FIBRILLAZIONE ATRIALE ED ICTUS CARDIOEMBOLICO

PROSPETTIVE TERAPEUTICHE E SOSTENIBILITÀ ECONOMICA

Martedì, 26 novembre 2013
ore 8.30 – 14.00

CAMERA DEI DEPUTATI
Palazzo Marini – Sala delle Colonne
Via Poli, 19 – Roma

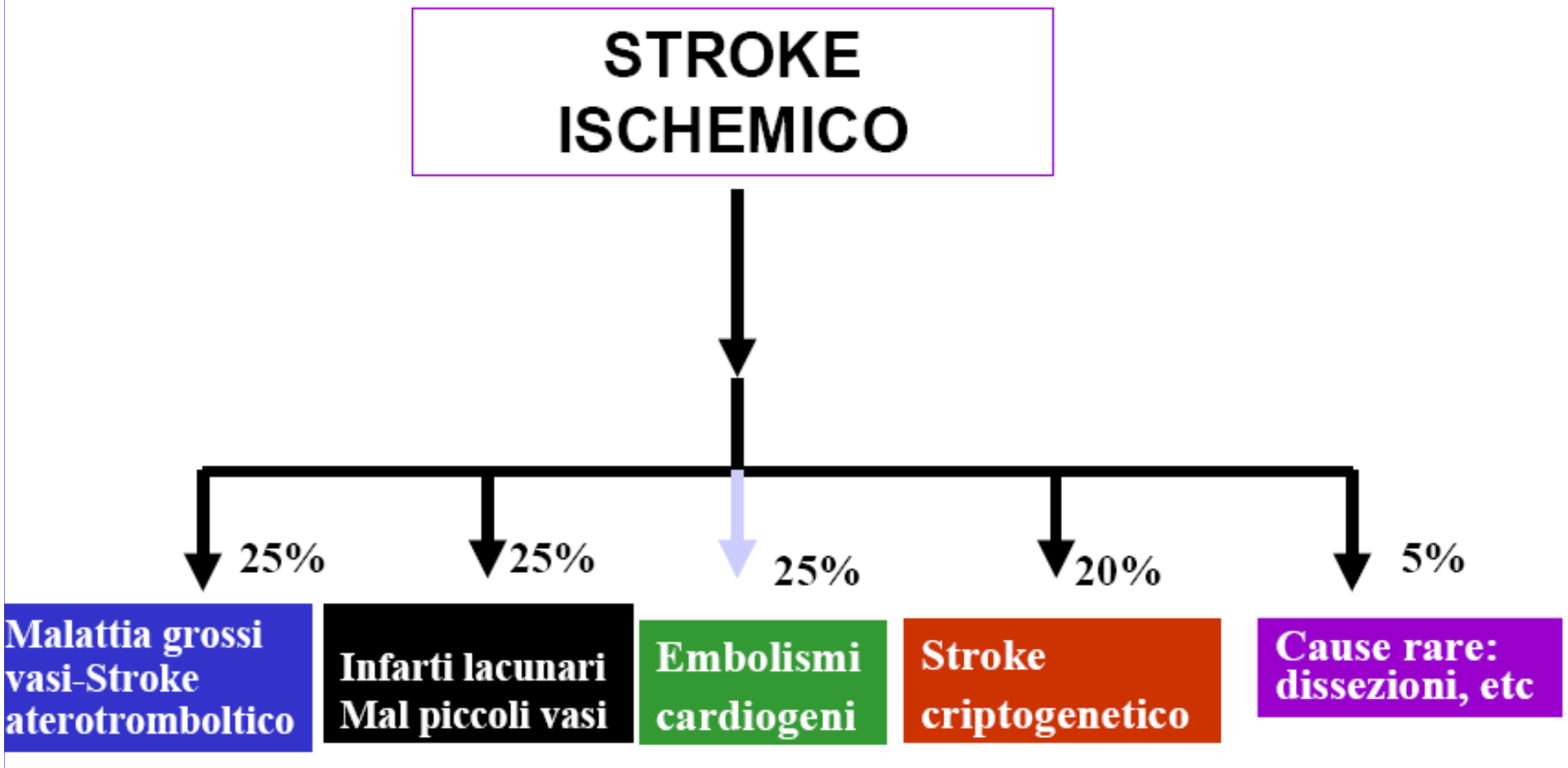
"*ICTUS* CRIPTOGENETICO": LA FIBRILAZIONE ATRIALE SILENTE

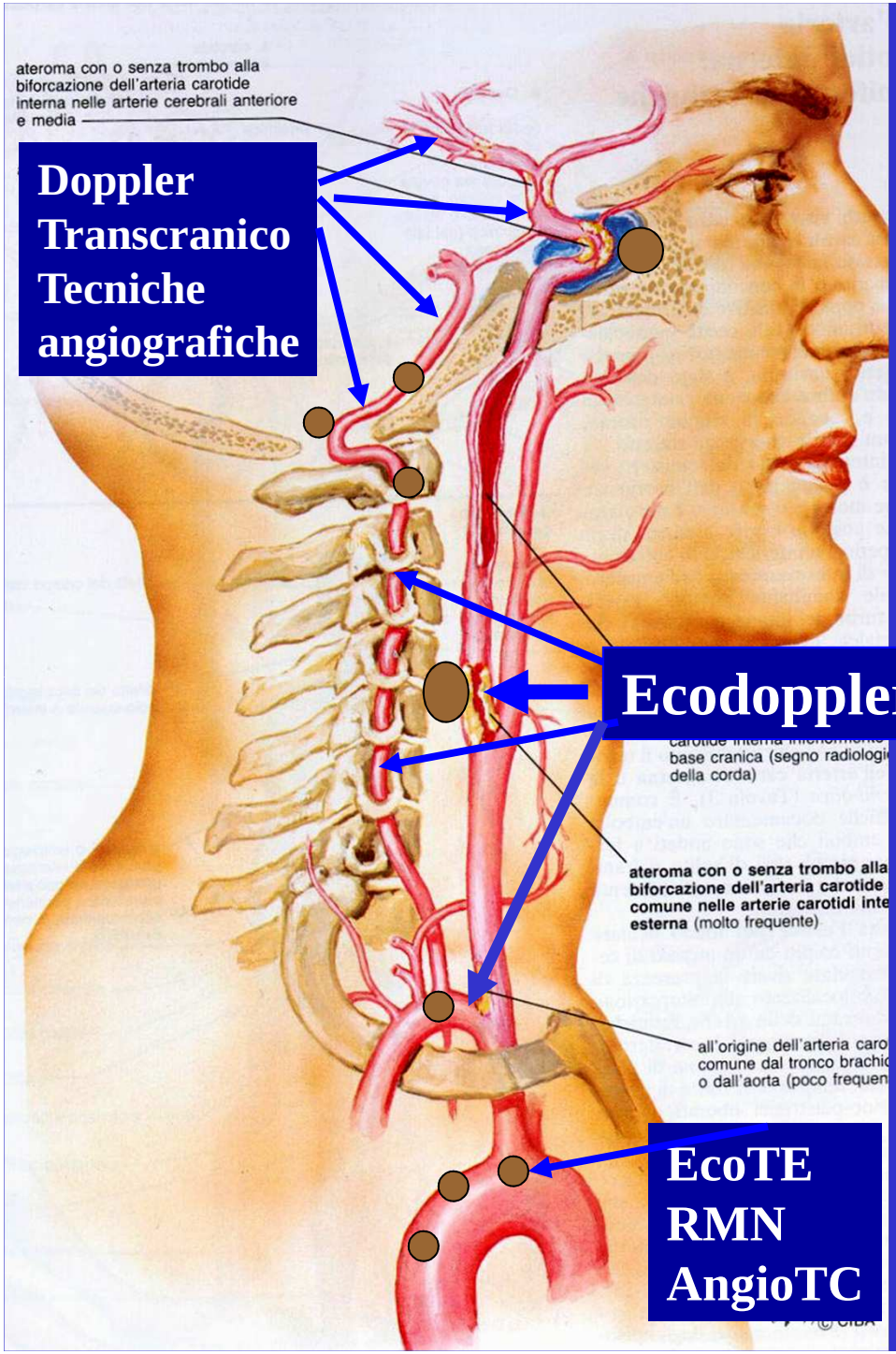
Paolo Cerrato

STROKE ISCHEMICO
CLASSIFICAZIONE FISIOPATOLOGICA

1. **Patologia dei grossi vasi (i. aterotrombotico)**
2. **Patologia dei piccoli vasi (infarto lacunare)**
3. **Cardioembolismo**
4. **Altre cause (cause rare)**
5. **Meccanismo Indeterminato**
   - **Più fattori causali**
   - **Accertamento insufficiente**
   - **Criptogenetico**

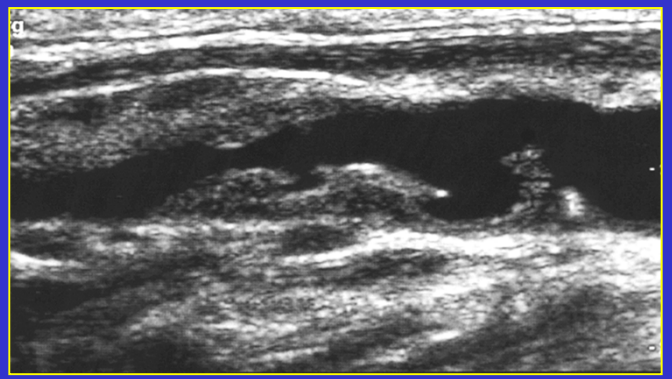
TOAST Classification, Stroke 1993

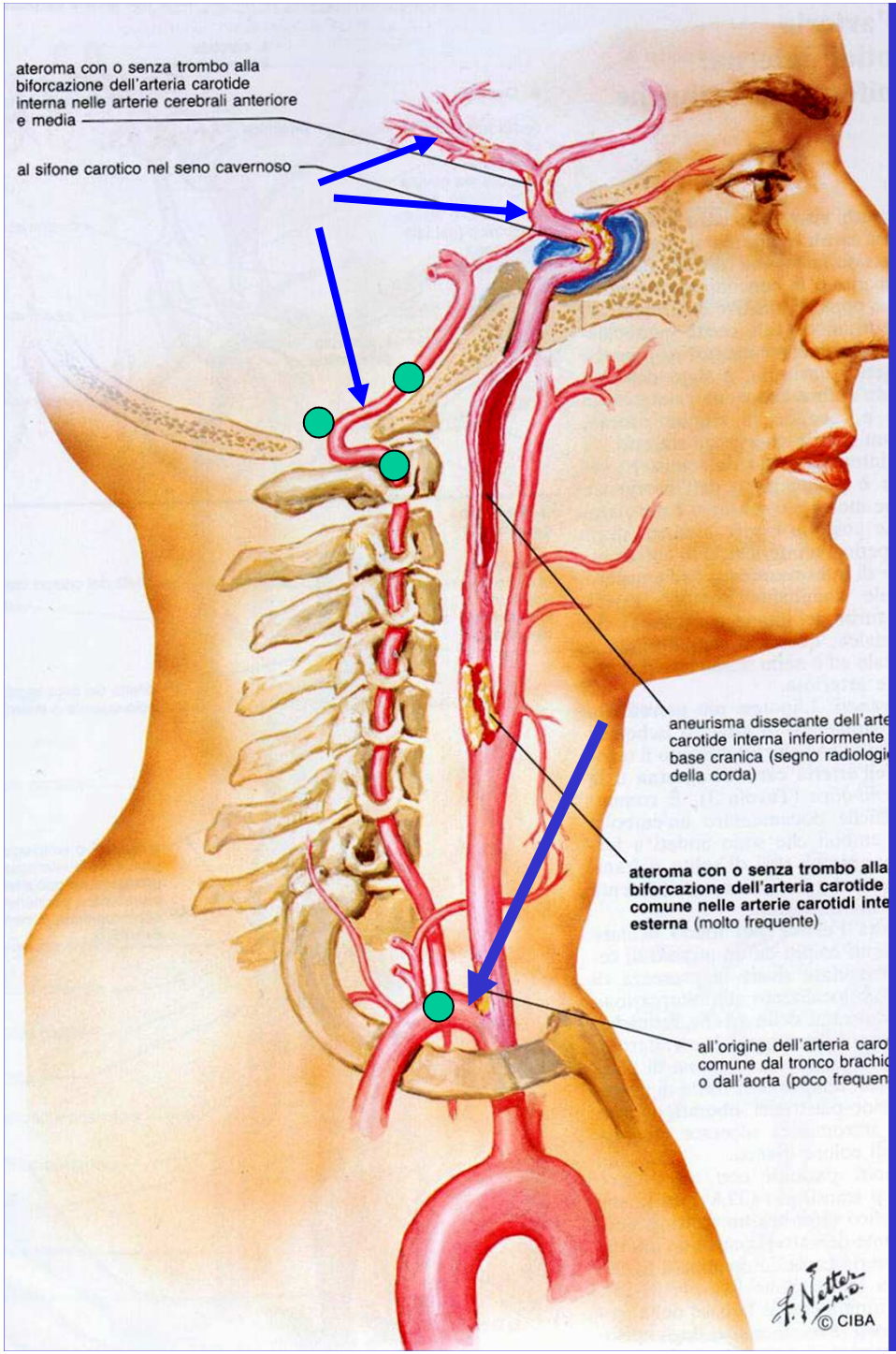

STROKE ISCHEMICO
25%
25%
25%
20%
5%
Malattia grossi vasi-Stroke aterotromboltico
Infarti lacunari Mal piccoli vasi
Embolismi cardiogeni
Stroke criptogenetico
Cause rare: dissezioni, etc



Come diagnosticare una "malattia dei grossi vasi"?

