

Implantable cardiac monitors (BioMonitor 2-AF, Confirm RX Insertable cardiac monitor and Reveal LINQ insertable cardiac monitoring system) to detect atrial fibrillation after cryptogenic stroke: a systematic review

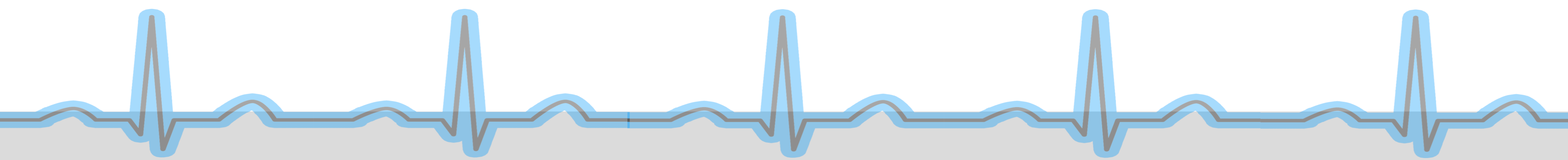
Wakefield V, Edwards SJ, Kew K, Jhita T, Cain P, Marceniuk G – BMJ Technology Assessment Group

Objectives

Why? **Atrial fibrillation** (AF) is a heart arrhythmia that is a known risk factor for stroke. Detecting AF after stroke provides an opportunity to reduce risk of recurrence with anticoagulants. Routine ECG monitoring after stroke is short-term and can miss AF when it is intermittent.

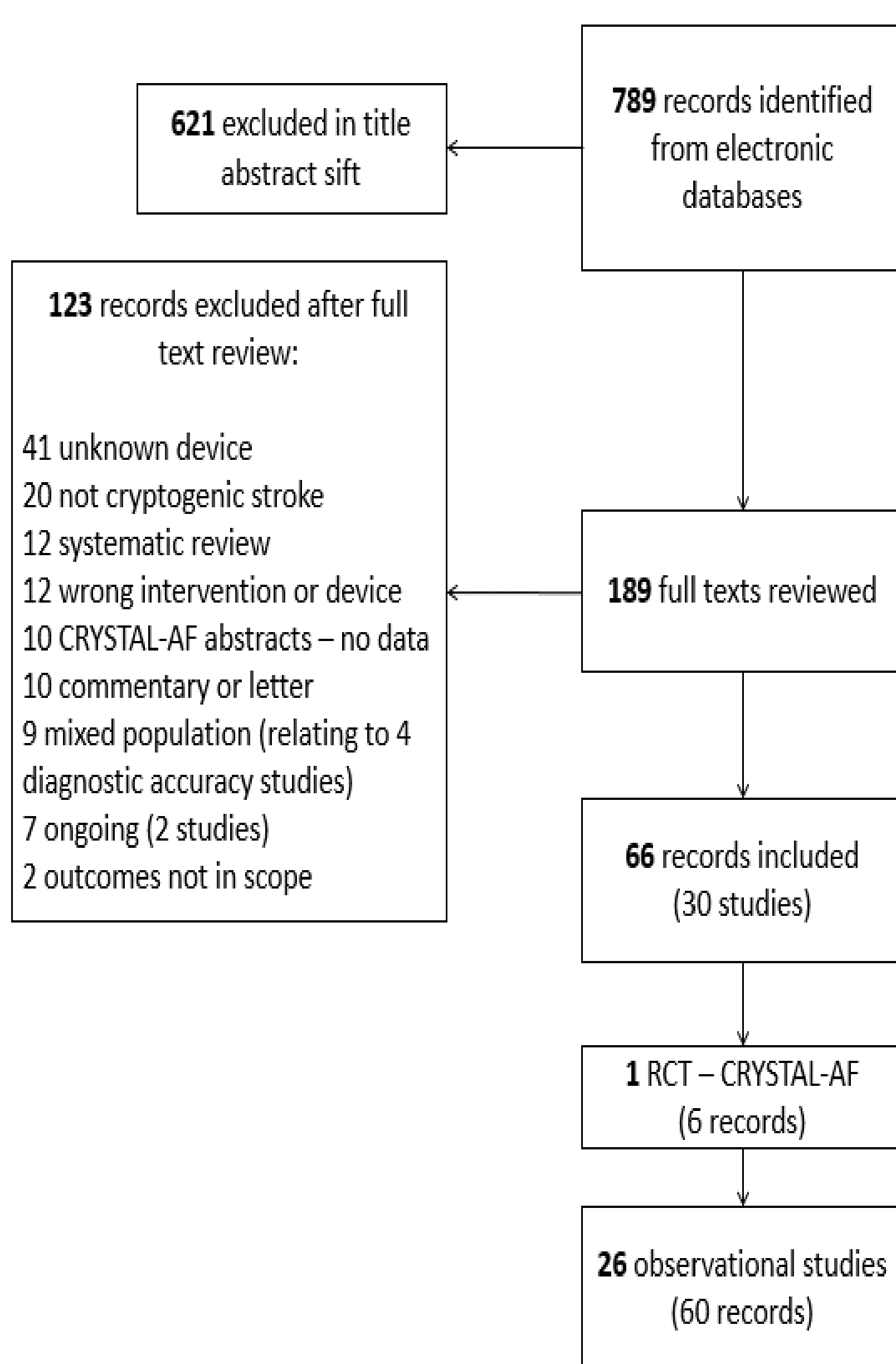
Who? Patients with **cryptogenic stroke** (stroke of unknown cause) after standard 24-hour ECG.

What? Diagnostic test accuracy (DTA) and clinical effectiveness of three **implantable cardiac monitors** (ICMs) to detect AF (BioMonitor 2-AF™, Confirm RX™ or Reveal LINQ™) compared with standard care (no further ECG monitoring).



Methods **Systematic review** (PROSPERO: CRD42018109216) of MEDLINE, EMBASE, CENTRAL, DARE and HTA databases from inception until September 2018. Two reviewers agreed studies for inclusion and performed RCT quality assessment with the Cochrane Risk of Bias 2 tool.

Results



- **One RCT** comparing an older version of the Reveal LINQ (CRYSTAL-AF), **26 non-comparative observational studies** (none for BioMonitor 2-AF or Confirm RX) and no DTA studies were included.

- **Data were presented narratively** as there were insufficient data for synthesis.

- **AF detection rate was significantly higher with Reveal XT** compared with standard care (36 months hazard ratio 8.8, 95% confidence interval: 3.5 to 22.2, $p < 0.001$).

- The 26 non-comparative studies demonstrated **highly variable AF detection rates** although there was substantial clinical heterogeneity (e.g. different stroke severity).

- Most AF detected was asymptomatic and therefore unlikely to have been picked up without an ICM.

- Device-related adverse events (AEs) such as pain and infection were low in all studies considered.

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CONCLUSIONS

Reveal LINQ may be more effective in detecting AF than standard care for patients with cryptogenic stroke and device-related AEs are rare with ICMs.

There are insufficient clinical data in a cryptogenic stroke population to assess Confirm RX or BioMonitor 2-AF with standard care.

High quality RCTs are needed to confirm the comparative efficacy of the different ICMs after cryptogenic stroke.



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Edwards SJ, Wakefield V, Jhita T, Kew K, Cain P, Marceniuk G