Post Resuscitation

Return of Spontaneous Circulation

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Repeat Primary Assessment

Do Not Move Pt for 10 minutes unless STEMI

Optimize Ventilation and Oxygenation

- Remove Impedance Threshold Device
- Respiratory Rate 10 / minute
- Maintain SpO2 92 – 98%
- DO NOT HYPERVENTILATE
- Prepare Vasopressors

B	• ETCO2 ideally 35 – 45 mm Hg
	Airway Protocol(s) AR 1, 2, 3, 4 ***as indicated***
B	12 Lead ECG Procedure
	IV or IO Access Protocol UP 6
P	Cardiac Monitor
	Monitor Vital Signs / Reassess
	Search for reversible causes

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	Chest Pain and STEMI Protocol AC 4 ***if indicated***
	Hypotension / Shock Protocol AM 5 ***as indicated***
A P	**Optimize Systolic BP and Mean Arterial BP** • Systolic BP > 90 mmHg • Mean Arterial BP > 65 mmHg
	Appropriate Arrhythmia Protocol(s) AC 2, 6, 7 ***as indicated***
	Seizure Protocol UP 13 ***as indicated***
	Post Intubation BIAD Management Protocol AR 8
	Targeted Temperature Management Protocol AC 13 ***if available***

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Notify Destination or Contact Medical Control

Transport Destination Decision

Post-resuscitation patient is medically complex.

Consider facility capabilities:

- 24-hour cardiac catheterization laboratory
- Medical ICU service
- Cardiology service
- Neurology service
- Pulmonologyservice
- Targeted Temperature Management

Reversible Causes

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

Arrhythmias are common and usually self limiting after ROSC

If Arrhythmia Persists follow Rhythm Appropriate Protocol

Post Resuscitation

ROSC - 10 Minute Cool Down Rules

*** Do not move Pt for 10 minutes POST ROSC Unless CLEAR STEMI **

1. Full Assessment / Vitals / 12 Lead EKG2
2. Secure Airway - No RSI/DAI unless absolutely needed – Highly likelihood of rearrest
3. Correct Hypotension
4. Correct Hypoxia – Do Not Hyperventilate

Pearls

- **Recommended Exam: Mental Status, Neck, Skin, Lungs, Heart, Abdomen, Extremities, Neuro**
- **Continue to search for potential cause of cardiac arrest during post-resuscitation care.**
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided. Titrate FiO_2 to maintain SpO_2 of 92 - 98%.**
- **Pain/sedation:**
  - **Patients requiring advanced airways and ventilation commonly experience pain and anxiety.**
  - **Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.**
  - **Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.**
  - **Vital signs such has tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.**
  - **Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.**
- **Ventilator / Ventilation strategies:**
  - **Tailored to individual patient presentations. Medical Control can indicate different strategies above.**
  - **In general ventilation with BVM should cause chest rise. With mechanical ventilation a reasonable tidal volume should be about 6 mL/kg and peak pressures should be < 30 cmH20.**
  - **Continuous pulse oximetry and capnography should be maintained during transport for monitoring.**
  - **Head of bed should be maintained at least 10 – 20 degrees of elevation when possible to decrease aspiration risk.**
- **EtCO2 Monitoring:**
  - **Initial End tidal CO2 may be elevated immediately post-resuscitation, but will usually normalize.**
  - **Goal is 35 – 45 mmHg but avoid hyperventilation to achieve.**
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of 90 – 100 mmHg or Mean Arterial Pressure (MAP) of 65 – 80 mmHg.**
- **STEMI (ST-Elevation Myocardial Infarction)**
  - **Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.**
  - **Consider placing defibrillator pads on patient as a precaution.**
  - **Document and time-stamp facility STEMI notification and make notification as soon as possible.**
  - **Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).**
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- Targeted Temperature Management (optional):
  - Maintain core temperature between 32 - 36°C.
  - Infusion of cold saline is NOT recommended in the prehospital setting.
  - No evidence suggests improved survival with prehospital cooling.
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post-resuscitation management may best be planned in consultation with Medical Control.