SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Parma

La chiusura percutanea dell'auricola sinistra nella prevenzione dell'embolia cardiogena

Umberto Scoditti

Programma Stroke Care

Dipartimento di Neuroscienze

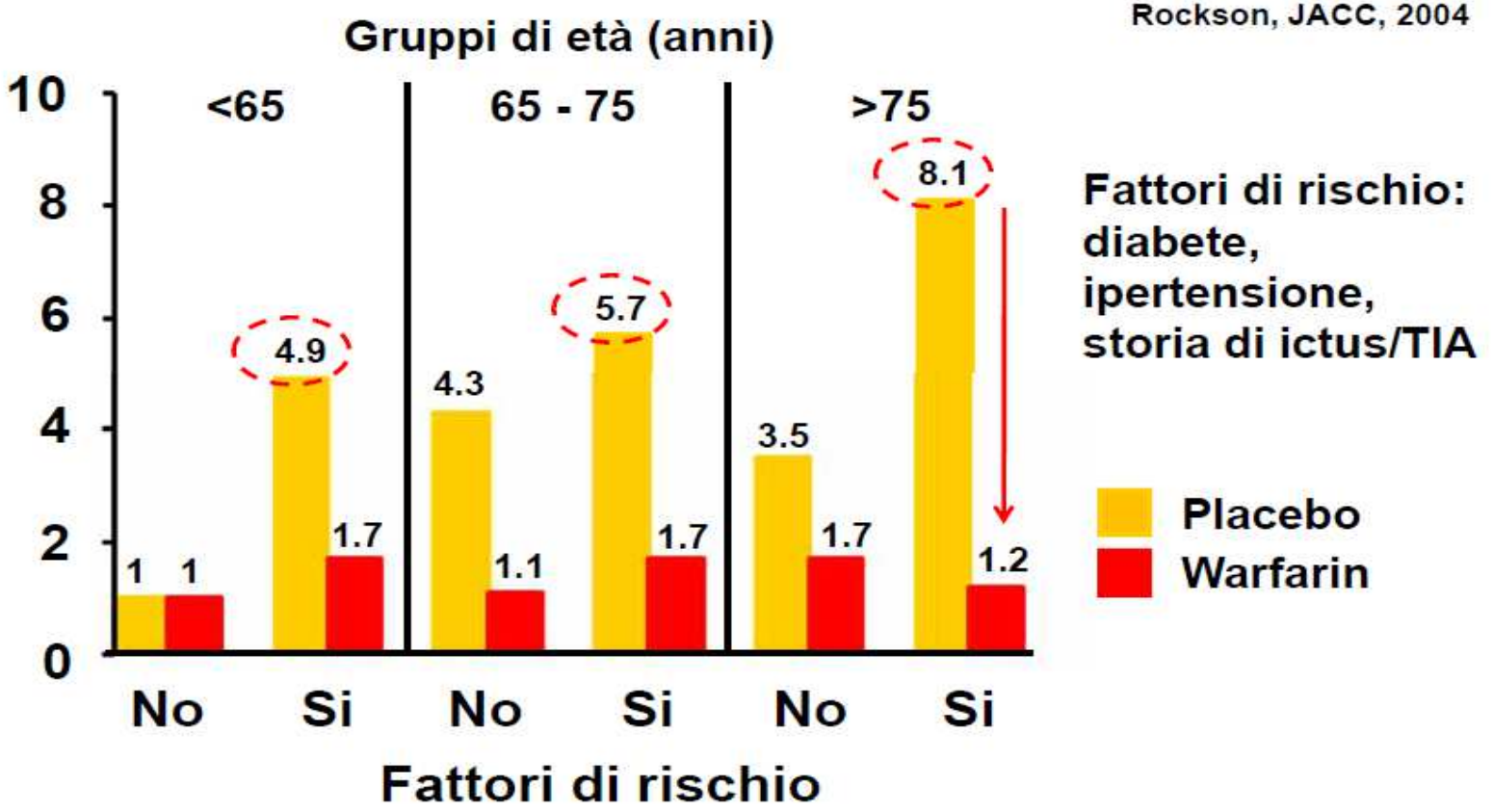
Azienda Ospedaliero Universitaria di Parma

Parma 21 gennaio 2014

Rischio annuale di ictus in pazienti con fibrillazione atriale, per gruppi di età

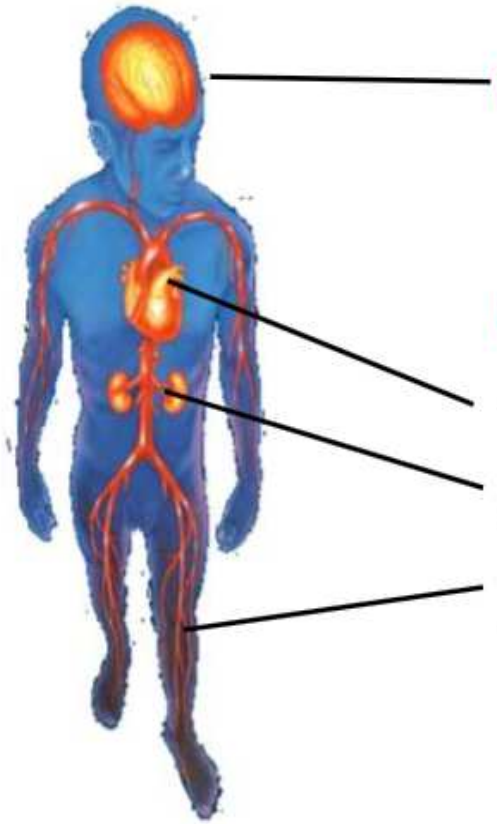
The Atrial Fibrillation Investigators

AFI, Arch Int Med, 1994
Rockson, JACC, 2004



AF identifies millions of people with a five-fold increased risk of stroke

Atrial Fibrillation and Cardioembolic syndromes



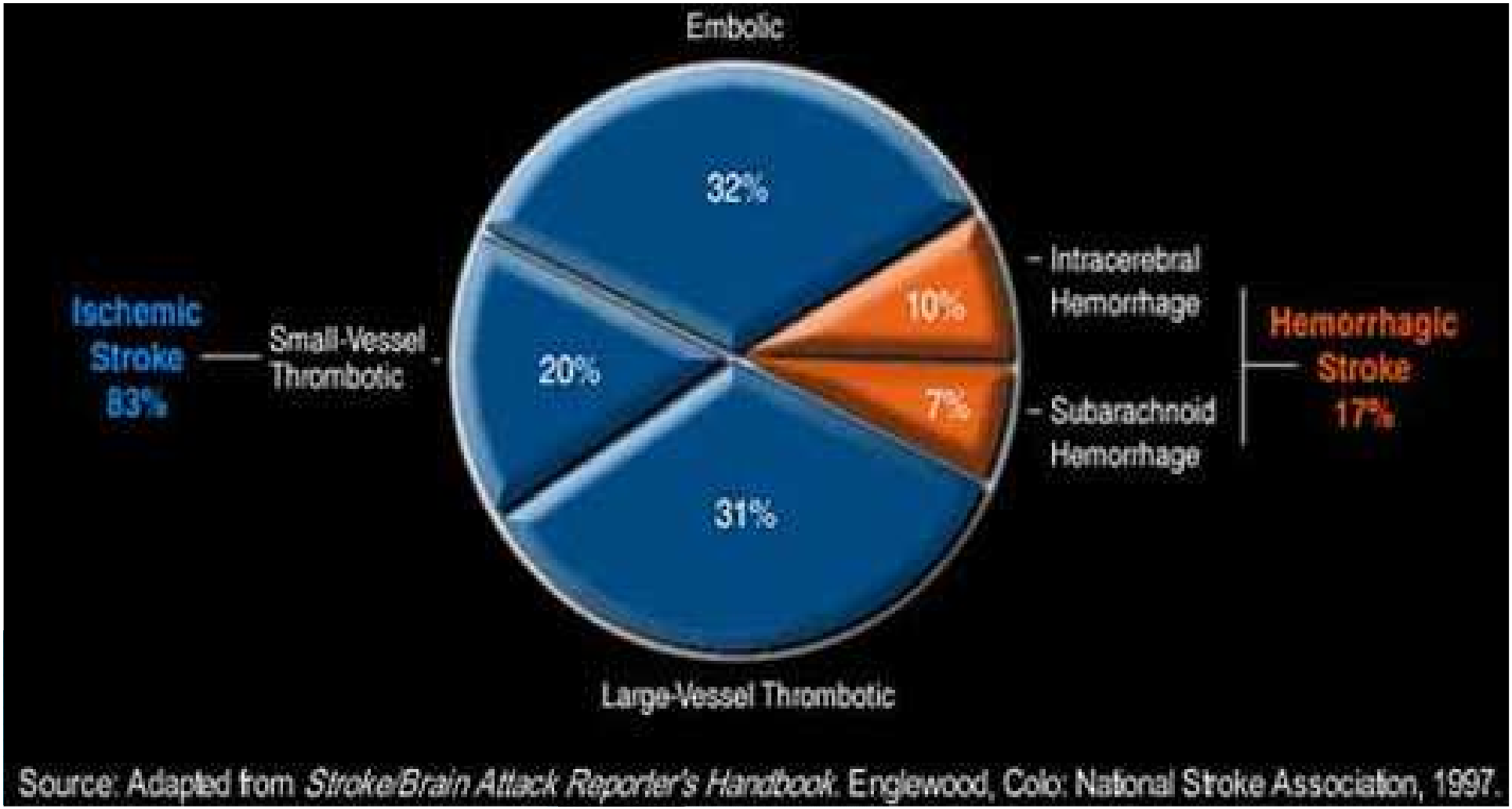
Cerebral Cardio-embolism (85%)*

Peripheral Cardio-embolism (15%) *

- Coronary (MI)
- Visceral (Mesenteric, Renal, etc.)
- Limbs

* Cabin Am J Cardiol 1990

Frequenza dei sottotipi di stroke



Source: Adapted from *Stroke/Brain Attack Reporter's Handbook*. Englewood, Colo: National Stroke Association, 1997.

