Γ’ Στρογγυλό τραπέζι: Το ΑΕΕ στις καρδιολογικές πράξεις

Εμφυτεύσιμοι καταγραφείς ρυθμού

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Disclosures

Honoraria
St. Jude Medical (Abbott)
Medtronic
Importance of Atrial Fibrillation

- Populations – Prevalence ranges 2.5 – 3.2%, mean 3% (2010) increases 5 million cases/yr
  Incidence has increased over last 2 decades and increases with age.
- Precipitants of AFib – account for 1/3 of all AFib: Surgery, Infection and MI.
- Complications of AFib – Embolus to Stroke – most dreaded and present in 25 to 30% of acute Ischemic Strokes and 28 to 50% of all Strokes

Heart Failure
Mortality

- AFib increases stroke risk 5X - Both CV and all-cause Mortality.

Definitions

Silent Atrial Fibrillation - asymptomatic episodes of paroxysmal atrial fibrillation.

Atrial Fibrillation Burden - can be defined as the time spent in atrial fibrillation per unit of time (day, week, month, etc).

Subclinical AF - A Silent Epidemic

- 10-40% of subjects with AF are silent
- No of subjects with AF by Year 2050 is estimated up to 49 million for men and 23 million for women in Asia

Dobreasnu D et al. Europace 2013

Camm et al Am J Cardiol 2012

1/3 of patients asymptomatic

Age, years SBU report, 2013

% of Population with AF

0% 2% 4% 6% 8% 10% 12% 14% 16%

2050 Asia: 7.2-19 million
Subclinical AF in Older Patients

- N=256
- FU 16 months
- SCAF is frequently detected by ICM
- No increase stroke/TIA in pts with SCAF

? Improved clinical outcomes with screening + early intervention for AF

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

Giuseppe Boriani, MD, PhD, Cecile Laroche, MSc, Igor Diemberger, MD, PhD, Elisa Fantecchi, MD, Mircea Ioachim Popescu, MD, PhD, Lars Hviilsted Rasmussen, MD, PhD, Gianfranco Sinagra, MD, Lucian Petrescu, MD, PhD, Luigi Tavazzi, MD, Aldo P. Maggioni, MD, Gregory Y.H. Lip, MD


Table 4   One-Year Outcomes in Asymptomatic (European Heart Rhythm Association I) Versus Symptomatic (European Heart Rhythm Association II-IV) Patients with Atrial Fibrillation

<table>
<thead>
<tr>
<th></th>
<th>EHRA I</th>
<th>EHRA II-IV</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>102/1086 (9.4%)</td>
<td>65/1556 (4.2%)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Cardiovascular hospitalizations</td>
<td>226/949 (23.8%)</td>
<td>396/1334 (29.7%)</td>
<td>.0019</td>
</tr>
<tr>
<td>Stroke/TIA/ peripheral embolism</td>
<td>10/962 (1.0%)</td>
<td>15/1344 (1.1%)</td>
<td>.8610</td>
</tr>
<tr>
<td>Stroke/TIA/ peripheral embolism or death</td>
<td>112/1064 (10.5%)</td>
<td>80/1409 (5.7%)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

EHRA = European Heart Rhythm Association; TIA = transient ischemic attack.

Figure 3   Survival at 1 year for asymptomatic (EHRA I) and symptomatic (EHRA II-IV) patients with atrial fibrillation. EHRA = European Heart Rhythm Association; FU = follow-up.
Silent Atrial Fibrillation

Clinical Consequences

- Cryptogenic Stroke
- Ischemic Stroke
- Heart Failure
- Early mortality

→ Cognitive Decline
→ Dementia

Clinical Challenges

- Detection of silent AF
- Quantification of AF burden
- Prevention of the progression to the permanent form of AF
- Prevention of thromboembolic phenomena
- Prevention of cardiomyopathy

Dilaveris P & Kennedy H. Clin Cardiol. 2017 Review
Cryptogenic stroke: Is silent atrial fibrillation the culprit?

