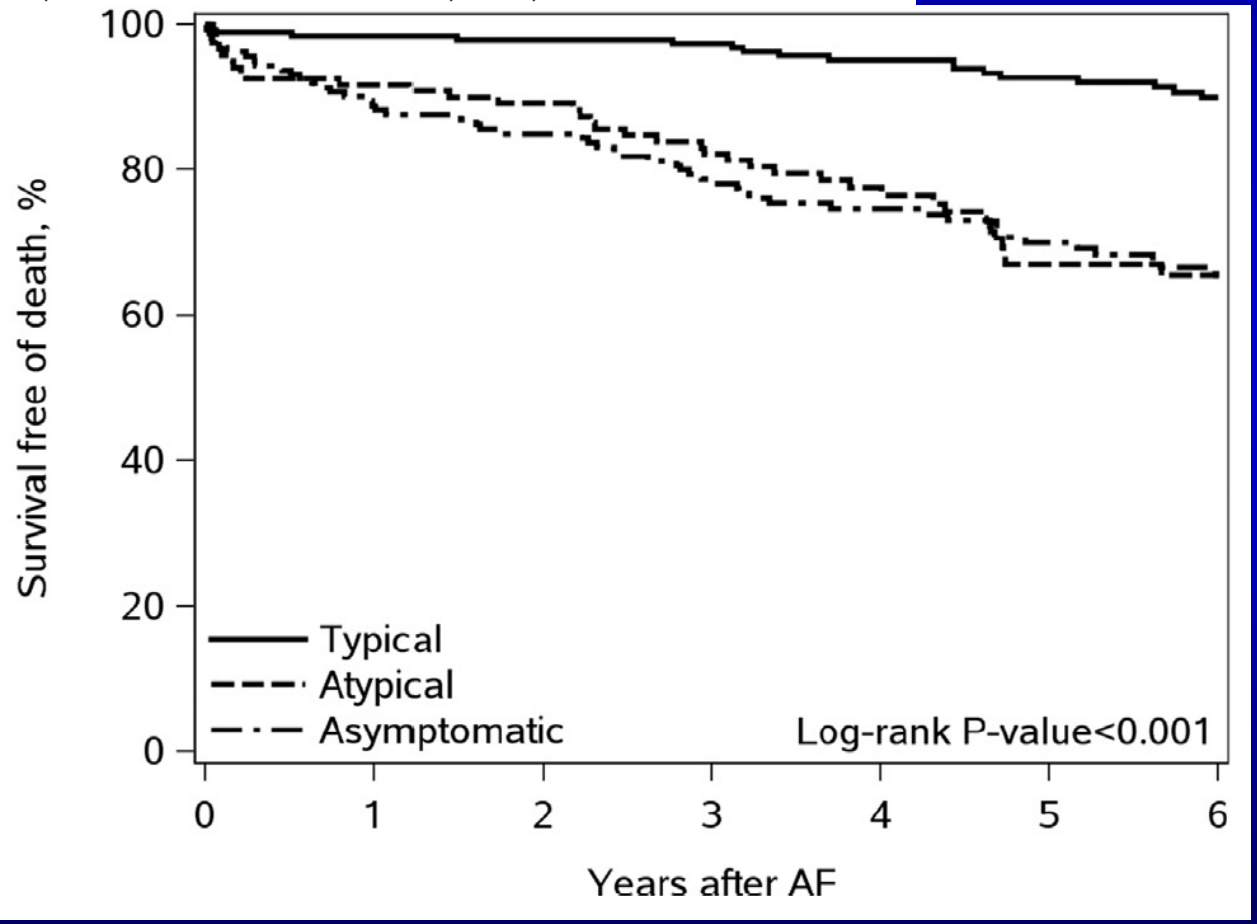
Giuseppe Boriani, MD, PhD,[a] Cecile Laroche, MSc,[b] Igor Diemberger, MD, PhD,[a] Elisa Fantecchi, MD,[a] Mircea Ioachim Popescu, MD, PhD,[c] Lars Hvilsted Rasmussen, MD, PhD,[d] Gianfranco Sinagra, MD,[e] Lucian Petrescu, MD, PhD,[f] Luigi Tavazzi, MD,[g] Aldo P. Maggioni, MD,[h] Gregory Y.H. Lip, MD[i]



Typical, atypical, and asymptomatic presentations of new-onset atrial fibrillation in the community: Characteristics and prognostic implications

Konstantinos C. Siontis, MD,[*†] Bernard J. Gersh, MB, ChB, DPhil,[‡] Jill M. Killian, BS,[§] Peter A. Noseworthy, MD, FHRS,[‡] Pamela McCabe, PhD, RN,[¶] Susan A. Weston, MS,[§] Veronique L. Roger, MD, MPH,[‡§] Alanna M. Chamberlain, PhD, MPH[§]