- bulbo carotideo, sede elettiva di formazione ateromi
- Meno affidabile per le arterie vertebrali





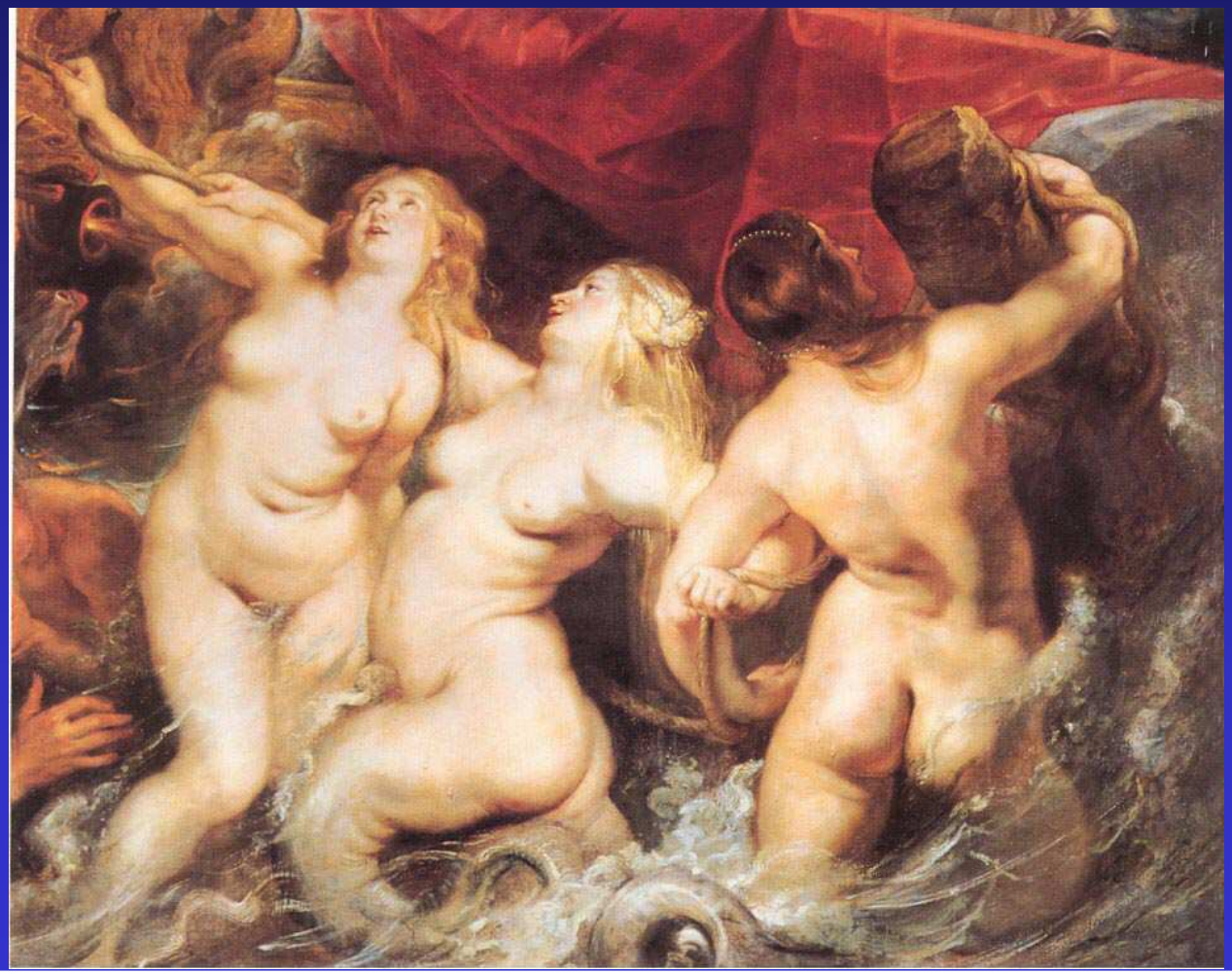
MALATTIA DEI GROSSI VASI

Tromboembolia dell'arteria vertebrale

Più difficile da studiare per

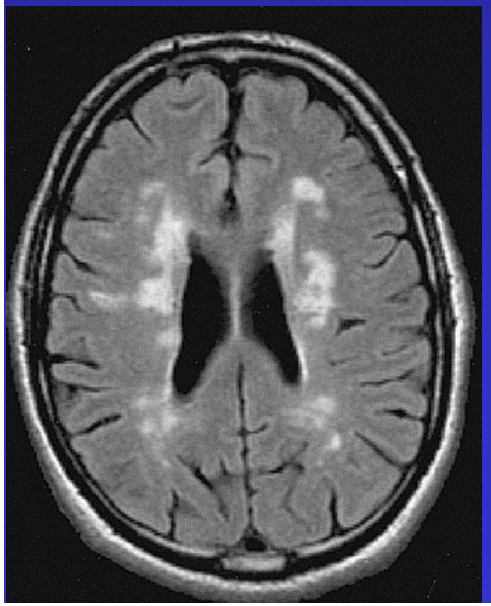
- Sede profonda
- Mascherata dall'osso
- Frequenti ipoplasie
- Piccole dimensioni

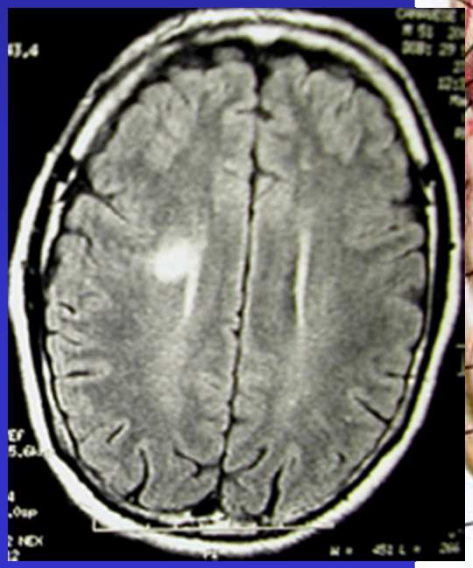
Infarto lacunare- “malattia dei piccoli vasi”

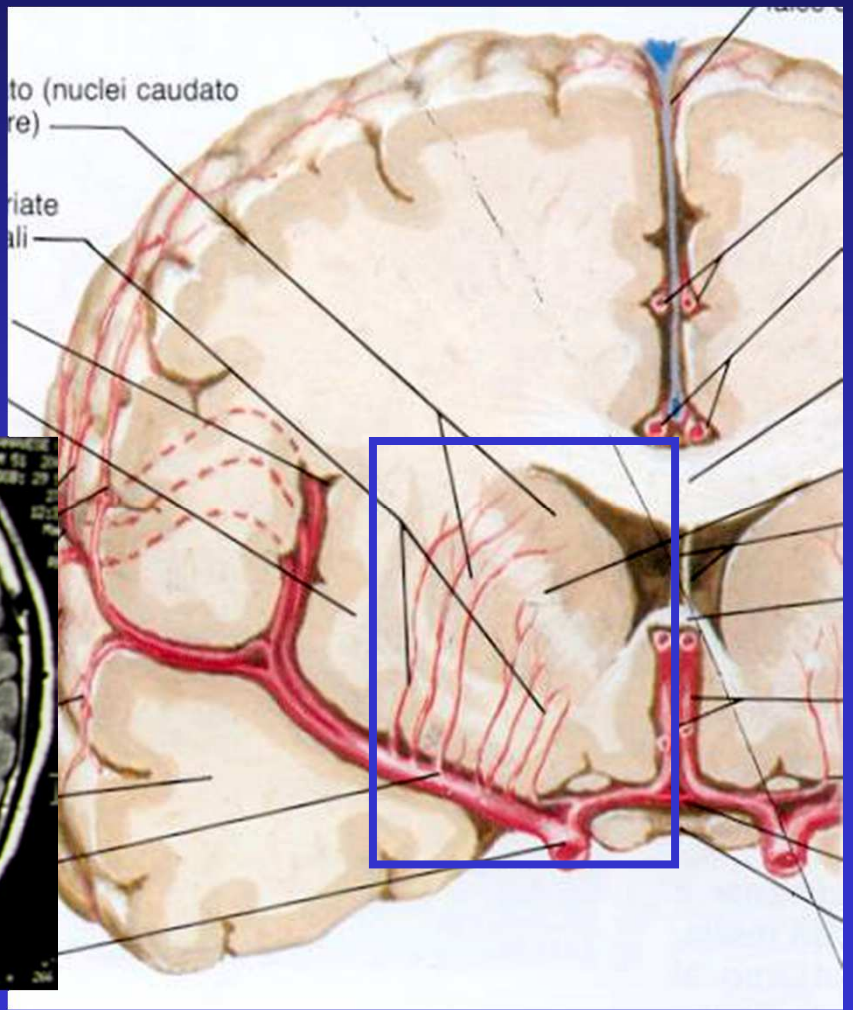


Infarto lacunare→ **Infarto di piccole dimensioni (<15 mm) localizzato nel territorio delle arterie perforanti o "arterie di piccolo calibro"**