Taya V. Glotzer, MD, FACC, FHRS, Paul D. Ziegler, MS

Table 1  AF detected by outpatient cardiac monitoring in patients with cryptogenic stroke

<table>
<thead>
<tr>
<th>Study (year)</th>
<th>No. of patients</th>
<th>AF definition</th>
<th>Monitoring type and duration</th>
<th>AF detection yield</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tayal et al(^{18}) (2008)</td>
<td>56</td>
<td>Any duration</td>
<td>MCOT: 21 days</td>
<td>Overall: 23%</td>
<td>Median time to AF detection: 7 days (2-19)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF &lt;30 seconds: 18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF &gt;30 seconds: 5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Elijovich et al(^{19}) (2009)</td>
<td>20</td>
<td>Not defined</td>
<td>Event monitor: 30 days</td>
<td>Overall: 24%</td>
<td>93% of AF was detected within first 21 days</td>
</tr>
<tr>
<td>Gaillard et al(^{20}) (2010)</td>
<td>98</td>
<td>32 seconds</td>
<td>Transtelephonic monitoring: 30 days</td>
<td>AF ≥ 5 minutes: 9%</td>
<td>Median duration of monitoring: 21 days (range 2–28 days)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MCOT: 28 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhatt et al(^{21}) (2011)</td>
<td>62</td>
<td>30 seconds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flint et al(^{22}) (2012)</td>
<td>236</td>
<td>5 seconds</td>
<td>MCOT: 30 days</td>
<td>Overall: 11%</td>
<td>Only 64% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF ≤30 seconds: 4%</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF &gt;30 seconds: 7%</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td>Kamel et al(^{23}) (2013)</td>
<td>20</td>
<td>30 seconds</td>
<td>MCOT: 21 days</td>
<td>Overall: 17%</td>
<td>Only 64% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF &lt;30 seconds: 12%</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AF ≥30 seconds: 5%</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td>Miller et al(^{24}) (2013)</td>
<td>156</td>
<td>30 seconds</td>
<td>MCOT: 30 days</td>
<td></td>
<td>Only 64% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td>EMBRACE: Gladstone et al(^{12}) (2014)</td>
<td>572</td>
<td>30 seconds</td>
<td>Event monitor: 30 days vs 24-hour Holter</td>
<td>16.1% (45/280) event monitor</td>
<td>Only 64% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.2% (9/277) 24-hour Holter</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.9% (28/284) event monitor</td>
<td>Only 62% completed 21 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5% (7/277 ) 24-hour Holter</td>
<td>Only 62% completed 21 days</td>
</tr>
</tbody>
</table>

AF = atrial fibrillation; MCOT = mobile cardiac outpatient telemetry.
Silent atrial fibrillation: epidemiology, diagnosis, and clinical impact

**TABLE 2**  AF detected by implantable cardiac monitors in patients with cryptogenic stroke

<table>
<thead>
<tr>
<th>Study</th>
<th>No. of Patients</th>
<th>AF Definition</th>
<th>Monitoring Duration</th>
<th>AF Detection Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotter et al (^{46})</td>
<td>51</td>
<td>2 minutes</td>
<td>Mean 229 (116) days</td>
<td>25.5%</td>
</tr>
<tr>
<td>Ritter et al (^{47})</td>
<td>60</td>
<td>2 minutes</td>
<td>1 year</td>
<td>16.7%</td>
</tr>
<tr>
<td>Etgen et al (^{48})</td>
<td>22</td>
<td>6 minutes</td>
<td>1 year</td>
<td>27.3%</td>
</tr>
<tr>
<td>Rojo-Martinez et al (^{49})</td>
<td>101</td>
<td>2 minutes</td>
<td>281 ± 212 days</td>
<td>33.7%</td>
</tr>
<tr>
<td>Jorfida et al (^{50})</td>
<td>54</td>
<td>5 minutes</td>
<td>6-28 months</td>
<td>46%</td>
</tr>
<tr>
<td>SURPRISE (^{51})</td>
<td>85</td>
<td>2 minutes</td>
<td>569 ± 310 days</td>
<td>16.1%</td>
</tr>
<tr>
<td>CRYS TAL AF (^{52,53})</td>
<td>221</td>
<td>&gt;30 seconds</td>
<td>Minimum 6 months</td>
<td>8.9% at 6 months, 12.4% at 12 months, 30.0% at 36 months</td>
</tr>
<tr>
<td>Poli et al (^{54})</td>
<td>74, ≥1 AF risk factor</td>
<td>2 minutes</td>
<td>Minimum 6 months</td>
<td>28% at 6 months, 33.3% at 12 months</td>
</tr>
</tbody>
</table>

Abbreviations: AF, atrial fibrillation; CRYS TAL AF, Cryptogenic Stroke and Underlying Atrial Fibrillation; SURPRISE, Stroke Prior to Diagnosis of Atrial Fibrillation Using Long-term Observation with Implantable Cardiac Monitoring Apparatus Reveal.
Detection of AF After Stroke/TIA