Heart Rhythm 2016

Screening for Atrial Fibrillation

A Report of the AF-SCREEN International Collaboration

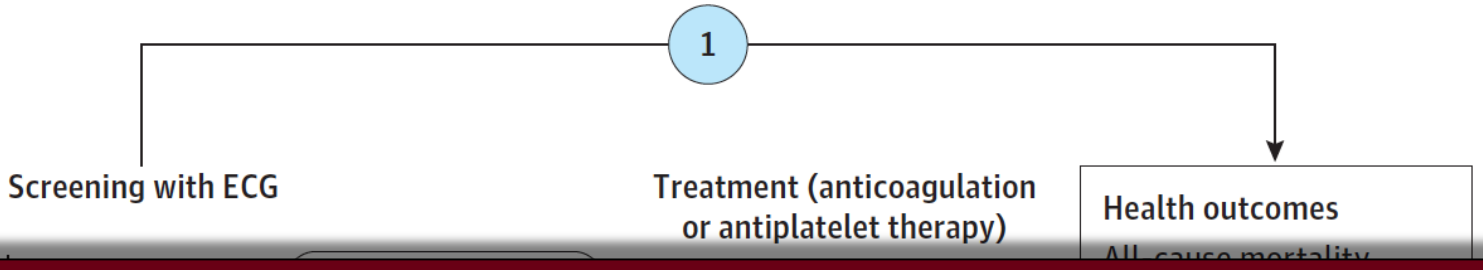
Device	Method of Interpretation	Sensitivity (%)	Specificity (%)	Reference
Pulse palpation		94 (84–97)	72 (69–75)	Cooke et al[55]
Handheld single-lead ECGs				
AliveCor (Kardia) heart monitor	Algorithm only (based on presence of P wave and RR irregularity)	98 (89–100)	97 (93–99)	Lau et al[56]
Merlin ECG event recorder	Cardiologist interpretation	93.9	90.1	Kearley et al[57]
Mydiagnostick	Algorithm only (based on RR irregularity)	94 (87–98)	93 (85–97)	Tieleman et al[58]
				Vaes et al[59]
Omron HCG-801	Algorithm only (based on RR irregularity)	98.7 (93.2–100)	76.2(73.3–78.9)	Kearley et al[57]
Omron HCG-801	Cardiologist interpretation	94.4	94.6	Kearley et al[57]
Zenicor EKG	Cardiologist interpretation	96	92	Doliwa et al[60]
Modified blood pressure monitors				
Microlife BPA 200 Plus	Algorithm only (based on pulse irregularity)	92	97	Marazzi et al[61]
Microlife BPA 200	Algorithm only (based on pulse irregularity)	97 (81.4–100)	90 (83.8–94.2)	Wiesel et al[62]
Omron M6	Algorithm only (based on pulse irregularity)	100	94	Marazzi et al[61]
Omron M6 comfort	Algorithm only (based on pulse irregularity)	30 (15.4–49.1)	97 (92.5–99.2)	Wiesel et al[62]
Microlife WatchBP	Algorithm only (based on pulse irregularity)	94.9 (87.5–98.6)	89.7 (87.5–91.6)	Kearley et al[57]
Plethysmographs				
Finger probe	Algorithm only (based on pulse irregularity)	100	91.9	Lewis et al[63]
iPhone photo-plethysmograph	Algorithm only (based on pulse irregularity)	97.0	93.5	McManus et al[64]*

Freedman Circulation 2017

JAMA | US Preventive Services Task Force | EVIDENCE REPORT

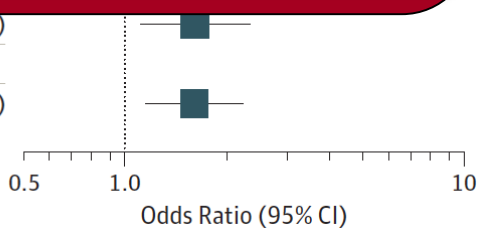
Screening for Atrial Fibrillation With Electrocardiography
Evidence Report and Systematic Review for the US Preventive Services Task Force

Daniel E. Jonas, MD, MPH; Leila C. Kahwati, MD, MPH; Jonathan D. Y. Yun, MD; Jennifer Cook Middleton, PhD; Manny Coker-Schwimmer, MPH; Gary N. Asher, MD, MPH



expected outcomes:
reduction of the risk of **stroke** and all-cause **mortality**
increased risk of **bleeding**
NOT ASSESSED in CLINICAL TRIALS

SAFE,[23-27] 2007	12	75/4933 (1.5)	47/4936 (1.0)	0.57 (0.13 to 1.00)	1.61 (1.11-2.32)
Any screening vs no screening					
SAFE,[23-27] 2007	12	149/9866 (1.5)	47/4936 (1.0)	0.56 (0.20 to 0.92)	1.60 (1.15-2.22)



SUBCLINICAL ATRIAL FIBRILATION (SCAF)

Subclinical atrial fibrillaton (AF): atrial high-rate episodes (>6 minutes and <24-hours) with lack of correlated symptoms in patients with cardiac implantable electronic devices, detected with continuous ECG monitoring (intracardiac) and without prior diagnosis (ECG or Holter monitoring) of AF.

