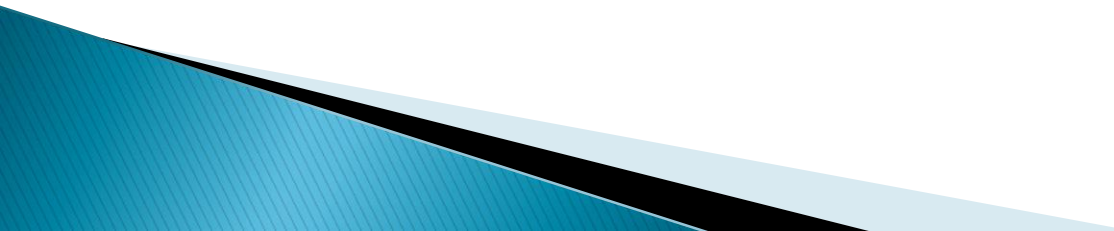


Identifying AF: Alivecor in Practice

Shona Holding,
Cardiovascular Specialist Nurse Practitioner
Westcliffe group Practices, Shipley, West Yorkshire

introduction

- ❑ Demonstrate use of device
 - ❑ Evidence
 - ❑ Practical use
 - ❑ Patient feedback
 - ❑ Audit data
 - ❑ Case studies
- 

AF Detection on iPhone ECG



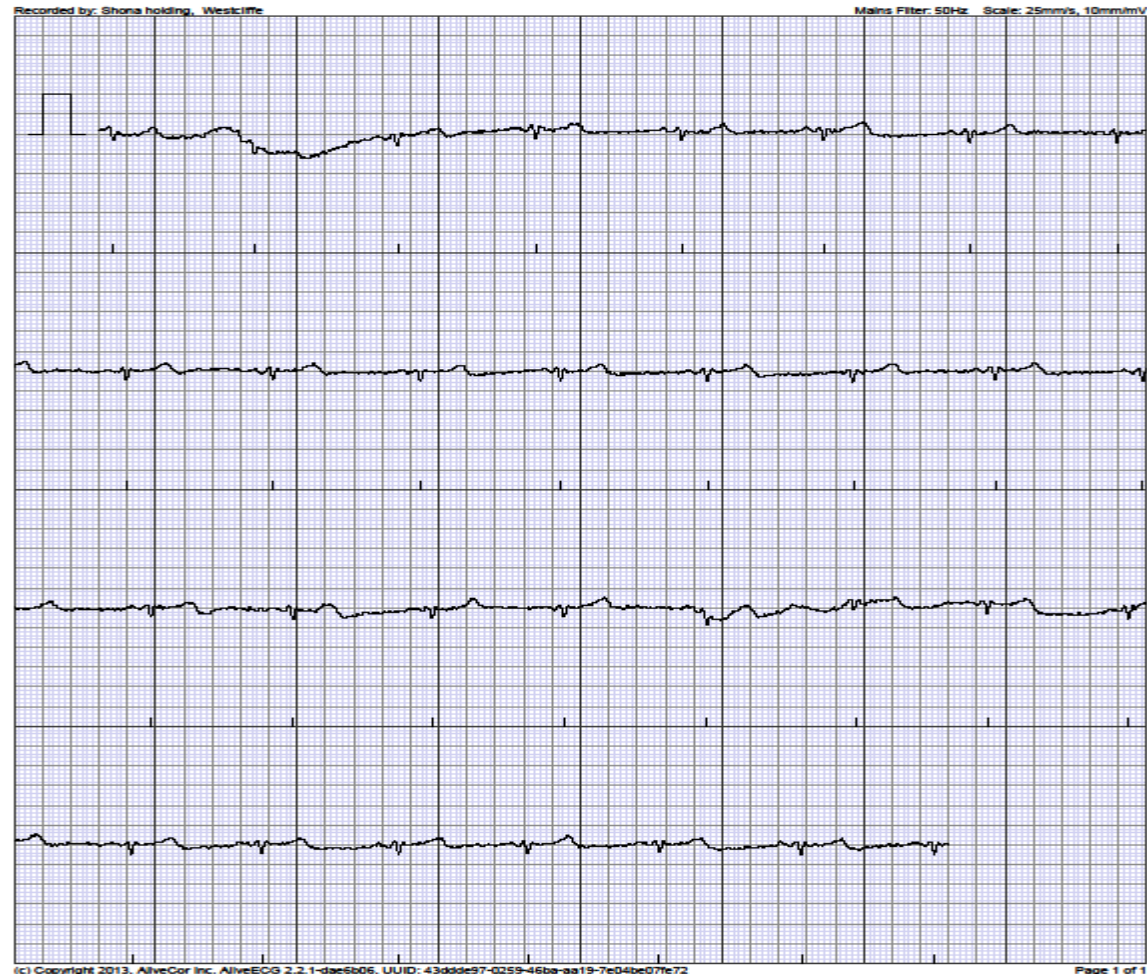
	Sensitivity	Specificity	Accuracy	Kappa
<i>Learning set (n = 109)</i>				
Cardiologist A	100%	90%	94%	0.87
Cardiologist B	95%	94%	95%	0.88
Original algorithm	87%	97%	94%	0.86
Optimized algorithm	100%	96%	97%	0.94
<i>Validation set (n = 204)</i> Algorithm was optimized by increasing weighting of absence of P waves				
Optimized algorithm	98%	97%	97%	0.92

