

TOP 3, SSVQ 2014

CRYSTAL AF

EMBRACE

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Cryptogenic Stroke and Underlying Atrial Fibrillation

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Atrial Fibrillation in Patients with Cryptogenic Stroke

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Conflits d'intérêts potentiels*

2 dernières années

CONFÉRENCES COMMANDITÉES

- Allergan
- Pfizer /BMS

ADVISORY BOARD

- Pfizer/BMS

RECHERCHE

- Astra Zeneca
- Covidien

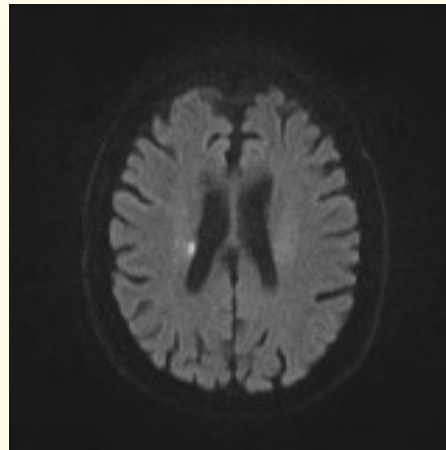
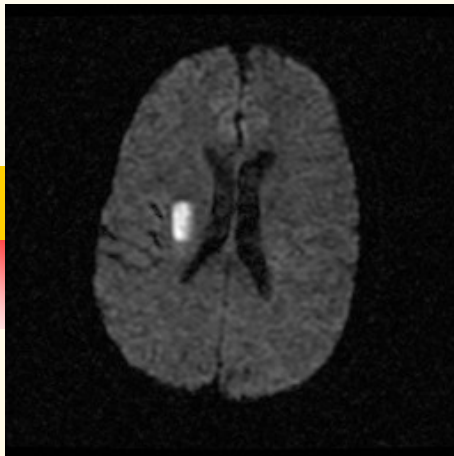
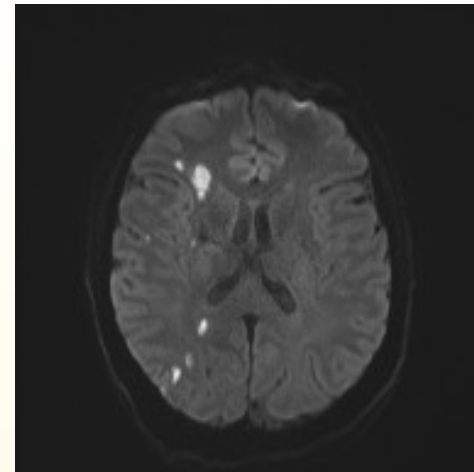
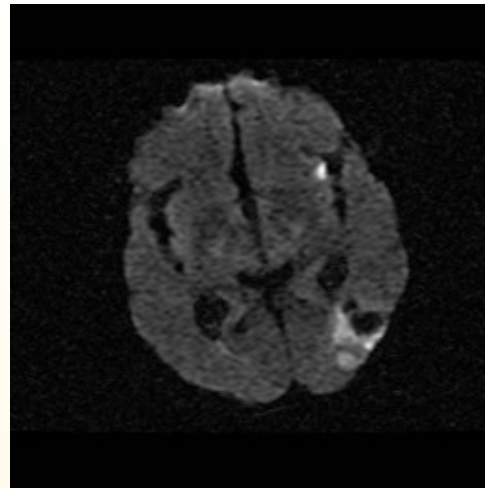
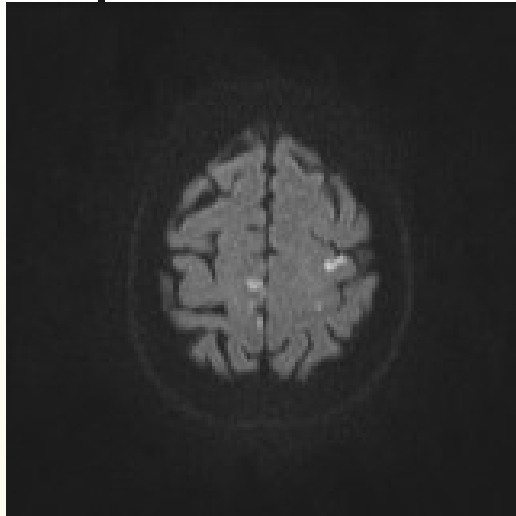
AIDE FINANCIERE POUR CONGRES