Adelaide Stroke Incidence Study Declining Stroke Rates but Many Preventable Cardioembolic Strokes

Stroke
Journal of the American Heart Association

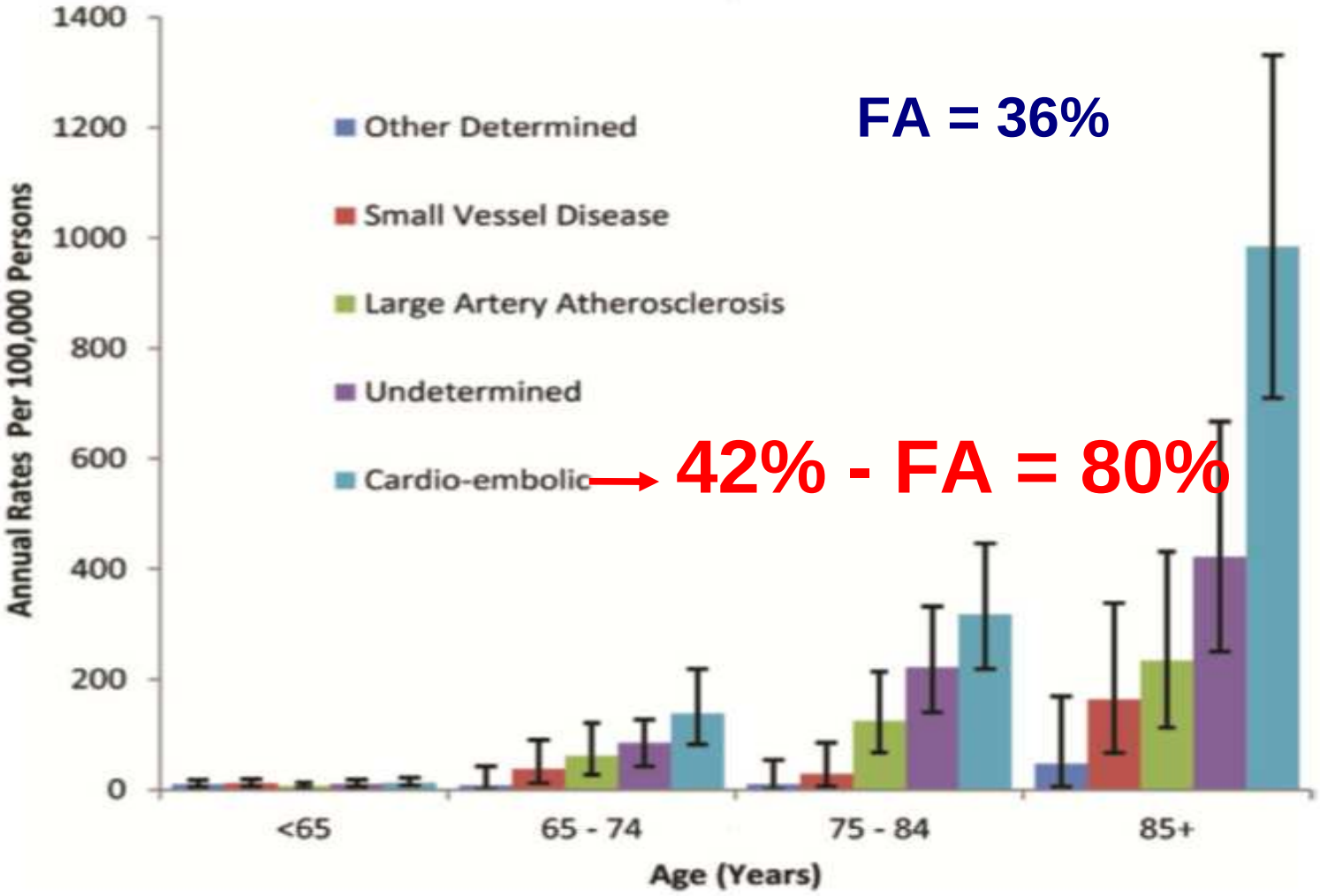
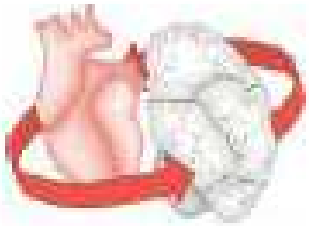


Figure 3. Age-specific incidence rates for all ischemic stroke subtypes in Adelaide (2009–2010).

