

Peer-reviewed published clinical studies validating the efficacy and value of MCOT to monitor post cryptogenic stroke patients

University of Pennsylvania study

Predictors of finding occult atrial fibrillation after cryptogenic stroke

Authors

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*Drs. Favilla and Ingala contributed equally.

Study results

- 28-day MCOT detected AF in a substantial proportion (14%) of cryptogenic stroke patients.
- 250 patients in a single center study - retrospective analysis of patients who underwent a 28 day MCOT.
- 84% (26 patients) were anticoagulated regardless of AF episode duration. All patients without bleeding history were offered anticoagulation regardless of duration of AF.

Source

Stroke. 2015;46:1210-1215.
DOI:10.1161/STROKEAHA.114.007763.
<https://www.ahajournals.org/doi/10.1161/STROKEAHA.114.007763>

Case-control study

Paroxysmal atrial fibrillation in cryptogenic stroke

Authors

Alejandro A. Rabenstein, MD,* Jennifer E. Fugate, DO,* Jay Mandrekar, PhD,[†] Joseph D. Burns, MD,** Raymond C.S. Seet, MD,[§] Stefan A. Dupont, MD,[¶] Timothy J. Kauffman, MD,[¶] Samuel J. Asirvatham, MD,** and Paul A. Friedman, MD**

Study results

- 128 patients enrolled within 3 months of suffering first stroke.
- Paroxysmal Atrial Fibrillation (PAF) of any duration detected in 25% of total patients with MCOT monitoring.
- ALL episodes were asymptomatic.
- Nearly 20% of all patients (1 in 5) had AF detected in < 30 second episodes.

Source

Journal of Stroke and Cerebrovascular Diseases, 2013

MCOT

Atrial fibrillation detected by Mobile Cardiac Outpatient Telemetry (MCOT) in cryptogenic TIA or stroke

Authors

A.H Tayal, MD; M. Tian, RN; K.M Kelly, MD, PhD; S.C. Jones, PhD; D.G.Wright, MD; D. Singh, MD; J. Jarouse, CRNP; J. Brillman, MD; S. Murali, MD; R. Gupta, MD

Source

Neurology®
Volume 71, Number 21, November 2008

Study results

- 68 patients in a single center study — retrospective analysis of patients who underwent a 21 day MCOT.
- AF was detected in 13/56 patients = 23%.
 - 5.3% of patients had runs of AF >30 seconds in duration.
 - 85% of patients had runs of AF <30 seconds in duration.

Atrial fibrillation In cryptogenic stroke

Outpatient cardiac telemetry detects a high rate of atrial fibrillation in cryptogenic stroke

Authors

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Source

Journal of the Neurological Sciences
324 (2013), p. 57-61
https://www.ahajournals.org/doi/10.1161/str.43.suppl_1.A150

Study results

- Retrospective analysis of all MCOT records for a period of 18 months (June 2009-January 2011) prescribed by Neurologists at a single Stroke Center.
- AF detected in 27 of 156 patients = 17.3%.
 - Two-thirds (n=18) developed episodes of PAF lasting less than 30 seconds.
 - 26% (n=7) lasting equal to or greater than 30 seconds.
 - 7% (n=2) had persistent AF.
- Mean time to first occurrence of AF was 8.8 days.
- Rate of PAF detection significantly increased from:
 - 3.9% in the initial 48 hours to
 - 9.2% at 7 days,
 - 15.1% at 14 days, and
 - 19.5% by 21 days
- MCOT provides a high rate of detection of AF in patients with cryptogenic stroke or TIA, and length of monitoring time is strongly associated with an increase in detection rate.

Mobile Cardiac Outpatient Telemetry patch vs Implantable Loop Recorder in cryptogenic stroke patients in the US – cost-minimization model

Authors

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Source

Med Devices (Auckl). 2021;14:445-458
<https://doi.org/10.2147/MDER.S337142>

Study results

- An initial strategy of 30-day electrocardiogram (ECG) monitoring with MCOT in diagnosis of AF in cryptogenic stroke patients realizes significant cost-savings compared to proceeding directly to ILR only.
- Almost 8 times lower costs were achieved with improved detection rates and reduction of secondary stroke risk due to new anticoagulant use in subjects with MCOT detected AF.
- In the base case modeling, the MCOT arm detected 4.6 more patients with AFs compared to the ILR alone arm in a cohort of 1000 patients (209 vs 45 patients with detected AFs, respectively).
- Using MCOT followed by ILR in half of the patients initially undiagnosed with AF leads to significant cost savings of \$4,083,214 compared to ILR alone in a cohort of 1000 patients.
- Cost per patient with detected AF was significantly lower in the MCOT arm \$29,598 vs \$228,507 in the ILR only arm.
- Almost 8 times lower costs were achieved with improved detection rates and reduction of secondary stroke risk due to new anticoagulant use in subjects with MCOT detected AF.
- These results strengthen emerging recommendations for prolonged ECG monitoring in secondary stroke prevention.