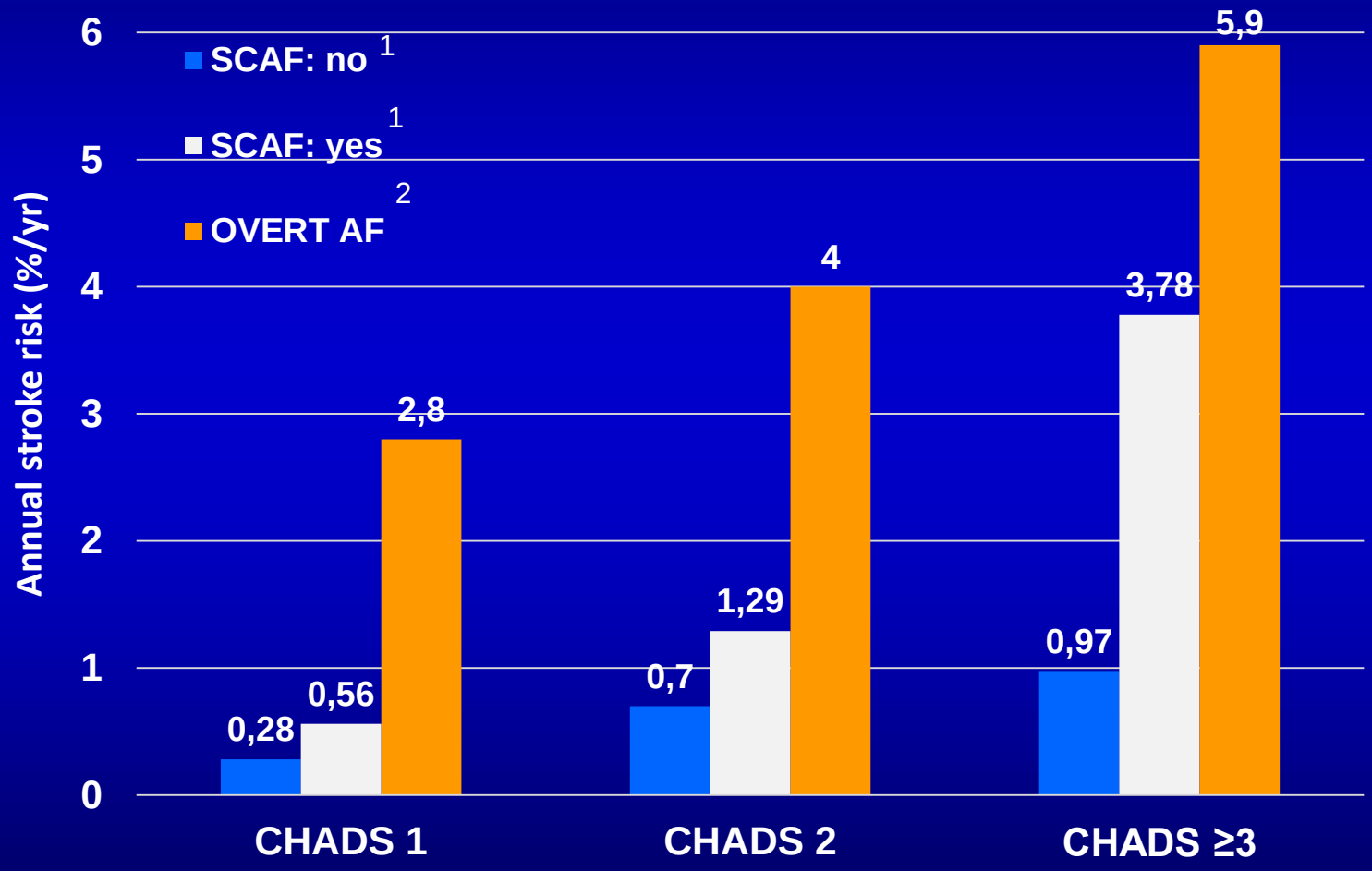
> 6 minutes e < 24 hours with lack of symptoms in patients with cardiac implantable electronic devices

ESC European Society of Cardiology

Europace (2017) **19**, 1556–1578
doi:10.1093/europace/eux163

EHRA CONSENSUS DOCUMENT
2017

STROKE RISK FOR SCAF IS LOWER COMPARED TO CLINICAL AF



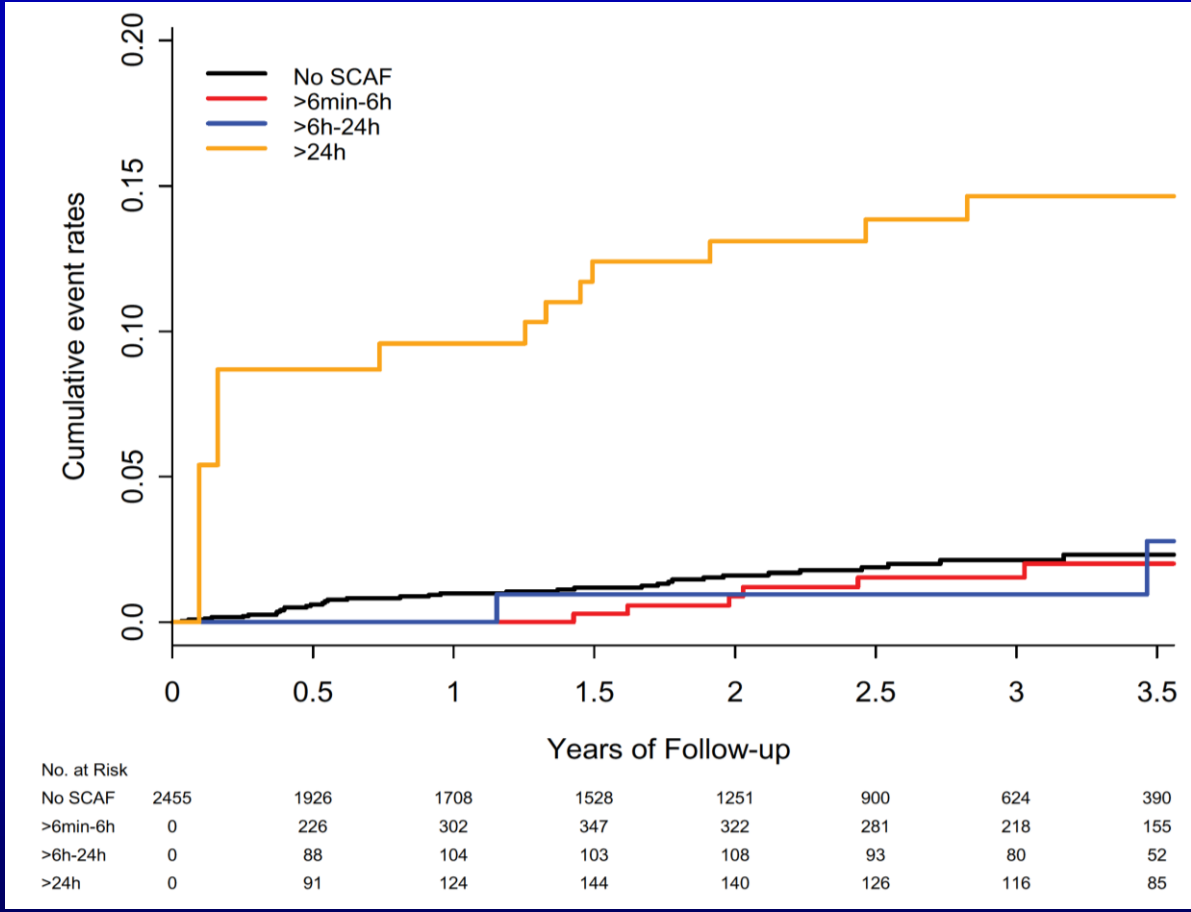
[1] Healey JS et al. N Engl J Med 2012;366:120-9

