

## Introduction:

- Atrial fibrillation (AF) is the most common sustained arrhythmia with prevalence increases with age and 5-folds increase in risk of ischemic strokes
- Silent AF is increasingly common in the aging population: screening studies reveal the prevalence of silent AF is 1.4% in people aged  $\geq 65$ , and stroke may be the first manifestation of this arrhythmia
- Earlier identification of silent AF by opportunistic screening  $\geq 65$  with appropriate anticoagulation therapy may decrease stroke, and is recommended in ESC and Au guidelines
- Native Americans have a high prevalence of diabetes and higher incidence of stroke than whites and blacks
- Indigenous Australians, and NZ Maori develop AF on average 10-20 years earlier than non-indigenous but little is known about unknown AF prevalence in Native Americans

## Purpose:

- To determine the incidence and clinical predictors of unknown AF in Native Americans seen at a tribal clinic using opportunistic screening with a single-lead iPhone-based ECG device (Kardia/AliveCor)

## Methods:

- Native Americans patients aged  $\geq 50$  followed in the Absentee Shawnee Tribal (AST) primary care clinic with no prior history of AF were approached for opportunistic screening
- Following consent, a 30-sec ECG was recorded using the Kardia mobile ECG device (Figure 1).
- A cardiologist over-read all tracings to confirm the diagnosis of AF
- Those confirmed to have AF (Figure 2) were referred to a cardiologist for further management

## Results:

- A total of 2323 Native Americans aged  $\geq 50$  are followed in the AST clinic [38% males, 62% female; mean age  $61.5 \pm 8.9$  years]
- The AF prevalence in 2323 Native Americans patients aged  $\geq 50$ , was 1.5%. The prevalence increased significantly with age (age 50-64 (0.7%); age 65-74 (2.6%); age  $\geq 75$  (4.6%); p for trend  $< 0.0001$ ; Figure 1)

Figure 1. Prevalence of AF by age group and by sex in the overall population

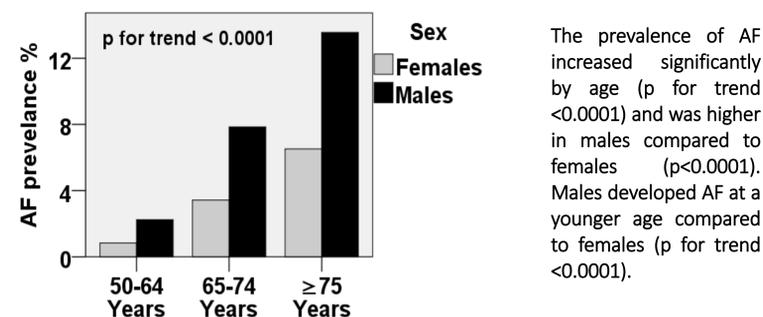
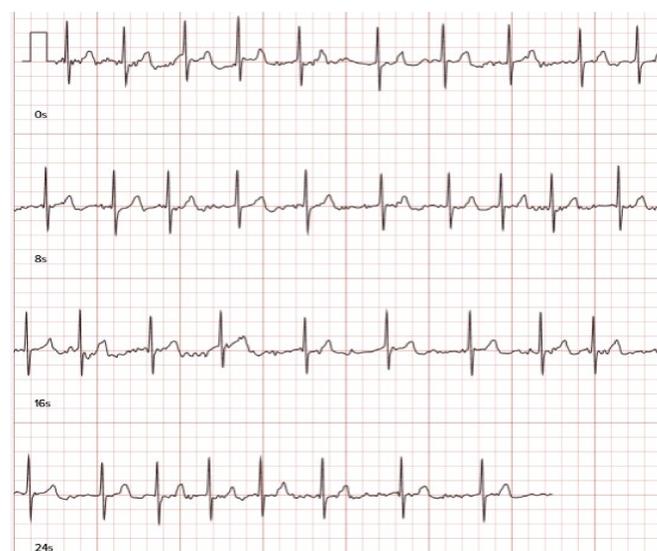


Figure 2. Single lead ECG recording using the Kardia mobile ECG device



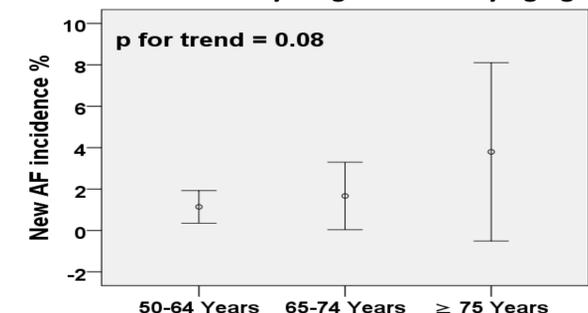
Figure 3. Single lead ECG for one of the screened patients showing AF



## Results:

- A total of 1179 patients approached for AF screening and 1019 patients (86%) agreed. Age and sex distribution of those screened was similar to the overall clinic population without AF.
- The majority of the patients screened were women (62.3%), mean age was  $61.5 \pm 8.5$  years and mean  $CHA_2DS_2-VASc$  score was  $2.2 \pm 1.5$ .
- 15/1019 (1.5%; 53.3% men, mean age  $65.9 \pm 10.3$ , mean  $CHA_2DS_2-VASc$  score  $3.1 \pm 1.7$ ) were diagnosed with new AF and were referred to a cardiologist.
- 8 of 15 with new AF were aged  $< 65$  years
- The incidence of newly diagnosed AF increased with increasing age (age 50-64: 1.1%; age 65-75: 1.7%; age  $\geq 75$ : 3.8%; p for trend 0.08 (Figure 4).

Figure 4. Incidence of newly diagnosed AF by age group



- Anticoagulation was initiated in 14 of 15
- Patients with new AF were more likely to be older in age with history of heart failure, COPD and hyperlipidemia.

## Conclusions:

- Opportunistic screening for AF using iPhone ECG in Native Americans is feasible and well accepted by the patients when attending a tribal clinic
- Our preliminary data suggest that Native Americans, like other first nation peoples, appear to develop AF at younger age than non-Native Americans populations and would be likely to benefit from AF screening earlier
- This novel approach for AF screening in tribal clinics has potential to improve health outcomes among a large number of individuals