Malattia dei piccoli vasi

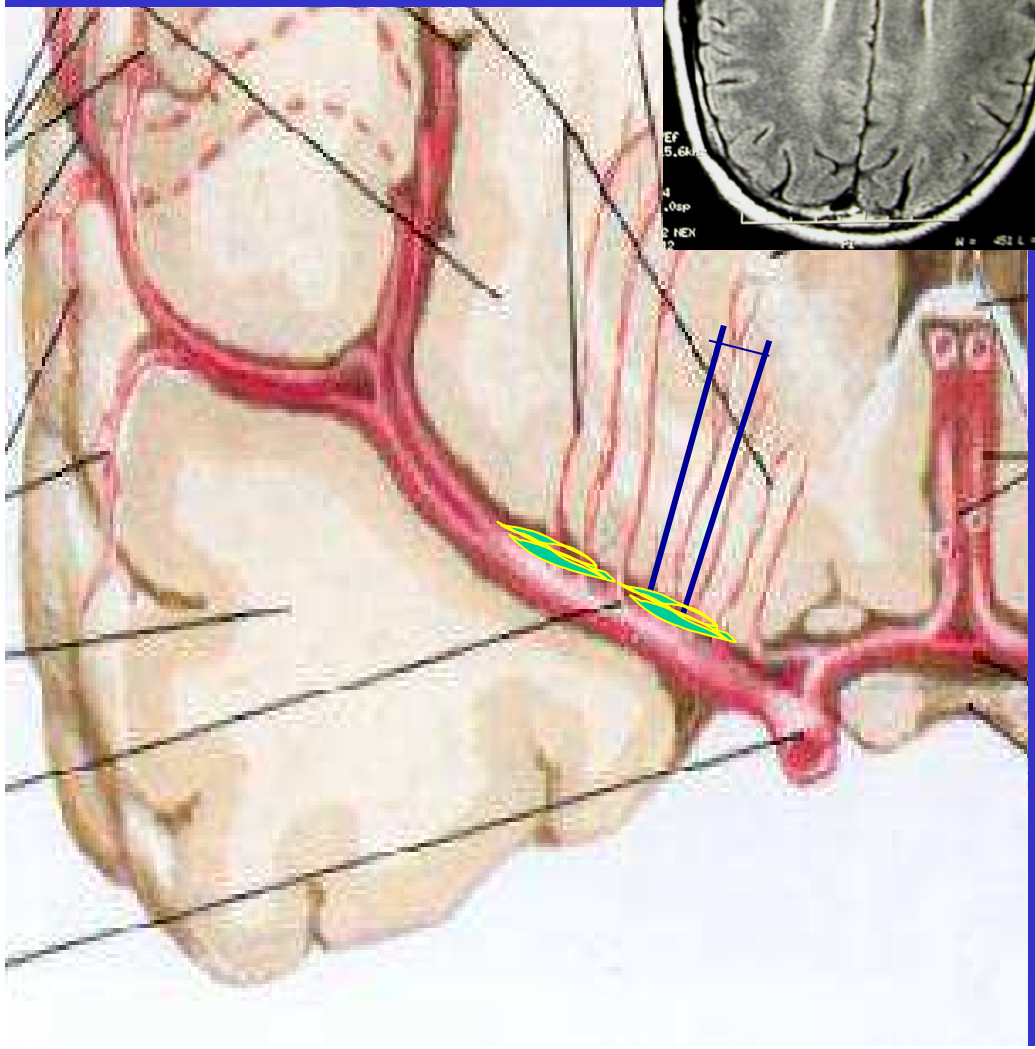






MECCANISMO INFARTO LACUNARE: microateromatosi



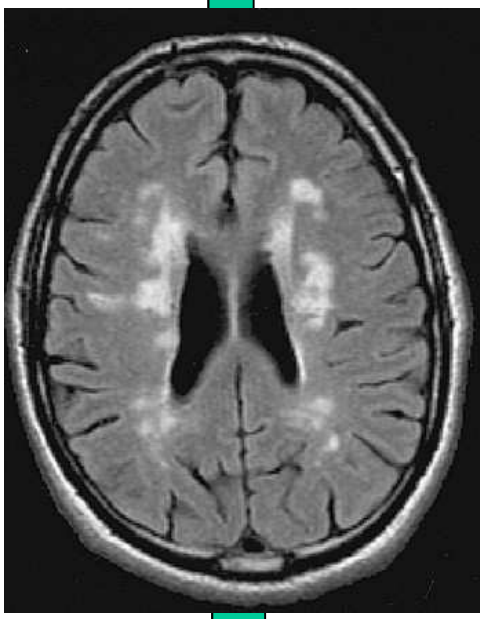


Infarti lacunari

- singoli
- di maggiori dimensioni
- spesso sintomatici

- ipertensione ++
- diabete ++
- Fumo +
- Dislipidemia +
- Omocisteina +

Cause rare di infarto lacunare



Sneddon

Omocistinuria

Vasculite

Pseudoxantoma elasticum

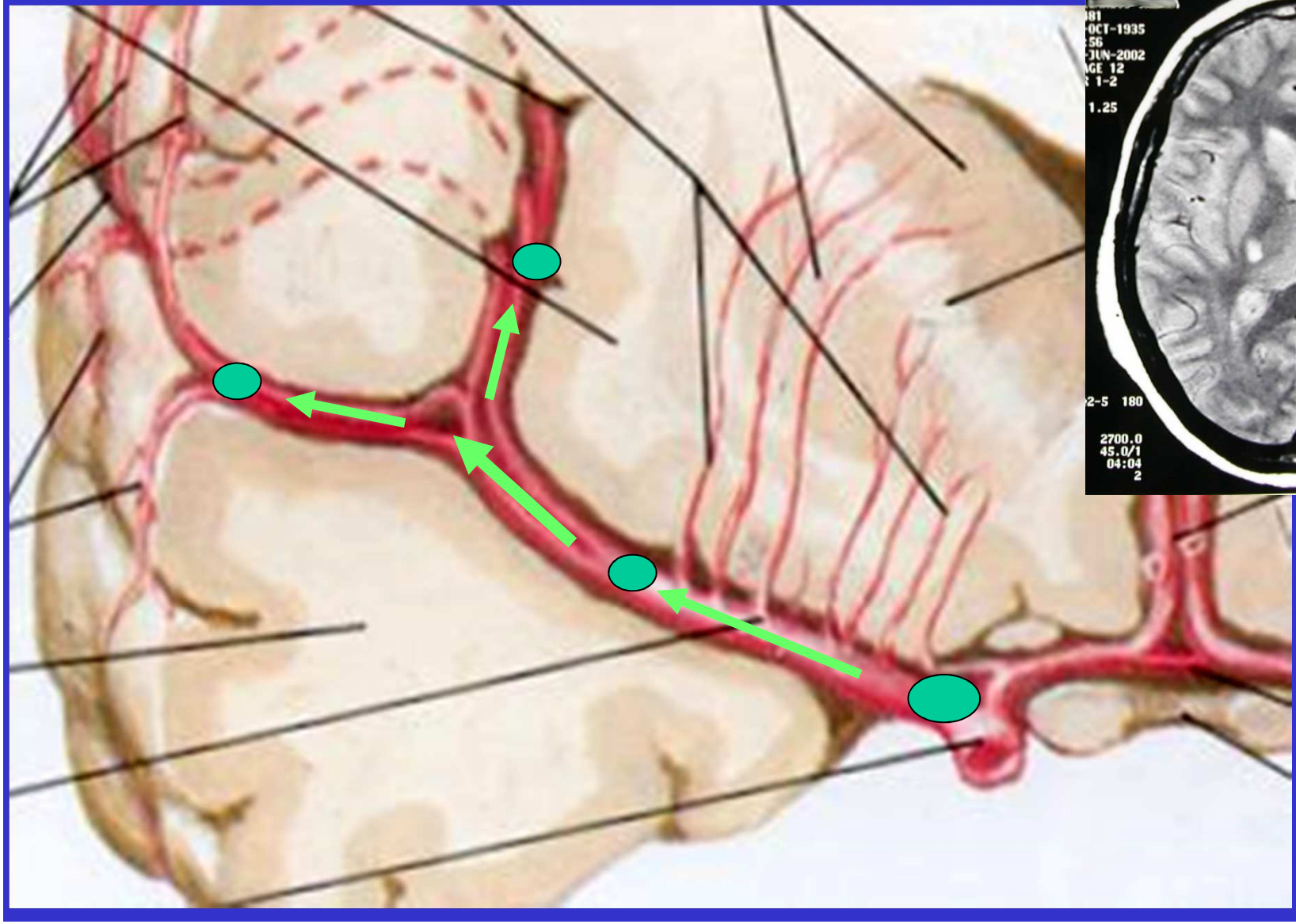
Mal di Fabry

Sindrome da APS

Altre …

CADASIL

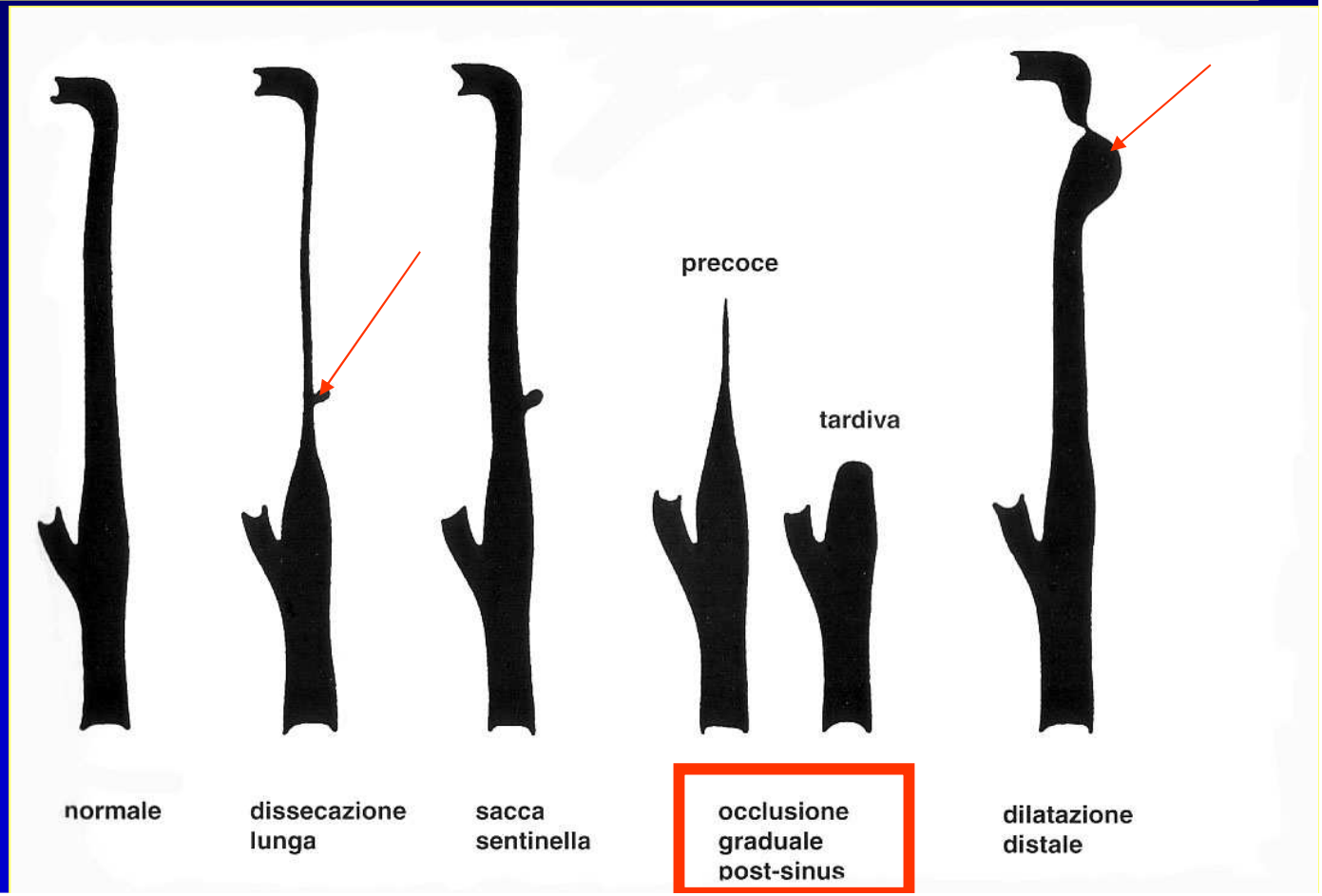
Tranne casi particolari l'infarto lacunare non riconosce un meccanismo embolico





DISSECAZIONE VASI EPIAORTICI
Diagnosi strumentale

Tecniche angiografiche → stenosi progressiva della carotide interna post-bulbare



STROKE CARDIOEMBOLICO
POSSIBILE:presenza di cardiopatia

Cardiopatie ad alto rischio *(Hart: Lancet 1993)*

- **fibrillatione atriale**
- **stenosi mitralica**
- **protesi valvolari**
- **IMA recente**
- **trombosi ventricolare sinistro**
- **mixoma atriale**
- **endocardite infettiva**
- **cardiomiopatia dilatativa (ischemica e non)**
- **endocardite trombotica abatterica**