[2] Gage BF et al. JAMA 2001; 285:2864-70

RISK OF STROKE ACCORDING TO DURATION OF SCAF – ASSERT SUBANALYSIS

Stroke risk in ASSERT is seen mostly for patients with SCAF lasting >24 h.

In them, the risk is approximately 5% year – similar to clinical AF



No. at Risk								
No SCAF	2455	1926	1708	1528	1251	900	624	390
>6min-6h	0	226	302	347	322	281	218	155
>6h-24h	0	88	104	103	108	93	80	52
>24h	0	91	124	144	140	126	116	85

Van Gelder IC et al. Eur Heart J 2017; 0: 1-6

Screening for Atrial Fibrillation

A Report of the AF-SCREEN International Collaboration

Trial (Year)	Number of Patients	Duration of Follow-Up	Atrial Rate Cutoff (bpm)	AF Burden Threshold	Hazard Ratio for TE Event	TE Event Rate (Below vs. Above AF Burden Threshold)
Ancillary MOST[10] (2003)	312	27 mo (median)	>220	5 min	6.7 (*P*=0.020)	3.2% overall (1.3% vs. 5%)
Italian AT500 Registry[7] (2005)	725	22 mo (median)	>174	24 h	3.1 (*P*=0.044) (95% CI, 1.1–10.5)	1.2% annual rate
Botto et al[6] (2009)	568	1 y (mean)	>174	$CHADS_2$+AF burden	n/a	2.5% overall (0.8% vs. 5%)
TRENDS[9] (2009)	2486	1.4 y (mean)	>175	5.5 h	2.2 (95% CI, 0.96–5.05, *P*=0.06)	1.2% overall (1.1% vs. 2.4%)
Home Monitor CRT[18] (2012)	560	370 days (median)	>180	3.8 h	9.4 (95% CI, 1.8–47, *P*=0.006)	2.0% overall
ASSERT[11] (2012)	2580	2.5 y (mean)	>190	6 min	2.5 (*P*=0.007) (95% CI, 1.28–4.85)	(0.69% vs. 1.69%)
SOS[27] (2014)	10016	2 y (median)	>175	1 h	2.11 (*P*=0.008) (95% CI, 1.22–3.64)	0.39% per year overall
RATE Registry[13] (2016)	5379 (3141 with pacemakers and 2238 with ICDs)	22.9 mo (median)	NA	Nonsustained atrial high-rate episodes with a duration from 3 atrial premature complexes to 15–20 s	0.87 (95% CI, 0.58–1.31, *P*=0.51)	For nonsustained atrial high-rate episodes: 0.55% (0.34%–0.76%) per year for pacemakers and 0.81% (0.50%–1.12%) per year for ICDs

Freedman Circulation 2017

Probing oral anticoagulation in patients with atrial high rate episodes: Rationale and design of the Non–vitamin K antagonist Oral anticoagulants in patients rate episodes (NOAH–AFI

Paulus Kirchhof, MD,[a,b,c,d,e] Benjamin F. Blank[d] Melanie
Hans-Christoph Diener, MD,[i] Andreas Goette, MD,[d,j]
Emmanuel Simantirakis, MD,[m] and Panos Vardas, MD
Paderborn, Munich, Germany; Crete, Greece; and Aalb

Pre-Study Screening

Study Proc

Patients at risk for cardiovascular events
(Age ≥65 years and ≥1 additional CHA_2DS_2VASc factor)

and

AHRE documented by an implanted device

Main exclusion criteria:
- Conventionally diagnosed AF
- Indication for oral anticoagulation
- Contraindication for NOAC therapy