- Pfizer/BMS

• **Aucun \$ pour cette conférence**

• **Quelques diapos recues de Medtronic**

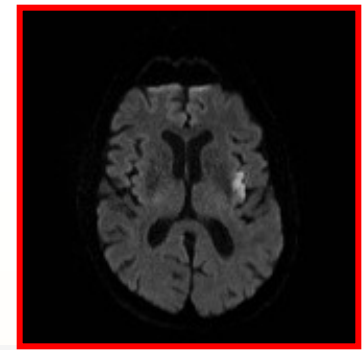
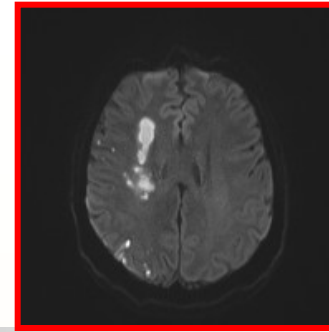
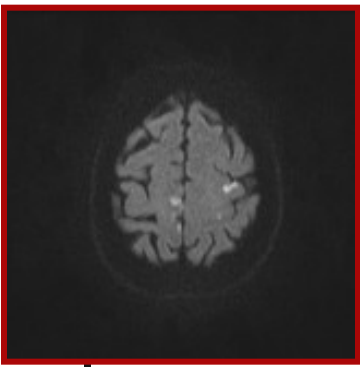
Approximativement 20 à 40% des AVC ischémiques sont classifiés « cryptogéniques »



" Cryptogenic stroke is an apology
for ignorance about the cause of
ischaemic stroke"

*Jonh Camm Sept 2014 J. Nat. Rev.
Cardiol 11, 504-505*

Est-ce de la FAP ??



- Infarctus territoires multiples
- Hx de palpitations
- Dilatation oreillette gauche
- ESV multiples
- Imagerie vasculaire normale
- Age avancé

More likely

- Infarctus un seul territoire
- Pas d'histoire de palpitations
- Pas de dilatations de l'oreillette
- Pas de ESV
- ASO à l'imagerie des vaisseaux

Less likely

« IT MUST BE A DUCK »

Controversies In STROKE

“If It Looks Like a Duck, Walks Like a Duck, and Quacks Like a Duck... It Must Be a Duck”

Anticoagulation in Stroke Patients With Suspected Atrial Fibrillation

Carlos A. Molina, MD, PhD; Magdy Selim, MD, PhD

(Stroke. 2013;44:302-303.)





**Controversy:
Start or not AC while long
term cardiac monitoring
is pending ?**



- Dr Sacco and Kanelson need to see the smoking gun and defend a conservative evidence and guideline – based position ...
- OAC should not be started until PAF is CONFIRMED on long term monitoring

- Dr Diener trust his intuition and experience...He considers that PAF is the likely cause of the embolic looking infarct «
- if it looks like a duck, walks like a duck, and quacks like a duck...It must be a duck »
- He recommends initiation of OAC ..while awaiting the results of long term monitoring...

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Background

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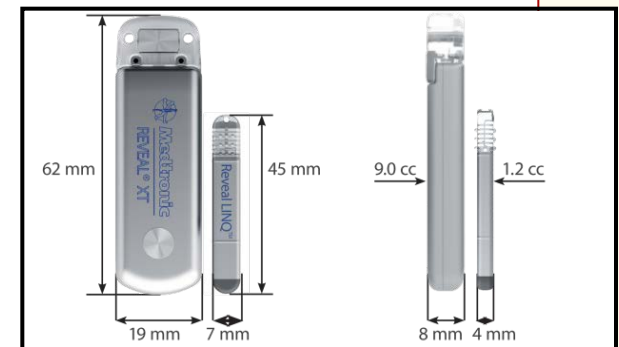
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- Selon les « guidelines » La documentation d'une FA est requise pour initier une anticoagulothérapie
- La FA est svt non détectée car paroxystique et asymptomatique
- Méthodes de détection: Monitoring intra hospitalier, ECG sériés, Holter 24h-96h, Monitoring long terme: externe ou ICM(Insertable Cardiac Monitoring)...
- Etudes diffèrent en terme de critères, durée, endpoint etc donc pas de recommandations cliniques fermes
- Guidelines suggèrent monitoring 24h en réalisant que la durée optimale est incertaine
- Dans AVC crypto : durée et la méthode de monitoring est à la discrétion du MD