Sindrome di Sneddon: **DIAGNOSI**

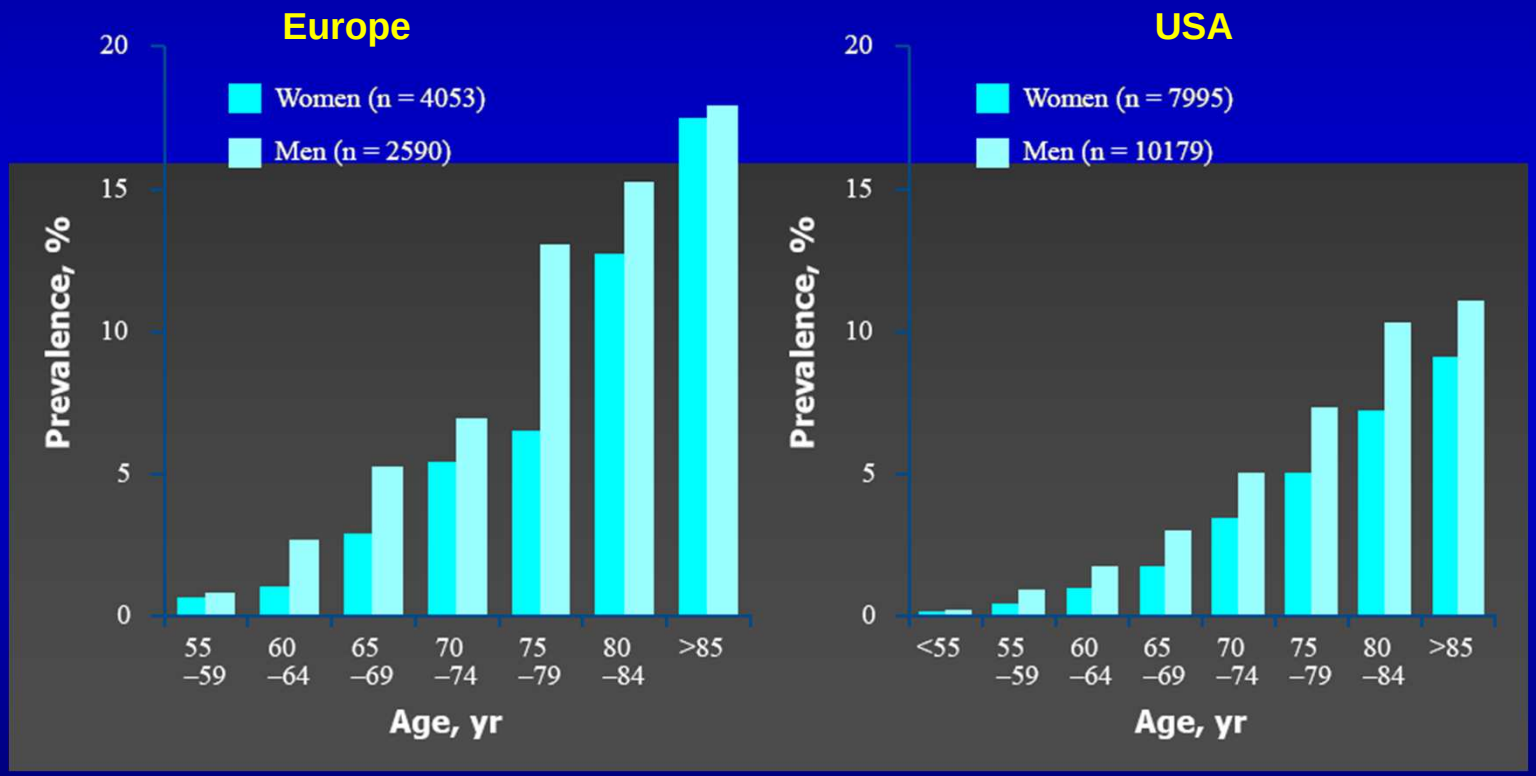
Livedo racemosa



BIOPSIA



La prevalenza della FA aumenta con l'età



(1)Heeringa et al.European Heart Journal (2006) 27, 949–953

(1)Go AS et al. JAMA (2001) 285, 2370-2375

FA parossistica o persistente/permanente

DIFFERENZA NON STATISTICAMENTE SIGNIFICATIVA

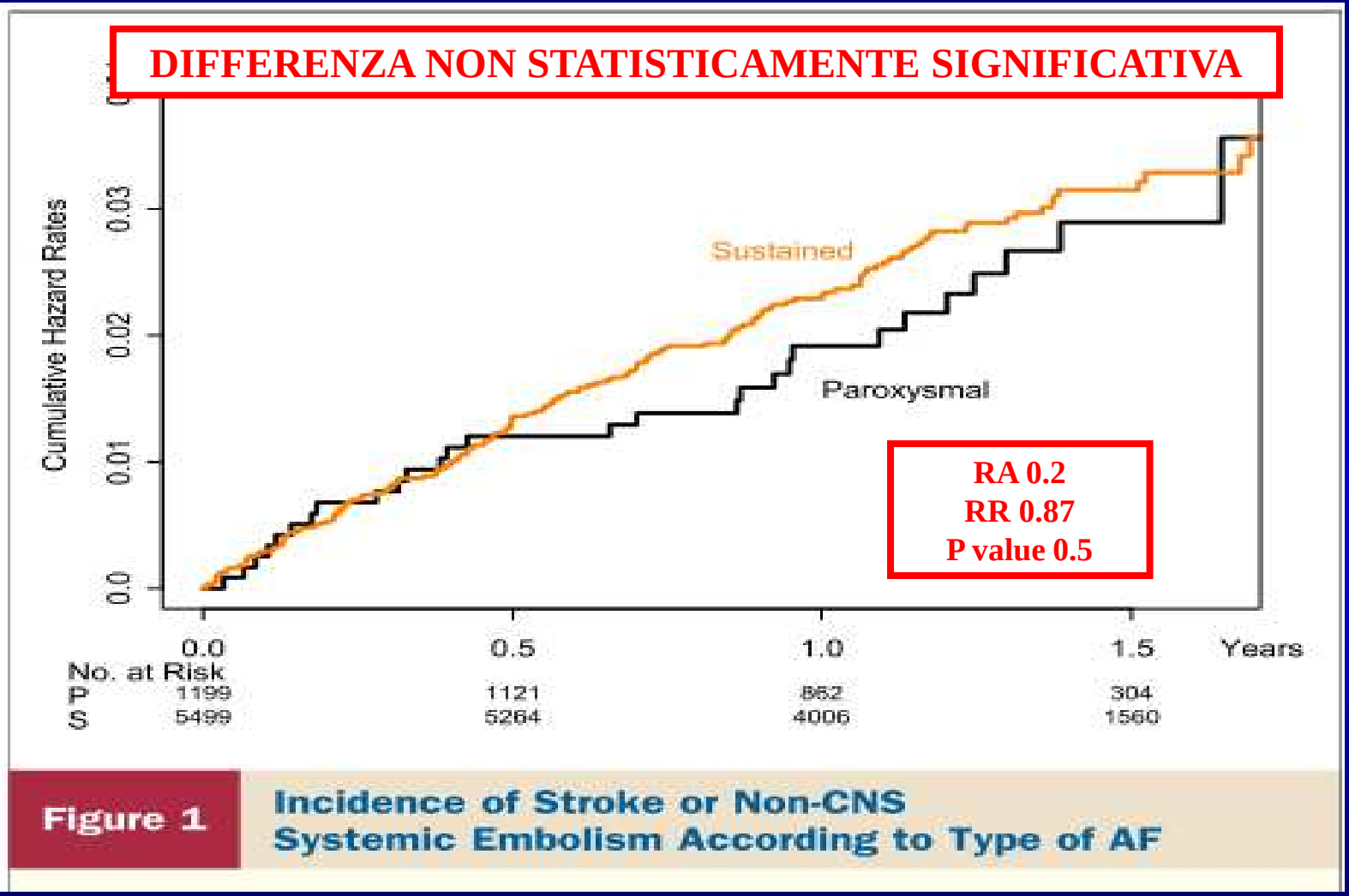
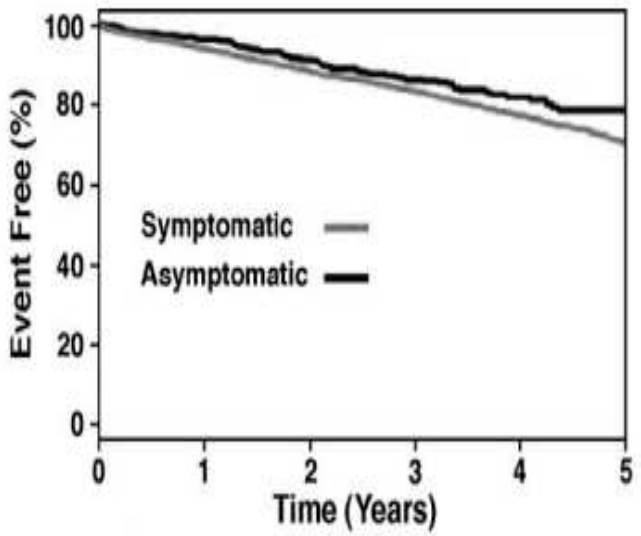


Figure 1 Incidence of Stroke or Non-CNS Systemic Embolism According to Type of AF

JACC 2007;50:2156-61

Sintomatica o Asintomatica

Figure 4



Numbers of Events

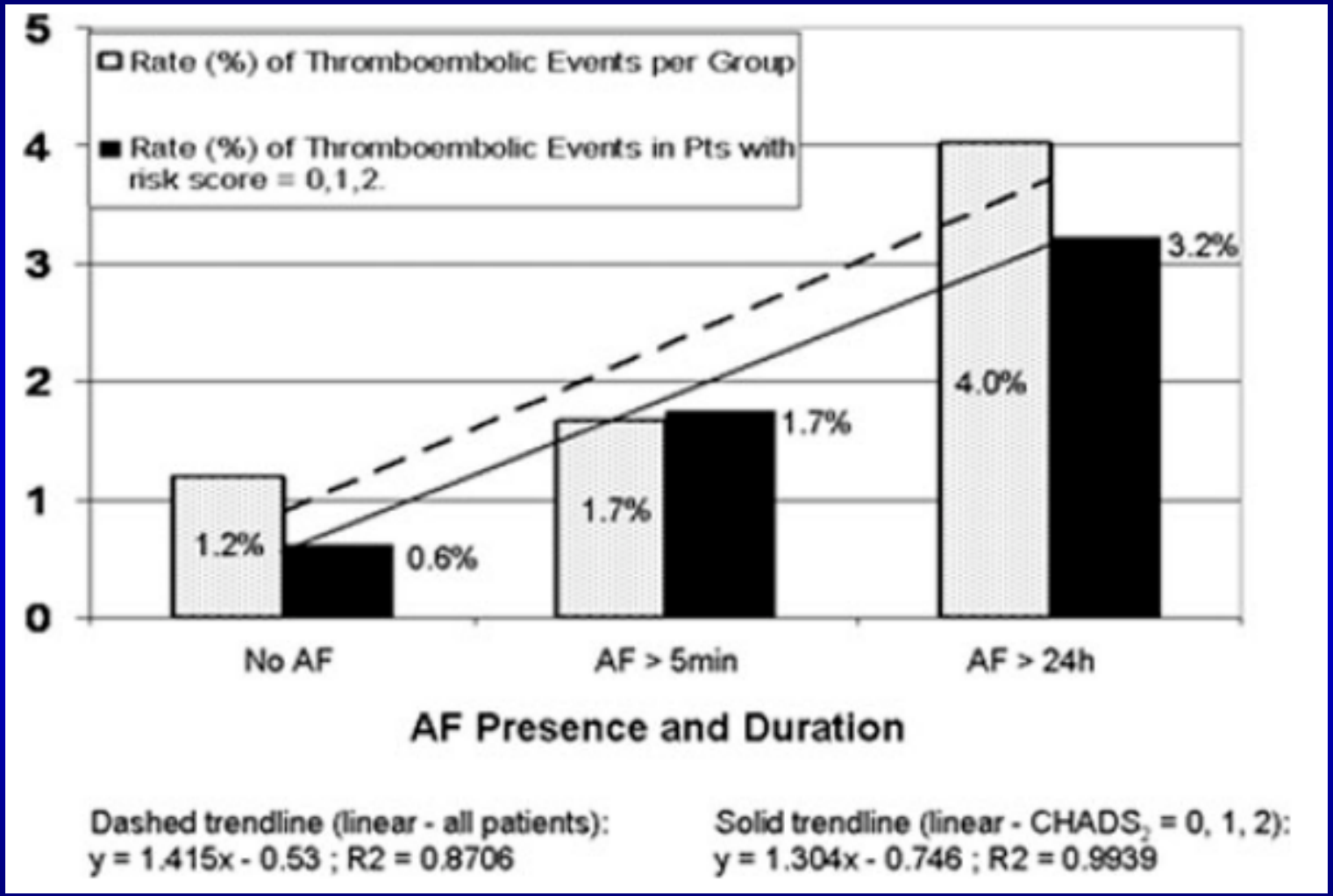
Symptomatic:	0(0%)	215(6%)	411(12%)	563(17%)	701(23%)	774(29%)
Asymptomatic:	0(0%)	17(4%)	42(8%)	62(14%)	73(18%)	78(21%)

Analisi del numero di Stroke:

Stratificando per le caratteristiche di base DIFFERENZA NON STATISTICAMENTE SIGNIFICATIVA (P 0.43)

Am Heart J 2005;149:657-63

Durata della FA e rischio di stroke



J Cardiovasc Electrophysiol 2009; 20: 241-248

Ischemia silente



Eventi cerebrovascolari sintomatici

Ischemie cerebrali silenti



FA sintomatica

FA asintomatica

Frequent Atrial Premature Beats Predict Paroxysmal Atrial Fibrillation in Stroke Patients