Stratification by indication of acetylsalicylic acid

Randomisation

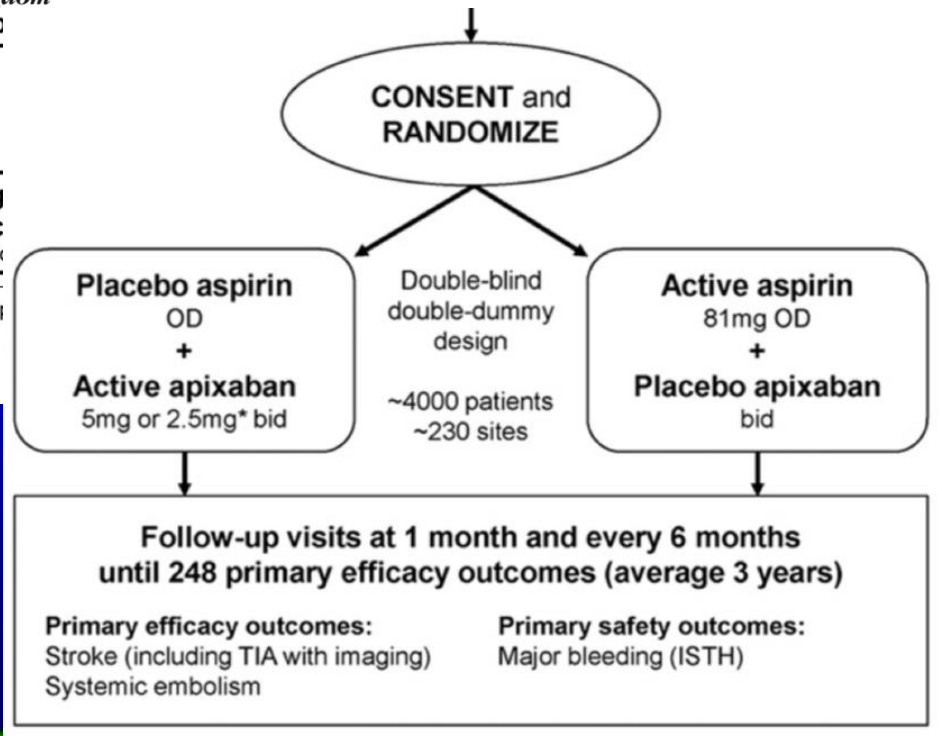
NOAC group

Usual Care g
No oral antic
(acetylsalicylic aci

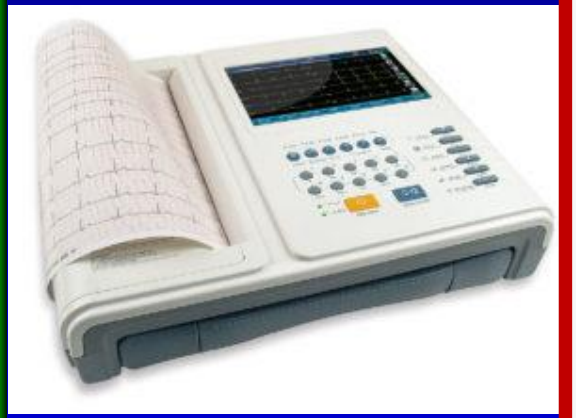
Outpatient follow-up

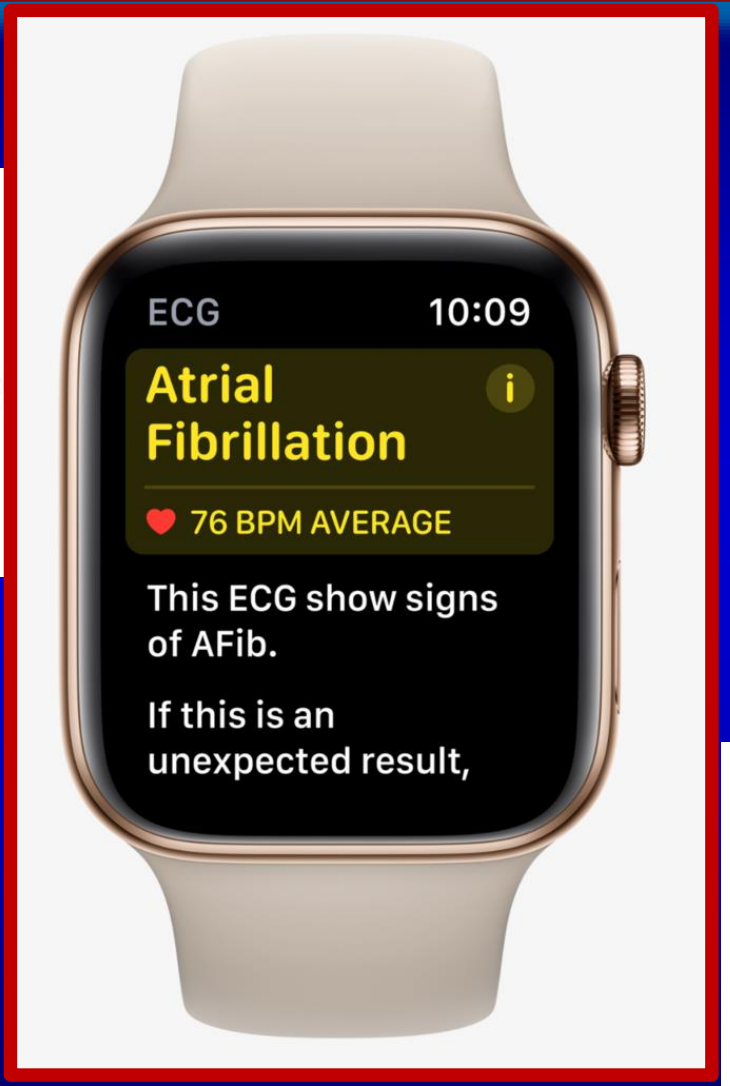
Rationale and design of the Apixaban for the Reduction of Thrombo-Embolism in Patients With Device-Detected Sub-Clinical Atrial Fibrillation (ARTESiA) trial

Renato D. Lopes, MD, MHS, PhD,[a] Marco Alings, MD, PhD,[b] Stuart J. Connolly, MD,[c] Heather Beresh, MSc,[c] Christopher B. Granger, MD,[a] Juan Benezet Mazuecos, MD,[d] Giuseppe Boriani, MD, PhD,[e] Jens C. Nielsen, MD, DMSc,[f] David Conen, MD, MPH,[c,g] Stefan H. Hohnloser, MD,[h] Georges H. Mairesse, MD,[i] Philippe Mabo, MD,[j] A. John Camm, MD,[k] and Jeffrey S. Healey, MD, MSc[c] *Durham, NC; Utrecht, the Netherlands; Hamilton, Canada; Madrid, Spain; Modena, Italy; Aarhus, Denmark; Basel, Switzerland; Frankfurt, Germany; Arlon, Belgium; Rennes, France; and London, United Kingdom*