**EMBRACE**
- Ext monitor: 16.1%
- Holter: 3.2%

**CRYSTAL AF**
- Ext monitor: 8.9%
- Holter: 1.4%
- ICM: 12.4%
- ICM: 2.0%
- ICM: 5.0%

300% 36 months

Lau CP, ......Tse HF. Europace 2015
CRYSTAL AF

End Point

Primary
- Time to first detection of AF at 6 months of follow-up

Secondary
- Time to first detection of AF at 12 months
- Recurrent stroke or TIA
- Change in use of oral anticoagulant drugs

STUDY POPULATION

447 patients were enrolled
441 underwent randomization
6 were excluded
- 4 did not meet eligibility criteria
- 2 withdrew consent
221 were assigned to ICM
- 209 had ICM inserted
- 13 did not have ICM inserted
220 were assigned to control
- 220 received standard of care

12 crossed over to control
12 exited the study
- 3 died
- 1 was lost to follow-up
- 5 withdrew
- 3 were withdrawn by investigator

6 crossed over to ICM
13 exited the study
- 2 died
- 1 was lost to follow-up
- 7 withdrew
- 3 were withdrawn by investigator

221 were included in intention-to-treat analysis
220 were included in intention-to-treat analysis

PATIENTS

- Age ≥ 40 years
- Diagnosis of stroke or TIA occurring within previous 90 days
- Stroke was classified as cryptogenic after extensive testing:
  - 12-lead ECG
  - ≥ 24 hours of ECG monitoring
  - TEE
- (in patients < 55 years of age)
  - Magnetic resonance angiography, computerized tomography angiography, or catheter angiography of head and neck
  - Ultrasonography of cervical arteries or transcranial Doppler ultrasonography of intracranial arteries allowed in place of MRA or CTA for patients aged ≥ 55 years
- Screening for thrombophilic states
  Patients were only categorized with cryptogenic stroke after extensive diagnostic testing.

CRYSTAL AF: MONITORING WITH ICM SUPERIOR TO SOC FOR THE DETECTION OF AF

Selected baseline patient characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ICM (n = 221)</th>
<th>Control (n = 220)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>61.6 ± 11.4</td>
<td>61.4 ± 11.3</td>
<td>0.84</td>
</tr>
<tr>
<td>Male</td>
<td>64.3%</td>
<td>62.7%</td>
<td>0.77</td>
</tr>
<tr>
<td>White</td>
<td>87.8%</td>
<td>86.8%</td>
<td>0.60</td>
</tr>
<tr>
<td>Patent foramen ovale</td>
<td>23.5%</td>
<td>20.9%</td>
<td>0.57</td>
</tr>
<tr>
<td>Index event</td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
<tr>
<td>Stroke</td>
<td>90.5%</td>
<td>91.4%</td>
<td></td>
</tr>
<tr>
<td>TIA</td>
<td>9.5%</td>
<td>8.6%</td>
<td></td>
</tr>
</tbody>
</table>

Detection of Atrial Fibrillation by 36 months

Hazard ratio, 8.8 (95% CI, 3.5 - 22.2)
P < 0.001 by log-rank test
CONTINUOUS MONITORING IS SUPERIOR TO INTERMITTENT
CRYSTAL AF sub-analysis: Choe, Am J Cardiol 2015

- Simulated intermittent monitoring was compared to continuous rhythm monitoring in 168 ICM patients

<table>
<thead>
<tr>
<th>Short-term Monitoring</th>
<th>Periodic Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-hour</td>
<td>Quarterly 24-hour Holters</td>
</tr>
<tr>
<td>48-hour</td>
<td>Quarterly 48-hour Holters</td>
</tr>
<tr>
<td>7-day Holter</td>
<td>Quarterly 7-day Holters</td>
</tr>
<tr>
<td>21-day event recorder</td>
<td>Monthly 24-hour Holters</td>
</tr>
<tr>
<td>30-day event recorders</td>
<td></td>
</tr>
</tbody>
</table>

Sensitivity was low: 1.3–22.8%
Negative predictive value: 82.3–85.6%

“Intermittent rhythm monitoring would have failed to identify previously undiagnosed AF in the vast majority of CS patients”

REVEAL AF STUDY

OBJECTIVES

GOAL: To demonstrate the value of early screening and detection of AF via ICM monitoring in high-risk patients.

