

SECTION: C-1**TITLE: Adult Cardiac and Respiratory Arrest****REVISED: March 30, 2012**

Attention to “the basics” during cardiac arrest is equally important as ALS drug therapies.

BLS-Specific Care

- For **unwitnessed arrest**: Consider 2 minutes of good, sustained, and effective CPR prior to defibrillation or AED attachment.
- For **witnessed arrest**, or after 2 minutes of good, effective and sustained CPR: AED use per 2010 AHA guidelines and manufacturer recommendations.
 - Single shocks are recommended to reduce interruption of CPR.
- When possible, reduce interruptions of chest compressions.
- When VF/pulseless ventricular tachycardia (VT) is present, deliver 1 shock and **immediately** resume CPR, beginning with chest compressions. **Do not delay resumption of chest compressions to recheck the rhythm or pulse.**
- After 5 cycles (about 2 minutes) of CPR, analyze the cardiac rhythm and deliver another shock if indicated. If a non-shockable rhythm is detected, resume CPR immediately.
- Careful use of BVM, airway adjuncts. Ventilations should occur over 1-2 seconds.
- Avoid hyperventilation/hyperinflation.
- Notify responding ALS unit ASAP.
- Apply LUCAS Chest Compression system when available

ILS-Specific Care

- Combitube as appropriate.
- Obtain peripheral vascular access.
 - IV: 200-500 cc crystalloid solution. Repeat PRN.

ALS-Specific Care

- Advanced airway management as appropriate.
- Rhythm-specific therapy (*see appropriate protocols*).
- The precordial thump may be considered for patients with witnessed, monitored, unstable VT (including pulseless VT) if a defibrillator is not immediately ready for use, but it should not delay CPR and shock delivery.
- Epinephrine
 - IV: 1 mg IVP every 3-5 minutes, or
 - ETT: 2-2.5 mg of 1:1,000 diluted to 8-10 cc every 3-5 minutes.
Consider underlying causes of cardiac arrest and treat accordingly.

Consider as appropriate:

- Sodium bicarbonate for known hyperkalemia, bicarb acidosis (DKA, TCA), prolonged resuscitation after ROSC.

Protocol C-1

Adult Cardiac / Respiratory Arrest

- IV: 1 mEq/kg repeated in 10 minutes (if still in arrest) at 0.5 mEq/kg. Minimum initial dose is 50 mEq. Follow TCA recommendations if TCA overdose is suspected.

ALS-Specific Care

Continued

- Calcium chloride for suspected hyperkalemia, calcium channel blocker OD, or suspected hypocalcemia.
 - IV: 500-1000 mg IVP.
 - Also administer sodium bicarbonate at 1 mEq/kg afterward. **Flush line thoroughly between medications.**
- Albuterol sulfate (high dose) for suspected hyperkalemia.
 - ETT: 10 mg (4 unit-doses) directly instilled into the ETT, followed by brief hyperventilation.
- Narcan (naloxone) for suspected narcotic overdose.
 - IV or ETT: 2 mg repeated PRN.
- Dextrose 50% for hypoglycemia.
 - IV: 12.5-50 g

Physician Pearls: Outside of the Comfort One/DNR situations (*see Appendix T*), once ALS intervention is initiated, Medical Control should be called prior to ceasing efforts. In addition, BLS interventions, an advanced airway, and at least 10 minutes of rhythm-appropriate therapy should have been performed prior to considering termination of efforts.

The American Heart Association (AHA) *2010 Guidelines for CPR and Emergency Cardiac Care* recommends:

- Good, sustained, and effective CPR. **“Push hard and fast.”**
- **Sustained coronary perfusion is believed essential for the heart to respond to defibrillation; any interruption in compressions should be minimized or avoided.** Even brief interruptions of compressions, such as those seen in the pause for ventilations or defibrillation, result in a rapid decrease of coronary perfusion.
- Change to a one-shock protocol. Frequent or long interruptions in precordial chest compressions for rhythm analysis or rescue breathing were associated with post resuscitation myocardial dysfunction and **reduced survival rates**. According to the AHA, “... if one shock fails to eliminate VF, the incremental benefit of another shock is low, and **the resumption of CPR is likely to confer a greater value than another shock.**” Therefore, when a shockable rhythm is found, **only one shock instead of three stacked shocks is recommended.**