

Rate and rhythm control

Identifying and managing the symptomatic patient

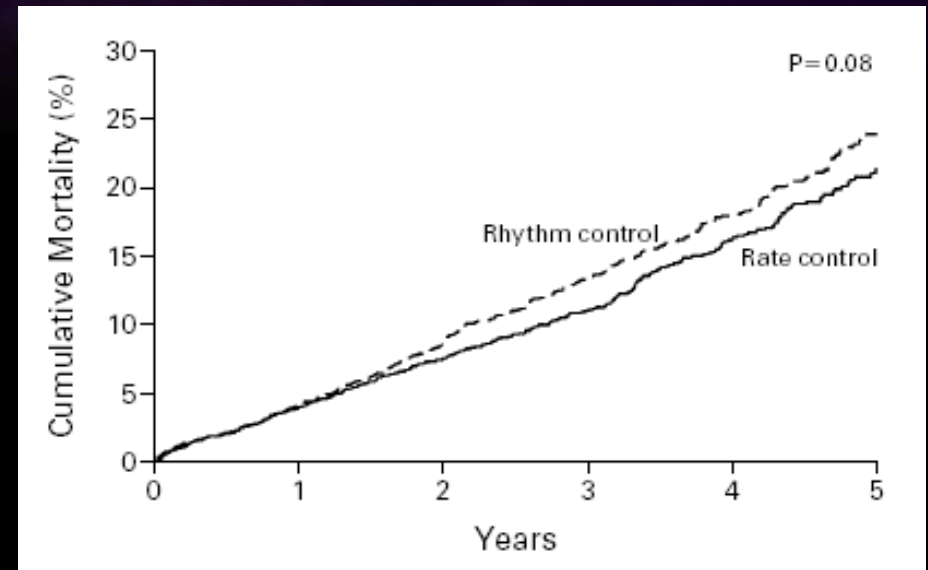
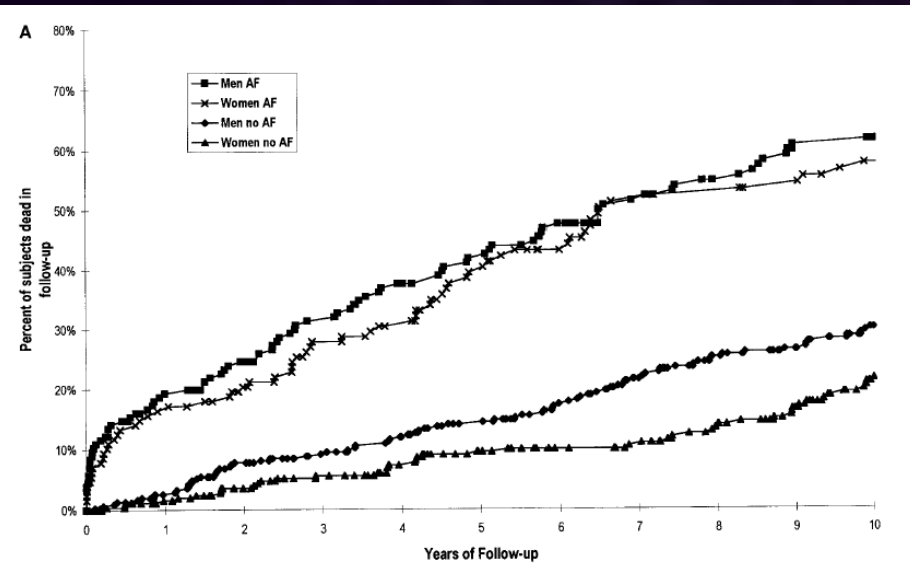


AFA Symposium – Heart Rhythm Congress 2009

Mark Earley

St Bartholomew's Hospital

Rate or Rhythm control?

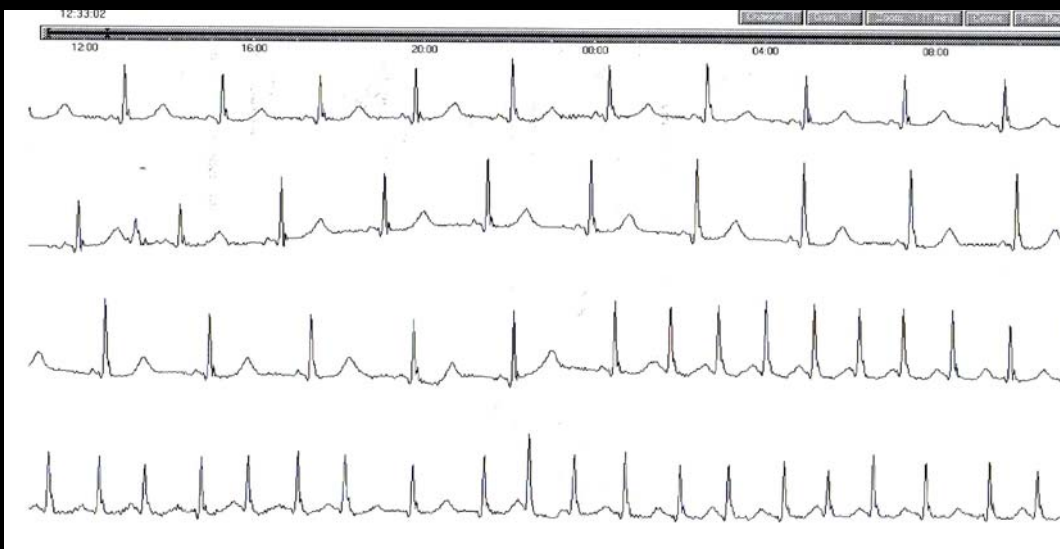
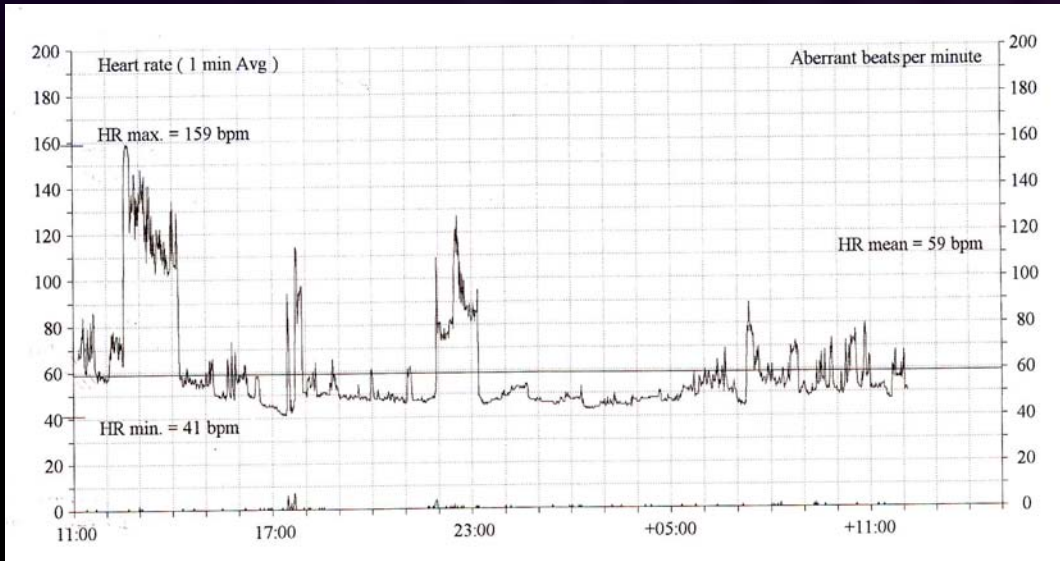


