

# **The abnormal cardiac rhythm: Initial Management Considerations**

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# Overview of the Physiology

- The heart is a pulsatile pump that provides the driving force for flow
- Blood Pressure (MAP) = Cardiac Output (CO) x Systemic Vascular Resistance (SVR)
- CO = Stroke Volume (SV) x Heart Rate (HR)

# Clinical Presentation”I

Wide range of presentations

- Asymptomatic
- Palpitations
- Lightheadedness
- Malaise
- Anxiety
- *“I don’t feel like myself”*

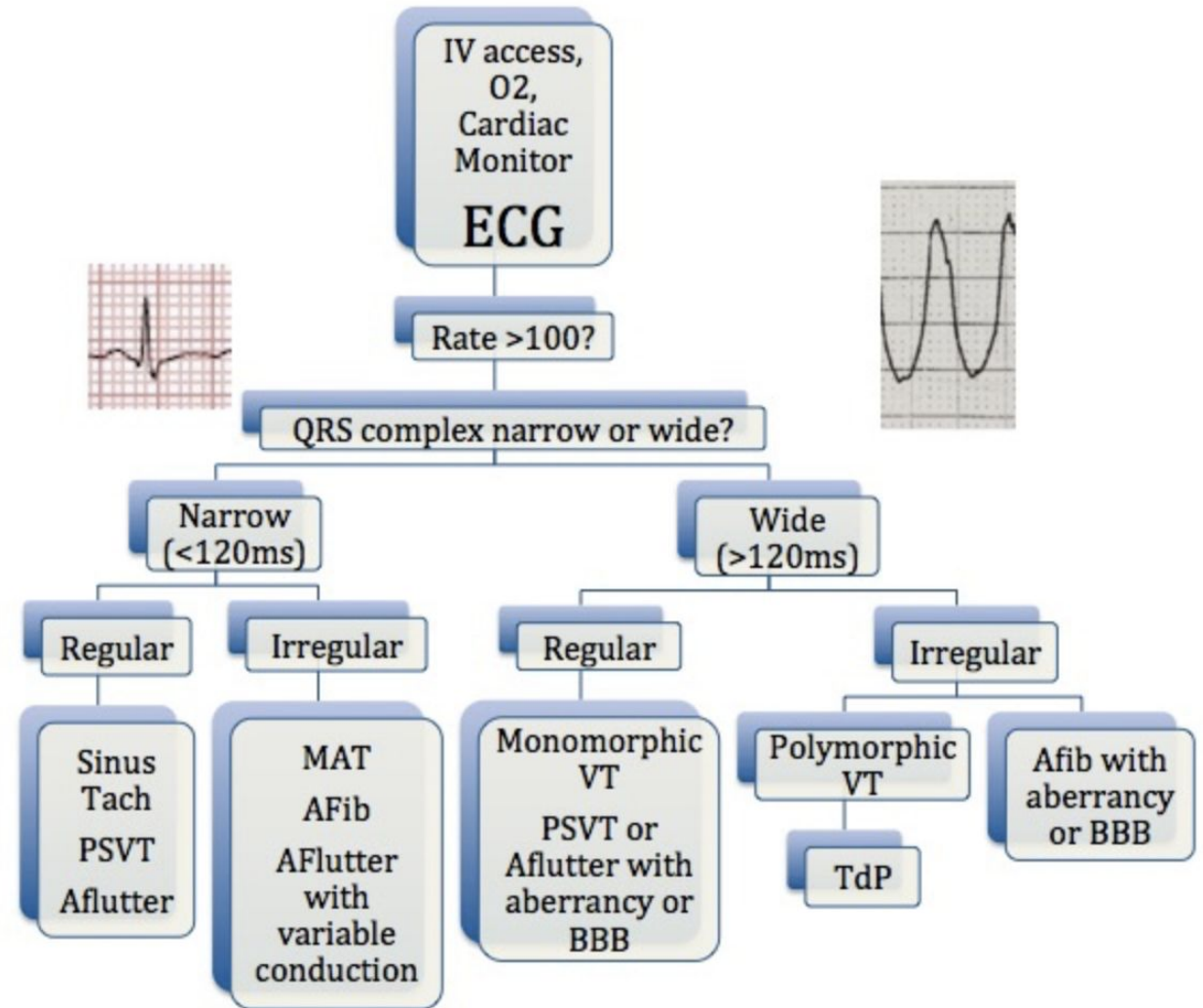
# Initial Assessment

- Follow the ABCDE approach
- Look/ask about features of the unstable abnormal rhythm
  - ☐ Altered Mental Status
  - ☐ Pulmonary Oedema or other features of Heart Failure
  - ☐ Syncope
  - ☐ Ischaemic Chest pain
  - ☐ Shock

*In the unstable patient, it may be necessary to obtain only an abbreviated history before Rx*