Objectifs de CRYSTAL AF

- Étude prospective randomisée, ouverte, multicentrique, post marketing
- Déterminer si monitoring cardiaque long terme avec ICM (REVEAL XT, Medtronic) est supérieur au monitoring standard pour détecter une FA chez les patients avec AVC cryptogénique
- End point primaire: **Détection de FA* à 6 mois**
- Secondaire:
 - Détection de FA à 12 mois
 - Durée de la FA
 - Corrélation avec symptômes d'AVC / ICT
 - Introduction d'AC



* Épisode de RC irrégulier sans ondes P, de > 30 sec

Principales inclusions / exclusions

Inclusions

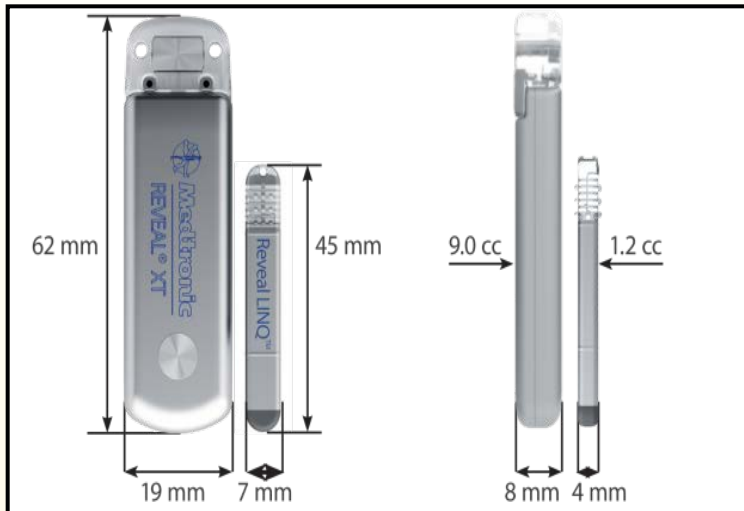
- 40 ans ou plus
- AVC/ICT crypto confirmé à l'imagerie (IRM ou CT)
- < 90 jours, sans mécanisme déterminé;
 - ECG, monito ou Holter 24 h
 - ETO
 - Imagerie vaisseaux tête et cou
 - Recherche état hypercoagulable si <55ans

Exclusions

- Hx de FA
- Indic ferme ou Contre-indication à l'AC
- Indication de pacemaker ou pace-défib.

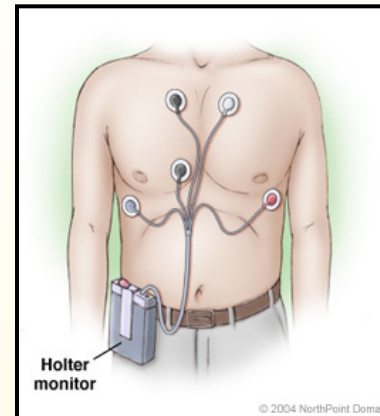
Comparaison des méthodes de monitoring

Monitoring continu REVEAL XT (IRM compatible)



- Données transmises à distance via le Medtronic Carelink Network

Monitoring standard



- Les deux:
- Visites à 1 mois et au 6 mois par la suite
- Episodes de FA identifiées: adjudiqués par comité indépendant

