# Everything about Atrial Fibrillation

**Atrial tachyarrhythmia characterized by uncoordinated atrial activation with consequent deterioration of atrial mechanical function**

## Presentation

50% episodes terminate within 24 hrs
Mostly asymptomatic

**Typical symptoms**

Palpitations

Tachycardia

Fatigue

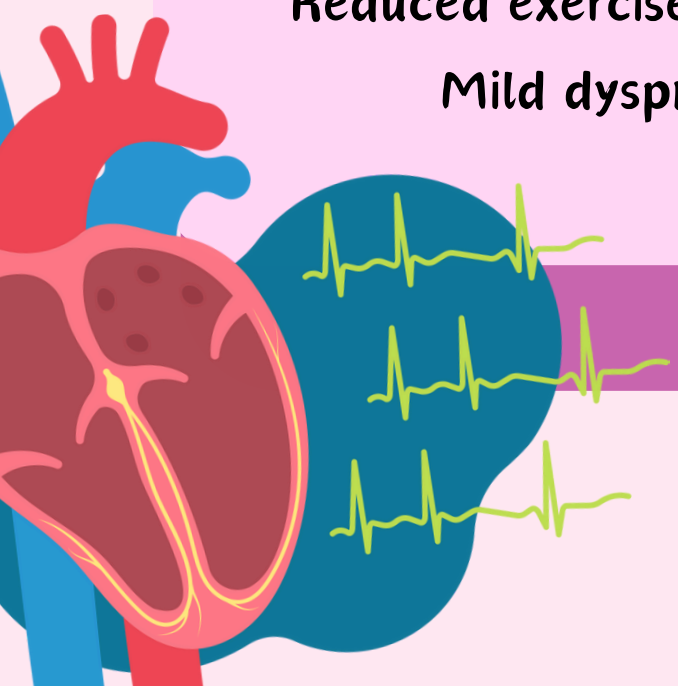
Weakness

Dizziness

Lightheadedness

Reduced exercise capacity

Mild dyspnea



## Cardiac Causes

Hypertension

Valvular disorder

Coronary artery disease

Myocarditis/ pericarditis

Congenital heart disease

Cardiothoracic surgery

## Non-cardiac Causes

Hyperthyroidism

Chronic renal disease

Obesity

Alcohol

Caffeine

Stroke

# Classification of Afib

1

## PAROXYSMAL

Spontaneous termination <7 days
and most often <48 hours


2

## PERSISTENT

Not self-terminating
Episodes lasting > 7 days or
requiring cardioversion for termination


3

## LONG STANDING PERSISTENT

Episodes lasts for ⩾1 year,
and it is decided to adopt rhythm control strategy


4

## PERMANENT

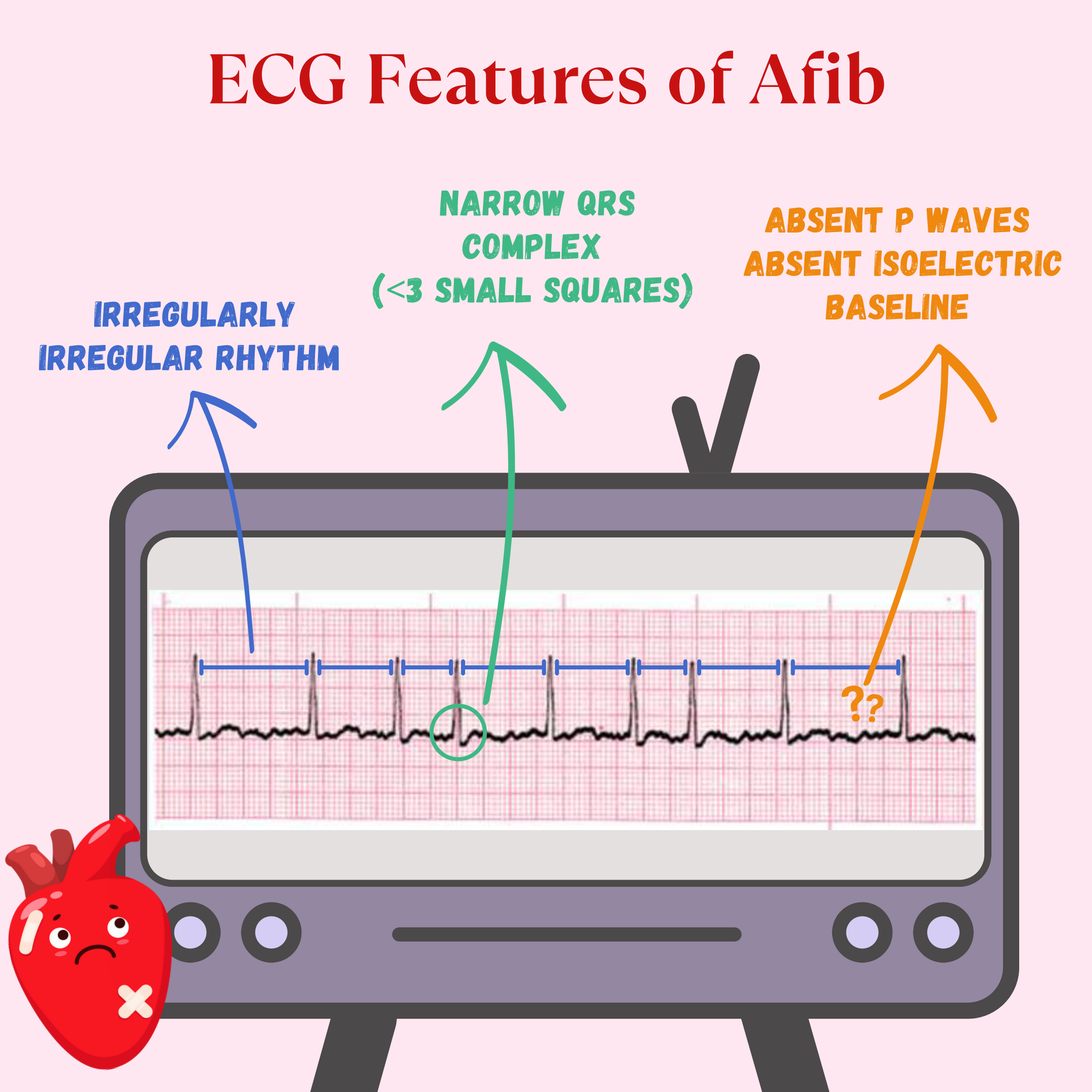
Rapid and irregular heartbeat is accepted
by both physician and patients
Rhythm control is not used