Leyden JM, 2013

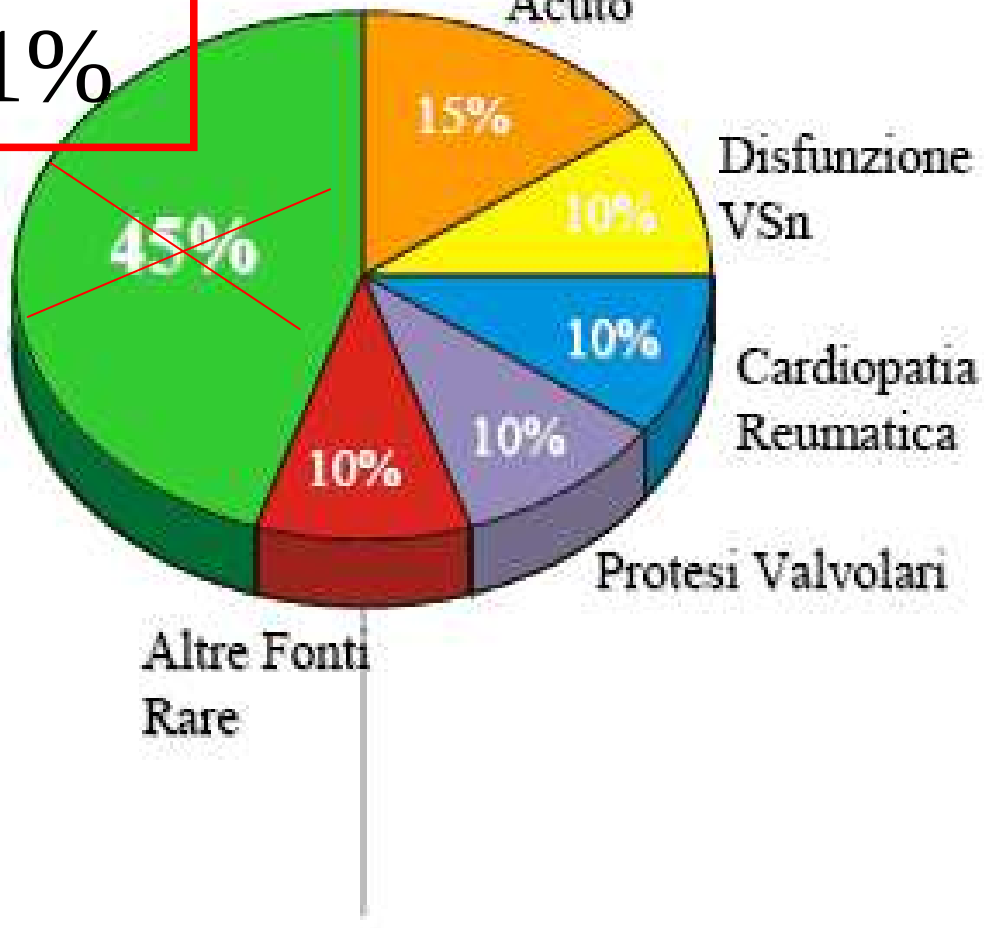
Ictus cardio-embolico

Ruolo delle diverse cardiopatie



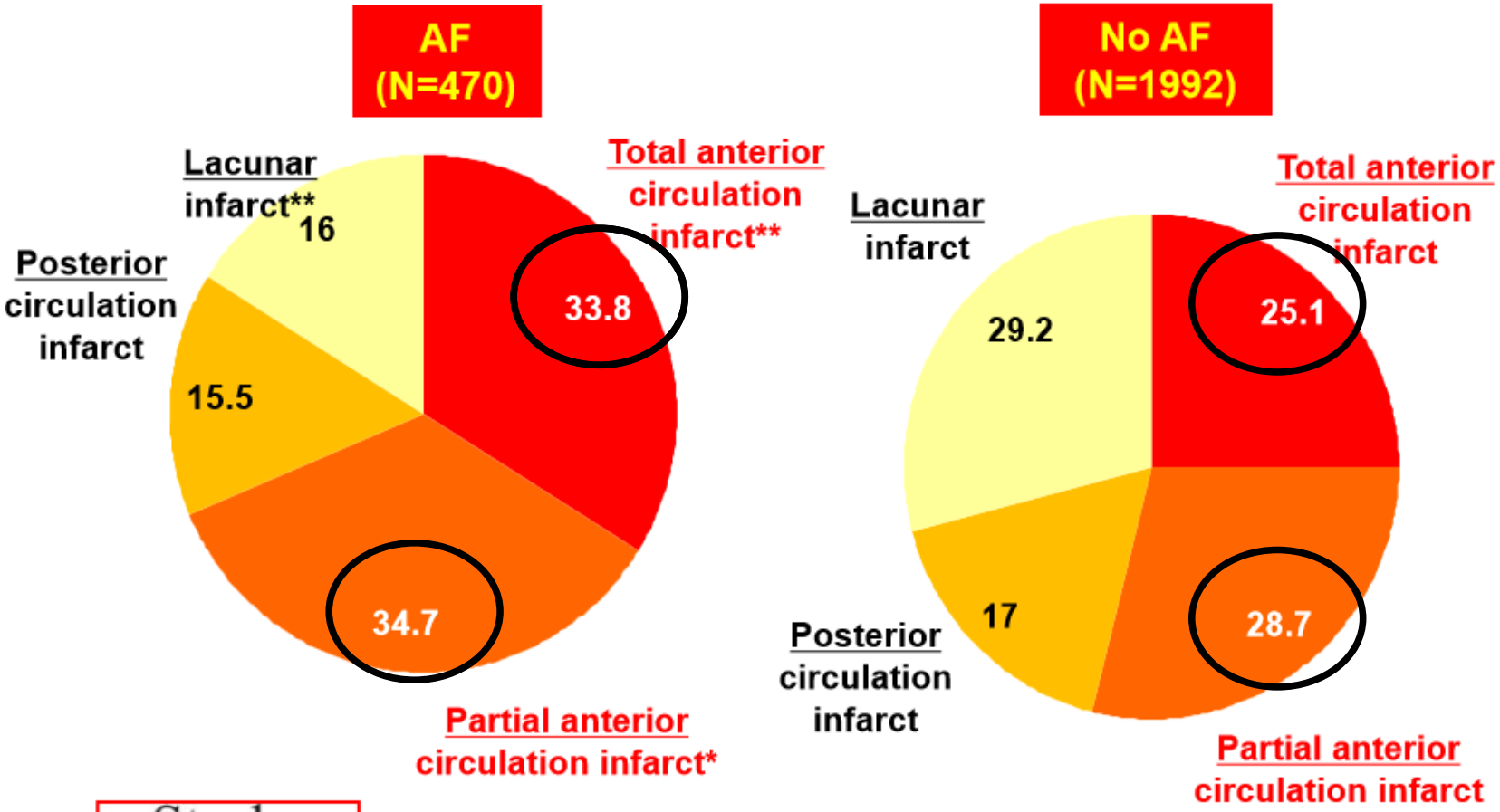
FA non valvolare

91%



Characteristics, Outcome, and Care of Stroke Associated With Atrial Fibrillation in Europe

Data From a Multicenter Multinational Hospital–Based Registry (The European Community Stroke Project)

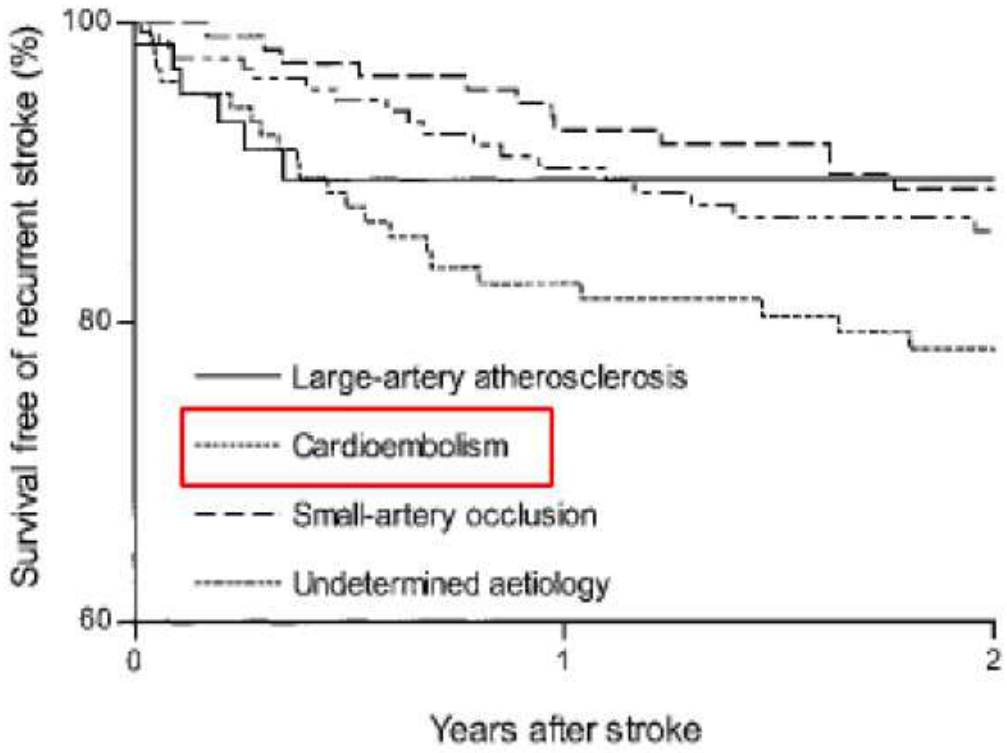


Stroke

*: **p<0.05** vs the same category of No AF pts
: **p<0.001 vs the same category of No AF pts

Lamassa M, 2001

Rischio di recidive a due anni, per tipo di ictus (n= 531)



Epidemiology of ischemic stroke subtypes according to TOAST criteria: incidence, recurrence, and long-term survival in ischemic stroke subtypes: a population-based study. PL Kolominsky-Rabas et al. Stroke. 2001;32:2735-2740

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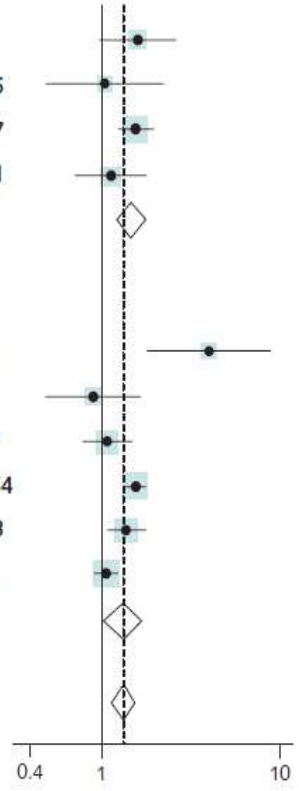
Cognitive Impairment Associated With Atrial Fibrillation

A Meta-analysis

Shadi Kalantarian, MD, MPH; Theodore A. Stern, MD; Moussa Mansour, MD; and Jeremy N. Ruskin, MD

Figure 3. The association between AF and cognitive impairment independent of stroke history.

Study, Year (Reference)	End Point	AF Events/ Patients, *n/N*	No AF Events/ Patients, *n/N*	Relative Risk (95% CI)	Weight, %*	CVA Exclusion
Cross-sectional						
Ott et al, 1997 (28)	Cognitive impairment	NR/NR	NR/NR	1.60 (1.00–2.56)	7.49	Yes†
Cacciatore et al, 1998 (29)	Cognitive impairment	20/60	227/1015	1.05 (0.50–2.20)	4.03	Yes
Jozwiak et al, 2006 (30)	Cognitive impairment	293/547	614/1467	1.56 (1.27–1.92)	14.01	Yes‡
Bilato et al, 2009 (32)	Cognitive impairment	73/135	519/1441	1.14 (0.73–1.78)	7.95	No
Subtotal (I^2 = 0.0%; *P* = 0.478)				1.47 (1.24–1.74)	33.48	
Prospective cohort						
Elias et al, 2006 (13)	Cognitive impairment	NR/59	NR/952	4.01 (1.84–8.74)	3.74	Yes
Marengoni et al, 2011 (14)	Dementia	18/68	152/617	0.90 (0.50–1.62)	5.66	Yes
Peters et al, 2009 (16)	Cognitive impairment	NR/190	NR/3146	1.08 (0.80–1.46)	11.30	No
Bunch et al, 2010 (11)	Dementia	731/10 161	804/26 864	1.56 (1.40–1.74)	16.46	No
Dublin et al, 2011 (12)	Dementia	103/502	469/2543	1.38 (1.10–1.73)	13.41	Yes
Marzona et al, 2012 (36)	Cognitive impairment	NR/NR	NR/NR	1.06 (0.93–1.21)	15.96	Yes†
Subtotal (I^2 = 84.0%; *P* = 0.000)				1.32 (1.04–1.67)	66.52	
Overall (I^2 = 74.2%; *P* = 0.000)				1.34 (1.13–1.58)	100	



Atrial Fibrillation is Associated With Reduced Brain Volume and Cognitive Function Independent of Cerebral Infarcts

Stroke
Journal of the American Heart Association

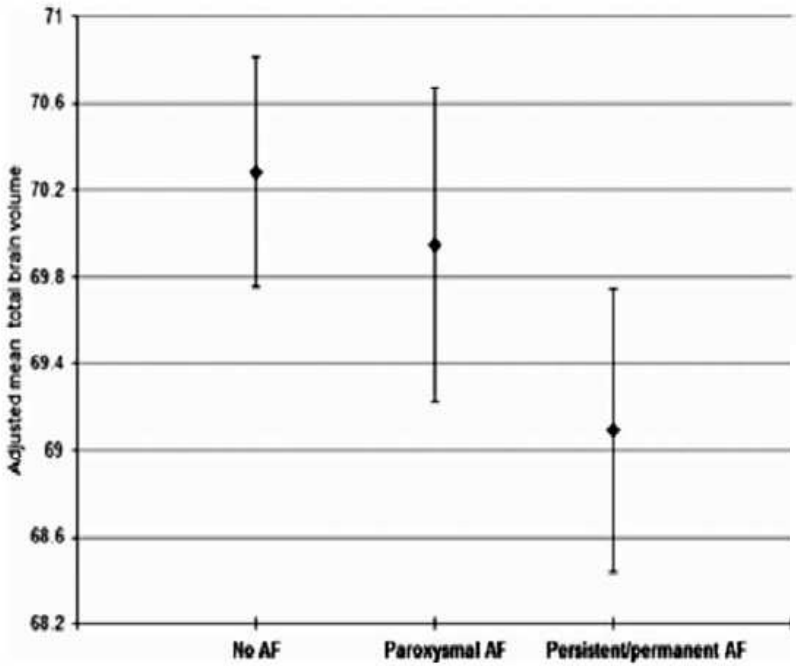


Figure 1. Mean brain volume expressed as percentage of total

(*Stroke*. 2013;44:1020-1025.)