Mortality Odds Ratio: M1.5 W1.9

AFFIRM, RACE, PIAF etc

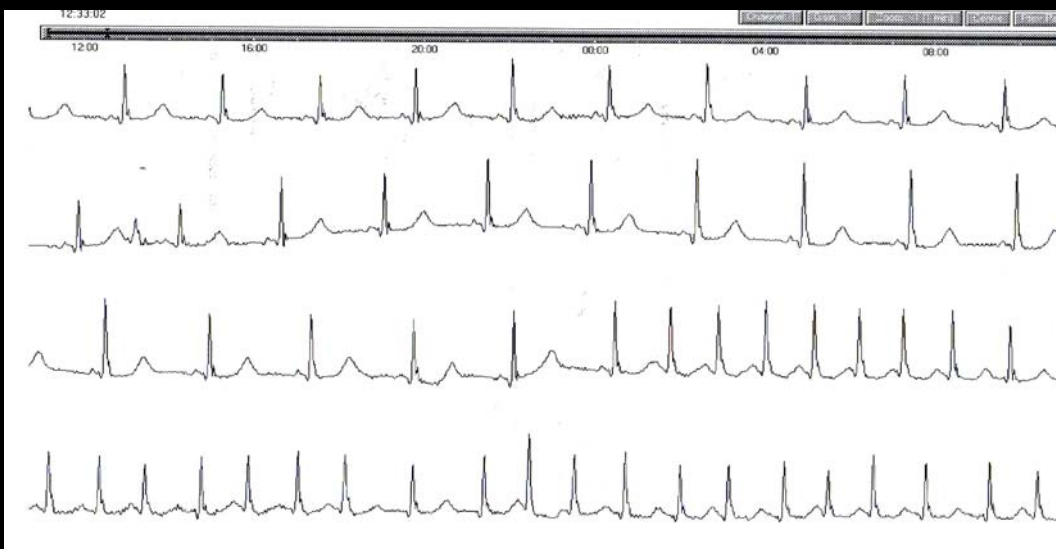
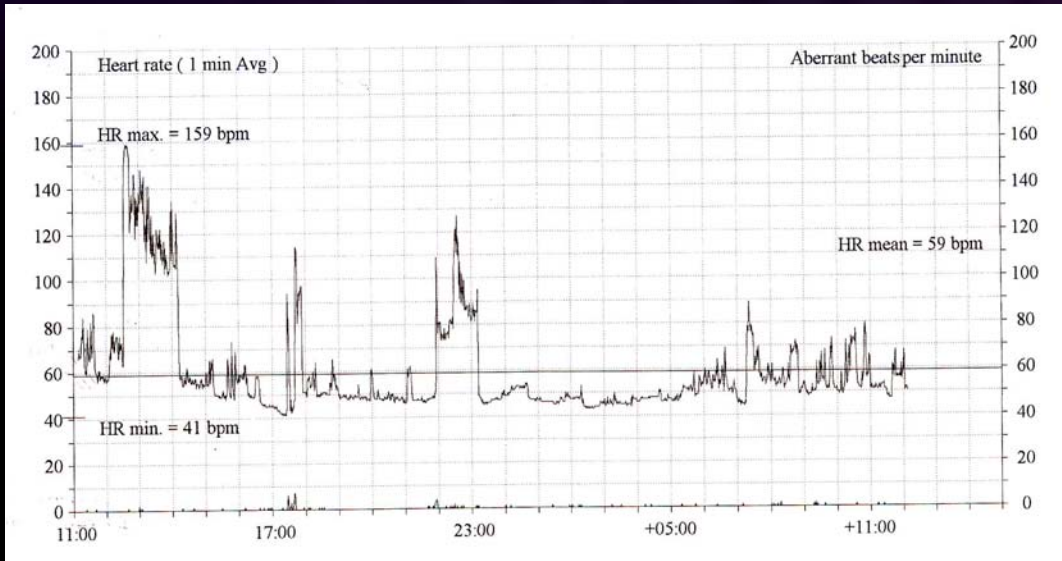
Reduce symptoms and prevent stroke