# ECG Features of Afib

IRREGULARLY IRREGULAR RHYTHM

NARROW QRS COMPLEX (<3 SMALL SQUARES)

ABSENT P WAVES
ABSENT ISOELECTRIC BASELINE



# Management of Afib

## 1. Stroke prevention

# $CHA_2DS_2$-VASc score

As soon as atrial fibrillation is diagnosed, assess the patient's stroke risk using $CHA_2DS_2$-VASc score and start anticoagulant therapy if appropriate, to prevent thromboembolic complications

| | |
|---|---|
| CHF (CONGESTIVE HEART FAILURE) | +1 |
| HYPERTENSION | +1 |
| AGE ⩾75 | +2 |
| DIABETES | +1 |
| STROKE | +2 |
| VASCULAR DISEASE | +1 |
| AGE 65-74 | +1 |
| SEX CATEGORY (FEMALE) | +1 |

| MALE | FEMALE |
|---|---|
| ⩾2 | ⩾3 |
| Anticoagulation indicated | |
| 1 | 2 |
| Consider anticoagulation | |
| 0 | 1 |
| Anticoagulation not necessary | |

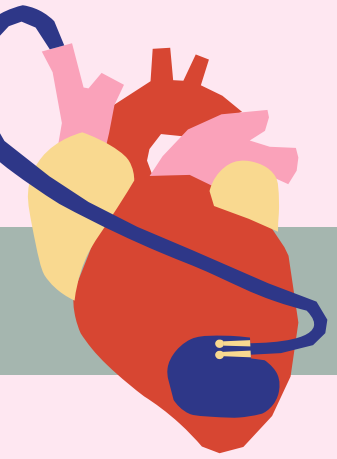
# Management of Afib

## 1. Stroke prevention

# Choice of Anticoagulation


| | Warfarin | DOAC |
|---|---|---|
| | Vitamin K antagonist | Drug examples<br>Factor Xa ⊗: apixaban, rivaroxaban<br>Direct thrombin ⊗: dabigatran |
| Indication | • Rheumatic mitral stenosis<br>• Mechanical heart valve<br>• Severe kidney impairment<br>• Another indication for warfarin e.g. APLS | • All other than those mentioned for warfarin |
| Monitoring | • Required (target INR 2-3) | • No routine monitoring required |

***The term 'valvular' atrial fibrillation has previously been used to describe Afib in patients who have rheumatic mitral stenosis and/or a mechanical heart valve. This term should be avoided as it can cause confusion.***