An Opportunity for a New Diagnostic Strategy

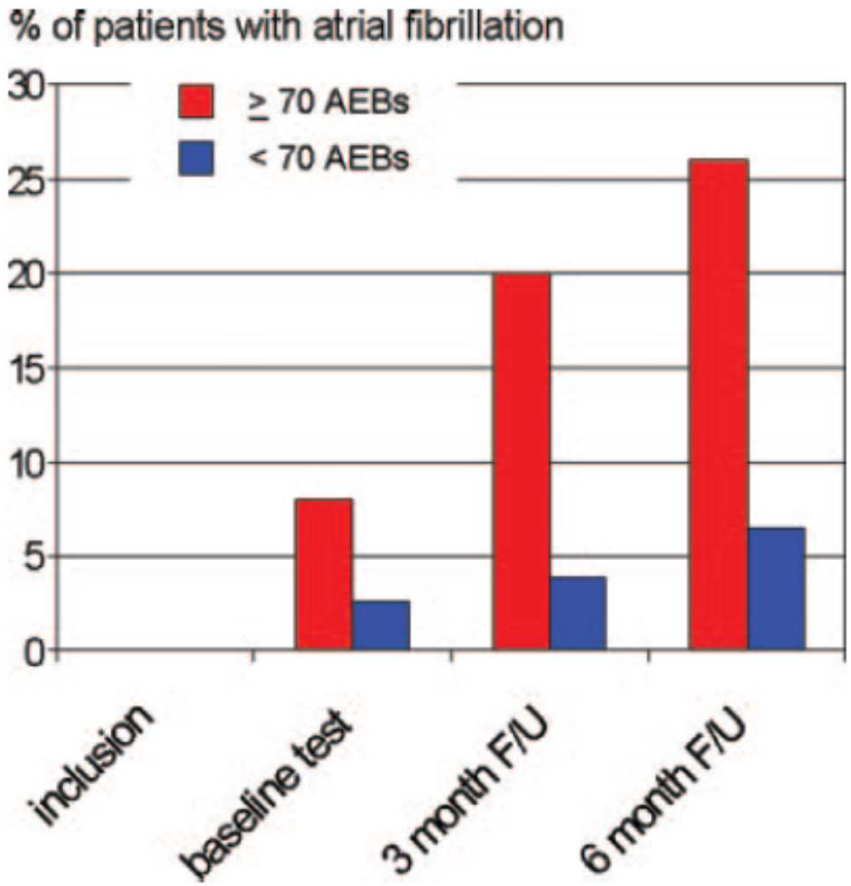
Dieter Wallmann, MD; David Tüller, MD; Kerstin Wustmann, MD; Pascal Meier, MD; Jörg Isenegger, MD; Marcel Arnold, MD; Heinrich P. Mattle, MD; Etienne Delacrétaz, MD

Background and Purpose—For patients having suffered ischemic stroke, the current diagnostic strategies often fail to detect atrial fibrillation as a potential cause of embolic events. The aim of the study was to identify paroxysmal atrial fibrillation in stroke patients. We hypothesized that patients with frequent atrial premature beats (APBs) recorded in 24-hour ECG will show more often atrial fibrillation when followed by repeated long-term ECG recordings than patients without or infrequent APBs.

Methods—127 patients with acute ischemic stroke and without known AF were enrolled in a prospective study to detect paroxysmal AF. Patients were stratified according to the number of APBs recorded in a 24-hour ECG (≥70 APBs versus <70 APBs). Subsequently, they all underwent serial 7-day event-recorder monitoring at 0, 3, and 6 months.

Results—Serial extended ECG monitoring identified AF in 26% of patients with frequent APBs but only in 6.5% when APBs were infrequent (P=0.0021). A multivariate analysis showed that the presence of frequent APBs in the initial 24-hour ECG was the only independent predictor of paroxysmal AF during follow-up (odds ratio 6.6, 95% confidence intervals 1.6 to 28.2, P=0.01).

Conclusions—In patients with acute ischemic stroke, frequent APBs (≥70/24 hours) are a marker for individuals who are at greater risk to develop or have paroxysmal AF. For such patients, we propose a diagnostic workup with repeated prolonged ECG monitoring to diagnose paroxysmal AF. (***Stroke*. 2007;38:2292-2294.**)



Cumulative incidence of paroxysmal atrial fibrillation (in %) detected at serial follow-up (F/U) with 7-day event recording.

STROKE CRIPTOGENETICO e FIBRILLAZIONE ATRIALE

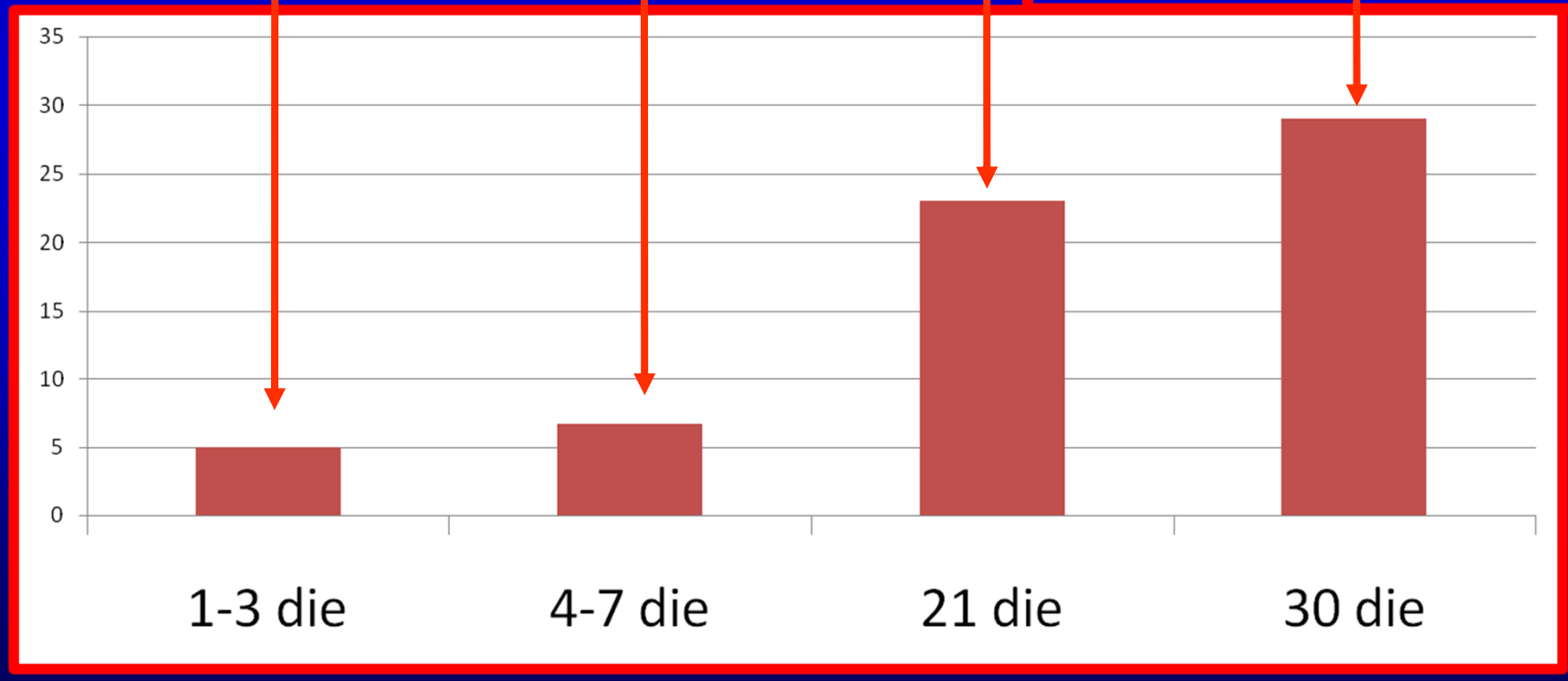
Detezione di FA con le **varie metodiche di monitoraggio**

1-3 DIE-> 3,8-6,1%
-Liao, Stroke 2007

4-7 DIE-> 5,7-7.7%
-Liao, Stroke 2007
-Jabaudon Stroke 2004

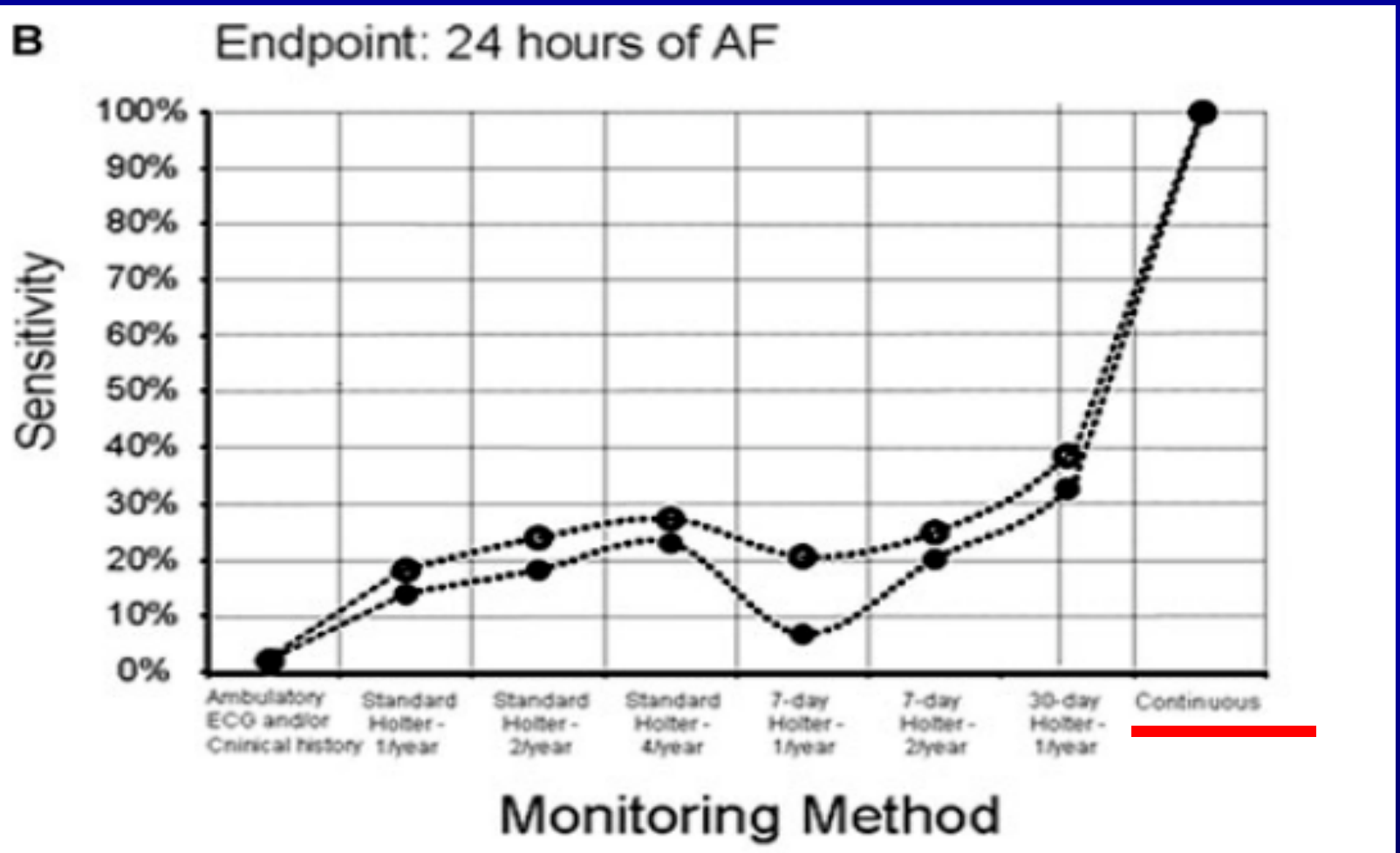
21 DIE->23%
-Tayal, Neurology 2008

30 DIE->29%
-Elijovich, J Stroke CV Dis 2009
-Zeigler, Stroke 2010
-Miller, J Neur Sciences 2012
-Flint Stroke, 2012



STROKE CRIPTOGENETICO e FIBRILLAZIONE ATRIALE
Metodiche di monitoraggio

Holter 24H-> Se 44,4%
7 die-> Se 50,4%
1 mese-> Se 65,1%
*VPN 53-64,6%



J Cardiovasc Electrophysiol 2009; 20: 241-248

Brief Report

Occult Atrial Fibrillation in Cryptogenic Stroke

Detection by 7-Day Electrocardiogram Versus Implantable Cardiac Monitors

Martin A. Ritter, MD*; Simon Kochhäuser, MD*; Thomas Duning, MD; Florian Reinke, MD; Christian Pott, MD; Dirk G. Dechering, MD; Lars Eckardt, MD; E. Bernd Ringelstein, MD

Background and Purpose—A significant number of patients with cryptogenic stroke suffer from intermittent atrial fibrillation (iAF) which was not detected during the standard diagnostic procedures. We investigated whether implantation of an insertable cardiac monitor (ICM) is feasible in patients with cryptogenic stroke, and compared the iAF detection rate of the ICM with 7-day Holter monitoring.