Paroxysmal AF: rhythm control



- 65 man
- Daily palpitations
- Hypertensive
- Echo: normal heart

Paroxysmal AF



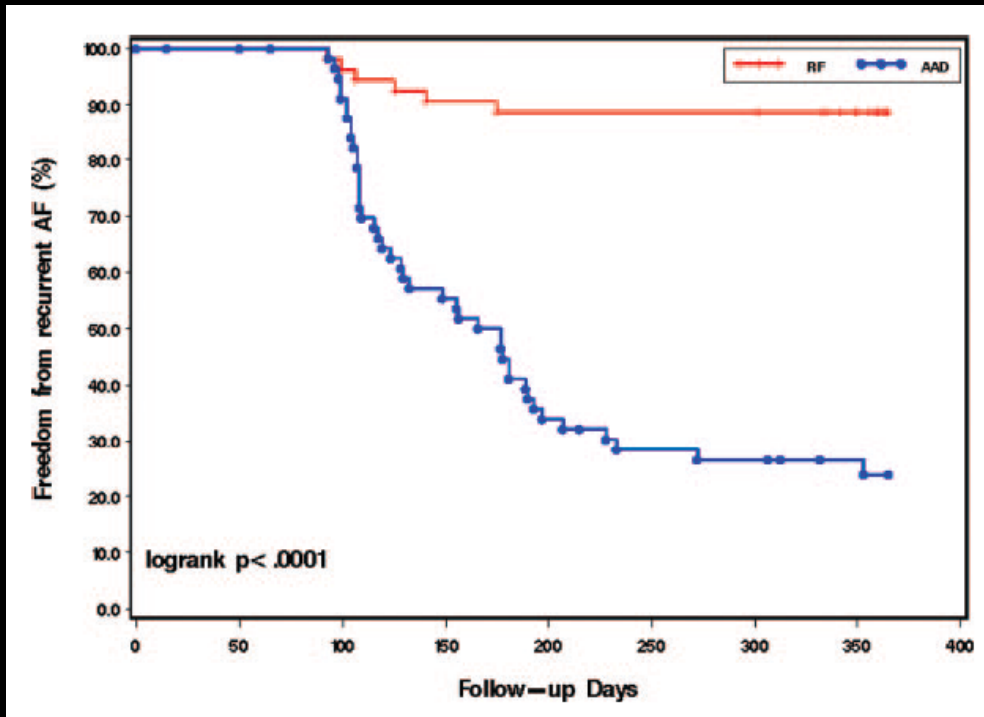
- Stroke prevention
- No therapy
- Pill in pocket (Class 1c)
- Prophylactic drug treatment
 - B Blockers
 - Class 1C +/- B Blockers
 - (Sotalol)
- Catheter ablation

Paroxysmal AF



- Stroke prevention
- No therapy
- Pill in pocket (Class 1c)
- Prophylactic drug treatment
 - **B Blockers**
 - **Class 1C +/- B Blockers**
 - **(Sotalol)**
- Catheter ablation

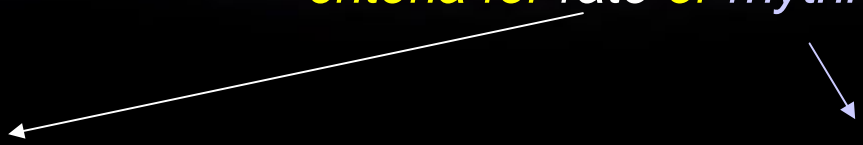
Paroxysmal AF



- Stroke prevention
- No therapy
- Pill in pocket (Class 1c)
- Prophylactic drug treatment
 - B Blockers
 - Class 1C +/- B Blockers
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- Catheter ablation

Persistent AF: Rate and/or rhythm control

NICE 2006: *some patients with persistent AF will satisfy criteria for rate or rhythm control*



- AGE > 65
- Coronary disease
- Contraindication to AADs
- Unsuitable for cardioversion
 - Cannot anticoagulate
 - Large LA (>5.5cm)
 - Structural heart disease
 - AF > 12 months
- Symptomatic
- New onset lone AF
- Treated reversible cause
- Heart failure

Persistent AF: Rate and/or rhythm control

NICE 2006: *some patients with persistent AF will satisfy criteria for rate or rhythm control*

- Rate and rhythm control are not mutually exclusive – explain both to patient
- Comorbidities that may influence choice of approach should be taken into account
- Regardless of approach ensure appropriate anticoagulation

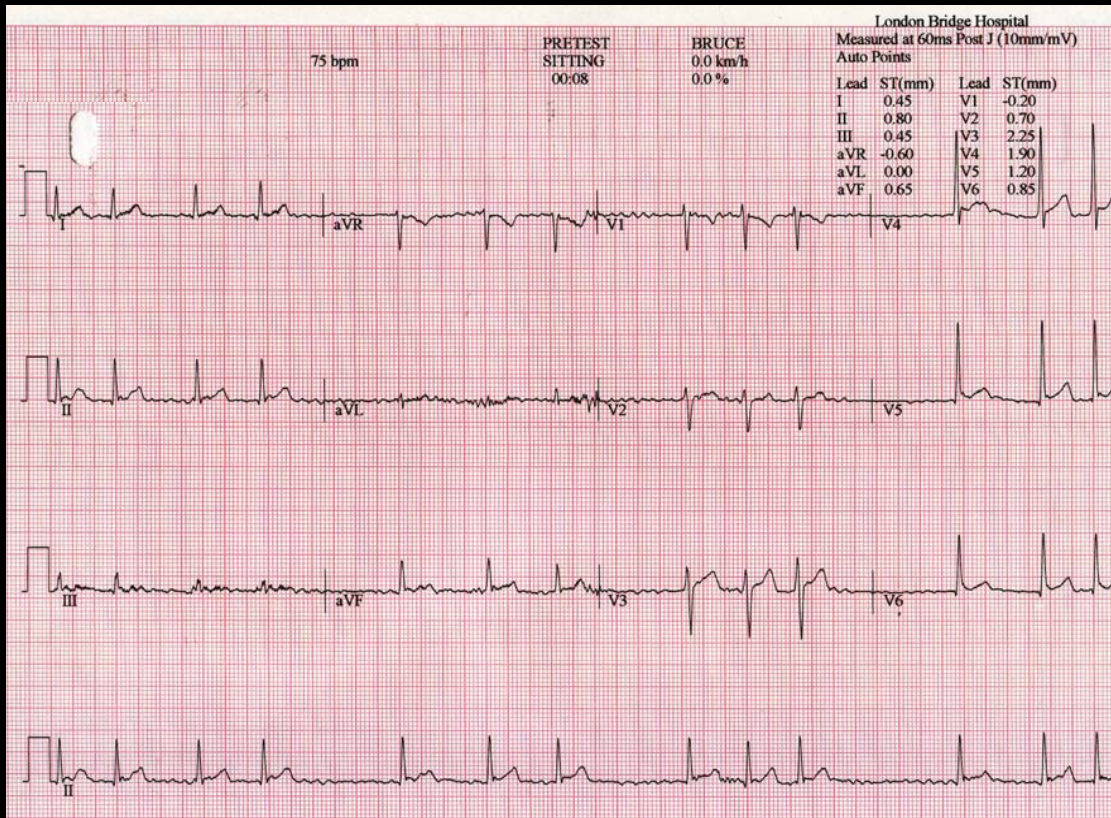
Persistent AF - symptoms

Symptom	Paroxysmal	Persistent
Palpitations	79	45
Dyspnoea	23	47
Fatigue	13	13
Syncope/dizziness	17	8
Chest pain	13	8
None	5	16