# Management of Afib

## 2. Rate control

**The aim of rate control:**
**to prevent haemodynamic deterioration by controlling ventricular rate**

### Pharmacological

Beta-blocker

Non-dihydropyridine CCB

Verapamil, diltiazem

Digoxin

### Non-pharmacological

Pacemaker insertion + AV nodal ablation

Patients with Afib whose rate is not adequately controlled by drugs

## 3. Rhythm control

**The aim of rhythm control:**
**to restore sinus rhythm and to improve symptoms in patients with Afib**

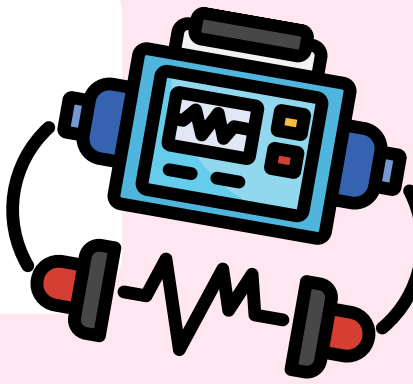
Swipe next for the algorithm!

### Cardioversion

Pharmacological: amiodarone

Electrical: synchronized DC cardioversion

Helpful for patients recently diagnosed with Afib / remain symptomatic despite adequate rate control therapy



# Management of Afib

## 3. Rhythm control - Cardioversion

Cardioversion has an inherent risk of causing thromboembolic events such as stroke. Anticoagulation is needed to reduce that risk.

**Cardioversion for acute Afib**

**Haemodynamically unstable**

**Anticoagulation & immediate DC electrical cardioversion**

**Haemodynamically stable**

**Afib <48 hrs**

At ↓ risk of developing LA thrombus

**Anticoagulation at the time of cardioversion**

**Afib >48 hrs / duration unknown**

At ↑ risk of developing LA thrombus

**Anticoagulation ⩾3 weeks**

**Cardioversion***

*For patients not anticoagulated, early cardioversion may be allowed if TOE is done to rule out LA thrombus

**Anticoagulation post-cardioversion**

4 weeks: $CHA_2DS_2$-VASc score 0 (male) or 1 (female)
Long-term: $CHA_2DS_2$-VASc score ⩾1 (male) or ⩾2 (female)

# TEST YOUR KNOWLEDGE!

A 71 year old woman with a history of hypertension presents with fatigue and rapid irregular palpitations. She normally takes enalapril for blood pressure control. Clinical examination reviews an irregularly irregular pulse, rate 125 beats/min, and BP 128/86 mmHg. Cardiovascular examination is otherwise normal. A 12-lead ECG is performed which shows atrial fibrillation with poor ventricular rate control, but no other abnormalities.

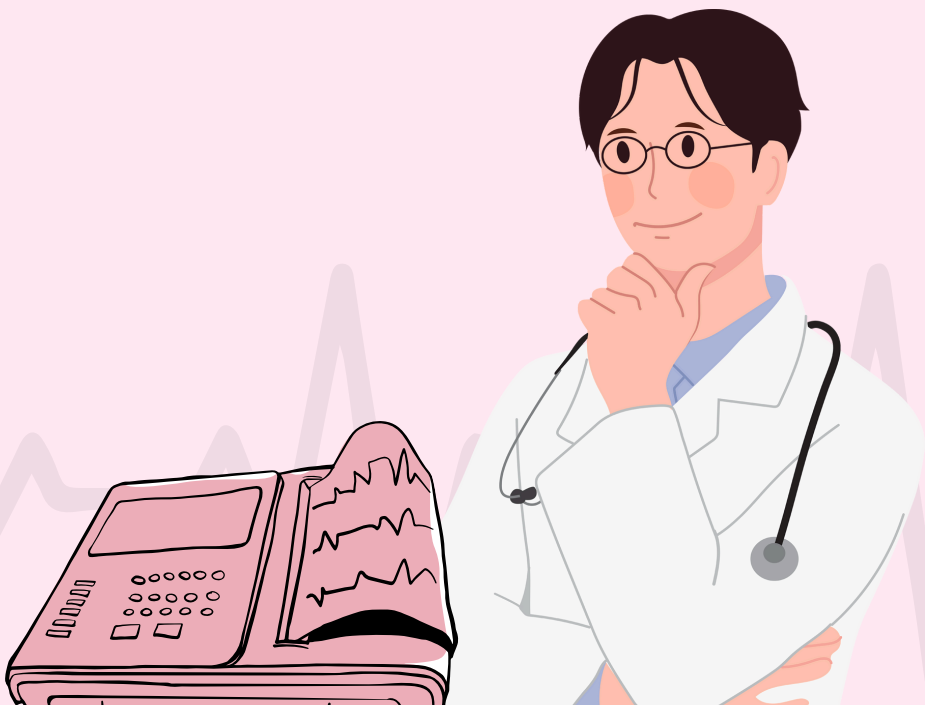
**Which of the following drugs is the most suitable agent to control heart rate in this patient?**

A) Adenosine

B) Amiodarone

C) B-blocker

D) Lidocaine



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