Table 4. Association Between Duration of Atrial Fibrillation by Tertile and MRI-Measured Brain Volumes: The Age, Gene/Environment Susceptibility-Reykjavik Study

Duration of AF	Total Brain Volume	Gray Matter Volume	White Matter Volume
No AF (reference)	70.2	43.7	25.2
1	69.5*	43.1*	25.0
2	69.4*	42.9†	24.9*
3	69.3†	43.0†	25.0
P for linear trend	0.012	0.011	0.16

AF indicates atrial fibrillation.

Table 5. Association Between Atrial Fibrillation and Cognitive Domains (Z Scores): The Age, Gene/Environment Susceptibility-Reykjavik Study

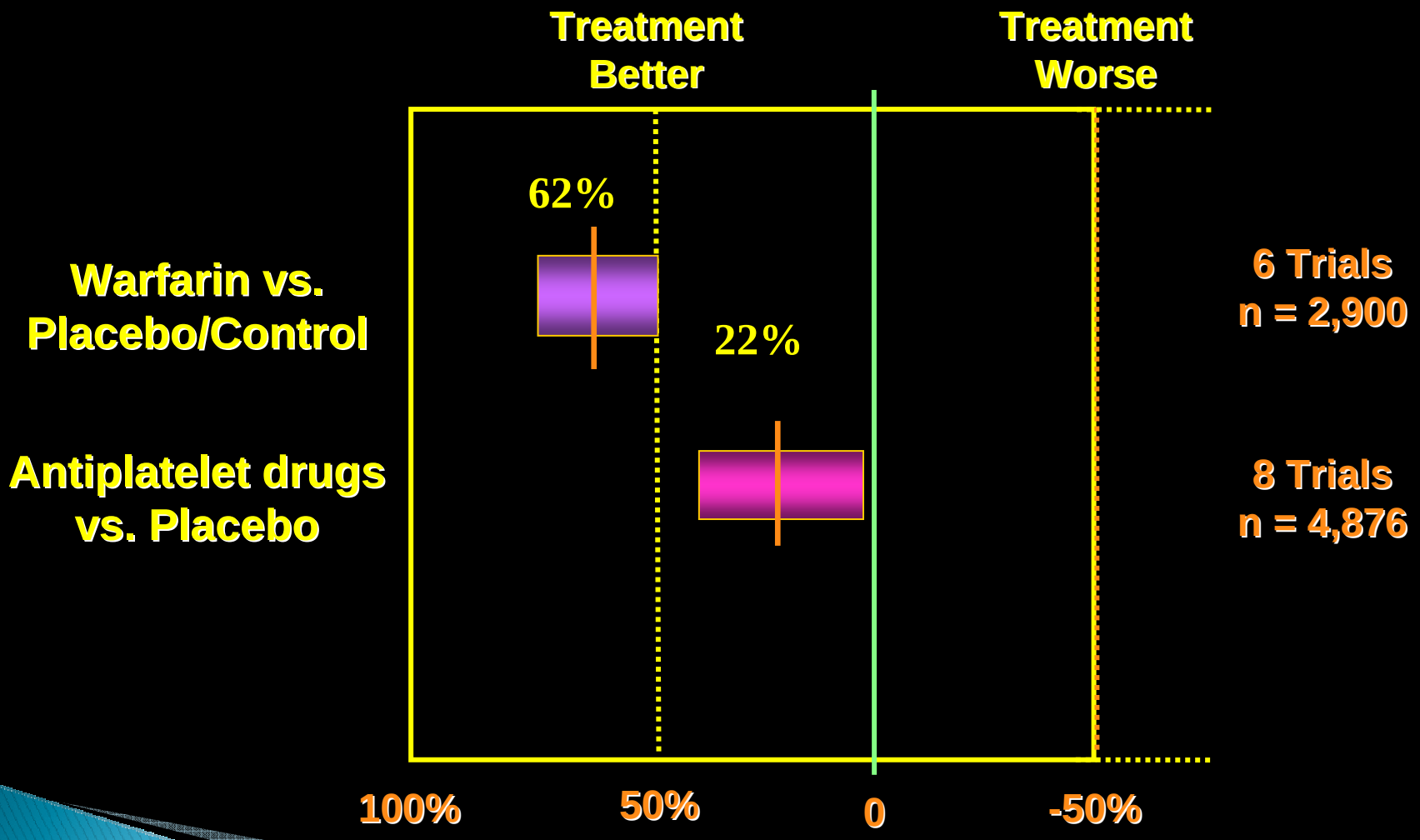
	Model 1	Model 2
Memory	−0.10 (0.05)*	−0.10 (0.05)*
SP	−0.06 (0.04)	−0.03 (0.04)
EF	−0.07 (0.04)*	−0.05 (0.04)

Model 1: adjusted for age, sex, and education level.

Model 2: adjusted for age, sex, education level, depressive symptoms, hypertension, myocardial infarction, diabetes mellitus, heart failure, smoking, body mass index, alcohol consumption, hypercholesterolemia, and cerebral infarcts on MRI.

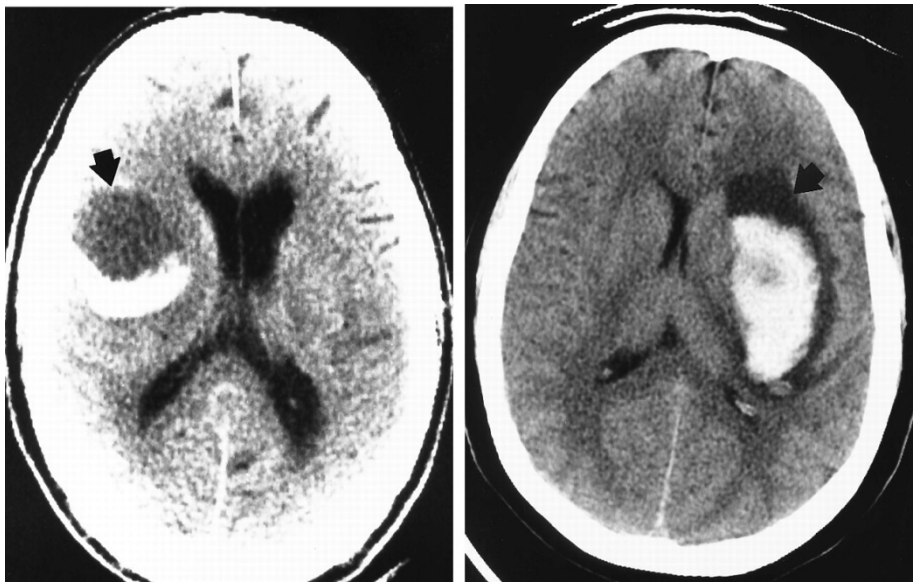
Antithrombotic Therapy for Atrial Fibrillation

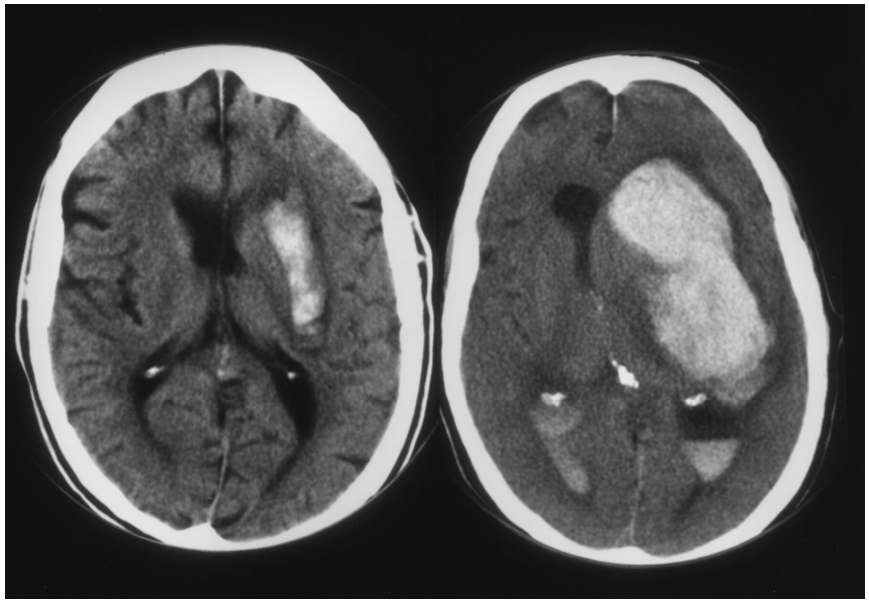
Stroke Risk Reduction



Hart R, et al. *Ann Intern Med* 2007;146:857.