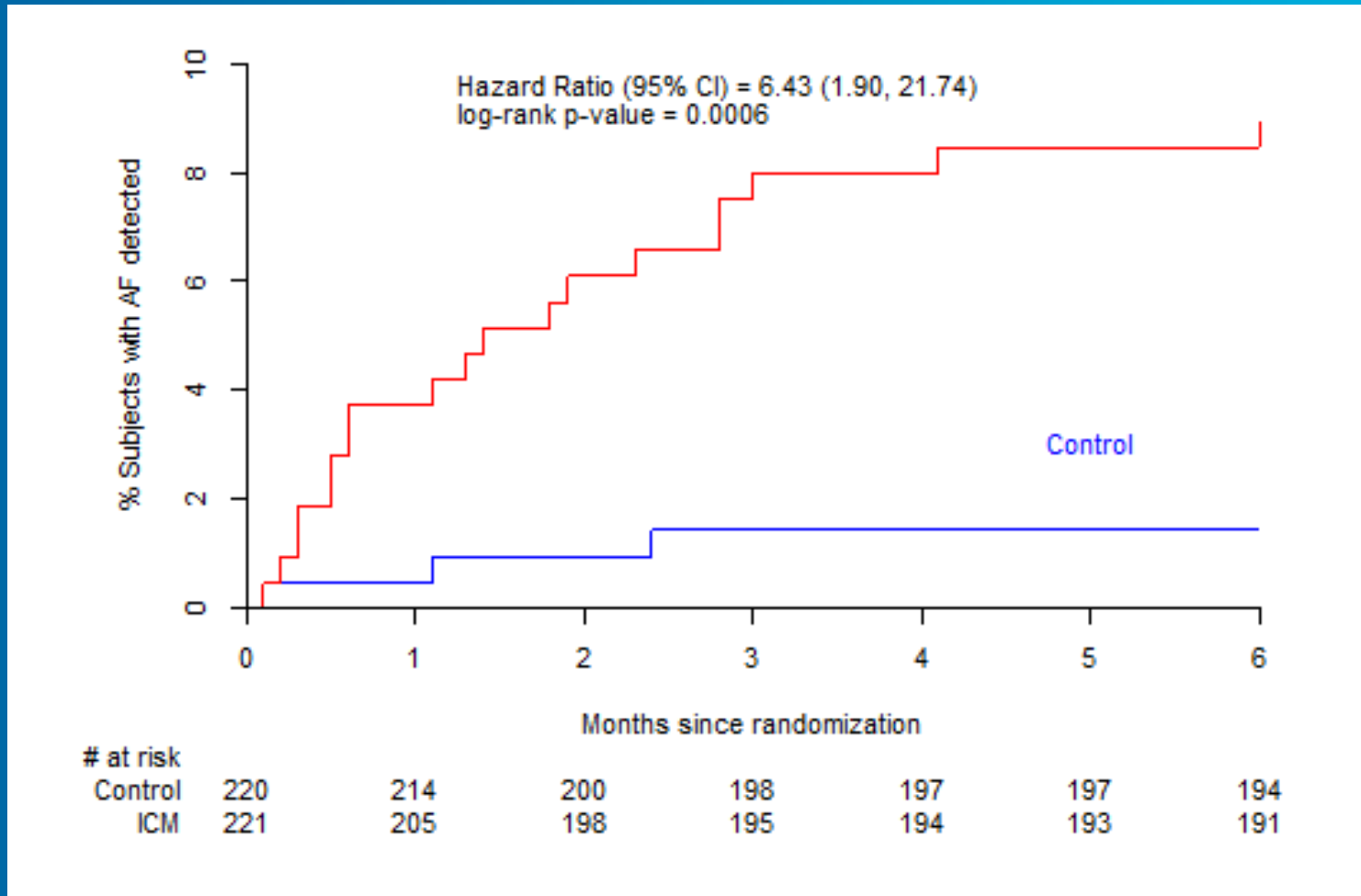
CRYSTAL-AF: Baseline Characteristics

	ICM	Control
Age	61.6 ± 11.4 years	61.4 ± 11.3 years
Gender - Male	142 (64.3%)	138 (62.7%)
Index Event – Stroke	200 (90.5%)	201 (91.4%)
Index Event – TIA	21 (9.5%)	19 (8.6%)
Pre-enrollment AF screening – Holter Monitoring	71.5% of patients Median of 23 hours (IQR 21-24)	70.9% of patients Median of 24 hours (IQR 22-24)
Pre-enrollment AF screening – Telemetry	29.9% of patients Median of 48 hours (IQR 36-96)	29.5% of patients Median of 72 hours (IQR 48-96)
Time between index event and randomization	36.6 ± 28.2 days	39.6 ± 26.9 days
Time between randomization and device insertion	8.7 ± 27.6 days	n/a

Pts jeunes, surtout des AVC, Holter > télémétrie, rando à 4-6 sem. de l'événement

