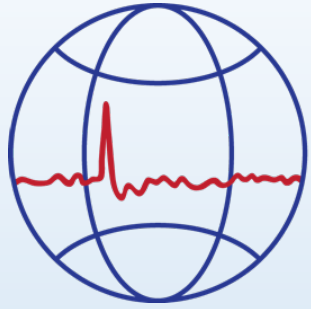


AF-SCREEN

Continuous recordings implanted/external

G. Boriani and J. Healey

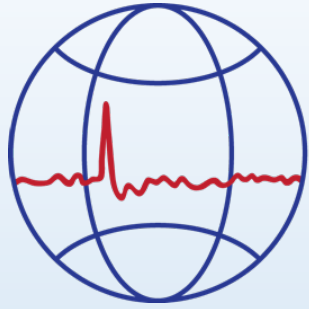


## AF-SCREEN

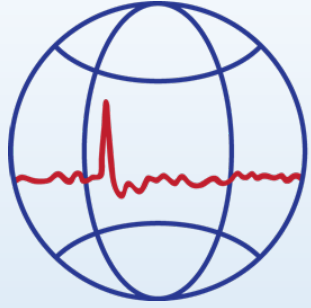
### **Subclinical AF (device-detected)**

- 1. Subclinical device-detected AF episodes (i.e. Atrial tachyarrhythmias  $\geq 5$ -6 min duration) are per se associated with an increased risk of stroke/systemic embolism
- 2. In terms of increase in the risk of stroke the effect size of subclinical device-detected AF may be smaller as compared to the risk associated with clinical AF (symptomatic or asymptomatic) (between 2.1-2.8x vs. around 5 x).
- 3. It is currently unknown what threshold of subclinical AF lasting  $< 24$  hours may justify oral anticoagulation in pts with a clinical profile at risk and how this may change according to the clinical setting (post stroke, high CHADS<sub>2</sub> or CHA<sub>2</sub>DS<sub>2</sub>VASc, etc. )

## AF detected by CIEDs and risk of STROKE



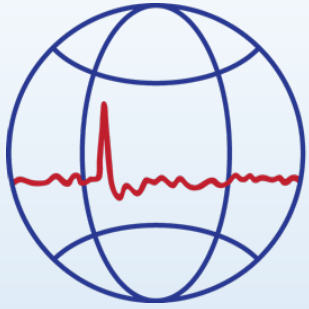
| Author, year           | N. Pts                        | AF burden associated with STROKE |
|------------------------|-------------------------------|----------------------------------|
| Glotzer, 2003          | 312 (SSS)                     | <b>≥ 5 min</b>                   |
| Capucci, 2005          | 725 (PAF history)             | <b>&gt; 24 hours</b>             |
| Botto, 2008            | 568 (PAF history)             | <b>≥ 5 min</b>                   |
| Glotzer, 2009          | 284 (≥ 1 RF)                  | <b>≥ 5.5 hours</b>               |
| Ziegler, 2010          | 168 (previous stroke, no PAF) | <b>≥ 5 min</b>                   |
| Boriani, 2011          | 568 (PAF history)             | <b>≥ 5 min</b>                   |
| Shanmugam, 2012        | 560 (CRT)                     | <b>&gt; 3.8 hours</b>            |
| Healey, 2012<br>ASSERT | 2580 (≥ 65 yo, HTN, no PAF)   | <b>&gt; 6 min</b>                |
| Boriani, 2014<br>SOS   | 10016 (PM or ICD or CRT)      | <b>≥ 1hour (highest HR)</b>      |