RADIOLOGICAL FEATURES OF OAC HEMORRHAGE





- On CT-scan Blood-Fluid Level
- Higher Risk of Hematoma Expansion

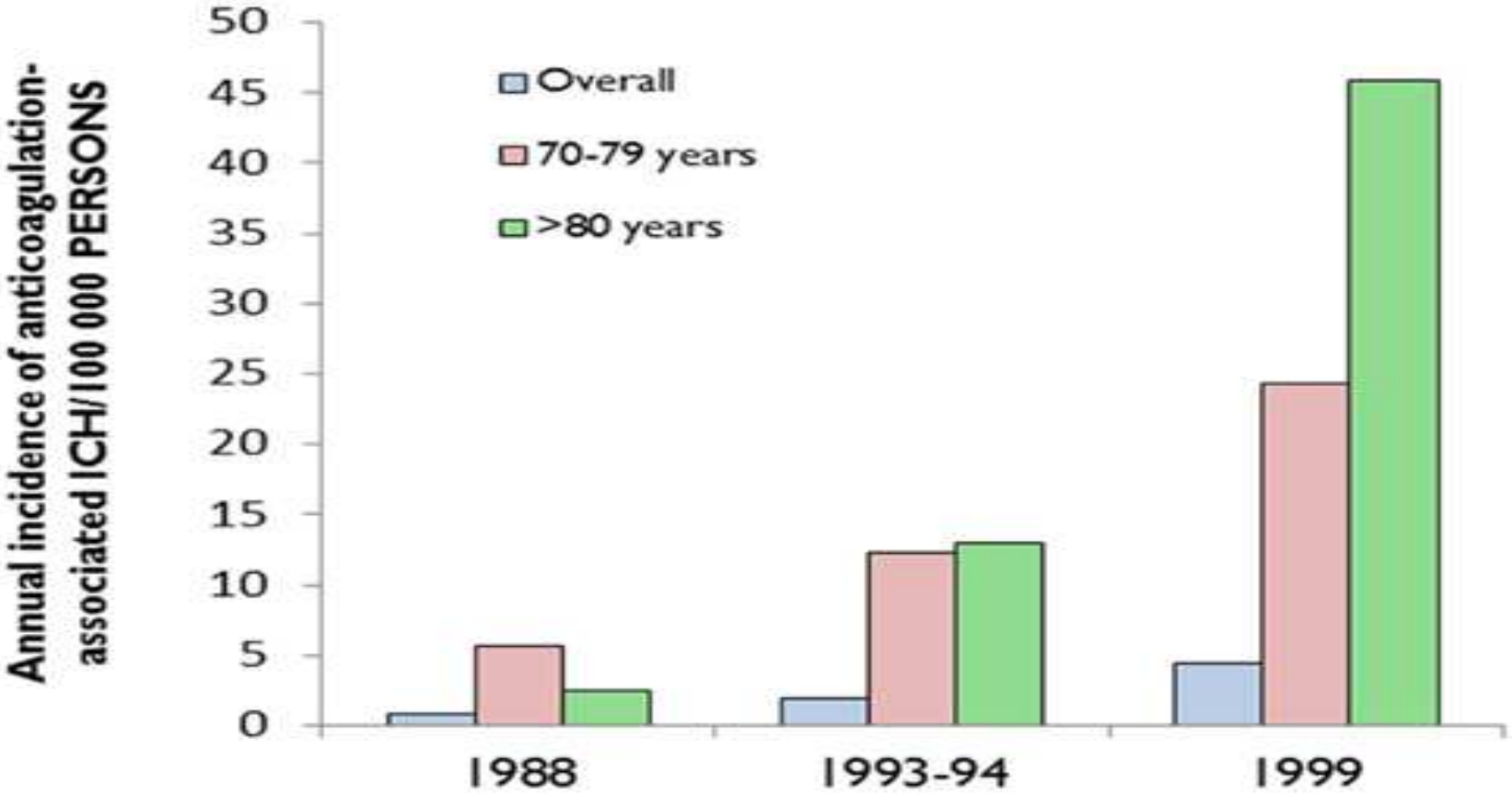
B Cucchiara Stroke 2008

DIMENSIONI DEL PROBLEMA

- 1-1.7% della popolazione europea è in TAO
- 5-15% di tutte le emorragie cerebrali sono correlate alla TAO
- Incidenza di emorragia cerebrale nei pazienti in TAO è 0.3-0.46%
- Nella popolazione l'incidenza di emorragia cerebrale TAO-correlata è 2-9 per 100.000/anno
- Incidenza di emorragia cerebrale e' da 7 a 11 volte maggiore nei pazienti trattati rispetto ai non trattati
- Mortalità 50%

R Hart 1995 Stroke 1995; M. Flaherty et al Neurology 2007;
T Steiner et al Stroke 2006; AMR Schols et al Stroke 2014

PROGRESSIVO INCREMENTO DELL'INCIDENZA DELLE EMORRAGIE ASSOCIATE A TAO, SOPRATTUTTO NEGLI ANZIANI



Flaherty et al., 2007

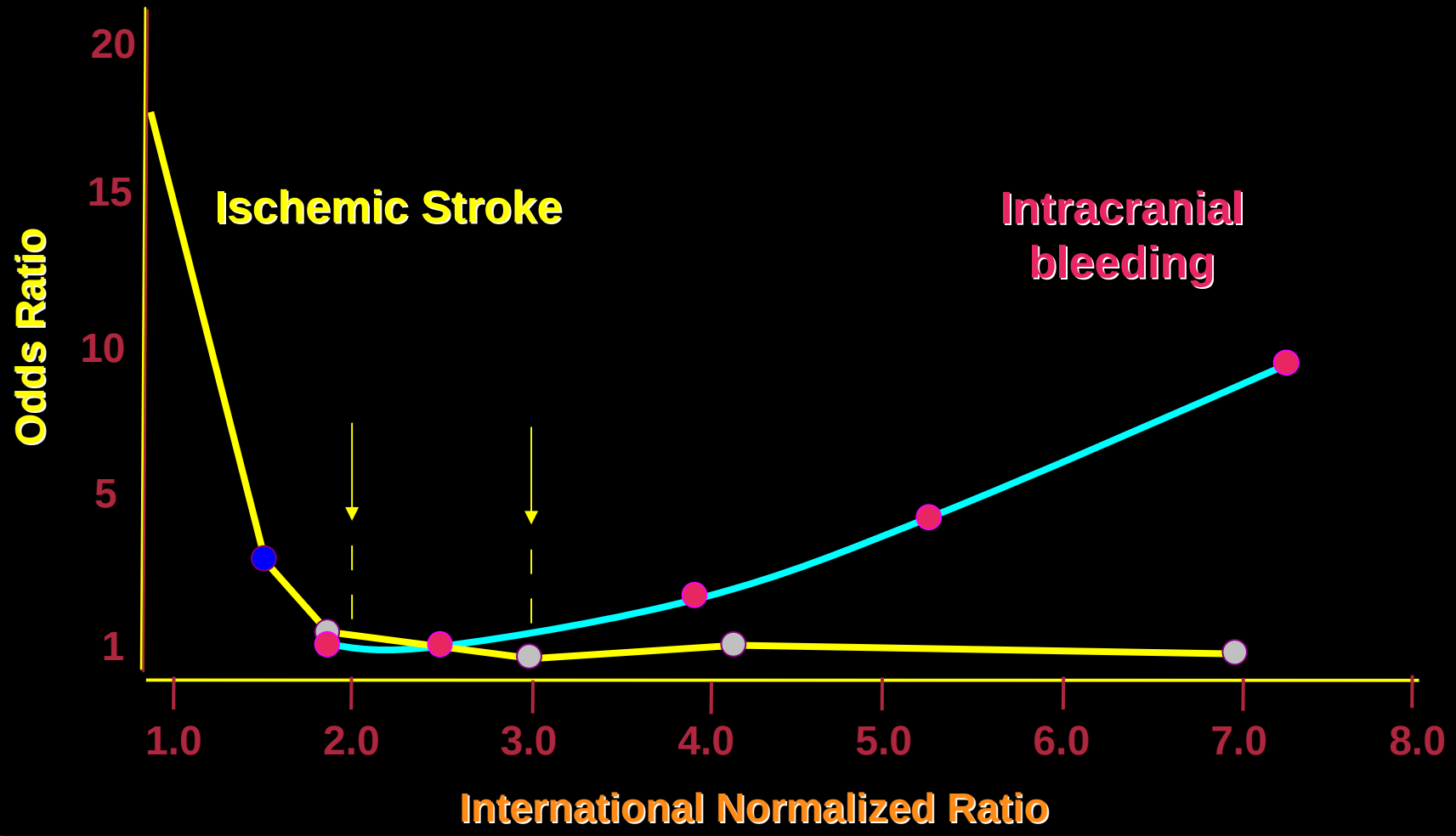
Table 1 Predisposing factors of cerebral hemorrhage in anticoagulated patients [3, 5]

