Adult Monomorphic Tachycardia

Wide Complex (≥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. dysrrhythmia
- Fever, sepsis, infection
- Pericarditis, pulmonary embolism
- Aortic dissection or aneurysm
- Overdose: Stimulants

Assess tachycardia in context of clinical condition
Identify and treat underlying cause of tachycardia

Unstable / Serious Signs and Symptoms
HR Typically > 150
Hypotension, Acute AMS, Ischemic Chest Pain, Acute CHF, Seizures, Syncope, or Shock secondary to tachycardia

YES →

P	
	Cardiac Monitor
	Cardioversion Procedure
	Consider Sedation Prior to Cardioversion **Midazolam 2 – 2.5 mg IV / IO** May repeat as needed **Maximum 10 mg**
	<u>Wide and Irregular: 200 – 360J</u> • **Monomorphic QRS (Synchronized)** • **Polymorphic QRS (Not-Synchronized)** *May repeat and increase dose with subsequent cardioversion attempts*

NO ↓

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

Regular Rhythm?

YES →

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

NO ↓

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

<u>Monomorphic QRS:</u>
- **All QRS complexes in a single lead are similar in shape.**

Adult Cardiac Protocol Section

Adult Monomorphic Tachycardia

Wide Complex (≥0.12 sec)

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 ≥ 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 – 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.