SILENT (asymptomatic) AF



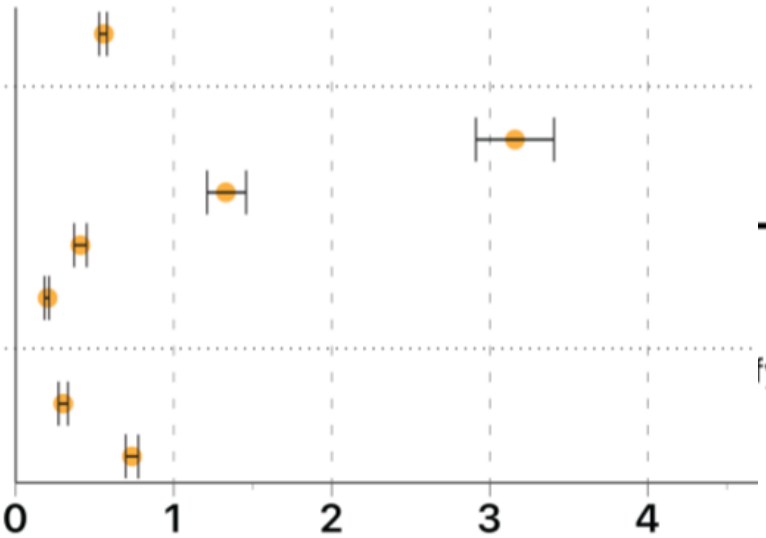


The Apple Heart Study

Mintu Turakhia MD MAS and Marco Perez MD
on behalf of the Apple Heart Study Investigators

Irregular Pulse Notification Algorithm

Grouping		Notified / Total	%
	Overall	2,161 / 419,297	0.52
Age	≥ 65	775 / 24,626	3.2
	55–64	556 / 42,633	1.3
	40–54	488 / 132,696	0.37
	22–39	341 / 219,179	0.16
Sex	Female	461 / 177,087	0.26
	Male	1,672 / 238,700	0.70



Algorithm results
- Regular pulse
- Suggestive of Afib

Am Heart J 2019 and ACC 2019

HUAWEI HEART STUDY
(PRE-MAFA)

AF screening study App

AF screening

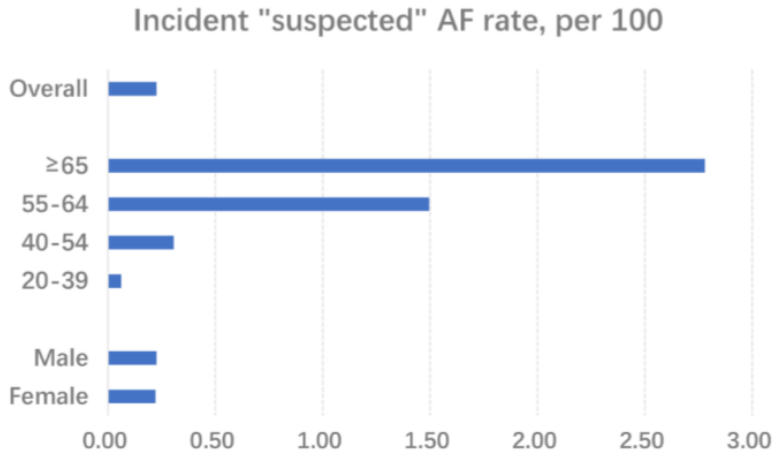
MAFA
TELECARE TEAM

MAFA
HOSPITAL

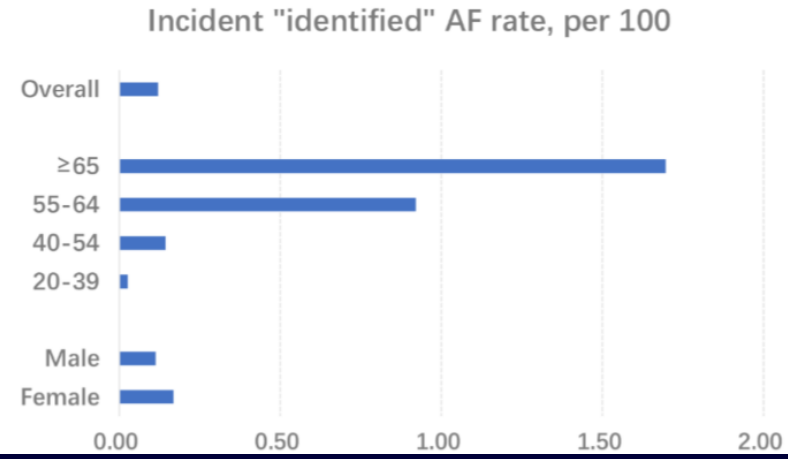
Inclus
Adult
Huawe
Smart
Huawei W
Honor Wa
Honor Ban

hone or devices

	Suspected AF	Total	%	95%CI
Overall	424	187912	0.23	(0.21-0.25)
⩾65	95	3419	2.78	(2.28-3.38)
55-64	112	7491	1.50	(1.24-1.80)
40-54	136	44432	0.31	(0.26-0.36)
18-39	81	132570	0.06	(0.05-0.08)
Male	369	162972	0.23	(0.20-0.25)
Female	55	24938	0.22	(0.17-0.29)