Methods—Sixty patients (median age 63; interquartile range, 48.5–72 years) with acute cryptogenic stroke were included. ICM was implanted 13 days (interquartile range; 10–65 days) after the qualifying event. Seven-day Holter was performed after the ICM was implanted.

Results—The iAF was detected by the ICM in 10 patients (17%; 95% CI, 7% to 26%). Only 1 patient (1.7%; 95% CI, 0% to 5%) had iAF during 7-day Holter monitoring as well (P=0.0077). Episodes of iAF lasting 2 minutes or more were detected 64 (range, 1–556) days after implantation. There were no recurrent strokes during the observation period. The implantation procedure was well tolerated with no adverse events; the daily data transmission protocol was easy to handle by the patients.

Conclusions—ICM implantation for the detection of iAF during outpatient follow-up is feasible in patients with cryptogenic stroke. ICMs offer a much higher diagnostic yield than 7-day Holter monitoring. **(*Stroke*. 2013;44:00-00.)**

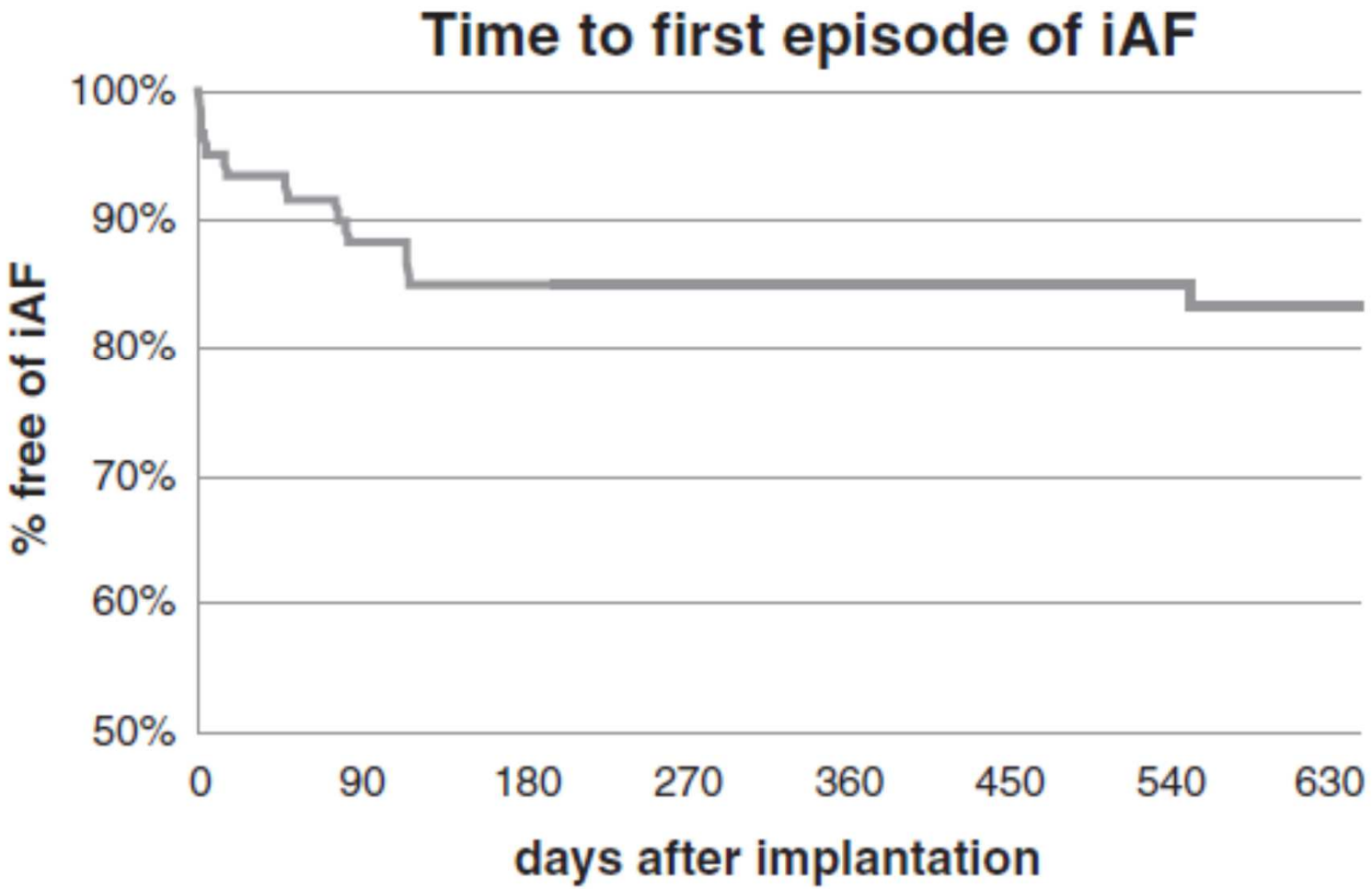


Figure. The figure shows the timing of the first detected episode of atrial fibrillation (iAF). Most patients were diagnosed with iAF within 90 days after implantation, and 1 patient was diagnosed >1 year later.

Circulation
Arrhythmia and Electrophysiology
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association
Learn and Live

Performance of a New Leadless Implantable Cardiac Monitor in Detecting and Quantifying Atrial Fibrillation Results of the XPECT Trial

Gerhard Hindricks, Evgueny Pokushalov, Lubos Urban, Milos Taborsky, Karl-Heinz Kuck, Dmitry Lebedev, Guido Rieger and Helmut Pürerfellner

Circ Arrhythm Electrophysiol 2010;3;141-147; originally published online February 16, 2010;
DOI: 10.1161/CIRCEP.109.877852
Circulation: Arrhythmia and Electrophysiology is published by the American Heart Association. 7272 Greenville Avenue, Dallas, TX 72514
Copyright © 2010 American Heart Association. All rights reserved. Print ISSN: 1941-3149. Online ISSN: 1941-3084

STROKE CRIPTOGENETICO e FIBRILLAZIONE ATRIALE: Protocollo di arruolamento

CRITERI DI INCLUSIONE

- Età compresa tra 18 e 80 anni

- Diagnosi di stroke criptogenetico con esclusione di altre eziologie mediante esecuzione di:

- ECG, Monitoraggio telemetrico 48 ore o Holter 24 h,
- TTE ed ev. TEE
- Doppler TC, ev. Doppler venoso arti inferiori,
- TAC e/o RM encefalo,
- EcoTSA, angioTAC
- Screening coagulativo

STROKE CRIPTOGENETICO e FA :
Protocollo di arruolamento

CRITERI DI INCLUSIONE

Presenza di almeno un fattore di rischio per lo sviluppo di FA:

- **Ipertensione arteriosa,**
- **Cardiopatia,**
- **Ipertrofia VS,**
- **Pericardite cronica,**
- **Dilatazione atriale,**
- **Patologie polmonari croniche,**
- **Patologie tiroidee,**
- **Diabete mellito**