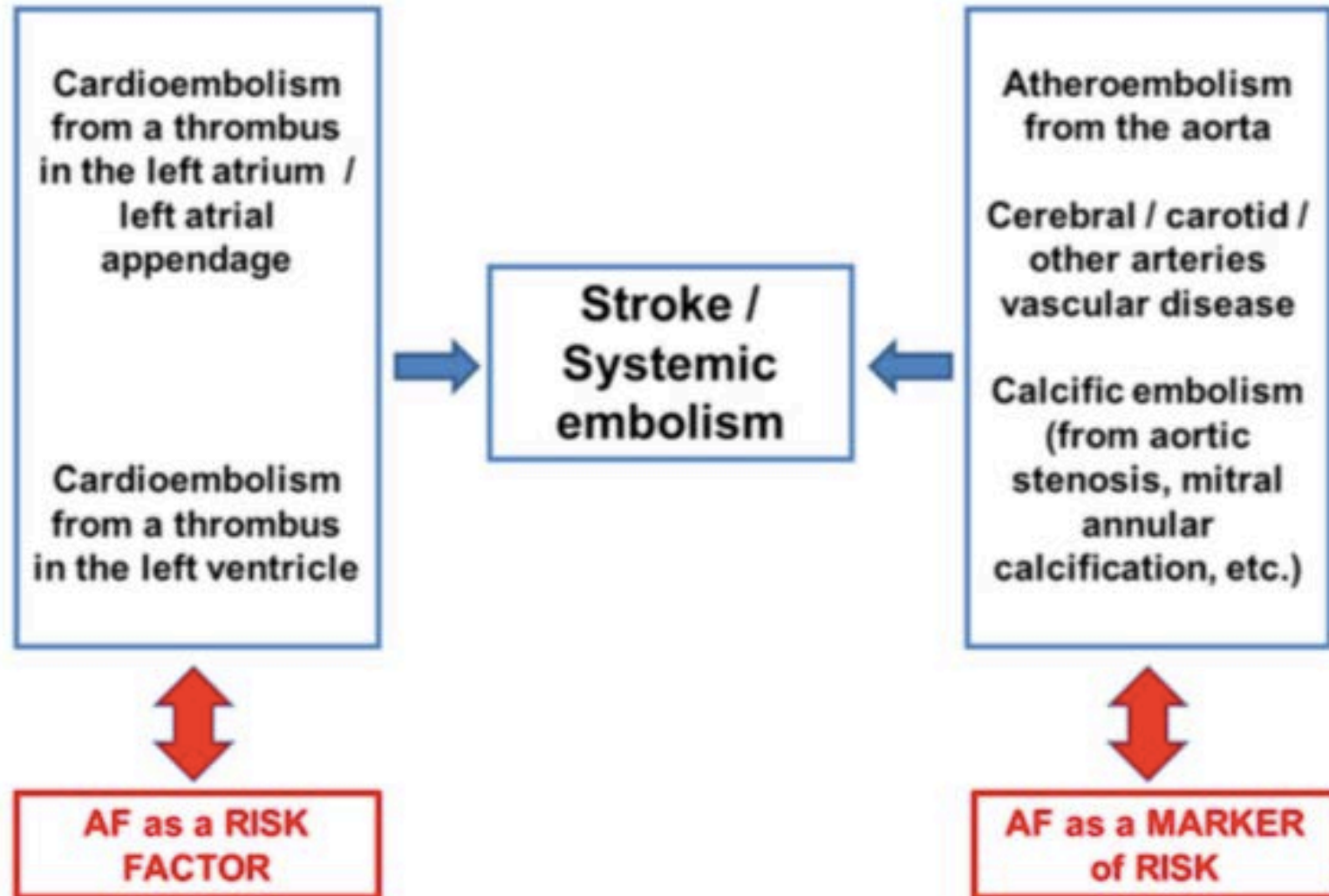
## AF-SCREEN

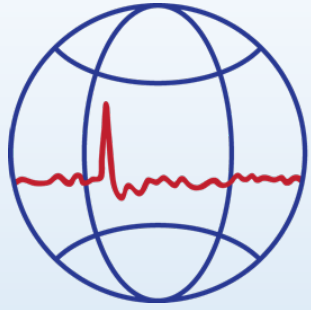
### **Subclinical AF (device-detected)**

