

Articles of Interest: August 1–15, 2021

Key Article Summary

TITLE: The comparison of Kardia Mobile and Hartmann Veroyal 2 in 1 in detecting first diagnosed atrial fibrillation

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ARTICLE TYPE: Prospective study of the feasibility of detecting atrial fibrillation (AF) in the pharmacy setting in patients without a previous history of arrhythmia using the single-lead KardiaMobile electrocardiograph (ECG) monitoring device with smartphone application or the Veroyal 2 in 1 ECG and blood pressure monitor

SOURCE: *Cardiol J.* 2021 Aug 6. doi: 10.5603/CJ.a2021.0083. Online ahead of print.

LINK: <https://pubmed.ncbi.nlm.nih.gov/34355779/>

KEY TAKEAWAYS:



Cardiologist-analyzed ECG readings from 417 patients (77.2% female; median age, 71 years; median CHA₂DS₂-VASc score, 3) using the KardiaMobile device first, followed by the Veroyal 2 in 1, demonstrated:

- Eight participants were identified with newly diagnosed AF; the KardiaMobile device identified 15 cases of AF (7 of 15 patients revealed during cardiologist interviews that they did have a history of AF) and the Veroyal device detected 10 cases, with a very low inter-rater agreement (kappa coefficient) of 0.088
- Sensitivity and specificity were 66.7% and 98.5%, respectively, with the KardiaMobile device and 10.0% and 95.0%, respectively, with the Veroyal device
 - The positive and negative predictive values (PPV and NPV) were 62.5% and 98.7%, respectively, with the KardiaMobile device, and 5.2% and 97.4%, respectively, with the Veroyal device
 - Cardiologist-diagnosed AF was frequently classified as both “rhythm” and simultaneous “rhythm and wave” findings (ventricular arrhythmia) by the Veroyal device; combining both findings, the sensitivity and specificity of the Veroyal device in detecting AF were 90.0% and 74.8%, respectively, and the PPV and NPV were 9.1% and 99.6%, respectively



This study suggests that the KardiaMobile device was able to detect AF with an acceptable level of sensitivity and high specificity, whereas the Veroyal detected AF with high specificity but low sensitivity, and highlights the necessity for cardiologist confirmation of false-positive results



With approximately 3.7 billion mobile health applications downloaded globally between 2013 and 2017, many for detecting AF, these devices have the ability to significantly impact the future of healthcare:

- Mobile AF detection may be particularly useful during a pandemic when in-person visits are not preferred or may not be possible
- High specificity and affordability allow opportunistic AF detection to be feasible for routine use (eg, at pharmacies)
- Formally evaluated mobile detection apps can contribute to increased patient awareness and knowledge of AF, medication awareness and compliance, improvements in treatment efficacy, and increased quality of life
- In comparing the 2 methods, KardiaMobile is more user-friendly, the transfer of recordings is more convenient, and the recordings are of better quality