STUDY DESIGN

REVEAL AF STUDY ENROLLMENT

- Enrolled 448 patients
- 384 inserted
- 52 excluded

- Baseline
- Successful RevealTM ICM insertion
- CareLink™ transmissions every month
- 6 Month Follow-up
- 12 Month Follow-up
- 18 Month Follow-up
- 24 Month Follow-up
- 30 Month Follow-up

- 3 deaths
- 17 exits

- 2 deaths
- 16 exits

- 3 deaths
- 19 exits

- 2 deaths
- 124 exits

- 3 deaths
- 18 exits

- 124 patients completed visits
- 115 missed visits
- 13 missed visits

- 319 completed visits
- 180 missed visits
- 13 missed visits

- 140 completed visits
- 10 missed visits
- 12 missed visits

- 9 patients inserted excluded from primary analysis cohort

- 6 CHADS2, 21+ additional risk factors
- 1 antiarrhythmic drug
- 2 no post-transmission device data

385 patients met the primary endpoint cohort definition

Mean follow-up: 22.5 ± 7.7 months

END POINTS

Primary
- Determine the incidence rate of AF lasting greater than or equal to six minutes in patients who are at high risk of having AF.

Secondary
- Identify predictors of AF onset
- Characterize the timing and nature of clinical actions relative to detection of AF

PATIENT INCLUSION CRITERIA

- Prospective, single-arm, open-label, multi-center, post-market study

- A CHADS2 score of ≥ 3 or CHADS2 = 2 and at least 1 of the following:
  - Coronary artery disease
  - Renal impairment (GFR 30-60 ml/min)
  - Sleep apnea
  - Chronic obstructive pulmonary disease

- No AF found after 24-hours of cardiac monitoring.

INCIDENCE OF ADJUDICATED AF LASTING ≥ 6 MINUTES IN DURATION

- AF detection rate at 30 months: 40.0%

- AF detection rate at 18 months: 29.3%

- AF detection rate at 12 months: 27.1%

- AF detection rate at 6 months: 20.4%

- AF detection rate at 30 days: 6.2%

TIME TO ONSET OF DAILY AF BURDEN

- 6 Minutes of AF in a Day
- 30 Minutes of AF in a Day
- 1 Hour of AF in a Day
- 6 Minutes of AF in a Day

- 30 month incidence rate for 6 or more hours of AF: 19.1%

- 18 month incidence rate for 6 or more hours of AF: 12.0%

Note: This analysis includes episodes > 30 minutes in duration, which were not adjudicated. Episodes duration attributed to episodes that were adjudicated to have AF were excluded from the analysis.
## Screening for atrial fibrillation

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunistic screening for AF is recommended by pulse taking or ECG rhythm strip in patients &gt;65 years of age.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>In patients with TIA or ischaemic stroke, screening for AF is recommended by short-term ECG recording followed by continuous ECG monitoring for at least 72 hours.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>It is recommended to interrogate pacemakers and ICDs on a regular basis for atrial high rate episodes (AHRE). Patients with AHRE should undergo further ECG monitoring to document AF before initiating AF therapy.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td><strong>In stroke patients, additional ECG monitoring by long-term non-invasive ECG monitors or implanted loop recorders should be considered to document silent atrial fibrillation.</strong></td>
<td>IIa</td>
<td>B</td>
</tr>
<tr>
<td>Systematic ECG screening may be considered to detect AF in patients aged &gt;75 years, or those at high stroke risk.</td>
<td>IIb</td>
<td>B</td>
</tr>
</tbody>
</table>
## ICM Competition Overview

<table>
<thead>
<tr>
<th></th>
<th>BioMonitor 2 (AF, S)</th>
<th>CONFIRM RX™</th>
<th>Reveal™ XT</th>
<th>Reveal LINQ™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>6cc, 10g</td>
<td>1.4 cc, 3g</td>
<td>9 cc, 15g</td>
<td>1.2cc, 2.5g</td>
</tr>
<tr>
<td><strong>Implant Location</strong></td>
<td>Parasternal, V2/V3, inframammary</td>
<td>Parasternal, V2/V3, inframammary</td>
<td>Mapping required</td>
<td>Parasternal, V2/V3, inframammary</td>
</tr>
<tr>
<td><strong>Sensing</strong></td>
<td>2-electrode → single-channel ECG</td>
<td>2-electrode → single-channel ECG</td>
<td>2-electrode → single-channel ECG</td>
<td>2-electrode → single-channel ECG</td>
</tr>
<tr>
<td><strong>Battery Life</strong></td>
<td>4 years</td>
<td>2 years</td>
<td>3 years</td>
<td>3 years</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>60 minutes of storage  • Manual and automatic  • Asystole, Brady, VT-FVT, AT/AF</td>
<td>60 minutes of storage  • Manual and automatic  • Asystole, Brady, VT-FVT, AT/AF</td>
<td>49.5 minutes of storage  • Manual and automatic  • Asystole, Brady, Tachy, AT/AF</td>
<td>59 minutes of storage  • Manual and automatic  • Asystole, Brady, Tachy, AT/AF</td>
</tr>
<tr>
<td><strong>AF Detection</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Home Monitoring</strong></td>
<td>BIOTRONIK Home Monitoring for BM2-AF only  Alternative option: Mobile Transmitter</td>
<td>Patient’s smartphone (Bluetooth connected)</td>
<td>Manual transmission only</td>
<td>MyCareLink Patient Monitor for all patients</td>
</tr>
<tr>
<td><strong>MR Conditional</strong></td>
<td>MRI Conditional (1.5 &amp; 3 T)</td>
<td>MRI Conditional (1.5T)</td>
<td>MRI Conditional (1.5 &amp; 3 T)</td>
<td>MRI Conditional (1.5 &amp; 3 T)</td>
</tr>
</tbody>
</table>
During atrial fibrillation the intervals from one beat to the next is always varying – the heartbeats are irregular. Whilst rhythm irregularity is not unique to atrial fibrillation, the manner in which it is irregular (the correlation structure) is unique.

