

SECTION: C-01

TITLE: Adult Cardiac and Respiratory Arrest

REVISED: June 01, 2019

Attention to “the basics” during cardiac arrest is equally important (if not more important than) as ALS drug therapies.

BLS-Specific Care

- Perform high performance Cardiopulmonary Resuscitation (AKA “Pit Crew”, see appendix 30)
 - For an **unwitnessed arrest**: Perform approximately 2 minutes/200 compressions of good, sustained, and effective CPR prior to defibrillation or AED attachment
 - For a **witnessed arrest**, or after approximately 2 minutes/200 compressions of good, effective and sustained CPR: AED use per AHA guidelines and manufacturer recommendations
 - For a suspected **DROWNING/SUBMERSION**, providers should begin with five high quality ventilations, then proceed with approximately 2 minutes/200 compressions of good, sustained, and effective CPR prior to defibrillation or AED attachment.
 - Ignore any “foam”, sputum, or copious oral secretions in the mouth during initial ventilations. Suction only after initial 5 ventilations but do not interrupt high quality resuscitation to do so.
 - Emphasis on minimizing interruptions and maximizing the compression fraction of high quality compressions.
 - Apply LUCAS Chest Compression system (if/when available) as described in appendix 30.
- Careful use of BVM, airway adjuncts. Ventilations should occur over 1-2 seconds
- Reduce interruptions of compressions, particularly the “peri-shock pause” as much as possible.
- Avoid hyperventilation/hyperinflation
- Notify responding ALS unit ASAP

AEMT/O.M. Specific Care

- Supra-glottic Airway as appropriate
- Obtain peripheral vascular access
 - IV: 200-500 ml crystalloid solution. Repeat PRN

ALS-Specific Care

- Advanced airway management as appropriate
- Rhythm-specific therapy (*see appropriate protocols*)
- Epinephrine
 - IV/IO: 1 mg 1:10,000 IVP every 3-5 minutes,
- Consider underlying causes of cardiac arrest and treat accordingly.

Consider as appropriate:

Anti-arrhythmic therapy:

- Lidocaine (Xylocaine)
 - IV/IO: 1.0 to 1.5 mg/kg IV bolus, can repeat in 3-5 minutes **not to exceed 3 mg/kg or 300 mg in 30 minutes (not including infusion)**
 - **Maintenance Infusion:** 2-4 mg/minute titrated for effect, to be initiated if V-fib/V-Tach resolves. (Start @ 2 mg/min & add 1 mg/min for each additional 1 mg/kg IV bolus)
 - 1 mg/kg bolus = 2 mg/min.
 - 1.5-2 mg/kg total bolus = 3 mg/min.
 - 2.5-3 mg/kg total bolus = 4 mg/min.
 - Always give full initial dose, but reduce all subsequent doses by ½ for elderly (>70) or with impaired hepatic function.
- Amiodarone
 - IV/IO 300 mg initial dose.
 - Consider repeat x1 150 mg 3-5 min.
- Magnesium Sulfate
 - IV: 2 g every 5 minutes,
 - 1st line for Torsades or refractory V-Fib/Pulseless V-Tach.
 - Administer in conjunction with lidocaine if hypomagnesemia suspected.
 - Consider for refractory VF/pulseless VT.

Sedation for CPR induced consciousness (Confirm continued pulseless-ness):

- IV/IO Ketamine: 1-2 mg/kg for CPR induced consciousness. May repeat if needed in 5-10 minutes.

Other specific therapy:

- Sodium bicarbonate for known hyperkalemia, suspected acidosis, TCA toxicity, and prolonged resuscitation.
 - 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
 - Consider dilution of Bicarb if given IO
- Calcium chloride for suspected hyperkalemia, calcium channel blocker OD, or suspected hypocalcemia
 - IV, IO: 500-1000 mg IVP
 - Administer sodium bicarbonate at 1 mEq/kg afterward for suspected hyperkalemia. **Flush line thoroughly between medications**
- Narcan (naloxone) for suspected narcotic overdose *with cardiac arrest*
 - IV, IO: 2 mg repeated PRN
- Dextrose 50% for hypoglycemia
 - IV/IO: 12.5-50 g
 - (Consider dilution of Dextrose if given IO or through small veins)

Physician Pearls: Outside of the POST/Comfort One/DNR situations (see *Appendix 26*), once ALS intervention is initiated; Medical Control should be called prior to ceasing efforts. In addition, BLS interventions, an advanced airway, and at least 20 minutes of rhythm-appropriate therapy should have been performed prior to considering termination of efforts.

Use waveform ETCO₂ as a gauge for effectiveness of resuscitation as well as monitoring CETT placement.