

Kittitas County Prehospital EMS Protocols

SUBJECT: **CARDIAC ARRHYTHMIAS**

- A. If stable, administer O₂ @ 4-6 lpm per nasal cannula.
- B. If unstable, administer O₂ @ 12-15 lpm per non-rebreather mask.
- C. Establish cardiac monitor/defibrillator.
- D. Establish peripheral IV access with Isotonic Crystalloid @ TKO.

Ventricular Tachycardia (Stable)

- A. In the conscious, stable patient:
 - 1. Administer **Amiodarone**, 150 mg IV infusion over 10 minutes.
 - 2. Start **Amiodarone** drip if converted at 1 mg/min.

Ventricular Tachycardia (Unstable)

- A. If patient is unstable (i.e., chest pain, dyspnea, systolic BP < 80 mm Hg, decreased LOC, or signs of pulmonary congestion):
 - 1. Initiate synchronized cardioversion @ 100 j.
 - 2. If no response, initiate synchronized cardioversion at 200 j, with subsequent shocks at 300 j and then 360 j.
 - 3. Prior to shocks, if patient is conscious and no significant delay would result, consider sedation/pain management (keep in the presence of hypotension, pulmonary edema, or unconsciousness).
- B. After conversion, or if recurrent after initial attempts at conversion,
 - 1. Administer **Amiodarone** 150 mg IV infusion over 10 minutes.
 - 2. Start **Amiodarone** drip at 1 mg/min.

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Wide Complex Tachycardias (of uncertain type in a conscious, stable patient)

- A. Establish 12 lead ECG.
- B. Consider **Adenosine 6 mg/rapid IV push** only if regular and monomorphic, to be followed by an immediate 50-60 ml NaCl flush. Alternatively, mix **Adenosine** in 50-60cc saline and push through 60cc syringe as combined drug/saline syringe bolus.
- C. Administer **Amiodarone 150 mg IV infusion over 10 minutes**.
- D. Start **Amiodarone** drip at 1mg/min.

Supraventricular Tachycardia / Atrial Fibrillation or Atrial Flutter

- A. If systolic BP < 80 mm Hg, or a decreased LOC:
 - 1. Initiate synchronized cardioversion @ 100 j.
 - 2. If no response, initiate synchronized cardioversion at 200 j, with subsequent shocks at 300 j and then 360 j.
 - 3. Prior to shocks, if patient is conscious and no significant delay would result, consider sedation/pain management (keep in the presence of hypotension, pulmonary edema, or unconsciousness).
- B. If patient is normotensive but symptomatic (e.g., dyspnea, chest pain, or decreased LOC):
 - 1. Place in Trendelenburg position and have patient perform Valsalva Maneuver (take deep breath and hold).
 - 2. If SVT is irregular or confirmed as atrial fibrillation or atrial flutter, *do not* administer **Adenosine**.
 - 3. Administer **Adenosine, 6.0 mg rapid IV push**, to be followed by an immediate 50-60 ml NaCl flush (60cc syringe rapid push). Alternatively, mix **Adenosine** in 50-60cc saline and push through 60cc syringe as combined drug/saline syringe bolus. Skip to Diltiazem if contraindicated.
 - 4. If no conversion after 2 minutes, administer **Adenosine 12 mg rapid IV push**, to be followed by an immediate 50-60 ml NaCl flush. Alternatively, mix **Adenosine** in 50-60cc saline in a 60cc syringe as combined drug /saline syringe bolus.
 - 5. Consider obtaining 12 lead ECG.

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6. If no conversion with **Adenosine**, consider **Amiodarone** 150 mg IV infusion over 10 minutes.
 7. Start **Amiodarone** drip at 1 mg/min.
- C. If Atrial fibrillation or atrial flutter is confirmed:
1. Diltiazem 0.25 mg/kg SLOW IV push over 2 minutes. Consider infusing in 100cc NaCl bag and infusing over 10 minutes for blood pressures <110mmHg systolic.
 - a. If patient becomes hypotensive (SBP<100mmHg) consider 500cc fluid bolus if no signs of fluid overload/pulmonary congestion.
 - b. Repeat dose if clinically ineffective after 10 minutes 0.35mg/kg over 2-3 minutes.
 2. Consider **Amiodarone** 150 mg IV over 10 minutes as second line therapy.
 3. Start **Amiodarone** drip at 1 mg/min.

Bradycardia's/AV Blocks

- A. If ECG shows 2nd degree AV block, 3rd degree AV block, junctional rhythm, or bradycardia with a heart rate < 60/minute, and patient symptomatic (e.g., systolic BP < 80 mm Hg, ischemic chest pain):
1. Administer **Atropine** 1.0 mg IV bolus, up to a total of 3 mg.
 2. Consider external cardiac pacing.
- B. Consider **Epinephrine Infusion**, mix 1 mg per 100 ml of Isotonic Crystalloid for a concentration of 10 mcg/ml. Administer IV piggyback @ 2-10 mcg/min, until BP ≥ 90 mm Hg systolic.
- C. If unresponsive to **Atropine** and pacing, and patient remains hypotensive, may use Levophed. Administer **Levophed** at initial rate of 2-4mcg/min IV/IO, titrated to maintain systolic blood pressure >90mmHg. Consult drip table for rates, rate adjustments should be limited to 2-4 mcg/min every 5 minutes, up to 30mcg/min.