Proven risk factors
Advancing age (especially >75 years)
Hypertension (especially systolic blood pressure >160 mm Hg)
History of cerebrovascular disease
Intensity of anticoagulation (mainly if INR > 4.0)
Possible risk factors
Increased variation of INR
Concomitant use of aspirin
Cerebral amyloid angiopathy
Tobacco smoking
Heavy alcohol consumption
Diabetes
Serious heart disease
Liver disease
Malignancy
Imaging and genetic markers
Leukoaraiosis detected by brain CT/MRI
Microbleeds by T2*-weighted MRI
Apo $\varepsilon 2$ or $\varepsilon 4$ genotype

Cervera et al. J Neurol 2012

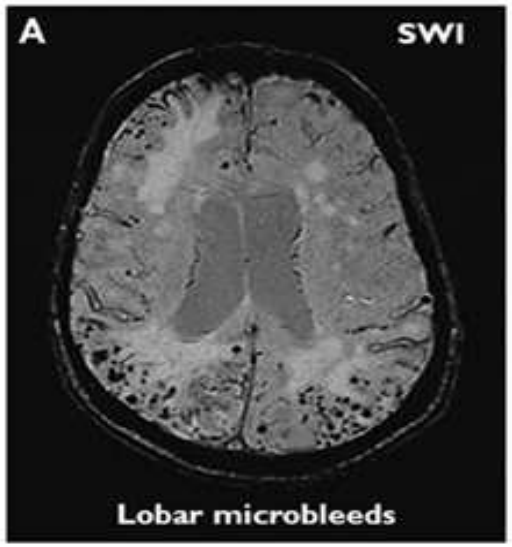
INR at the Time of Stroke or Bleeding

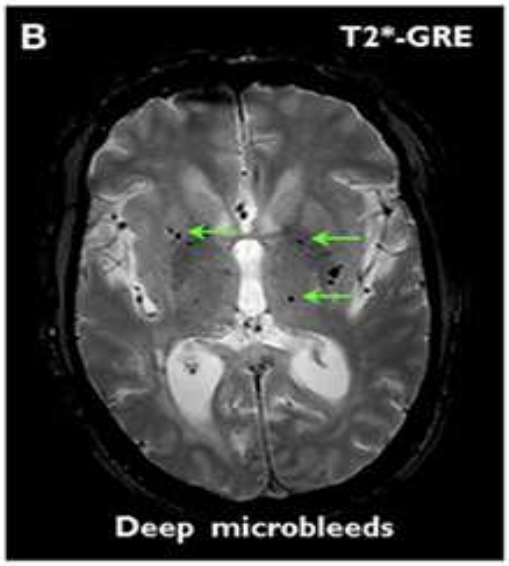
Efficacy and Safety of Warfarin

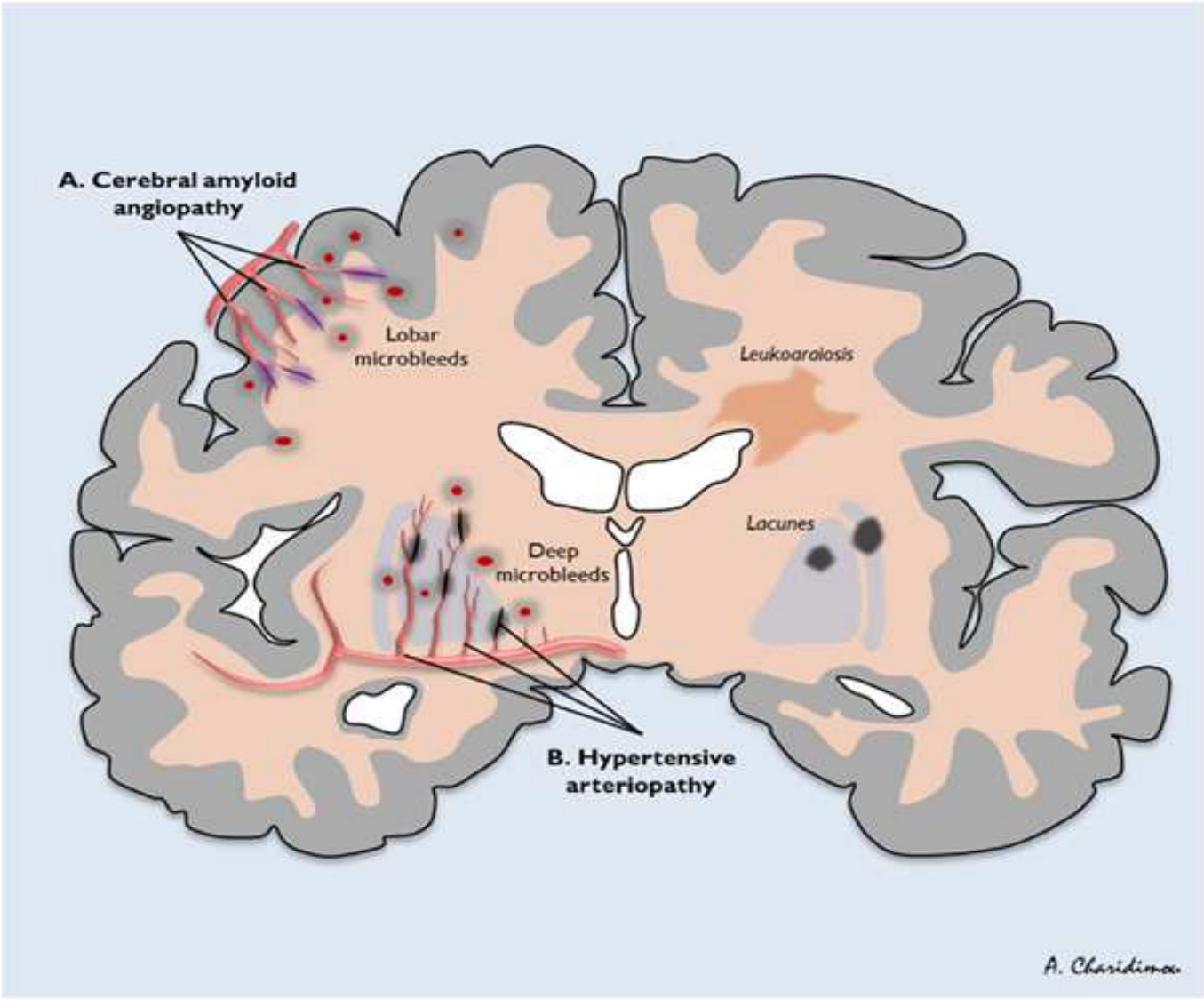


Fang MC, et al. *Ann Intern Med* 2004; 141:745.
Hylek EM, et al. *N Engl J Med* 1996; 335:540.

MARKERS NEURORADIOLOGICI E RISCHIO EMORRAGICO
"MICROBLEED" E LEUCOARAIOSI







Use of the CHA2DS2-VASc and HAS-BLED Scores to Aid Decision Making for Thromboprophylaxis in Nonvalvular Atrial Fibrillation

Table 2. Assessment of Stroke (CHA_2DS_2-VASc)[14] and Bleeding Risk (HAS-BLED)[15] in Atrial Fibrillation Patients

CHA_2DS_2-VASc	Score	HAS-BLED	Score
Congestive heart failure	1	Hypertension (systolic blood pressure >160 mm Hg)	1
Hypertension	1	Abnormal renal and liver function* (1 point each)	1 or 2
Age ≥75 y	2	Stroke	1
Diabetes mellitus	1	Bleeding tendency/predisposition*	1
Stroke/TIA/TE	2	Labile INRs (if on warfarin)*	1
Vascular disease (prior MI, PAD, or aortic plaque)	1	Elderly (eg, age >65 y)	1
		Drugs or alcohol (1 point each)*	1 or 2
Aged 65 to 74 y	1		
Sex category (ie, female sex)	1		
Maximum score	9	Maximum score	9

Lane et al, Circulation, 2012

TABLE 2. Expert Recommendations for the Management of Warfarin-Associated ICH: Responses to 3 Specific Questions*

Question	Expert 1	Expert 2	Expert 3†	Expert 4†	Expert 5†	Expert 6	Expert 7
1.How can anticoagulation best be reversed (INR=2.5)?	rFVIIa and vitamin K	rFVIIa if deteriorating; FFP and vitamin K otherwise	rFVIIa, FFP, and vitamin K	FFP or PCCs and vitamin K	PCCs and vitamin K	PCCs and vitamin K	PCCs and vitamin K
2.When should anticoagulation with prosthetic cardiac valve be restarted?	>7 d in most patients‡	>7 d if computed tomogram stable	5-10 d	Low-dose heparin as early as 48 h	10-14 d§	1-3 d	7 d
3.Should warfarin therapy be restarted for atrial fibrillation?	With reluctance	If prior ischemic stroke	Probably never	If ICH is deep (ie, nonlobar)	If ICH is deep (ie, nonlobar)	If ICH is deep (ie, nonlobar)	In secondary

REVIEW

Pharmacologic and Nonpharmacologic Therapies for Stroke Prevention in Nonvalvular Atrial Fibrillation

JIANGLI HAN, M.D., PH.D.,*,† JIE CHENG, M.D., PH.D.,* and NILESH MATHURIA, M.D.*
From the *Texas Heart Institute/St.Luke's Episcopal Hospital, Houston, Texas; and †Peking University Third Hospital, Beijing, China

(PACE 2012; 35:887–896)

