Adult Tachycardia

Wide Complex (≥0.12 sec) REGULAR RHYTHM

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	Cardioversion Procedure
	Wide and Regular: 100J
	Wide and Irregular: 200 – 360J (Not Synchronized)
	May repeat and increase dose with subsequent cardioversion attempts
	Consider Sedation Prior to Cardioversion
	Midazolam 2 – 2.5 mg IV / IO May repeat as needed **Maximum 10 mg**

NO ↓

B	12 Lead ECG Procedure
A	IV / IO Procedure
P	Cardiac Monitor

↓

REGULAR RHYTHM and Monomorphic QRS Complex

NO → (skip to Consider consultation with medical control if patient is stable)

YES ↓

P	**Adenosine 6 mg IV / IO** Rapid push with flush May repeat **12 mg IV / IO** May repeat **12 mg IV / IO**
	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 Maximum 17 mg / kg** **Procainamide 1 – 4 mg / min** Or **Lidocaine 1 mg / kg IV / IO. If infusion is initiated > 15 minutes from first bolus, repeat 1 mg / kg bolus**

↓

P	**Consider consultation with medical control if patient is stable**

↓

RHYTHM CONVERTS

YES →

B	12 Lead ECG Procedure
	Monitor and Reassess

NO ↓

	Monitor and Reassess

↓

Notify Destination or Contact Medical Control

Single lead ECG able to diagnose and treat arrhythmia

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

Adult Cardiac Protocol Section

Adult Tachycardia

Wide Complex (≥0.12 sec) IRREGULAR RHYTHM

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	Cardioversion Procedure
	Wide and Regular: 100J
	Wide and Irregular: 200 – 360J (Not Synchronized)
	May repeat and increase dose with subsequent cardioversion attempts
	Consider Sedation Prior to Cardioversion
	Midazolam 2 – 2.5 mg IV / IO May repeat as needed **Maximum 10 mg**

NO ↓

B	12 Lead ECG Procedure
A	IV / IO Procedure
P	Cardiac Monitor

IRREGULAR RHYTHM and MONOMORPHIC QRS Complex

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 Maximum 17 mg / kg
	Procainamide 1 – 4 mg / min
	Or
	Lidocaine 1 mg / kg IV / IO. If infusion is initiated > 15 minutes from first bolus, repeat 1 mg / kg bolus

P	**Consider consultation with medical control if patient is stable**

RHYTHM CONVERTS — YES → B: 12 Lead ECG Procedure; Monitor and Reassess

NO ↓

Monitor and Reassess

IRREGULAR RHYTHM and POLYMORPHIC QRS Complex

Airway Protocol(s) AR 1, 2, 3 **as indicated**

Pulseless VF / VT Protocol AC 8
Cardiac Arrest Protocol AC 3
as indicated

Single lead ECG able to diagnose and treat arrhythmia

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

Notify Destination or Contact Medical Control

Adult Cardiac Protocol Section

Adult 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.**
- **Rhythm should be interpreted in the context of symptoms**
- **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.**
- **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.**
- **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.
- **Regular Wide-Complex Tachycardias:**
  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 Tachycardias:**
  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.
- **Polymorphic / Irregular Tachycardia:**
  This situation is usually unstable and immediate defibrillation is warranted.
  When associated with prolonged QT this is likely Torsades de pointes: Give 2 gm of Magnesium Sulfate slow IV / IO.
  Without prolonged QT likely related to ischemia and Magnesium may not be helpful.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.