% of patients presenting with symptoms

Persistent AF – no symptoms

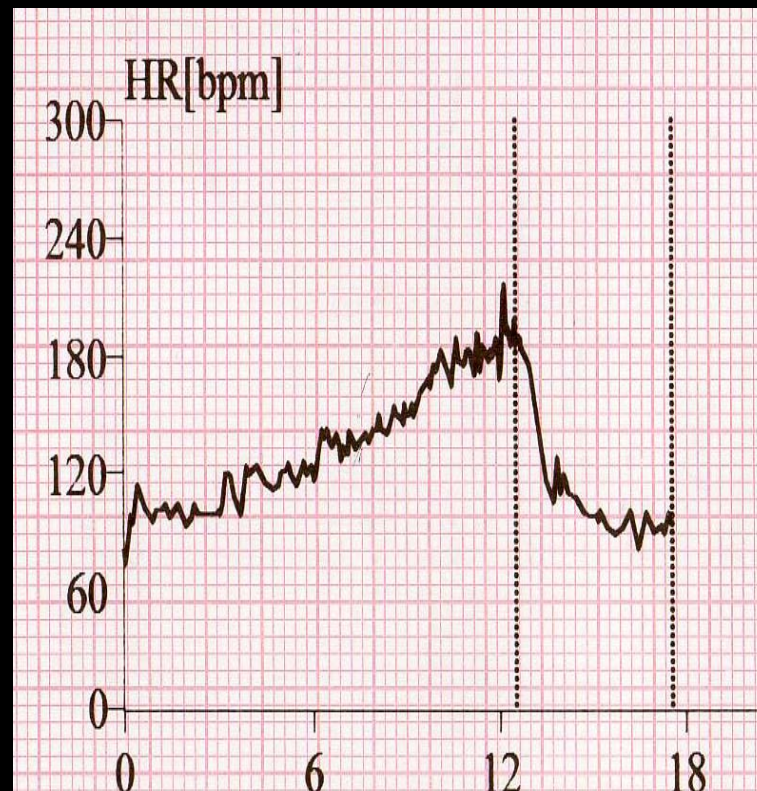
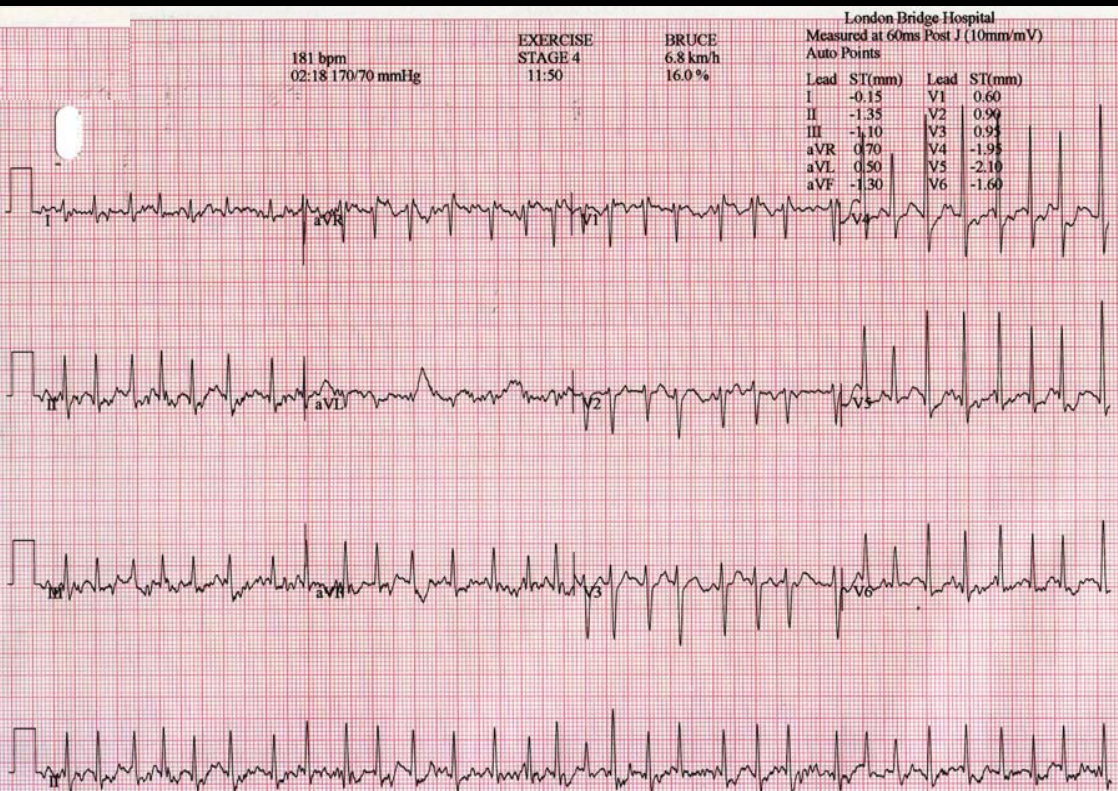
- 39 year old Man
- Migraine – GP irreg pulse
- Swims, runs, surfs
- Echo: normal (LA 4.3cm)