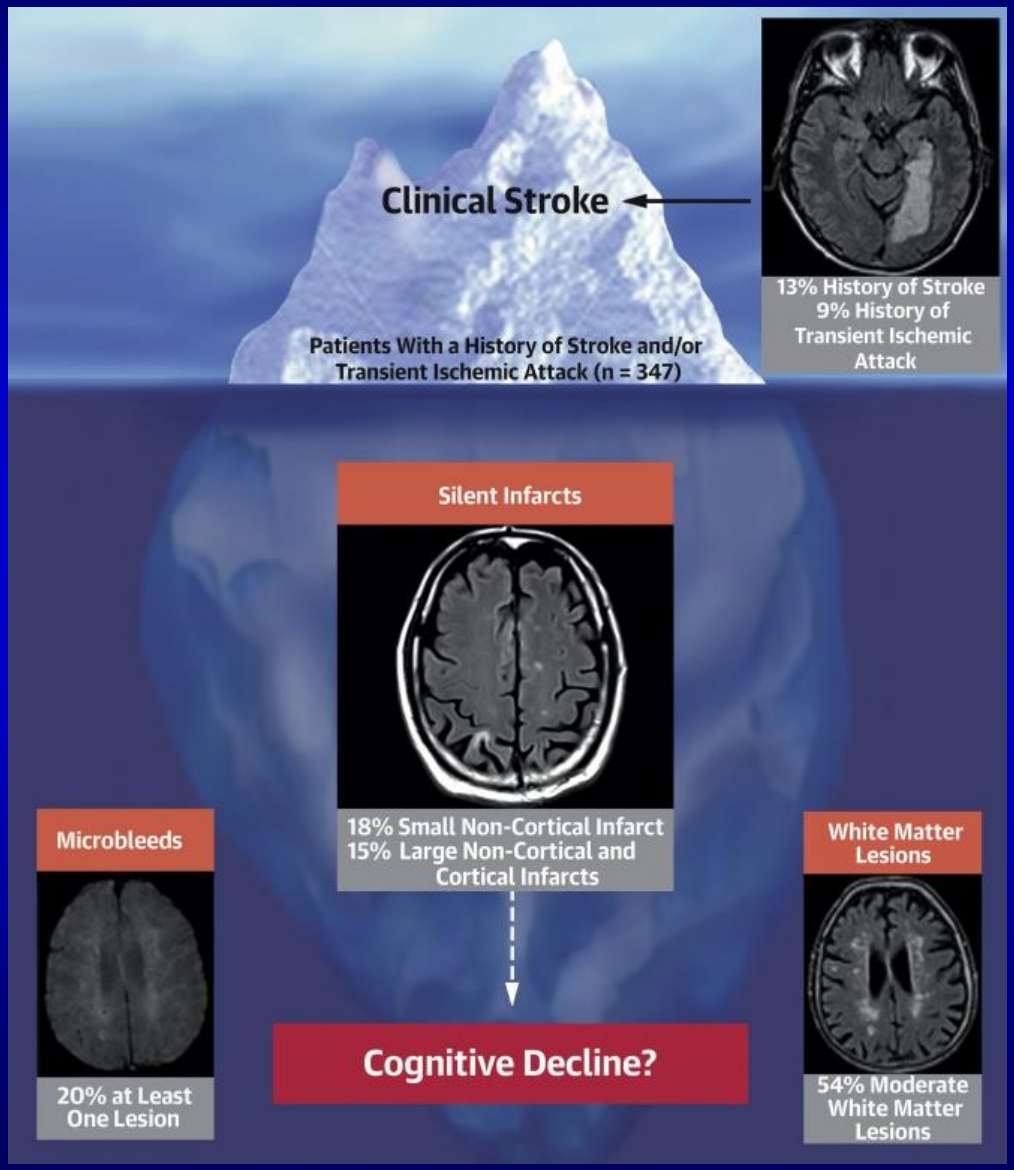


	Identified AF	Total	%	95%CI
Overall	227	187912	0.12	0.11-0.14
⩾65	58	3419	1.70	(1.31-2.19)
55-64	69	7491	0.92	(0.73-1.16)
40-54	64	44432	0.14	(0.11-0.18)
18-39	36	132570	0.03	(0.02-0.04)
Male	185	162972	0.11	(0.10-0.13)
Female	42	24938	0.17	(0.12-0.23)



Guo JACC 2019

Can AF be harmless?



SWISS-AF Study

1,737 patients
mean age 73±8 years
28% women
90% taking OACs

Conen JACC 2019

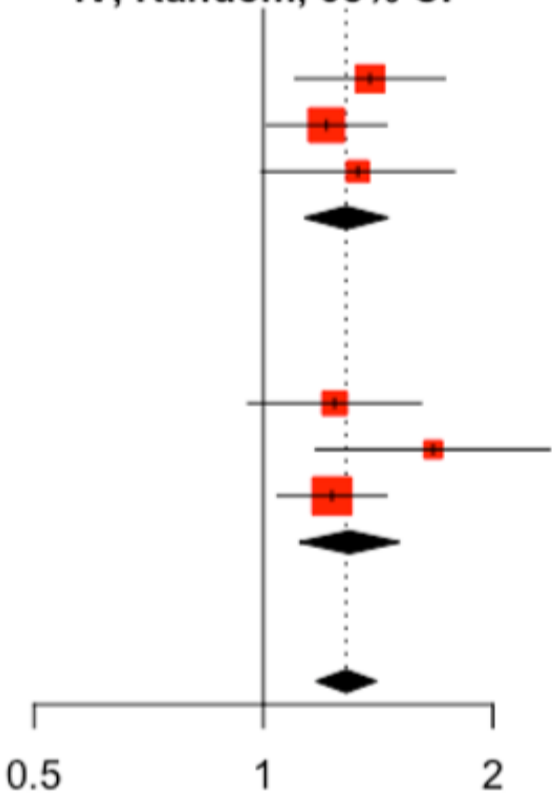
Can AF be harmless?