STROKE CRIPTOGENETICO e FIBRILLAZIONE ATRIALE: Protocollo di arruolamento

CRITERI DI ESCLUSIONE

-Storia di FA pregressa con indicazione alla scoagulazione

-Paziente già scoagulato per altri motivi

-Punteggio di Rankin 4 o 5

STROKE CRIPTOGENETICO e FA: Protocollo di studio

IMPIANTO

- Loop Recorder in DH entro 6 mesi dall'evento cerebrale

FOLLOW UP

- controllo trans-telefonico mensile

- visita dopo detezione del primo episodio di FA > 5 min

- follow-up previsto: minimo 6 mesi

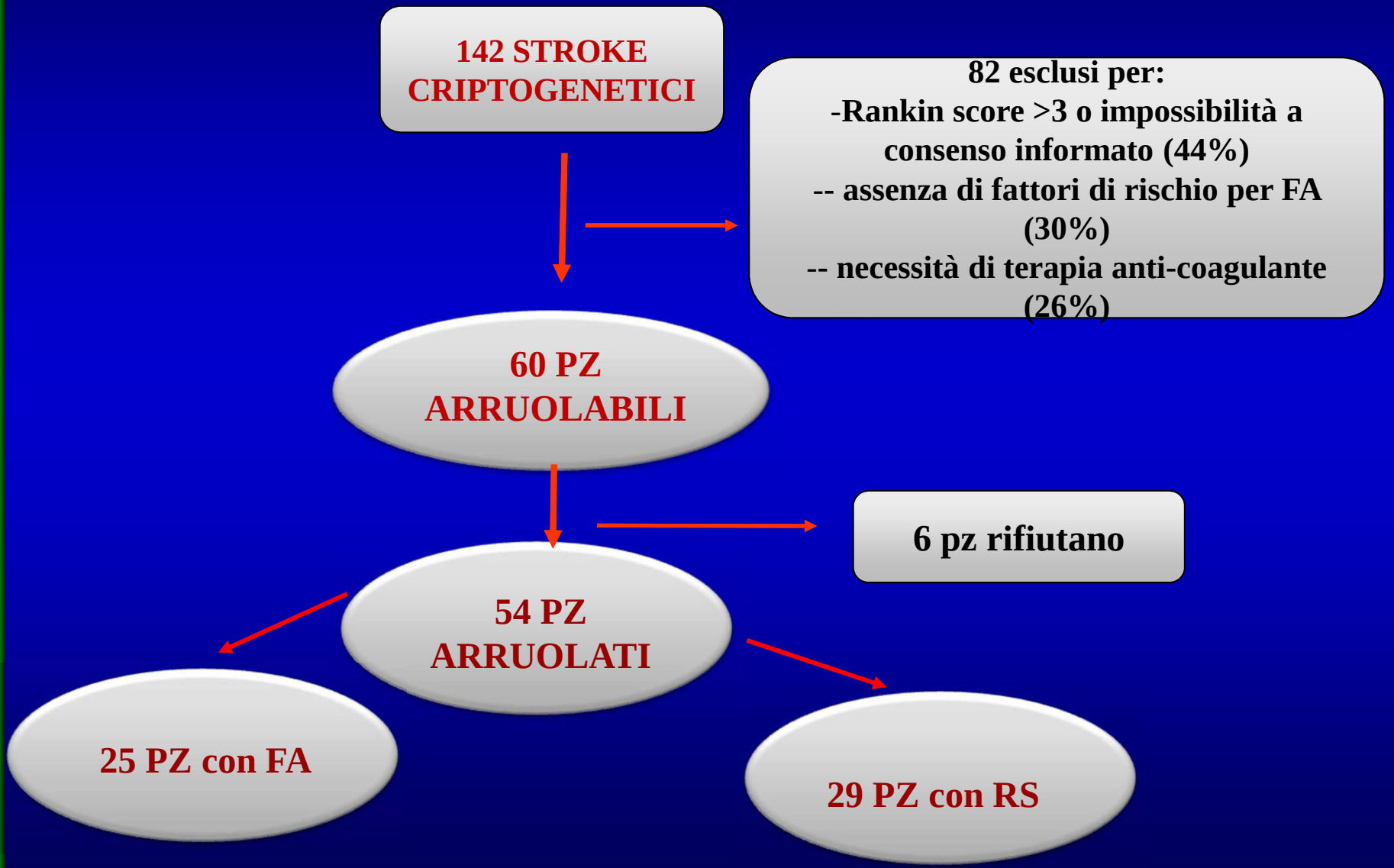
ENDPOINT

1°: prevalenza FA nello stroke criptogenetico

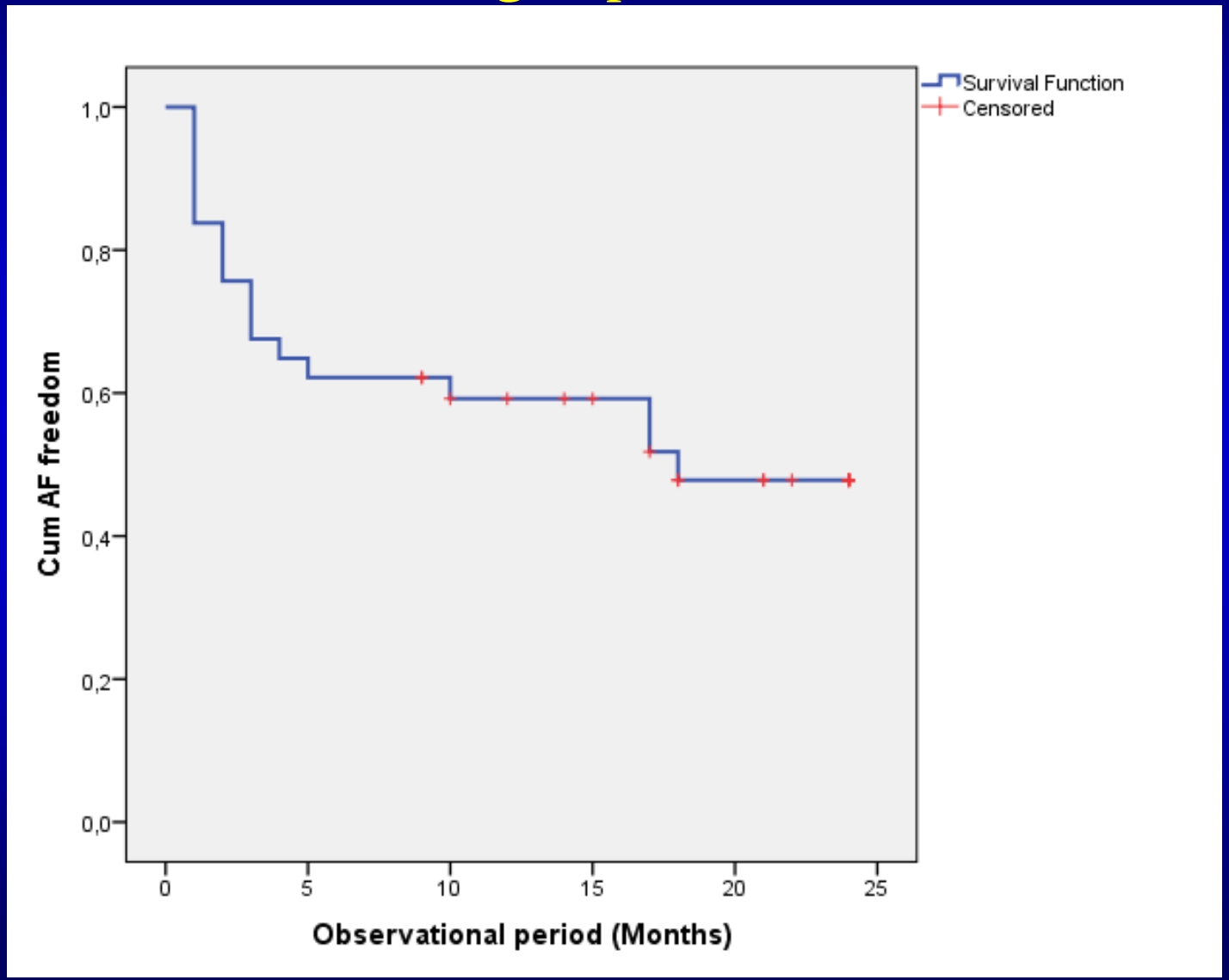
2°: confronto caratteristiche cliniche – parametri ecocardiografici dei due gruppi

Analisi eseguita per intention to treat

STROKE CRIPTOGENETICO e FA: Arruolamento



STROKE CRIPTOGENETICO e FA:
Caratteristiche degli episodi di FA rilevati



STROKE CRIPTOGENETICO e FA: Caratteristiche generali dei pazienti arruolati

Table 1. Baseline features, univariate analysis of indipendent predictors of AF

	Overall, 54	SR, 29	AF, 25	Univariate
				p value
Age	67.8±9.4	65.7±11.5	70.1±5.8	0,2
Gender, Male	31 (57.4)	15 (51.7)	16 (64.0)	0,4
Diabetes mellitus	10 (18.5)	7 (25.0)	3 (12.0)	0,2
Hypertension	47 (88.7)	23 (82.1)	24 (96.0)	0,1
Cardiomyopathy	12 (22.6)	6 (20.7)	6 (24.0)	0,8
Dystiroidism (in therapy)	8 (14.8)	4 (14.8)	4 (16.0)	0,8
Previous Stroke	15 (27.8)	6 (20.7)	9 (36.0)	0,2
CHADS2	3.4±0.8	3.4±1.0	3.5±0.6	0,6
CHADS2VASC	4.5±1.2	4.4±1.3	4.7±1.2	0,3
HAS-BLEED	3.0±0.6	2.9±0.6	3.1±0.7	0,5
Timing Stroke-LR implantation (months)	3.6±2.0	3.2±2.0	4.1±1.8	0,1
Atrial premature contractions >100/day	6 (11)	2 (6.8)	4 (16.0)	0,1

*values are mean±SD or numbers with percentages. CI: confidence interval: HR: hazard ratio.

STROKE CRIPTOGENETICO e FA:
Caratteristiche degli episodi di FA rilevati

Table 3. AF features and burden	
Pts with AF	25/54 (46.3%)
Asymptomatic	19/25 (76%)
First detection (months)	5.4 (1-18)
Overall AF episodes	25 (1-380)
Overall AF episodes/month	1 (0-17)
Episode of AF ≥ 5 minutes	10 (1-85)
Episode of AF ≥ 5 minutes/month	0.3 (0-2.8)
Overall AF burden (hours)	561 (0.5-11750)
Overall AF burden/month (hours)	18.7 (0.2-392)
Longest episode (hours)	20 h. (7 min - 8 days) 16 pts (64%) 1h-1d, 5 (24%) >1 d
Heart Rate (non-sympthomatic/ sympthomatic pts)	120±22 / 132±16 (p=0.1)
Paroxysmal/Persistent AF	24/25 (96%)-1/25 (4%)

*values are median and range or numbers with percentages

STROKE CRIPTOGENETICO e FA: Conclusioni

L'impianto di un monitoraggio cardiaco continuo in una popolazione selezionata rappresenta un metodo minimamente invasivo ma altamente efficace per identificare pazienti a rischio di fibrillazione atriale allo scopo di trattare adeguatamente il rischio embolico ed evitare recidive in un gruppo di pazienti paucisintomatici e con un buon recupero neurologico dal precedente evento ischemico



ARTICLES

Incidence of atrial fibrillation detected by implantable loop recorders in unexplained stroke

Paul E. Cotter, MB, MPhil
Peter J. Martin, MD
Liam Ring, MB
Elizabeth A. Warburton, MD
Mark Belham, MD*
Peter J. Pugh, MD*

Correspondence to Dr. Cotter: paule.cotter@hse.ie

ABSTRACT

Objectives: The usefulness of the implantable loop recorder (ILR) with improved atrial fibrillation (AF) detection capability (Reveal XT) and the factors associated with AF in the setting of unexplained stroke were investigated.

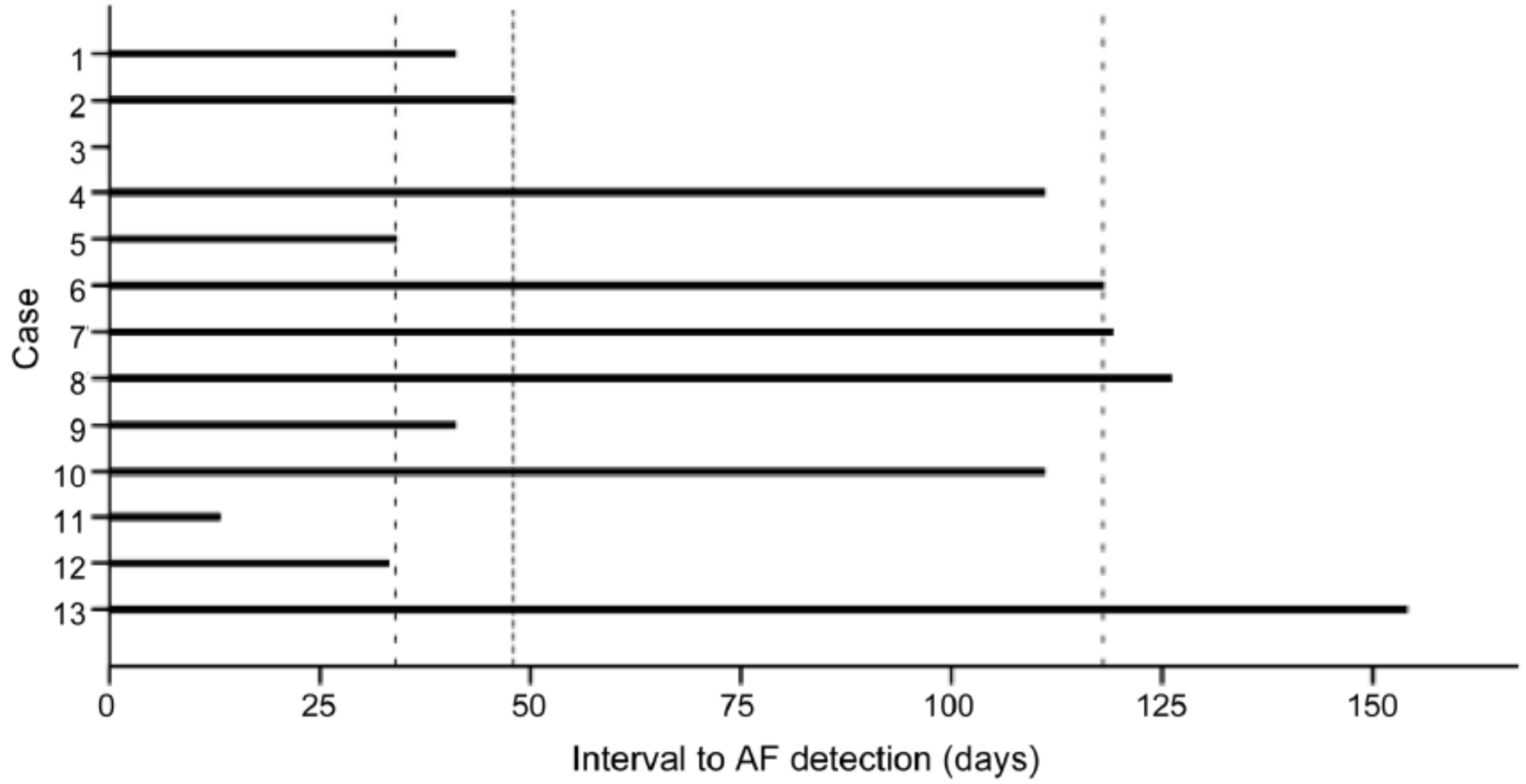
Methods: A cohort study is reported of 51 patients in whom ILRs were implanted for the investigation of ischemic stroke for which no cause had been found (cryptogenic) following appropriate vascular and cardiac imaging and at least 24 hours of cardiac rhythm monitoring.

Results: The patients were aged from 17 to 73 (median 52) years. Of the 30 patients with a shunt investigation, 22 had a patent foramen ovale (73.3%; 95% confidence interval [CI] 56.5%–90.1%). AF was identified in 13 (25.5%; 95% CI 13.1%–37.9%) cases. AF was associated with increasing age ($p = 0.018$), interatrial conduction block ($p = 0.02$), left atrial volume ($p = 0.025$), and the occurrence of atrial premature contractions on preceding external monitoring ($p = 0.004$). The median (range) of monitoring prior to AF detection was 48 (0–154) days.

