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| **Case Title**  | Myocardial Infarction – Refractory VF Arrest - ECMO |
| **Scenario Name** | ECMO possibility  |

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| **Learning Objectives -** [**Use action words**](http://ubccpd.ca/sites/ubccpd.ca/files/Accreditation_Learning%20Objectives_%20Verbs.pdf) |
| **Knowledge:**1. Apply basic ACLS protocols
2. Demonstrate management of V. Fib Arrest
3. Demonstrate initial management of chest pain
4. Demonstrate initial management of Acute MI
 |
| **Skills:**1. Perform high quality CPR
2. Perform defibrillation
3. Perform intubation
4. Demonstrate EKG interpretation
 |
| **Attitude/Behaviours**1. Demonstrate Team skills
2. Demonstrate Situational awareness
3. Demonstrate Graded Assertiveness
 |
| **Scenario Environment** |
| **Location** | ED |
| **Monitors** | Telemtry/Crash Cart/defibrillator |
| **Props/Equipment** | EMS stretcher brought to right side of ED gurney Chlorhexidine and trauma shears for RNArt line and Mac cath set US at bedside with sterile sheath IV, MedsAirway equipmentEKG |
| **Make-up/Moulage** | None |
| **Potential Distractors** | None |

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| **Case Introduction:** |
| 58 y.o. Caucasian male presenting with chest pain at work during argument with co-worker. 45 minutes of central chest pain and SOB. Witnessed arrest. Immediate bystander CPR  |

| **Patient Parameters** | **Effective Management** | **Notes** |
| --- | --- | --- |
| **Phase 1: VF arrest****Condition:** Unstable, CPR ongoing. **Initial Assessment*** **Heart Rhythm:** VF
* **HR:**
* **BP:** 0
* **RR:** 0
* **SP02:** 0
* **T:** 36.6 C
* **Glucose:** 6.5
* **CNS:** GCS 3
* **CVS:** None. US no contractility
* **GI:**
* **Weight:** 154lbs
* **Height:** 5’9”
 | 1. **Take a focused history from EMS** (see Notes column)
2. **Medical Management**
* ECG, goal within 10 mins
* Cardiac monitor
* Oxygen
* IV access (x2 NOT right wrist)
* Cardiac labs
* Meds: Epi +/- amiodarone

 | **1. Focused history**Was having argument with co-worker when sudden central chest pain developed. Ongoing x 45 mins. SOB. Denies cardiac history. Witnessed arrest with immediate bystander CPR. EMS arrival <5min. Defibrillated with ROSC. Lost pulses as arrived in ED. CPR immediately resumed. **PMHx*** Smoker
* HTN

**Meds*** HCTZ
* Ramipril
* Atorvastatin

**Allergies*** None
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| **Phase 2: V. Fib Arrest****Condition:** CodingPatient unresponsive, eyes closed, apneic**Physical Examination*** **Heart Rhythm:** Ventricular Fibrillation
* **BP:** no reading
* **RR:** apneic
* **CNS:** GCS 3
 | 1. **Patient Reassessment** (see Notes column)-*Recognizes change in condition*
2. **Medical Management:**
* CPR
* Directs RN to lead code (ACLS protocol)
* Directs 2nd RN to prepare for lines
* Intubates patient
* Defibrillate and follow ACLS Protocol in conjunction with RN
* Directs 2nd MD to start femoral access with US
 | 1. **Patient Reassessment**

**Airway*** Obstructed – tongue
* Accepts oral a/w & intubation

**Breathing** * Apneic – must be bagged

**Circulation*** Absent pulses – must do CPR
 |
| **Phase 3: ROSC** **Condition:** Unstable Patient unresponsive, eyes closed, apneic**Physical Examination*** **Heart Rhythm:** Sinus with obvious anterior STE
* **HR:** 100
* **BP:** no reading
* **RR:** apneic
* **CNS:** GCS 3
 | 1. **Patient Reassessment** (see Notes column)-*Recognizes change in condition*
2. **Medical Management:**
* CPR
* Intubate patient if not already done so
* Calls Interventional cardiology and ICU
 | 1. **Patient Reassessment**

**Airway*** Obstructed, must intubate if not already done so

**Breathing** * Apneic, must bag

**Circulation*** Absent pulses, must continue CPR
 |
| **Phase 4: Recurrent VF** **Condition:** Unstable**Physical Examination****Physical Examination*** **Heart Rhythm:** Ventricular Fibrillation
* **BP:** no reading
* **RR:** apneic
* **CNS:** GCS 3
 | 1. **Patient Reassessment** (see Notes column)-*Recognizes refractory VF*
2. **Medical Management:**
* Calls CV surgery/Interventional (if not done already)/ICU
* CV surgery agrees candidate for ECMO and is notifying perfusionist
 | 1. **Patient Reassessment**

**Airway*** Intubated

**Breathing** * Some spontaneous effort, allows assistance between and with own resps

**Circulation*** Persistent VF with brief episodes of ROSC but GCS 3
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| **Expected Patient Management** | **Debriefing Points** |
| 1. **Student**
2. **Junior Resident**
3. **Senior Resident**
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**References:**

**X-RAYS**



**EKGs**

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