Primary Endpoint: Detection of AF at 6 months

ICM finds 6x more patients with AF



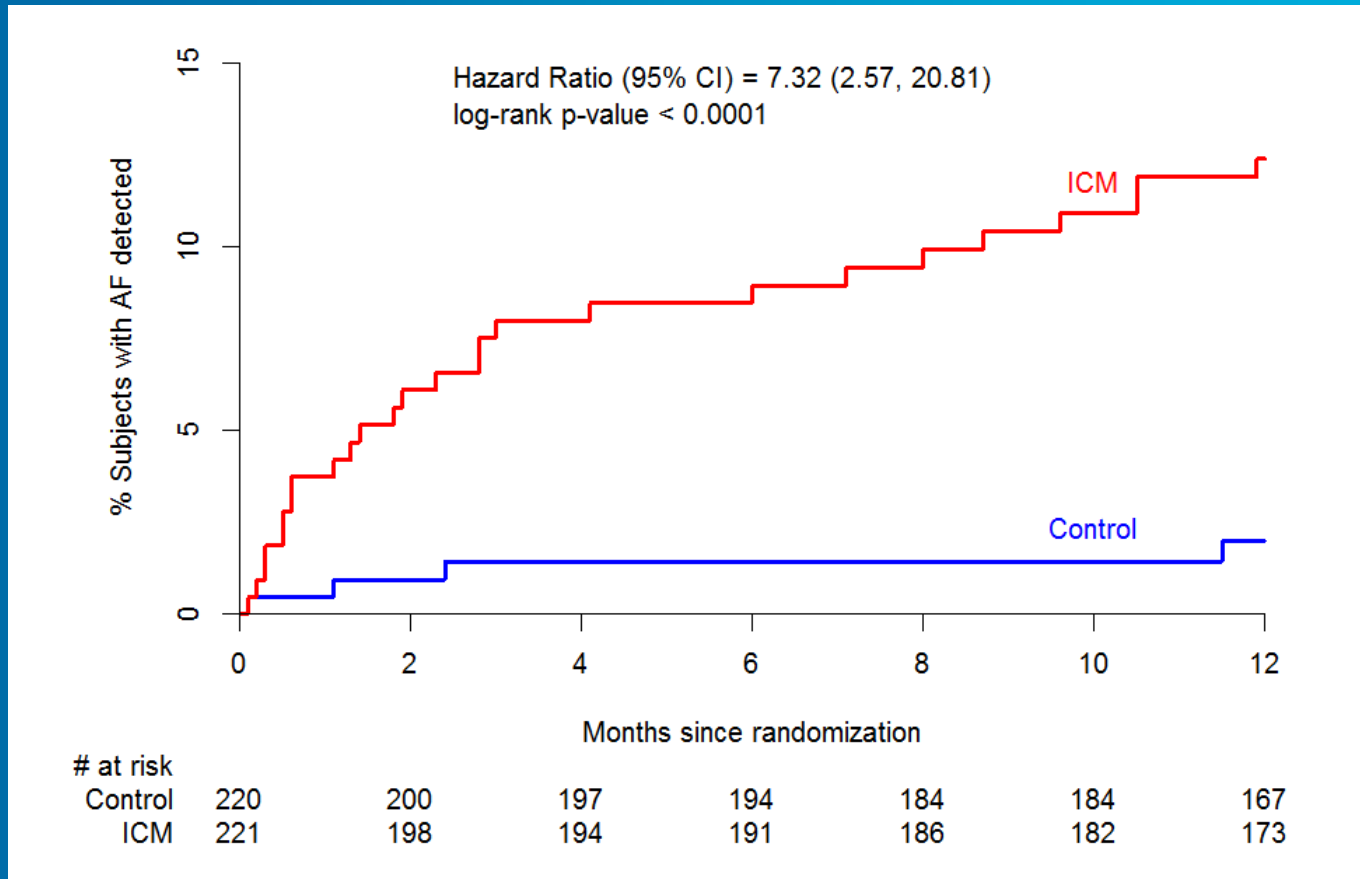
Rate of detection in ICM arm was 8.4% vs 1.4% in control arm

6 Month Endpoints

	ICM	Control
Median time from randomization to AF Detection	41 days	32 days
Patients found to have AF	19	3
% Asymptomatic Episodes	74%	33%
Oral Anticoagulation (OAC) Usage, overall	10.1%	4.6%
OAC use in patients with detected AF	94.7%	66.7%
Recurrent Stroke/TIA	5.2%	8.6%
Proportion of patients with AF \geq 6 minutes on one day	93.8%	N/A
Tests required to detect AF	Automatic AF detection	88 ECGs 20 24-hour Holters 1 event recorder

