



Arrhythmias and Clinical EP

PERFORMANCE AND USABILITY OF A NOVEL SMARTPHONE APPLICATION FOR ATRIAL FIBRILLATION DETECTION IN AN AMBULATORY POPULATION REFERRED FOR CARDIAC MONITORING

Poster Contributions

Poster Area, South Hall A1

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Background: Current mHealth solutions for atrial fibrillation (AF) surveillance rely on smartphone-ECG dyads which require hardware that may limit widespread use. We previously described the development of an AF detection application (app) that leverages out-of-the-box smartphone (standard camera) to acquire pulsatile time series recordings and analyze using novel algorithms. Our aim in this study is to examine adherence and ambulatory performance of this prescribed app.

Methods: 16 ambulatory participants, referred for cardiac event monitoring for cryptogenic stroke or suspected AF, were provided a study iPhone 4S preloaded with the app. Participants were asked to use the app three times daily and as needed for symptoms (e.g. palpitations) over a 7-day period. Participants completed a usability questionnaire evaluating the app upon study completion. Participants were not compensated for participation.

Results: Participants exhibited a high degree of adherence (95% adherence to scheduled recordings, ~25 recordings per participant). The app demonstrated excellent performance for detection of paroxysmal AF (97% sensitivity, 98% specificity, 98% accuracy) compared to the gold-standard contemporaneous cardiac monitoring devices. Majority of respondents described the app as "easy to use", "important" and "fitting very well into daily life" (Figure 1).

Conclusions: Our AF detection app demonstrated excellent user adherence and satisfaction, along with an outstanding ability to detect AF.

