

# Adult Monomorphic Tachycardia

## Wide Complex ( $\geq 0.12$ sec)



### History

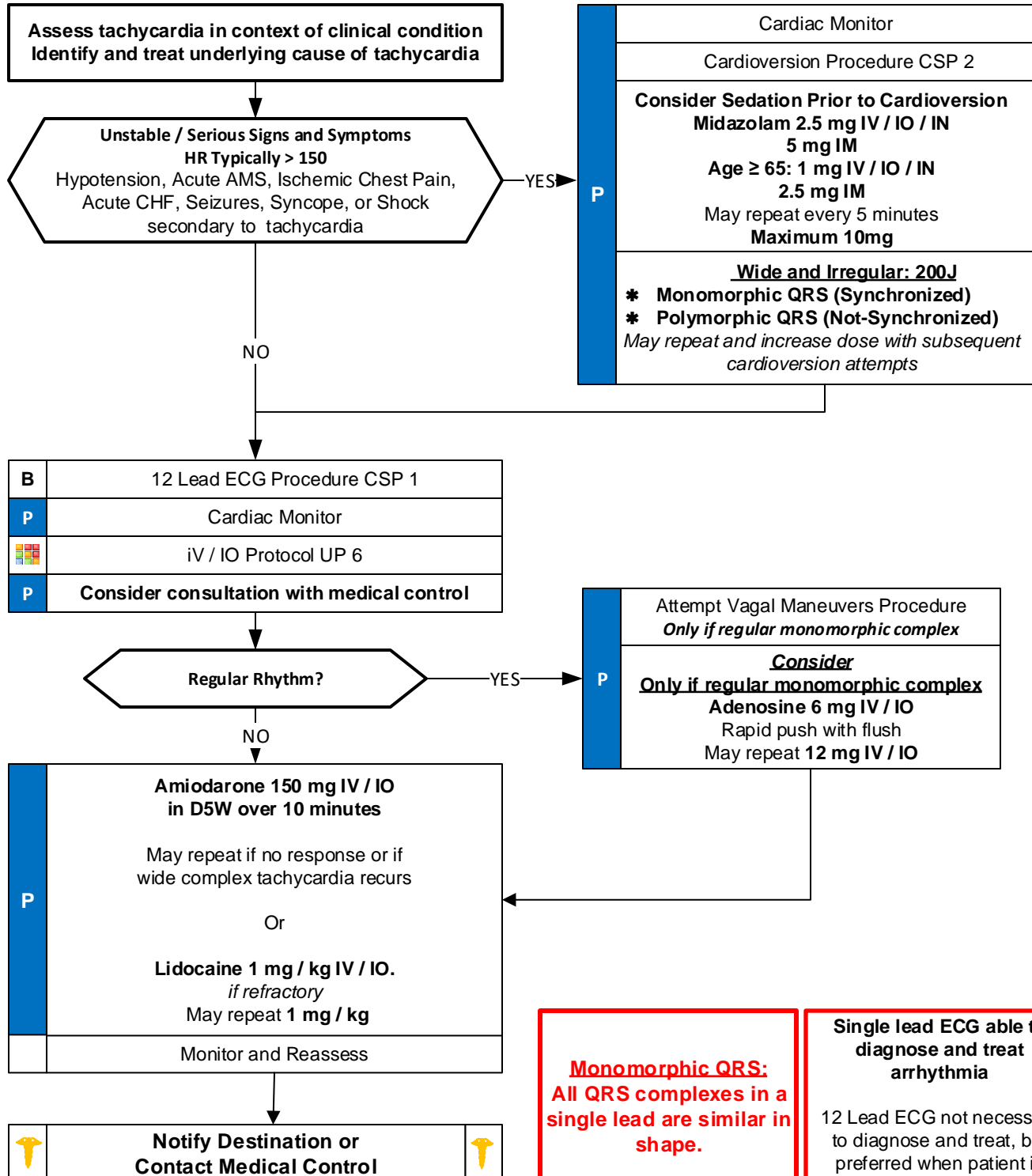
- \* Age
- \* Past medical history (MI, Angina, Diabetes, post menopausal)
- \* Recent physical exertion
- \* Palpitations, irregular heart beat
- \* Time (onset /duration / repetition)

### Signs and Symptoms

- \* Chest pain, heart failure, dyspnea
- \* AMS
- \* Shock, poor perfusion, hypotension
- \* Pale, diaphoresis
- \* Shortness of breath
- \* Nausea, vomiting, dizziness

### Differential

- \* Trauma vs. Medical
- \* Sinus Tachycardia vs. dysrhythmia
- \* Fever, sepsis, infection
- \* Pericarditis, pulmonary embolism
- \* Aortic dissection or aneurysm
- \* Overdose: Stimulants



**Monomorphic QRS:**  
All QRS complexes in a single lead are similar in shape.

**Single lead ECG able to diagnose and treat arrhythmia**

12 Lead ECG not necessary to diagnose and treat, but preferred when patient is stable.

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### Pearls

- \* **DO NOT** administer a Calcium Channel Blocker for wide complex tachycardia
- \* Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro
- \* Most important goal is to differentiate the type of tachycardia and if **STABLE** or **UNSTABLE** and **SYMPTOMATIC**.
- \* 12-Lead ECG:
  - 12 Lead ECG not necessary to diagnose and treat
  - Obtain when patient is stable and/or following rhythm conversion.
- \* Monomorphic QRS:
  - All QRS complexes in a single lead are similar in shape.
- \* Polymorphic QRS:
  - QRS complexes in a single lead will change shape from complex to complex.
- \* Rhythm should be interpreted in the context of symptoms and pharmacological or electrical treatment given only when symptomatic, otherwise monitor and reassess.
- \* Unstable condition
  - Condition which acutely impairs vital organ function and cardiac arrest may be imminent.
  - If at any point patient becomes unstable move to unstable arm in algorithm.
- \* Symptomatic condition
  - Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea, but cardiac arrest is not imminent.
  - Symptomatic tachycardia usually occurs at rates  $\geq 150$  beats per minute. Patients symptomatic with heart rates  $< 150$  likely have impaired cardiac function such as CHF.
- \* Serious Signs / Symptoms:
  - Hypotension. Acutely altered mental status. Signs of shock / poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute congestive heart failure.
- \* Search for underlying cause of tachycardia such as fever, sepsis, dyspnea, etc.
- \* Typical sinus tachycardia is in the range of 100 to (220 – patient's age) beats per minute.
- \* If patient has history or 12 Lead ECG reveals Wolff-Parkinson-White (WPW), **DO NOT** administer a Calcium Channel Blocker (e.g., Diltiazem) or Beta Blockers. Use caution with Adenosine and give only with defibrillator available.
- \* Regular Wide-Complex Tachycardia:
  - Unstable condition:
    - Immediate defibrillation if pulseless and begin CPR.
  - Stable condition:
    - Typically VT or SVT with aberrancy. Adenosine may be given if regular and monomorphic and if defibrillator available.
    - Verapamil contraindicated in wide-complex tachycardias.
    - Agencies using Amiodarone, Procainamide and Lidocaine need choose one agent primarily. Giving multiple anti-arrhythmics requires contact of Medical Control.
    - Atrial arrhythmias with WPW should be treated with Amiodarone or Procainamide
- \* Irregular Tachycardia:
  - Wide-complex, irregular tachycardia: Do not administer calcium channel, beta blockers, or adenosine as this may cause paradoxical increase in ventricular rate. This will usually require cardioversion. Contact Medical Control.
- \* Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.