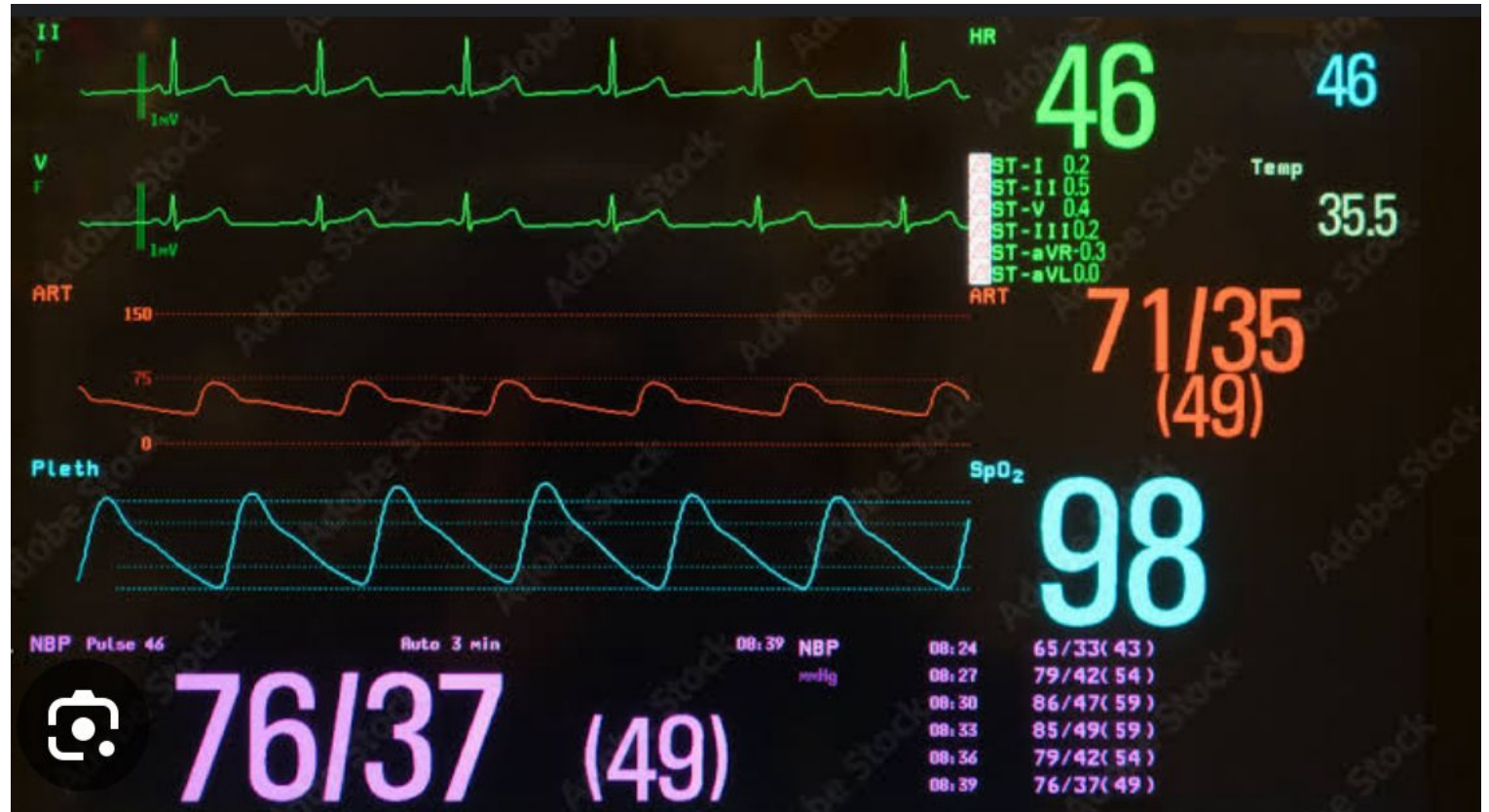
# Management: Unstable Tachyarrhythmias

- Max Heart Rate:  $220 - \text{Age}$
- Termination of Arrhythmia
- Electrical Cardioversion
  - Defibrillator (Energy?)
- Chemical Cardioversion
  - Drugs e.g Adenosine, Amiodarone etc



# Management: Unstable Bradyarrhythmias

- Common cause is Heart Blocks
- Stepwise approach
  - Atropine
  - Adrenaline/Isoprenaline
  - Pacing



*Whenever you can, find and treat the underlying cause*

# Diagnostics

- If the patient is stable;
  - Obtain a 12 lead ECG to determine Rhythm and assess for ischaemia/infarction
- Other tests:
  - ☐ Electrolytes
  - ☐ Troponins
  - ☐ Blood Gas
  - ☐ Thyroid Function
  - ☐ Urea & Creatinine
  - ☐ Urine VMA
  - ☐ ProBNP, Tox Screen, imaging

# Consultation & Disposition

- Physician/Cardiology consultation
- Disposition depends on the abnormal rhythm, the underlying causes, the general clinical appearance of the patient.



# Pearls and Pitfalls

- A systematic approach can be useful in the rapid assessment and treatment
- Recognize the hemodynamic consequences of the rhythm
- Avoid simply treating the symptoms rather than the tachy/bradysrhythmia
- Consider underlying precipitants of the abnormal rhythm such as infection, toxidromes, hypoxemia, ischemia, medication side effects, metabolic abnormalities, structural heart disease, pulmonary disease, medication non-compliance