Adult Cardiac Protocol Section

**Adult Tachycardia**

Wide Complex (QRS > 0.12 sec) REGULAR RHYTHM

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

- **Clinical Operating Guidelines AC-7**
  - This protocol has been altered from the original NCCEP Protocol by the Durham County EMS Medical Director
  - Revised 1/2020

**Cardioversion Procedure**

- **Wide and Regular: 100J** (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
  - OR
  - Fentanyl 50-75 mcg IV/IO/IN
    - If Midazolam contraindicated
    - DO NOT Administer BOTH Fentanyl AND Midazolam

**12 Lead ECG Procedure**

- **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**

**Monitor and Reassess**

**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 100 mg in 100 mL of D5W**
- 1 mg/min (60 mL/hr)
  - OR
- **Lidocaine 1 mg / kg IV / IO.**
  - If infusion is initiated > 15 minutes from first bolus, repeat 1 mg / kg bolus

**Consider consultation with medical control if patient is stable**
Adult Cardiac Protocol Section

Adult Tachycardia

Wide Complex (QRS ≥ 0.12 sec) IRREGULAR RHYTHM

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

Yes

Cardioversion Procedure
Wide and Irregular: 100/150/200J (Synchronized)
May repeat and increase dose with subsequent defib attempts

Consider Sedation Prior to Cardioversion
Midazolam 2 – 2.5 mg IV / IO
May repeat as needed
Maximum 10 mg
OR
Fentanyl 50-75 mcg IV/IO/IN
If Midazolam contraindicated
DO NOT Administer BOTH Fentanyl AND Midazolam

No

12 Lead ECG Procedure

IRREGULAR RHYTHM and MONOMORPHIC QRS Complex

Amiodarone 150 mg in 100 mL of D5W IV / IO
Infuse over 10 minutes
May repeat if wide complex tachycardia recurs
Amiodarone 100 mg in 100 mL of D5W
1 mg/min (60 mL/hr)
OR
Lidocaine 1 mg / kg IV / IO.
If infusion is initiated > 15 minutes from first bolus, repeat 1 mg / kg bolus

Consider consultation with medical control if patient is stable

RHYTHM CONVERTS

Yes

B
12 Lead ECG Procedure

P
Monitor and Reassess

Notify Destination or Contact Medical Control

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.
Adult Tachycardia
Wide Complex (QRS ≥ 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:
- 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.
- Typical sinus tachycardia is in the range of 100 to (220 - patient’s age) beats per minute.

Regular Wide-Complex Tachycardias:
- Unstable condition:
  - Immediate cardioversion. If pulseless, begin CPR and immediate defibrillation.
- Stable condition:
  - Arrhythmias with known or suspected WPW should be treated with Amiodarone if the patient is stable.

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.