Secondary Endpoint: Detection of AF at 12 months

ICM finds 7x more patients with AF



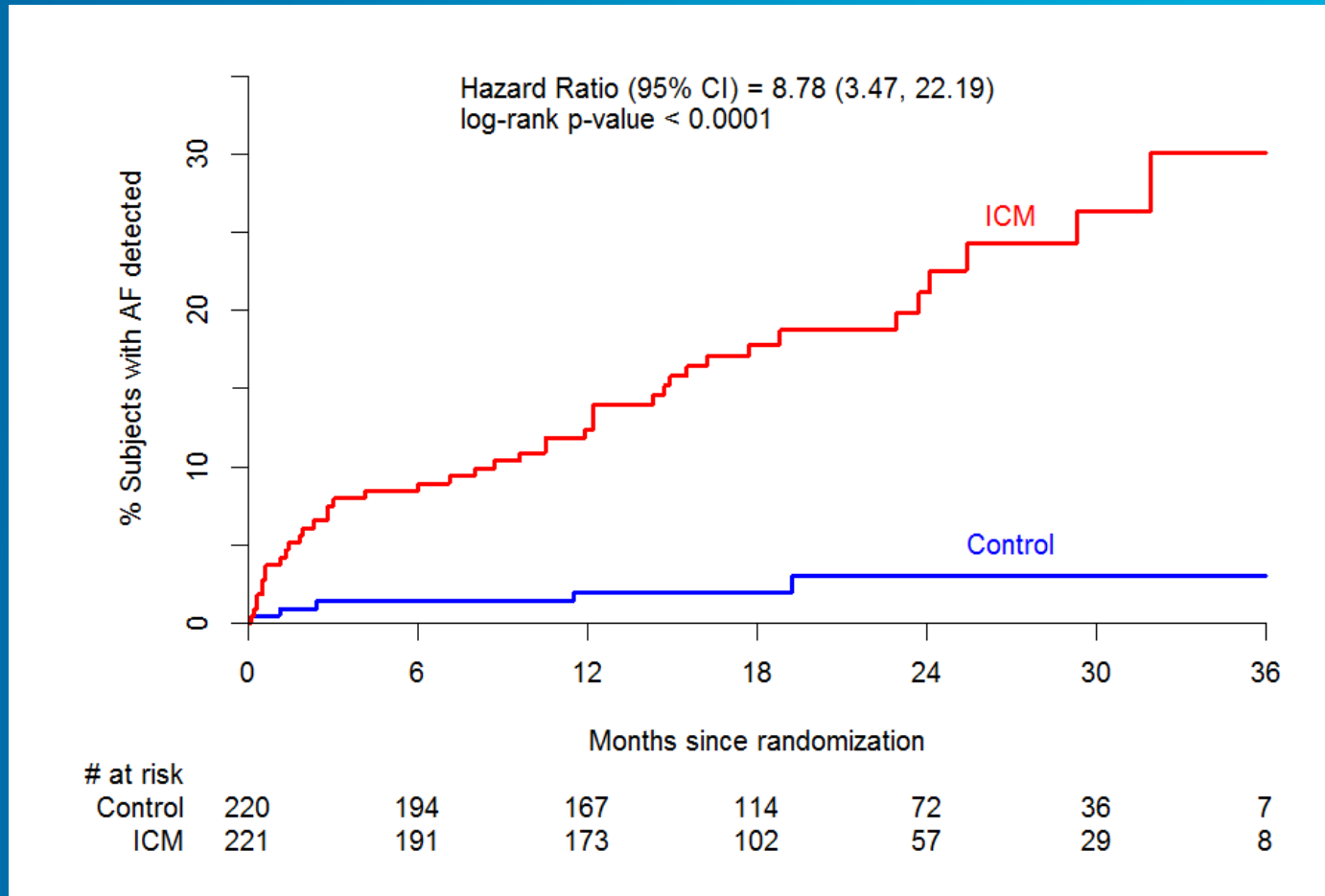
Rate of detection in ICM arm was 12.4% vs 2.0% in control arm