Example tracing

Patient:
Recorded: Wednesday, September 14, 2016 at 8:39:54 AM
Heart Rate: 60 bpm Duration: 30s

Finding by AliveCor: Normal

AliveCor



**AliveCor Heart Monitor and
AliveECG app for detecting atrial
fibrillation**

**NICE advice [MIB35] Published
date: August 2015**



COST

- App is FREE
- MIB, NICE quotes £62.49 incl VAT for device
 - Cheaper if bought in bulk (£50)

Cost in time

- 30 min appointment with HCA
 - Already downloaded App
 - HCA attaches device and teaches patient how to record heart rhythm
 - Demonstrates how to email tracing
 - Saves that rhythm strip as baseline
- HCA receives tracing via nhs email account and attaches to notes
 - Sent to 'designated' group for interpretation

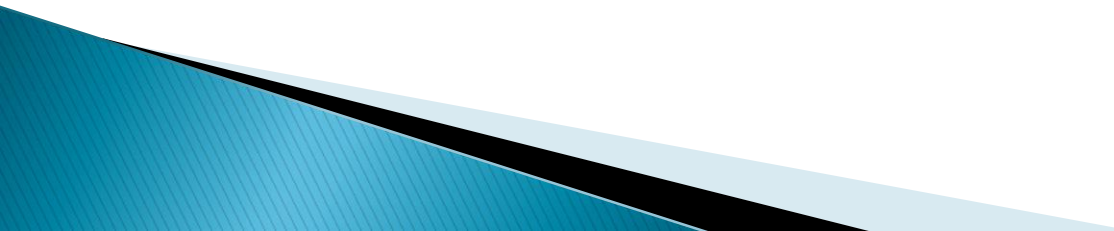
Patient reviewed in clinic after 3 months or once dysrhythmia captured.

- Devices returned after 3 months or before

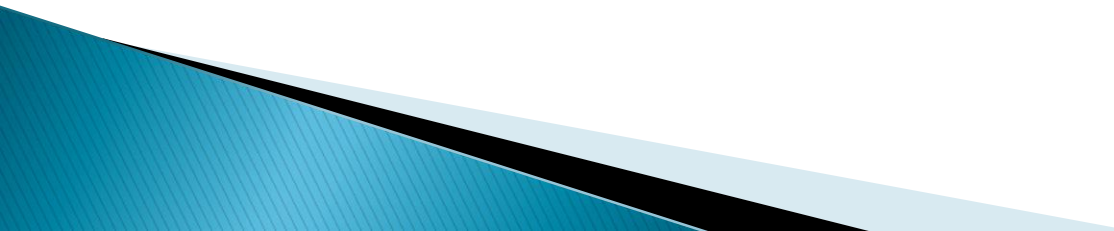
How used in practice

- Use in community cardiology clinic
 - Anyone with intermittent palpitations offered loan of device
 - Iphone 5/6; smart phone (samsung); ipad; ipod; tablet
 - All specialist practitioners have one: useful to check rhythm in clinic if irregular pulse identified
- rolling out to GPs with specific guidance on its use:
 - Suitable patients
 - Interpretation skills
 - Clinical governance

Audit data (unpublished) shows

- ▶ 80 patients of all ages we have found the device to be well tolerated. The diagnostic yield is very high as we now only receive ECG traces of patient symptoms.
 - ▶ 50% of people fitted with the device have dysrhythmic disease (from simple ectopics to SVTs and AF) and the remaining 50% reveals sinus rhythm suggesting a non-cardiac cause for their symptoms.
- 

Patient feedback

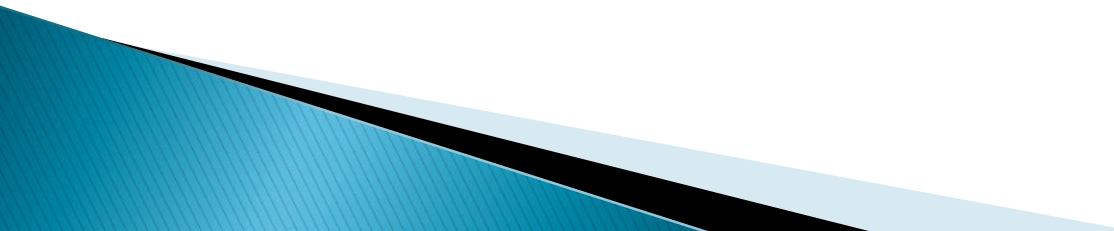
- ▶ Very easy to use
 - ▶ Easy once I got used to it
 - ▶ Wouldn't work for me but worked when my husband tried it
 - ▶ Wouldn't be able to use if at work
 - ▶ Don't have the correct phone
- 