- No anticoagulation
- Exercise test
- Cardioversion

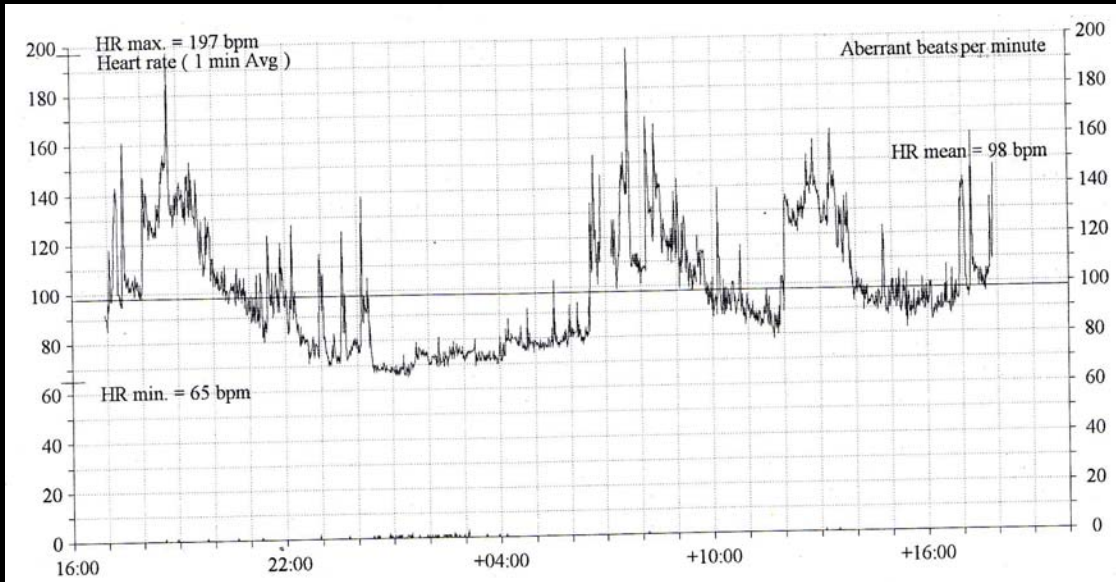
Persistent AF – no symptoms

- 39 year old Man
- Migraine – GP irreg pulse
- Swims, runs, surfs
- Echo: normal (LA 4.3cm)



Persistent AF – few symptoms

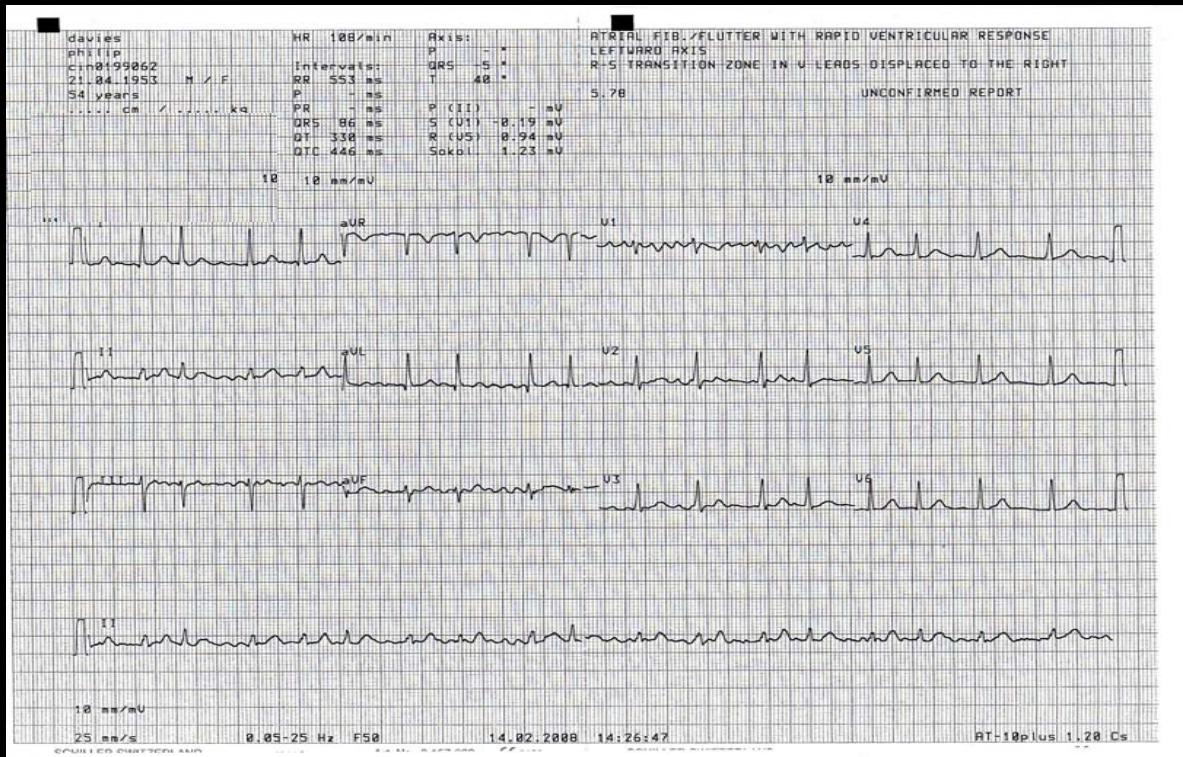
- 55 year old man
- Cellulitis – GP irreg pulse
- Palpitations 4 years
- Mild hypertension
- 4/5 siblings – AF
- Echo: normal (LA 4.7cm)



- No anticoagulation
- Bisoprolol
- Cardioversion

Persistent AF – few symptoms

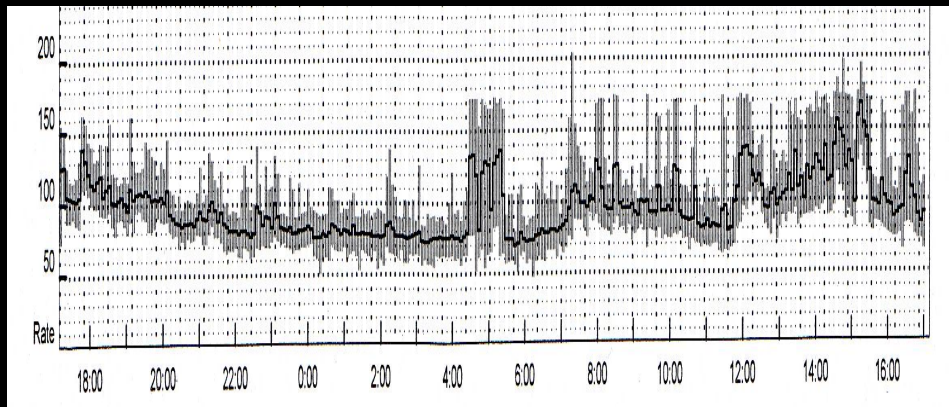
- 54 year old Man
- Routine health screening
- SOB on exercise
- Echo: normal (LA 3.7cm)