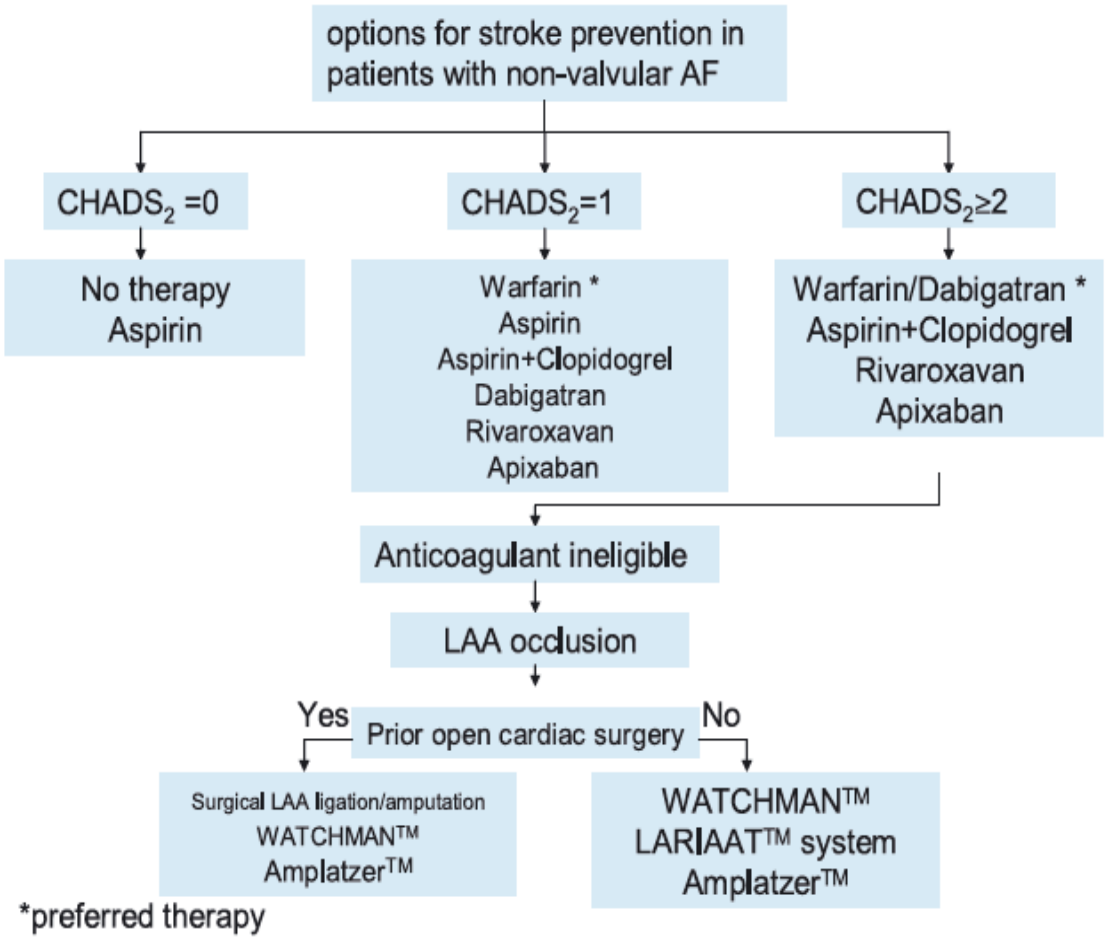
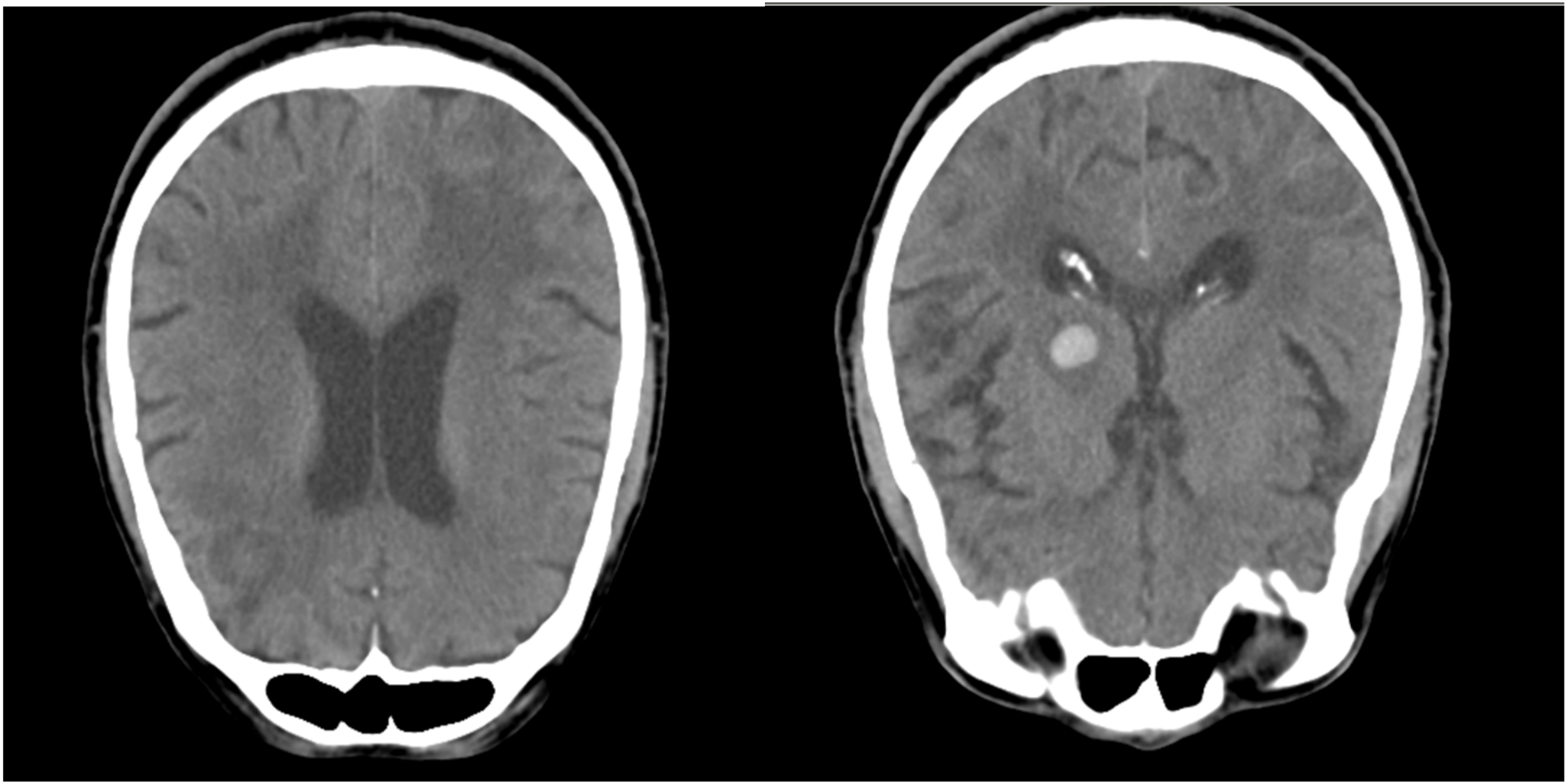
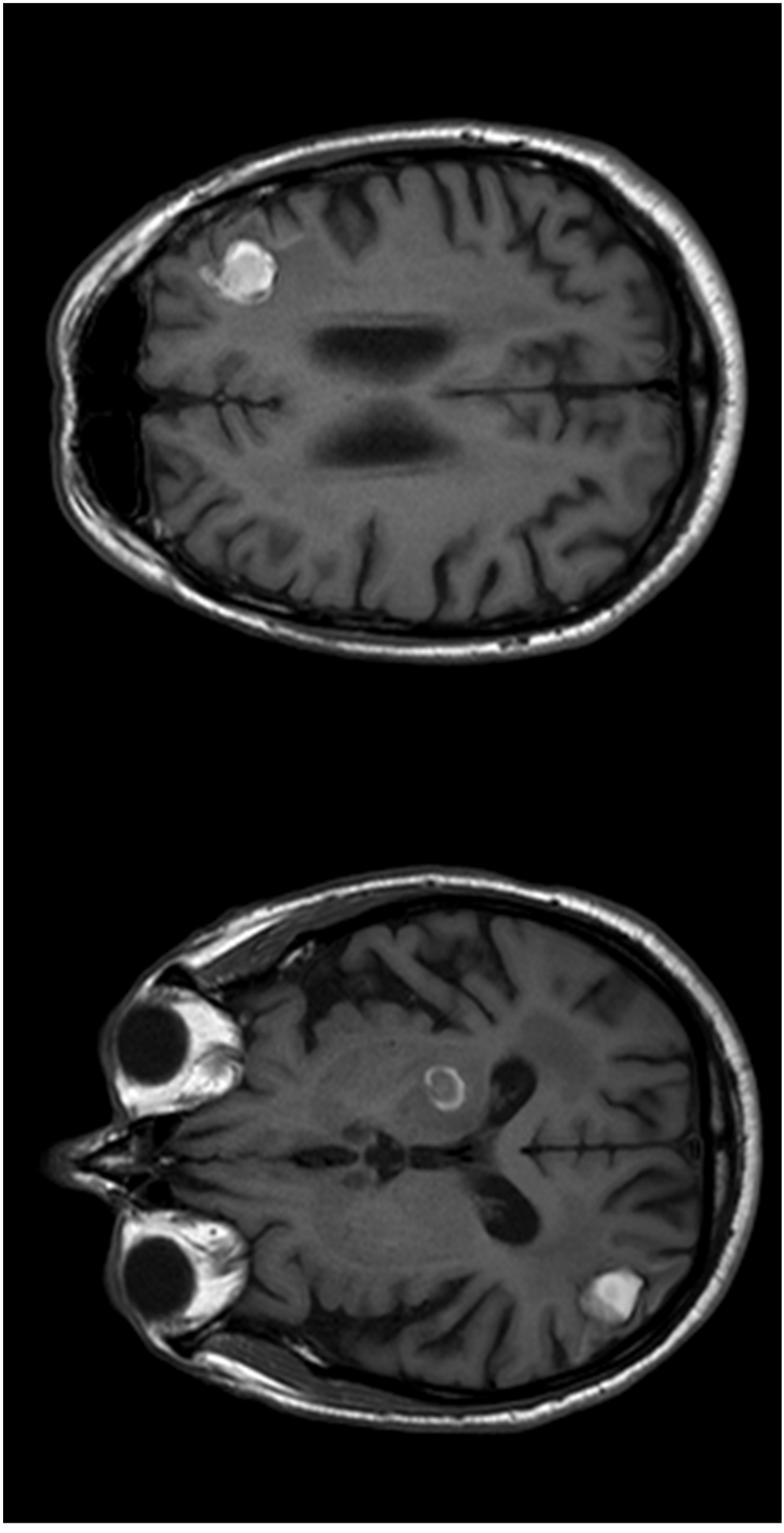
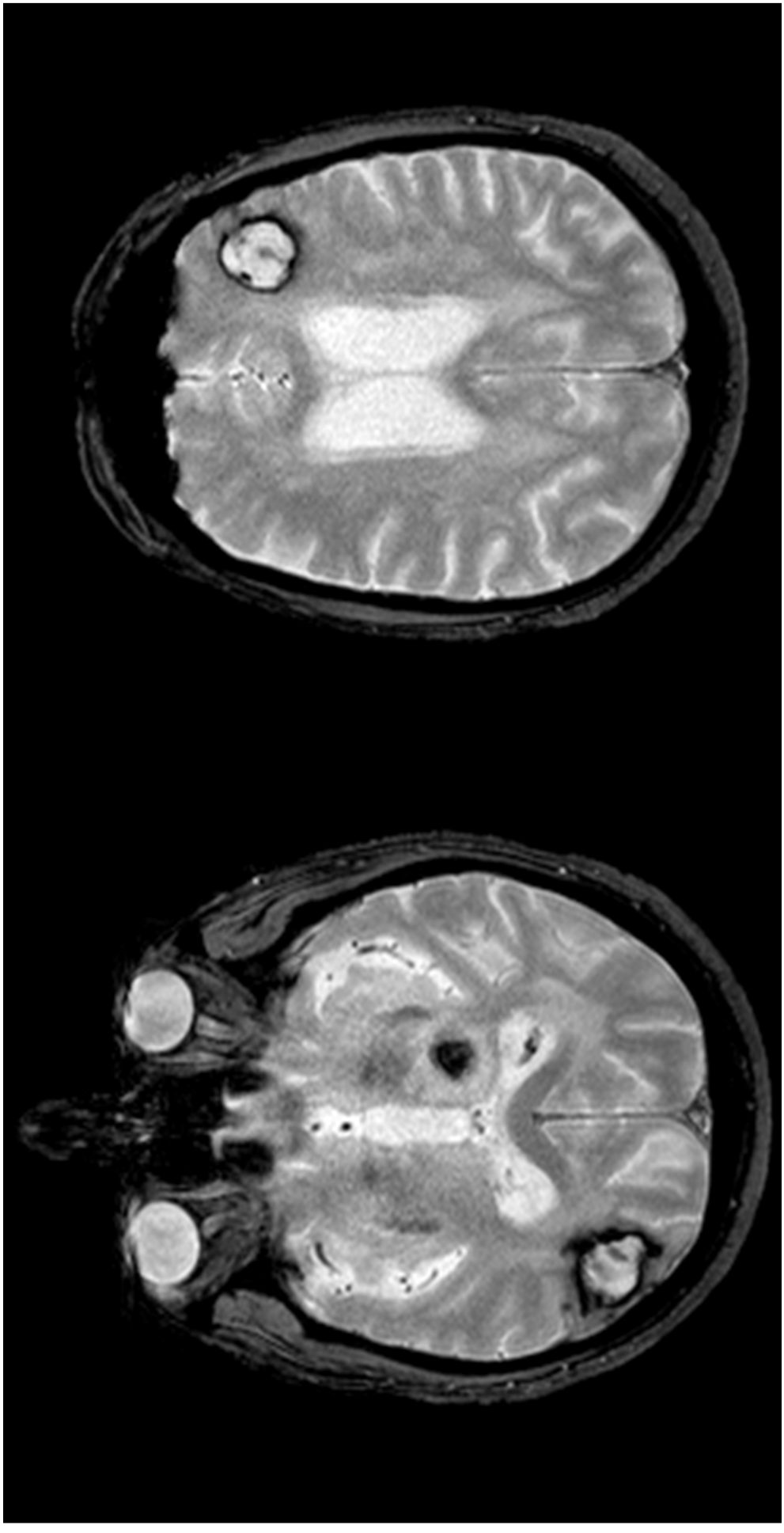