Conclusion: In patients with unexplained stroke, AF was detected by ILR in 25.5%. Predictors of AF were identified, which may help to target investigations. ILRs may have a central role in the future in the investigation of patients with unexplained stroke. *Neurology*® 2013;80:1–5

FA in 13 pz su 51

Figure Bar graph of time to atrial fibrillation (AF) detection in cases where AF was detected



Cryptogenic Stroke and underlying Atrial Fibrillation (CRYSTAL AF): Design and rationale

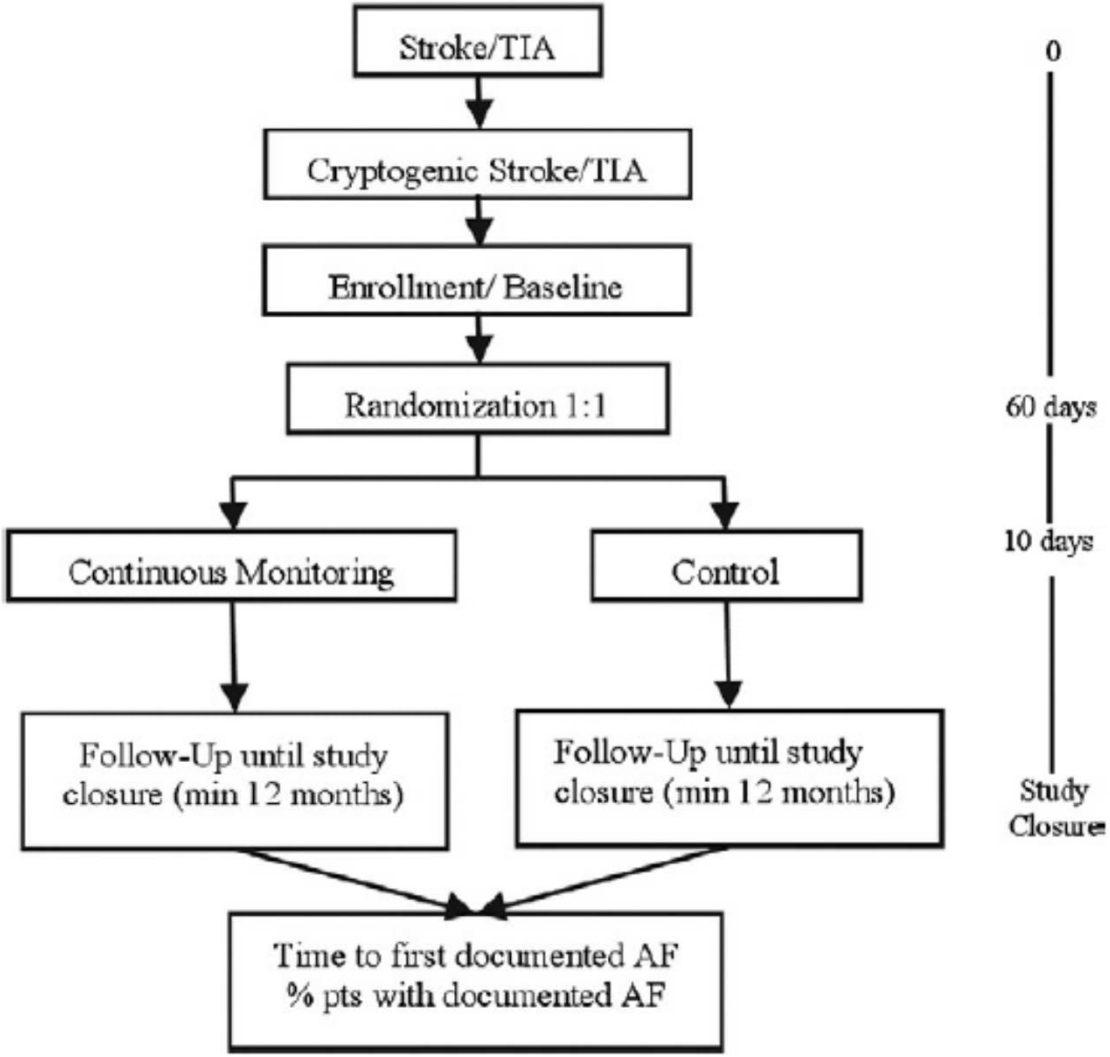
Anil-Martin Sinha, MD, DPhil,[a] Hans-Christoph Diener, MD, PhD,[b] Carlos A. Morillo, MD,[c] Tommaso Sanna, MD,[d] Richard A. Bernstein, MD, PhD,[e] Vincenzo Di Lazzaro, MD,[f] Rod Passman, MD,[g] Frank Beckers, PhD,[h] and Johannes Brachmann, MD, PhD[a] *Klinikum Coburg and Essen, Germany; Ontario, Canada; Rome, Italy; Chicago, IL; and Maastricht, The Netherlands*

Background Patients with atrial fibrillation (AF) are at increased risk for ischemic stroke. In patients who have suffered a stroke, screening for AF is routinely performed only for a short period after the stroke as part of the evaluation for possible causes. If AF is detected after an ischemic stroke, oral anticoagulation therapy is recommended for secondary stroke prevention. In 25% to 30% of stroke patients, the stroke mechanism cannot be determined (cryptogenic stroke). The incidence of paroxysmal AF undetected by short-term monitoring in patients with cryptogenic stroke is unknown, but has important therapeutic implications on patient care. The optimum monitoring duration and method of AF detection after stroke are unknown. The purpose of this study is to evaluate the incidence of AF and time to AF detection in patients with cryptogenic stroke using an insertable cardiac monitor.

Study Design The CRYSTAL AF trial is a randomized prospective study to evaluate a novel approach to long-term monitoring for AF detection in patients with cryptogenic stroke. Four hundred fifty cryptogenic stroke patients (by definition, without a history of AF) will be enrolled at approximately 50 sites in Europe, Canada, and the United States. Patients will be randomized in a 1:1 fashion to standard arrhythmia monitoring (control arm) or implantation of the subcutaneous cardiac monitor (Reveal XT; Medtronic, Inc, Minneapolis, MN) (continuous monitoring arm).

Outcomes The primary end point is time to detection of AF within 6 months after stroke. The clinical follow-up period will be at least 12 months. Study completion is expected at the end of 2012. (Am Heart J 2010;160:36-41.e1.)

Figure 1



Overview of the study design with the required timeline.

Table I. CRYSTAL AF inclusion and exclusion criteria

Inclusion criteria

1. Recent episode (<60 d) of cryptogenic symptomatic TIA* or recent episode of cryptogenic ischemic stroke.
   A stroke/TIA is considered to be cryptogenic if no possible cause can be determined despite extensive workup according to the standard protocol of the participating center.
   Before randomization, the following tests are minimally required as standard tests to establish the diagnosis of cryptogenic stroke:
   - MRI or CT
   - 12-lead ECG for AF detection
   - 24-h ECG monitoring for AF detection and PAC analysis (eg, Holter)
   - TEE
   - CTA or MRA of head and neck to rule out other causes of stroke pathologies
2. Patient or legally authorized representative is willing to sign patient consent form
3. Patient is ≥40 y old

Exclusion criteria

1. Patient has known etiology of the TIA or stroke (based on neuro-/cardiac/vascular imaging), such as:
   - Angiographic signs of large-artery atherosclerosis (MRA, CTA, or digital subtraction angiography) in the artery feeding the acute ischemic territory
   - Radiographic appearance consistent with acute small-artery occlusion, with lesion <1 cm in diameter (DWI or CT).
   - Evidence of a high-risk cardiac or aortic arch source of embolism (LV or LA thrombus or "smoke," emboligenic valvular lesion or tumor, PFO with extant source of venous thromboembolism, aortic arch plaque >3 mm thick or with mobile components or any other high-risk lesion)
   - History of spontaneous deep vein thrombosis
   - Stroke of other determined cause such as presence of nonatherosclerotic vasculopathies, hypercoagulable states (must be tested in patients <55 y old) and hematologic disorders
2. Patient has untreated hyperthyroidism.
3. Patients had myocardial infarction <1 m before stroke/TIA.
4. Patient had coronary bypass grafting <1 m before stroke/TIA.
5. Patient has valvular disease requiring immediate surgical intervention.
6. Patient has documented history of AF or atrial flutter.
7. Patient has presence of a PFO, and PFO is/was an indication to start OAC in the patient according to the ESO guidelines.[5]
8. Patient has permanent indication for anticoagulation at enrollment.
9. Patient has permanent OAC contraindication.
10. Patient is already included in another clinical trial that will affect the objectives of this study.
11. Patient's life expectancy is <1 y.
12. Patient is pregnant.
13. Patient is indicated for implant with a pacemaker, ICD, CRT device, or an implantable hemodynamic monitoring system
14. Patient is not fit, or is unable or unwilling to follow the required procedures of the Clinical Investigation Plan.

PAC, Premature atrial complex; *TEE*, transesophageal echocardiography; *DWI*, diffusion-weighted imaging; *LV*, left ventricular; *LA*, left atrial; *OAC*, oral anticoagulation; *ESO*, European Stroke Organisation; *ICD*, implantable cardioverter defibrillator; *CRT*, cardiac resynchronization therapy.

*Only TIAs with the following documented characteristics can be included: visible lesion on MRI or CT that fits the symptoms of the TIA and at least one of the following symptoms: speech problems, weakness of arm or leg, or hemianopsia.

Noninvasive Cardiac Monitoring for Detecting Paroxysmal Atrial Fibrillation or Flutter After Acute Ischemic Stroke

A Systematic Review

Joy Liao, MD; Zahira Khalid, MB; Ciaran Scallan, BSc; Carlos Morillo, MD; Martin O'Donnell, MB

Background and Purpose—Identifying paroxysmal atrial fibrillation/flutter is an essential part of the etiological workup of patients with ischemic stroke. However, there is controversy in the literature regarding the use of noninvasive cardiac rhythm monitoring with previous reviews reporting a low detection rate with routine monitoring. We performed a systematic review to determine the frequency of occult atrial fibrillation/flutter detected by noninvasive methods of continuous cardiac monitoring after acute ischemic stroke or transient ischemic attack.

Methods—Studies were identified from comprehensive searches of PubMed, EMBASE, Science Citation Index, and bibliographies of relevant articles. Only English language articles were included. Randomized controlled trials and prospective cohort studies of consecutive patients with acute ischemic stroke that fulfilled predefined criteria were eligible. Two authors conducted searches and abstracted data from eligible studies independently.

Results—Sixty studies were deemed potentially eligible. After application of eligibility criteria, 5 studies (736 participants) were included in the analysis. All studies evaluated Holter monitoring; 2 also evaluated event loop recording. In studies that evaluated Holter monitoring (588 participants), new atrial fibrillation/flutter was detected in 4.6% (95% CI: 0% to 12.7%) of consecutive patients with ischemic stroke. Duration of monitoring ranged from 24 to 72 hours. Two studies (140 participants) evaluated event loop recorders after Holter monitoring. New atrial fibrillation/flutter was detected in 5.7% and 7.7% of consecutive patients in these 2 studies.

Conclusions—Screening consecutive patients with ischemic stroke with routine Holter monitoring will identify new atrial fibrillation/flutter in approximately one in 20 patients. Although based on limited data, extended duration of monitoring may improve the detection rate. Further research is required before definitive recommendations can be made. (***Stroke.*** **2007;38;2935-2940.)**

Table 3. Study Results

Study, Year	N	Intervention	Duration of Monitoring	Definition of Atrial Fibrillation	New Atrial Fibrillation/Flutter	Initiation of Monitoring
Barthelemy et al, 2003	60	Cardiac event recorder (n*=52)	4 days (70.1 hours)	≥30 seconds	7.7%	10 days from stroke event
		Holter monitor (n=55)	24 hours		5.5%	Admission to neurology ward
Jabaudon et al, 2004	149	Holter monitor (n=139)	21 hours	Not stated	5.0%	8 days after admission
		Event loop recorder (n=88)	159 hours	AF detected by manual review	5.7%	55 days after admission
Hornig et al, 1996	261	Holter monitor (n=261)	24 hours	Not stated; evaluated by cardiologist	3.8%	ND
Rem et al, 1985	184	Continuous cardiac monitoring (n=159)	48 hours	Not stated; evaluated by neurology resident	2.5%	ND
		Holter monitor (n=51)	24–48 hours		3.9%	ND
Schuchert et al, 1999	82	Holter monitor (n=82)	72 hours	At least 1 minute	6.1%	2–3 weeks after acute stroke

*n values indicate subjects without atrial fibrillation/flutter on history or previously.
ND indicates no data.

Letters to the Editor

Stroke *welcomes Letters to the Editor and will publish them, if suitable, as space permits. They should not exceed 750 words (including references) and may be subject to editing or abridgment. Please submit letters in duplicate, typed double-spaced. Include a fax number for the corresponding author and a completed copyright transfer agreement form (available online at http://stroke.ahajournals.org and http://submit-stroke.ahajournals.org).*

Detecting Paroxysmal Atrial Fibrillation After Ischemic Stroke and Transient Ischemic Attack: If You Don't Look, You Won't Find

To the Editor:

different vascular territories), which may be seen in 12% of cryptogenic events. Such patients are prime targets for extended duration ECG monitoring.

To put this in perspective, we analyzed AF prevalence data from the prospective Registry of the Canadian Stroke Network,

LA DURATA DEL MONITORAGGIO AUMENTA LA SENSIBILITA NEL DIAGNOSTICARE LA FA

--24 ORE → 3%
--7 GG→ 6%
--21 GG→ 9%
--30 GG→ 11%

to increase with increasing duration of monitoring.[12] In a substudy of TRENDS, a single 24-hour Holter would have diagnosed AF in 3%, whereas 7, 21, or 30 days of monitoring would have led to diagnosis of AF in 6%, 9%, or 11%, respectively.[12] Similarly, the Atrial Fibril-