- 4. Prospective studies (ARTESiA , NOAG are ongoing) in order to assess the net clinical benefit of NOACs when indicated on the basis of SCAF with episodes/burden < 24 h
- 5. Anyway, subclinical AF predicts the occurrence of subsequent clinical AF (symptomatic or asymptomatic) so close monitoring is needed in non- anticoagulated pts with a profile at risk of stroke
- 6. Any AF, even subclinical AF, is both a marker and a risk factor for stroke



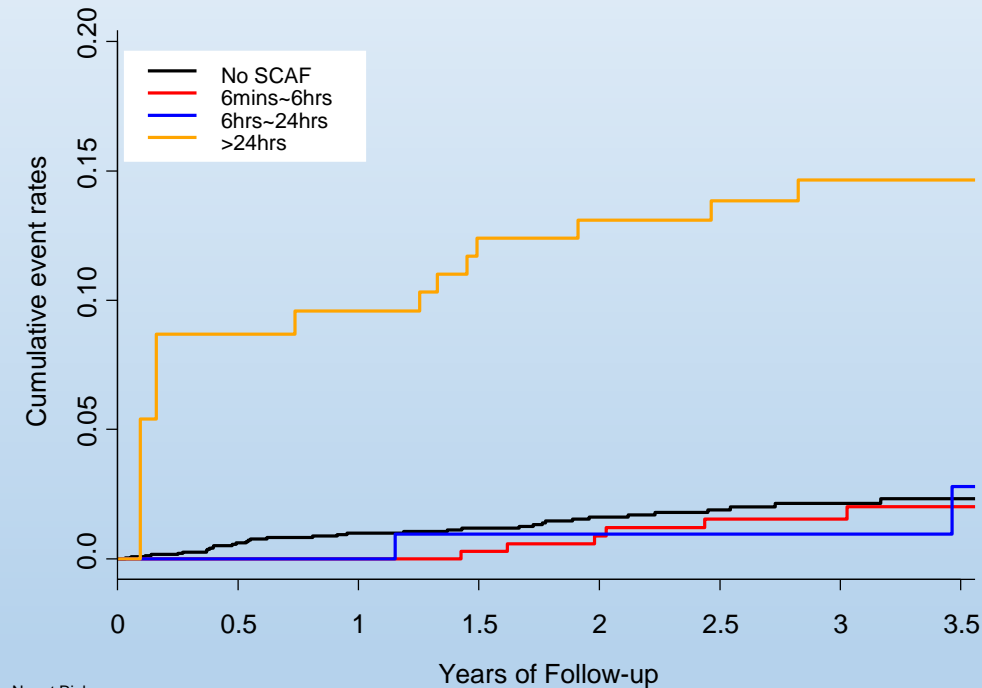
G. Boriani, D. Pettorelli / *Vascular Pharmacology* 83 (2016) 26–35