- No anticoagulation
- Bisoprolol
- Cardioversion
- Warfarin

Persistent AF – the asymptomatic patient

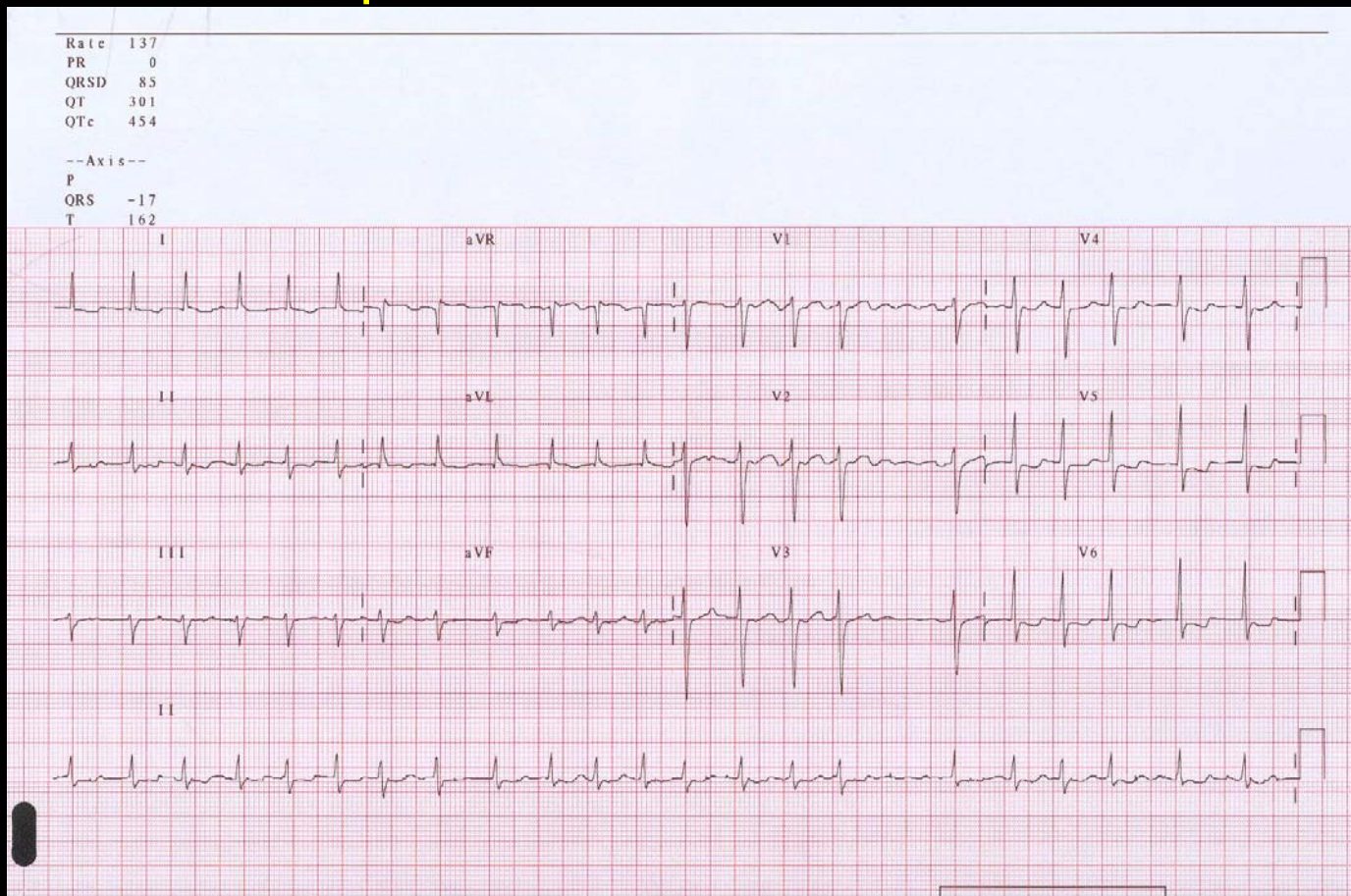
- 54 year old Man
- Routine health screening
- SOB on exercise
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- DC Cardioversion
- Amiodarone
- SR maintained
- Amiodarone stopped
- AF
- Warfarin to Aspirin