The sophisticated algorithm is able to recognize the correlation structure of atrial fibrillation with 95% accuracy by using scatter plot graphs (Lorenz plots).
Why would there be Low Evidence of P-Waves?

The device uses P-Wave Evidence to help discriminate true AF from False AF.

But...

Sometimes the device cannot determine the presence of P-Waves because of...

- Small P-Waves
- Noise
- Rhythm > 77 bpm
Circadian Behavior of P-Wave Duration, P-Wave Area, and PR Interval in Healthy Subjects

Polychronis E. Dilaveris, M.D., Patrik Färbom, M.D., Velislav Batchvarov, M.D., Azad Ghuran, M.D., and Marek Malik, Ph.D., M.D.

From the Department of Cardiological Sciences, St. George’s Hospital Medical School, London, England

**Figure 2.** Mean hourly P duration, P area, and PR intervals plotted against the time of the day. Vertical bars represent the standard error of the mean. The shaded areas represent the fitted single harmonic curves ± the standard error of the mean.

**Figure 3.** Mean hourly P duration/RR, P area/RR, and PR/RR slopes plotted against the time of the day. Vertical bars represent the standard error of the mean. The shaded areas represent the fitted single harmonic curves ± the standard error of the mean.
The original detection algorithm looks for evidence of AF based on differences in the pattern of R-R intervals over a 2-minute period. An improvement in the ICM algorithm for AF detection incorporating P-wave information substantially reduced inappropriately detected episodes and duration, with minimal reduction in sensitivity for detecting AF.
AF SELF-LEARNING ALGORITHM

REVEAL LINQ WITH AF SELF-LEARNING ALGORITHM

EARLY INCIDENT

- Threshold is set
- AF Evidence is calculated
- **HIGH Evidence** of P-Waves is found
- Apply Self-Learning Algorithm
- AF Evidence is modified

Threshold:
- More Sensitive (40)
- Balanced Sensitivity (50)
- Less Sensitive (60)
- Least Sensitive (75)

**1. LEARNS**
AF algorithm *tracks* R-wave variability in a patient and *keeps* their P-wave evidence history

**2. ADAPTS**
Self-learning algorithm *collects P-wave evidence* for a patient and adapts

**3. REJECTS**
Self-learning algorithm *rejects false AF* in patients with sick sinus
Cryptogenic stroke – AF episode
A: atrial fibrillation

B: sinus rhythm, premature atrial extrasystoles
ΤΑΧΥΑΡΡΥΘΜΙΑ
67y, Havoc: 2, ήπια δυσαρθρία

AF episode:
- Detected: 08-Oct-2018
- Duration: 05:06:00
- Max V. Rate: 118 bpm
- Median V. Rate: 78 bpm

ECG Summary: AF (ID# 989)
Importance of AF burden?
CONCLUSIONS

- ICM detects low burden/asymptomatic AF in cryptogenic stroke patients Etgen’13, Cotter’13, Rojo-Martinez’13, SURPRISE’14
- ICM offers higher diagnostic yield than 7-day Holter, standard monitoring Ritter’13 and intermittent monitoring Choe’15
- Continuous monitoring with ICM is guideline recommended in cryptogenic stroke patients - 2016 ESC guidelines for AF screening
- ICM is a cost-effective diagnostic tool for the prevention of recurrent stroke
THANK YOU