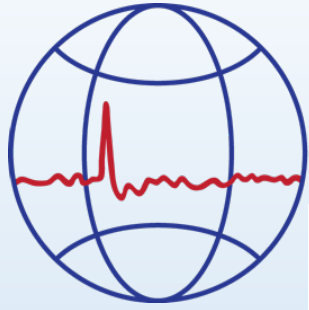
# AF-SCREEN

## Risk of ischemic stroke or systemic embolism according to duration of SCAF

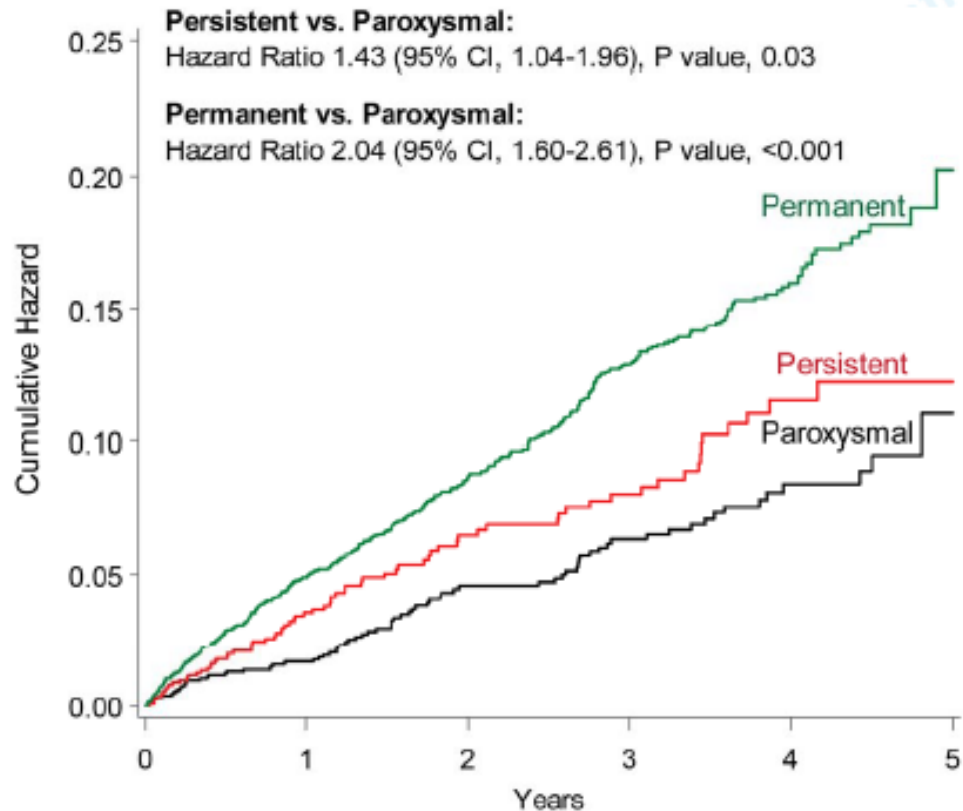


| No. at Risk | 0    | 0.5  | 1    | 1.5  | 2    | 2.5 | 3   | 3.5 |
|-------------|------|------|------|------|------|-----|-----|-----|
| No SCAF     | 2455 | 1926 | 1708 | 1528 | 1251 | 900 | 624 | 390 |
| 6mins-6hrs  | 0    | 226  | 302  | 347  | 322  | 281 | 218 | 155 |
| 6hrs-24hrs  | 0    | 88   | 104  | 103  | 108  | 93  | 80  | 52  |
| >24hrs      | 0    | 91   | 124  | 144  | 140  | 126 | 116 | 85  |

Unpublished from ASSERT



# AF-SCREEN



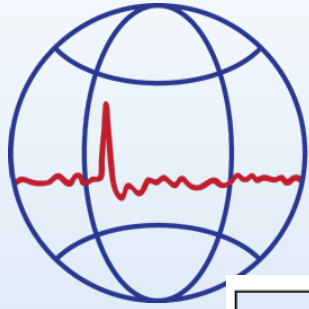
| No. at Risk |      |      |      |      |     |    |
|-------------|------|------|------|------|-----|----|
| Paroxysmal  | 1576 | 1226 | 766  | 604  | 310 | 17 |
| Persistent  | 1136 | 846  | 502  | 386  | 174 | 7  |
| Permanent   | 3854 | 2909 | 1975 | 1505 | 685 | 31 |

Figure 1. Kaplan-Meier cumulative hazard rates of embolic events according to pattern of AF occurrence.