Persistent AF – heart failure

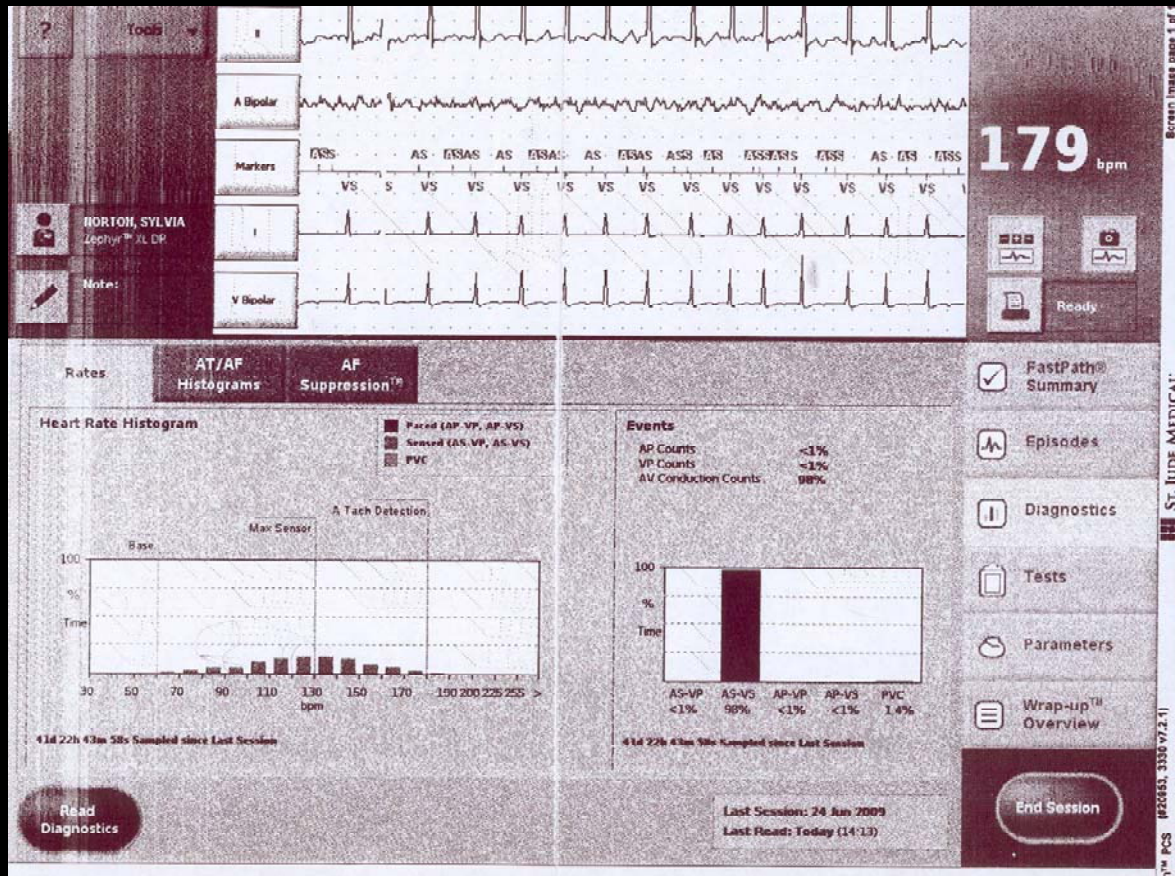
- 78 year old woman
- Hospital admission cardiac failure
- Echo: poor LV function?



- Warfarin
- Rate control
 - Bisoprolol*
 - Digoxin*
 - Diltiazem*
- Rhythm control
 - Amiodarone*
- SR + heart block
- Pacemaker

Persistent AF – heart failure

- 78 year old woman
- Hospital admission cardiac failure
- Echo: poor LV function?



- Pacemaker
- Rate control
 - Bisoprolol 10mg*
 - Digoxin 250*
- Next step?

