



# Adult Monomorphic Tachycardia

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

### History

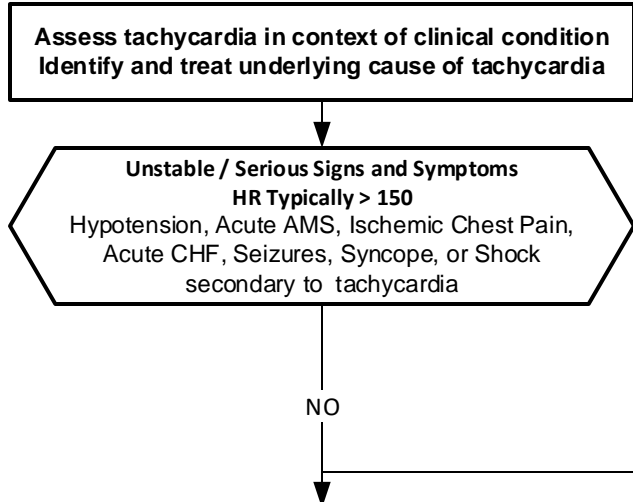
- Age
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Recent physical exertion
- Palpitations, irregular heart beat
- Time (onset/duration / repetition)

### Signs and Symptoms

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

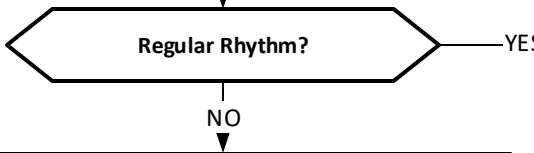
### Differential

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



	Cardiac Monitor
	Cardioversion Procedure
	<b>Consider Sedation Prior to Cardioversion</b>
	<b>Midazolam 2 – 2.5 mg IV / IO</b> May repeat as needed <b>Maximum 10 mg</b>
	<b>Wide and Irregular: 200 – 360J</b>
P	<ul style="list-style-type: none"> <li>• <b>Monomorphic QRS (Synchronized)</b></li> <li>• <b>Polymorphic QRS (Not-Synchronized)</b></li> </ul>
	<i>May repeat and increase dose with subsequent cardioversion attempts</i>

B	12 Lead ECG Procedure
P	Cardiac Monitor
	IV or IO Access Protocol UP 6
P	<b>Consider consultation with medical control</b>



	Attempt Vagal Maneuvers Procedure <i>Only if regular monomorphic complex</i>
P	<b>Consider</b> <b>Only if regular monomorphic complex</b> <b>Adenosine 6 mg IV / IO</b> Rapid push with flush May repeat <b>12 mg IV / IO</b>

P	<b>Amiodarone 150 mg</b> in 100 mL of D5W IV / IO Infuse over 10 minutes  May repeat if wide complex tachycardia recurs  <b>Amiodarone 450 mg</b> in 250 mL of D5W <b>1 mg/min (33 mL/hr) IV / IO</b>  Or <b>Procainamide 20 – 50 mg / min IV / IO</b>  <b>Procainamide 1 – 4 mg / min</b>  <b>Maximum 17 mg / kg</b>
	Monitor and Reassess
	<b>Notify Destination or Contact Medical Control</b>

**Monomorphic QRS:**

- All QRS complexes in a single lead are similar in shape.



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### Pearls

- **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  $(220 - \text{patients age})$  beats per minute.
- If patient has history or 12 Lead ECG reveals Wolfe 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.