## ACTIVE-AVERROES

N=6563, ASA-treated

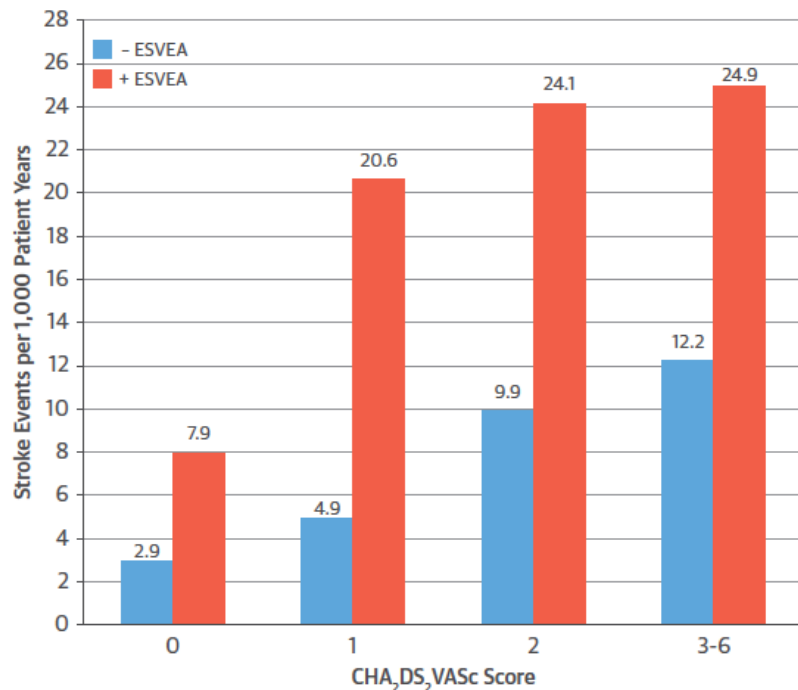
Venassche T. Eur Heart J. 2014



# AF-SCREEN

## Copenhagen Heart Study

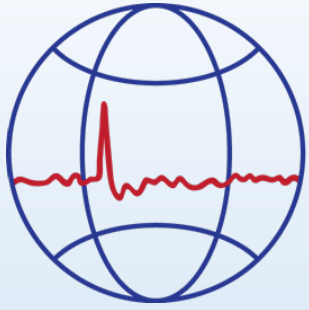
**FIGURE 1** Incidence of Stroke per 1,000 Patient-Years According to ESVEA and CHA<sub>2</sub>DS<sub>2</sub>-VASc score



A stepwise increase in the rates of stroke was observed with increasing CHA<sub>2</sub>DS<sub>2</sub>-VASc (congestive heart failure, hypertension, age 75 years or older, diabetes mellitus, previous stroke or transient ischemic attack, vascular disease, age 65 to 74 years, female) score and a significantly higher risk in the patients with excessive supraventricular ectopic activity (ESVEA) ( $p = 0.0002$ ).