Persistent AF – Rate control

- **Assessment**

- Ambulatory Holter monitor
- Exercise test

- **Target Heart Rate**

- Rest 60-80
- Moderate exercise <120
- Mean HR < 100

- **Therapy**

1. **Single drug**

- B Blocker
- Verapamil or Diltiazem

2. **Second agent**

- 1st line + Digoxin

3. **Triple therapy**

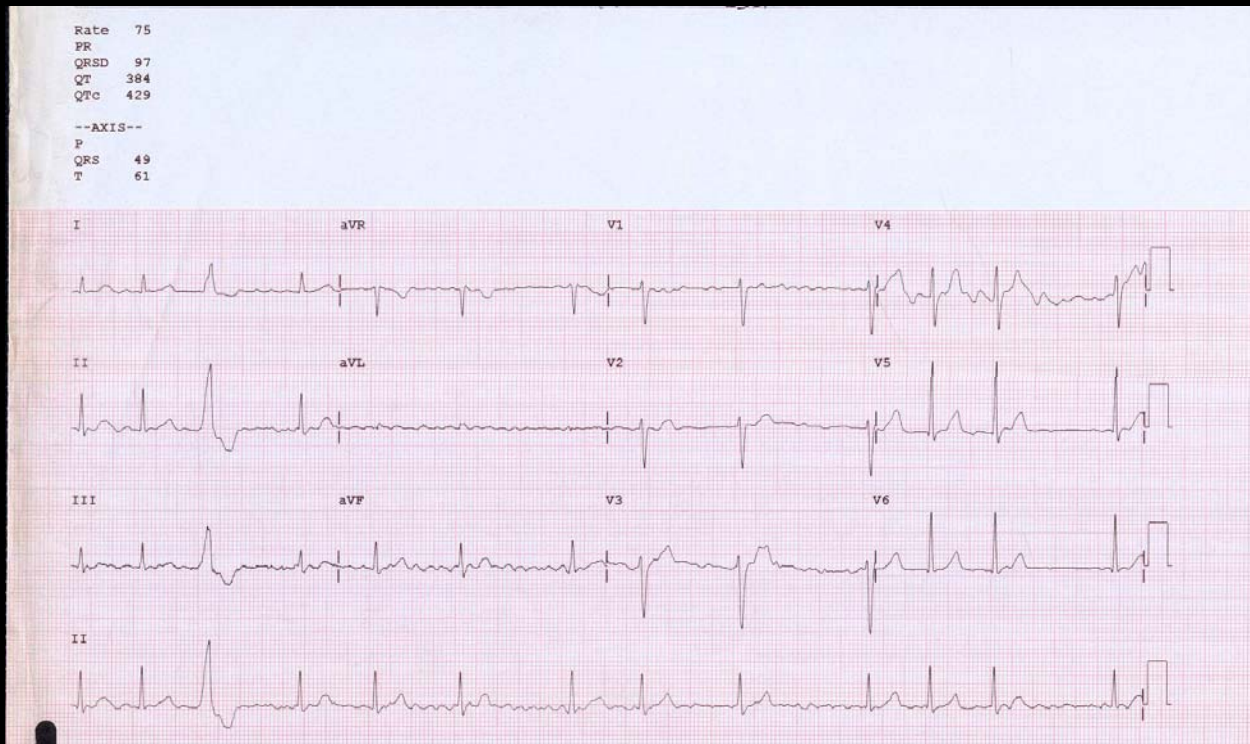
- *caution!*

4. **Pace and ablate**

- ? Biventricular pacing

Persistent AF – few symptoms

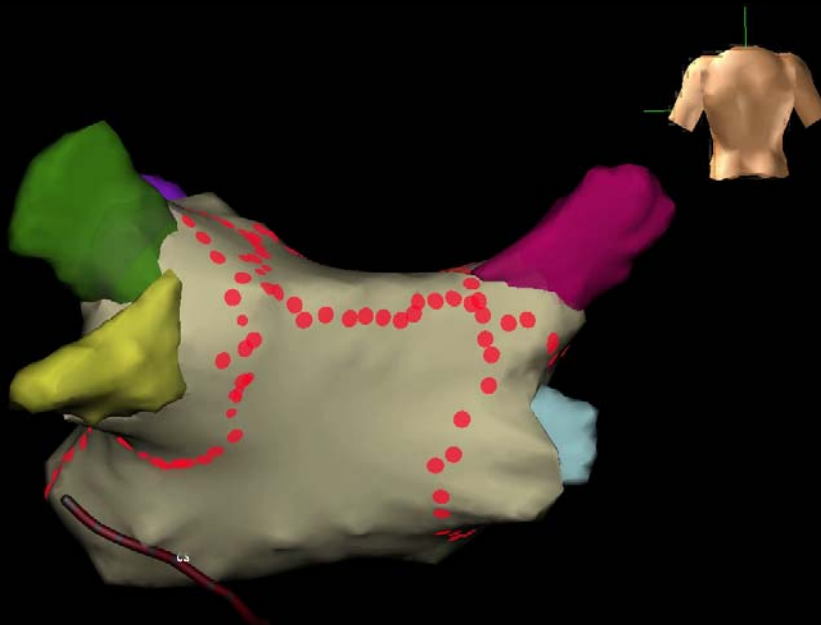
- 47 year old man
- Lethargy
- Mild SOB on exercise
- Echo: normal (LA 4.2cm)



- Warfarin
- Amiodarone
- Cardioversion
- Amiodarone stopped
- Catheter ablation

Persistent AF – few symptoms

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- Lethargy
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- Warfarin
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Electrode spacings: | Distal | 0-2 | 2-3 | 3-4 |
Nominal (mm) 3.5 2.0

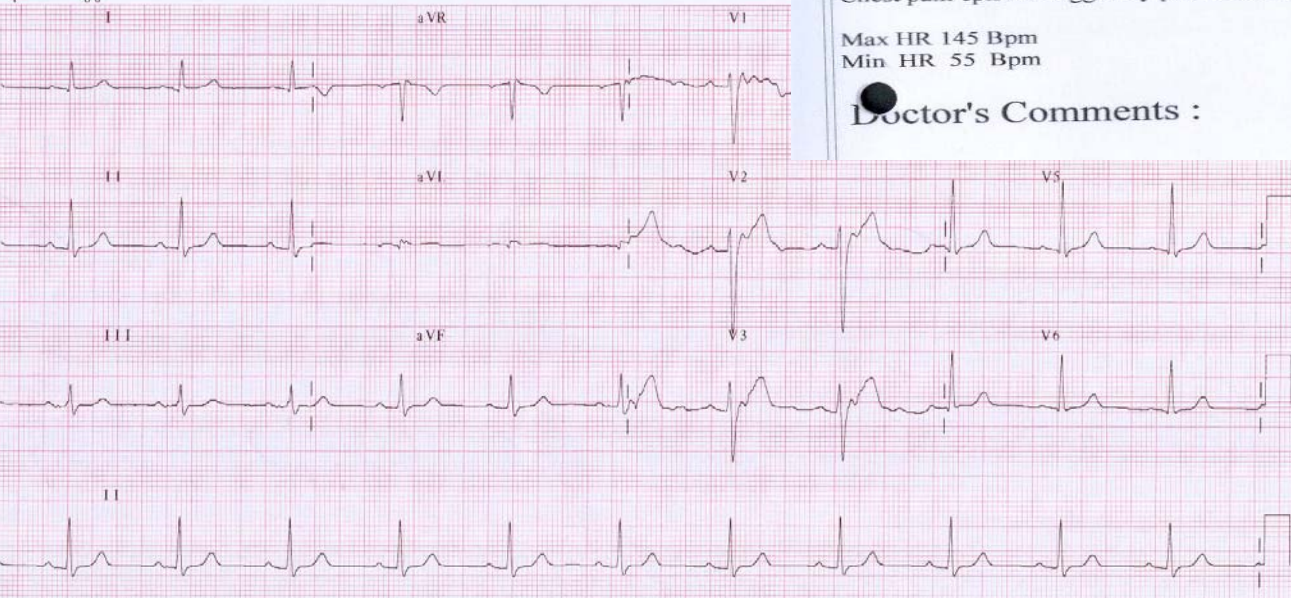
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Persistent AF – few symptoms

- 47 year old man
- Lethargy
- Mild SOB on exercise
- Echo: normal (LA 4.2cm)

Rate 68
PR 175
QRSD 102
QT 370
QTc 393

--Axis--
P 50
QRS 43
T 60



Operator's Comments :

Patient predominantly in sinus rhythm throughout with frequent ventricular ectopic beats.

3 episodes of ?? Sinus tachycardia/ _____ the longest lasting 40 minutes, no symptoms
Chest pain episode logged by patient correlated with normal sinus rhythm.

Max HR 145 Bpm
Min HR 55 Bpm

Doctor's Comments :

- SR off drugs
- Aspirin 75

Persistent AF – Rhythm control

1. DC Cardioversion

- After treated precipitating cause

2. DC CV + Antiarrhythmic drug

- Flecainide (normal heart)
- (Sotalol)
- Amiodarone (short term only)

3. Catheter ablation

- Drug may still be needed

Rate *and* Rhythm control for Persistent AF



- Rate control to reduce symptoms and prevent HF
- Assess rate control with exercise or ambulatory monitoring
- PPM + AVN ablation where rate *and* rhythm not achievable

- Rhythm control for symptoms *not* mortality
- Use cardioversion (+/- amiodarone) to assess symptom burden
- Current AADs are of low efficacy or high toxicity
- Catheter ablation is most effective method