12 Month Endpoints

	ICM	Control
Median time from randomization to AF Detection	84 days	52.5 days
Patients found to have AF	29	4
% Asymptomatic Episodes	79%	50%
Oral Anticoagulation (OAC) Usage, overall	14.7%	6.0%
OAC use in patients with detected AF	96.6%	100%
Recurrent Stroke/TIA	7.1%	9.1%
Proportion of patients with AF \geq 6 minutes on one day	92.3%	N/A
Tests required to detect AF	Automatic AF detection	121 ECGs 32 24-hour Holters 1 Event Recorder

Detection of AF at 36 months

ICM finds 8.8x more patients with AF



Rate of detection in ICM arm was 30% vs 3% in control arm

36 Month Data

	ICM	Control
Median time from randomization to AF Detection	252 days	72 days
Patients found to have AF	42	5
% Asymptomatic Episodes	81%	40%
Oral Anticoagulation (OAC) Usage, overall	38.5%	8.3%
OAC use in patients with detected AF	90%	80%
Recurrent Stroke/TIA	11.1%	12.7%
Proportion of patients with AF \geq 6 minutes on one day	94.9%	N/A
Tests required to detect AF	Automatic AF detection	202 ECGs, 52 Holter Monitors, 1 Event Recorder

Conclusions:

- Le Moniteur Cardiaque Implanté est supérieur au monitoring standard pour la détection de la FA chez patients avec AVC cryptogénique
 - 6 mo : 8.9% (HR: 6.43) , « NNT »* = 14
 - 12 mo: 12.4% (HR:7.2), « NNT »* = 10
 - 36 mo: 30% (HR 8.7), « NNT »* = 4
- 92.3 % des patients avec FA dans CRYSTAL AF ont eu au moins une journée de > 6 minutes de FA
- Détection de FA a changé le management vers l'anticoagulothérapie dans 97%

* Number Needed to be Implanted to detect a first episode of AF

Discussion / questions:

- Dans CRYSTAL-AF Taux de détection plus bas de FA (8-12%) que dans études comparables (ad 25%)
 - Investigation plus rigoureuse pré-rando
 - Adjudication indépendante des épisodes de FA
 - Caractéristiques de base différentes: plus jeunes, moins d'HTA
- La FA découverte post AVC est -elle responsable de l'événement initial ??

Pratico-pratique ...



Reveal LINQ™ ICM



Wireless



MyCareLink™
Patient Monitor



Cellular

Patient Details: Johnson, Rex		Transmission Details		Transfer Del	
PID406789321		Last Audit: 26-Jan-2012		Discontinue	
© Reveal LINQ™ Date of Implant: 1-Dec-2011					
Overview	Profile	Equipment	History	Schedule	© CareAlert Notification
Indication	Date of Birth	Device Information	Patient Phone Number	Follow-Up Physician	
Syncope	01-Jan-1930	Battery Status: OK	655-550-6550 655-777-2340	Smith, Martin, MD	
Patient Reports (Last 30 Reports)			Next Scheduled 30-day Summary Report: 06-Feb-2012 Create New Report		
Received	Report Type	Event Summary			
26-Jan-2012 12:14	Full Report	Pause Episode, Symptom Episode			
26-Jan-2012 03:30	Event Report	Pause Episode, Symptom Episode			
7-Jan-2012 08:10	Summary Report	Patient Data from 12/07/2011 - 01/06/2012			
9-Dec-2011 11:52	Full Report	No Events			



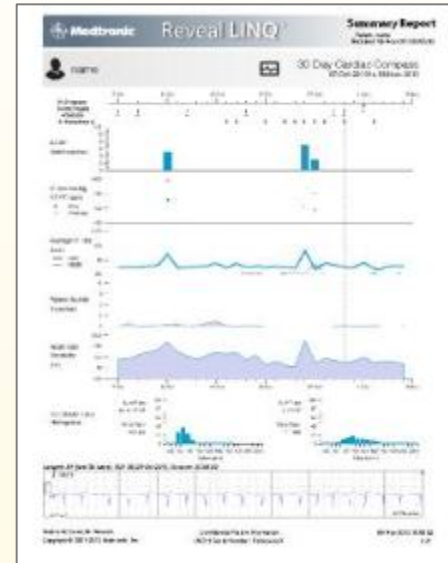
Simplified Insertion
Procedure



Patient
Assistant



Mobile
Alerts



Streamlined Reports