Assessment of REmote HEArt Rhythm Sampling using the AliveCor heart monitor to screen for Atrial Fibrillation: The REHEARSE-AF Study

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The study data were analysed and reported independently without involvement of the company.

No investigators have received personal remuneration from AliveCor Inc.
Background: Atrial Fibrillation (AF)

- Increasingly common in ageing populations
- Predisposes to formation of cardiac thrombus
- Often Asymptomatic
- Implicated in significant % ischaemic strokes
- Effective anticoagulation can reduce AF-associated stroke risk by over 60%
- More effective identification and treatment could reduce stroke risk
- Hypothesis: Can regular ECG monitoring over a period of a year increase detection of AF
Conclusions

• Regular twice-weekly iECG screening in people over 65y (CHADS-VASc score ≥2) results in an almost four-fold increase in the diagnosis of AF over the course of a year at a cost of ≈€9000 per AF diagnosis

• Such an approach appears highly acceptable to this patient population

• Whilst these data suggest that this strategy has the potential to reduce the risk of stroke and systemic embolism, the full clinical impact and cost-effectiveness requires further evaluation in a larger, prospective outcome trial.
Study Protocol

- 1001 people over 65y with ≥1 additional stroke risk factor. Access to the internet via Wifi.
- Randomised and followed for 1 year
  - 501 Routine Care
  - 500 Regular ECG Monitoring
    - AliveCor Kardia (iPod + Wifi) Single lead ECG Twice weekly
    - Automated Report + Human Overread
Compliance with ECG Monitoring Protocol

% of iECG participants

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Percentage of Weeks</th>
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<tbody>
<tr>
<td>0-50%</td>
<td>Less than 1 day</td>
</tr>
<tr>
<td>50-75%</td>
<td>Less than 2 days</td>
</tr>
<tr>
<td>75-90%</td>
<td>2-3 days</td>
</tr>
<tr>
<td>90%+</td>
<td>3 or more days</td>
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</tbody>
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% of weeks with iECG submitted on at least 1 day (left panel) or at least 2 days (right panel)
Diagnosis of AF

Hazard Ratio 3.9 (1.4-10.4) \( p = 0.007 \)

Cost per AF diagnosis according to iECG pathway £8,255 (€9,070)
iECG Participant Experience Survey

Overall Satisfaction
- Extremely or very satisfied
- Generally satisfied
- Slightly or not at all satisfied

Anxiety Regarding Heart Rhythm
- Not at all anxious or slightly anxious
- Moderately anxious
- Very or extremely anxious

Restriction of Lifestyle
- Not at all restricted
- Slightly restricted
- Moderately or severely restricted

Confidence in Use of Device
- Extremely or very confident
- Generally confident
- Slightly or not at all confident

Acceptance of Information Sharing
- Extremely or very comfortable
- Generally comfortable
- Slightly or not at all comfortable