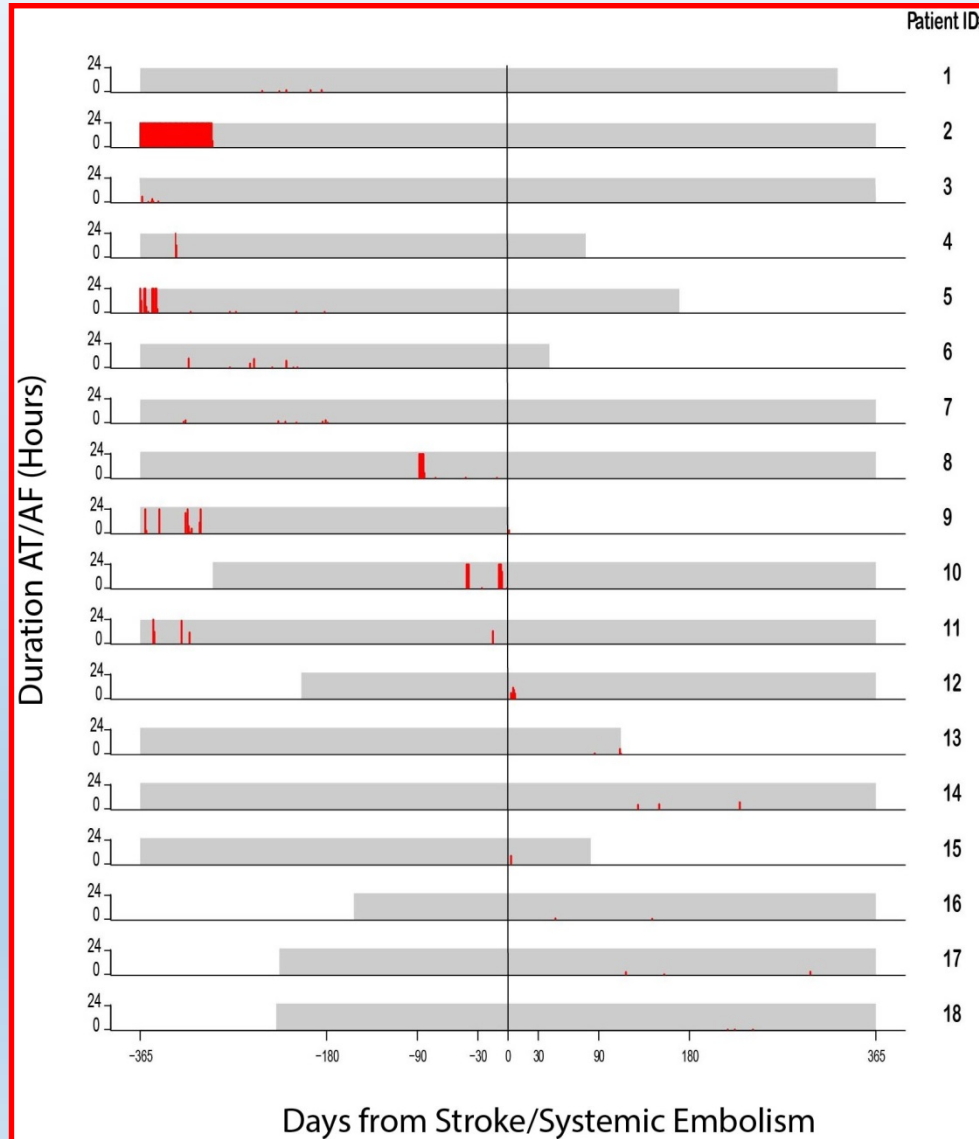
- JACC 2015;66:232-41
- n=678, age 55-75 yrs
- Median f/u 14 years
- ESVEA on baseline Holter defined as:
  - $\geq 30$  APBs/h ( $\geq 720$  APBs/d) or atrial runs  $\geq 20$  beats



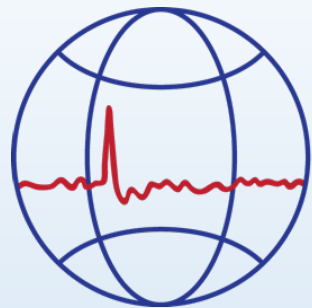


# AF-SCREEN

# Relation between AF and Stroke



M. Brambatti  
Circulation  
2014



**AF-SCREEN**

## **SCAF, Stroke Sub-Type and Severity in ASSERT**

|                              | <b>NO AHRE<br/>(N=25)</b> | <b>AHRE<br/>(N=19)</b> | <b>P Value†</b> |
|------------------------------|---------------------------|------------------------|-----------------|
| Stroke subtype               |                           |                        |                 |
| Cardio-embolic, n(%)         | 2 (8.0)                   | 5 (26.3)               | 0.210           |
| Large artery disease n(%)    | 0 (0.0)                   | 1 (5.3)                | 0.432           |
| Lacuna n(%)                  | 7 (28.0)                  | 5 (26.3)               | 0.901           |
| Uncertain n(%)               | 16 (64.0)                 | 8 (42.1)               | 0.149           |
| Localization                 |                           |                        |                 |
| Cortical n(%)                | 9 (36.0)                  | 10 (52.6)              | 0.270           |
| Subcortical n(%)             | 12 (48.0)                 | 7 (36.8)               | 0.459           |
| Uncertain n(%)               | 4 (16.0)                  | 2 (10.5)               | 0.684           |
| 7-Day RANKIN score, mean±SD  | 3.2±1.8                   | 3.4±1.9                | 0.642           |
| 30-Day RANKIN score, mean±SD | 2.5±1.9                   | 2.9±1.7                | 0.518           |