openheart

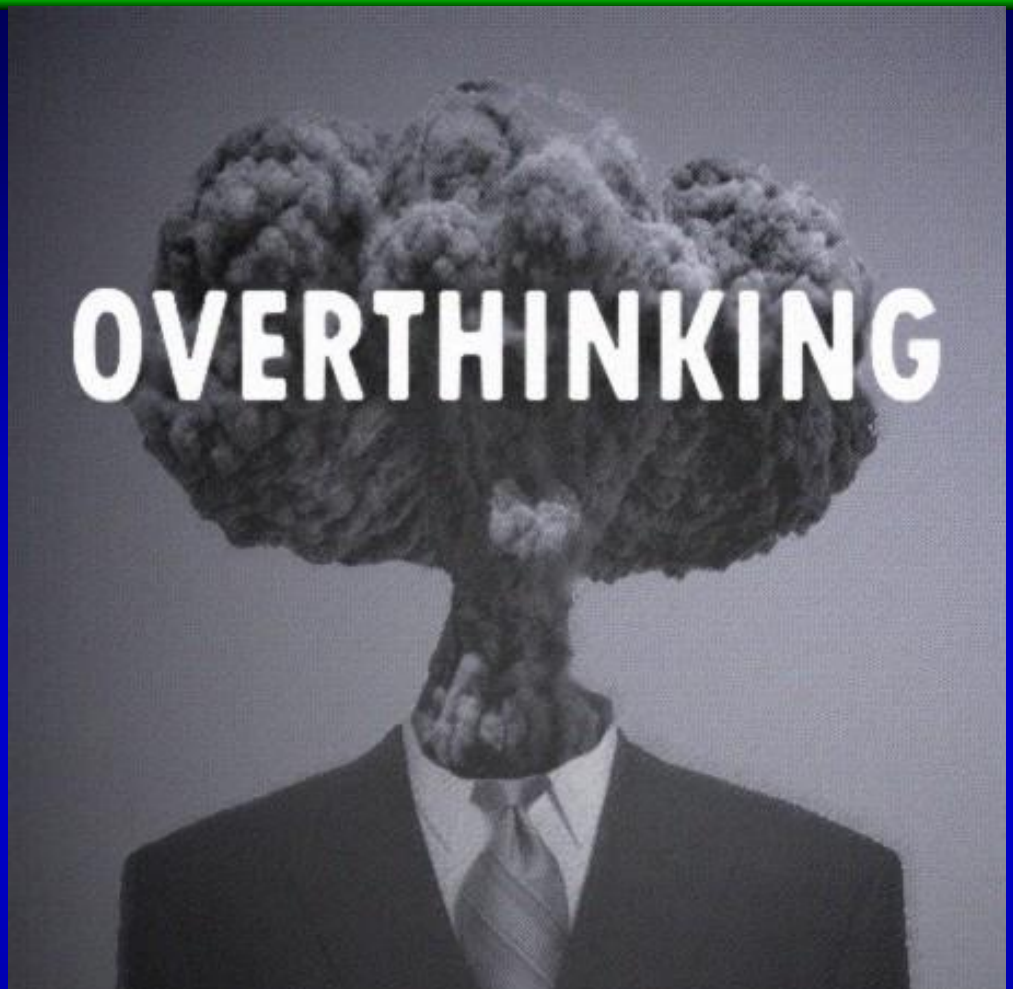
Stroke-independent contribution of atrial fibrillation to dementia: a meta-analysis

Andrea Saglietto,[1] Mario Matta,[2] Fiorenzo Gaita,[3] Victoria Jacobs,[4] Thomas Jared Bunch,[4] Matteo Anselmino[1]

Study or Subgroup	TE	SE	Weight	Hazard Ratio IV, Random, 95% CI
AF = Prevalent AF				
Dublin 2011	0.32	0.1153	16.1%	1.38 [1.10; 1.73]
Marzona 2012	0.19	0.0923	25.1%	1.21 [1.01; 1.45]
De Bruijn 2015 - II	0.29	0.1487	9.7%	1.33 [0.99; 1.78]
Total (95% CI)			51.0%	1.28 [1.13; 1.46]
Heterogeneity: $Tau^2 = 0$; $Chi^2 = 0.86$, df = 2 (P = 0.65); $I^2 = 0\%$				
AF = Incident AF				
De Bruijn 2015 - I	0.22	0.1332	12.1%	1.24 [0.96; 1.61]
Singh-Manoux 2017	0.51	0.1808	6.6%	1.67 [1.17; 2.38]
Chen 2018	0.21	0.0840	30.4%	1.23 [1.04; 1.45]
Total (95% CI)			49.0%	1.30 [1.11; 1.51]
Heterogeneity: $Tau^2 = 0.0036$; $Chi^2 = 2.44$, df = 2 (P = 0.29); $I^2 = 18\%$				
Total (95% CI)			**100.0%**	**1.28 [1.17; 1.41]**
Heterogeneity: $Tau^2 = 0$; $Chi^2 = 3.31$, df = 5 (P = 0.65); $I^2 = 0\%$				



Heart 2019



medicina 2019

MDPI

Review

Subclinical and Asymptomatic Atrial Fibrillation: Current Evidence and Unsolved Questions in Clinical Practice

Andrea Ballatore [1], Mario Matta [2], Andrea Saglietto [1], Paolo Desalvo [1], Pier Paolo Bocchino [1], Fiorenzo Gaita [3], Gaetano Maria De Ferrari [1] and Matteo Anselmino [1,*]


Thanks for your attention!

AIAC

Associazione Italiana Aritmologia e Cardiostimolazione

Esposizione radiologica durante procedure interventistiche di elettrofisiologia/elettrostimolazione