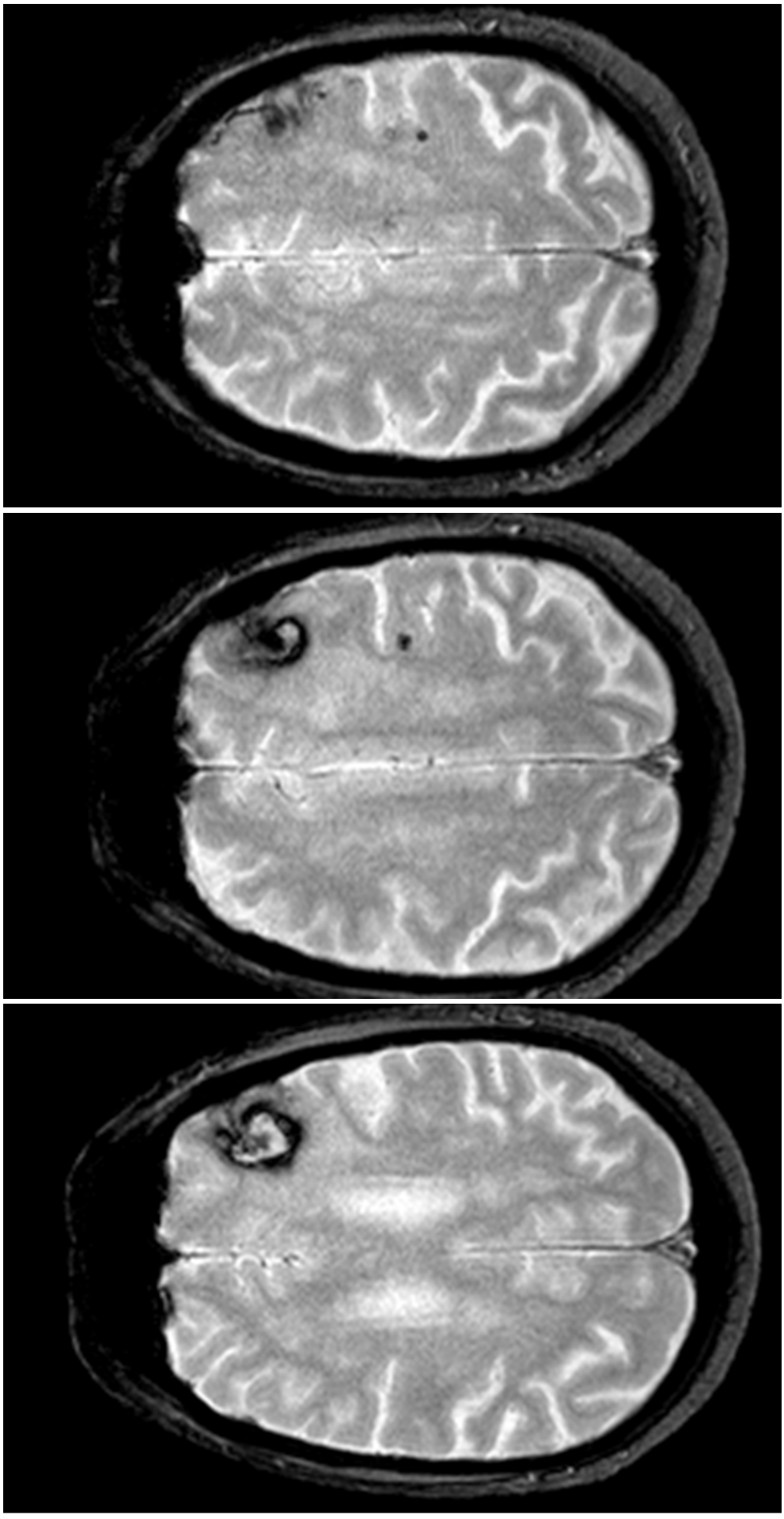


Figure 3. *Potential algorithm regarding options for stroke prevention in nonvalvular AF.*









GRAZIE PER L'ATTENZIONE