Case study 1

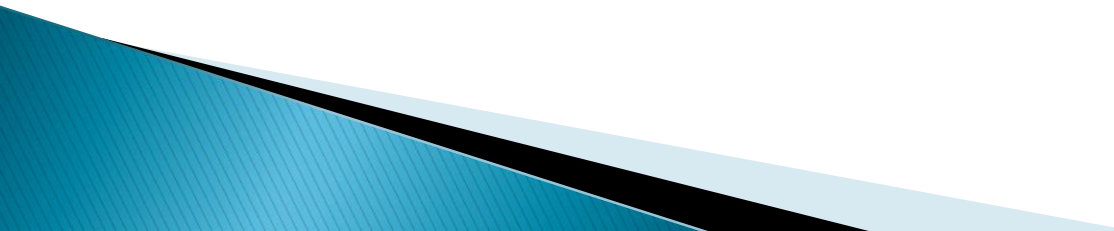
- ▶ 49 year old gentleman referred to community cardiology clinic with 4 month history of intermittent palpitations. They have been occurring sporadically and one episode caused him to feel faint, however he did not pass out, no chest pain, or breathlessness.
- ▶ A 24 hour tape had been conducted before referral. This showed sinus rhythm with frequent ventricular ectopy (4%) with a 5 second narrow complex tachycardia.



CASESTUDY 1 conti...

- ▶ In clinic:
 - ▶ vital signs were normal.
 - past medical history: Nil of significance
 - family history of stroke but no sudden cardiac death.
 - ▶ SH: works full time, is a non smoker, mod alcohol and no caffeine.
 - ▶ Medications: propranolol 40 mg od.
 - ▶ Due to 4% burden of ventricular ectopy an echocardiogram is arranged.
 - ▶ Given the sporadic nature of his palpitations he is set up an alivecor device.
- 


Case study 1 conti...

- ▶ Within **7 days** of being set up with this device, we capture **atrial fibrillation** on the **4th trace** sent. Further tracings follow confirming paroxysmal AF.
 - ▶ reviewed in clinic soon after to discuss treatment options discussed.
 - ▶ The echocardiogram is normal. CHADSVASC score of zero
 - ▶ Propanolol is switched to bisoprolol for symptom control and is reviewed in clinic until symptoms stabilised.
 - ▶ This gentleman found the phone device easy to use and is delighted it helped with a timely diagnosis
- 

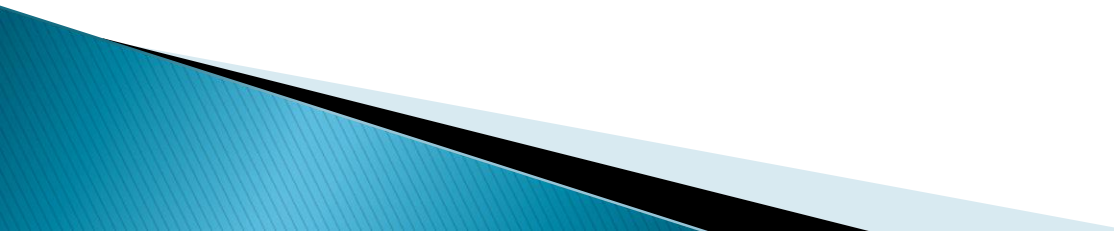
Case study 2

- ▶ A 73 year old lady is referred to a community cardiology clinic
- ▶ P/C: experienced palpitations for over 2 years, and was previously investigated in 2013: Previous 24 hour and 5 day holter monitoring, revealed sinus rhythm with frequent atrial ectopy but no paroxysmal atrial fibrillation
- ▶ Her symptoms persist but have improved since switching to bisoprolol. She describes the palpitations as sudden onset/off/set, erratic and can last for several hours. She experiences a high diuresis during the symptoms but no Chest Pain, lethargy, shortness of breath or dizziness and no syncope. They occur sporadically and her last one was 2–3 weeks ago.
- ▶ PMH: nil.
- ▶ On examination:–unremarkable
- ▶ set up with alivecor

Case study 2 conti..

- ▶ sent **2 tracings** within a month of being set up with the device and **atrial fibrillation** was captured on both tracings.
 - ▶ Bisoprolol is restarted and uptitrated until symptom control is achieved.
 - ▶ This lady has a **CHADSVASc score of 2** in presence of AF so her risk of stroke is explained and treatment options discussed. This lady chooses to take a **DOAC** rather than warfarin.
- 

In summary

- ▶ Very effective to capture dysrhythmia during intermittent symptoms
 - ▶ Sometimes tracings unreadable/difficult to interpret
 - ▶ Generally user friendly
 - ▶ Limited to modern phone/ipad technology
 - ▶ Useful to diagnose AF on finding incidental irregular pulse
- 

Thank you for listening

Any Questions??

