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| **Case Title** | Anterior MI with cardiac arrest |
| **Scenario Name** | Acute Anterior MI with Cardiac Arrest |

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| **Learning Objectives -** [**Use action words**](http://ubccpd.ca/sites/ubccpd.ca/files/Accreditation_Learning%20Objectives_%20Verbs.pdf) | |
| **Knowledge:**   1. Recognize acute anterior MI and need for thrombolysis 2. Use the IHA ST elevation MI PPO 3. Respond to arrest following ACLS guidelines 4. Recognize need for targeted temperature management (therapeutic hypothermia) | |
| **Skills:**   1. Demonstrate high quality CPR 2. Review and demonstrate cooling techniques and targets | |
| **Attitude/Behaviours:**   1. Demonstrate Team skills 2. Demonstrate Situational awareness 3. Demonstrate Graded Assertiveness | |
| **Scenario Environment** | |
| **Location** | ED |
| **Monitors** | Cardiac monitor |
| **Props/Equipment** | Defibrillator, TNK (if non-Primary PCI site) |
| **Make-up/Moulage** |  |
| **Potential Distractors** |  |

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| **Case Introduction:** |
| 68M, presents to ER at 0800h with chest pain radiating to the R arm. |

| **Patient Parameters** | **Effective Management** | **Notes** |
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| **Phase 1: ST Elevation**  **Condition: Stable**  **Initial Assessment**   * **Heart Rhythm: Sinus rhythm, ST elevation** * **HR: 65** * **BP: 158/64** * **RR: 18** * **SP02: 97%** * **T: 37.1** * **Glucose: 7.8** * **CNS: GCS 15** * **Chest: clear** * **CVS: HS normal, no edema, JVP normal** * **GI: Obese** * **Weight: 111kg** | 1. **Take a focused history** (see Notes column) 2. **Medical Management**  * Monitor * Establish IVs * ECG – stat * Labs * ASA/NTG/consider O2. * Recognize STEMI   **Consequences of ineffective management** | 1. **Focused history**  * Chest pain episode yesterday – called MD’s office and told to go to ER. Pain resolved so he didn’t. * Awoke 0700 h and noticed increasing chest pain since going to bathroom. Some SOB with it. * No previous history of same   **PMHx**   * HTN, quit smoking 22yrs ago, Family Hx CAD. Obese   **Meds**   * None   **Allergies**   * None |
| **Phase 2: Thrombolytics**  **Condition:**  **Physical Examination**   * **Heart Rhythm: Sinus rhythm, ST elevation with PVCs** * **HR: 65** * **BP: 128/58** * **RR: 20** * **SP02: 97%** * **CNS: GCS 15** | 1. **Patient Reassessment** (see Notes column) 2. **Medical Management**  * Initiate STEMI protocol – prepare for thrombolysis or Primary PCI * Consider admission/transfer requirements * Treat pain with NTG and analgesics   **Consequences of ineffective management** | 1. **Patient Reassessment**   **Airway**   * Patent   **Breathing**   * Spontaneous   **Circulation**   * Normal * STEMI on monitor |
| **Phase 3: VF arrest**  **Condition: Cardiac Arrest**  **Physical Examination**   * **Heart rhythm: VF** * **HR: 0** * **BP: --** * **RR: --** * **SPO2: --** | **1. Patient Reassessment** (see notes column)   1. **Medical Management**  * High quality CPR * Defibrillate as soon as ready * Follow ACLS cardiac arrest – VF pathway * Prepare for advanced airway * Prepare and administer meds as per ACLS guidelines | **1. Patient Reassessment**  **Airway**   * Consider placing advanced airway   **Breathing**   * No spontaneous resps   **Circulation**   * CPR in progress * Defibrillate as per guidelines |
| **Phase 4: ROSC**  **Condition: Stabilizing**  **Physical Examination**   * **Heart rhythm: Sinus rhythm with ST elevation** * **HR: 88** * **BP: 148/84** * **RR: not spontaneous** * **SPO2: 97%** * **GCS: 3** | **1. Patient Reassessment** (see notes column)  **2. Medical Management**   * ACLS Post-Cardiac Arrest care algorithm * Intubate pt, if not already done * Consider Targeted Temperature Management * Anti-arrthymics, if not already done * Thrombolysis, if PCI not available in 90mins and not given prior to arrest | **1. Patient Reassessment**  **Airway**   * Advanced airway needed if not already done   **Breathing**   * No spontaneous, needs to be ventilated   **Circulation**   * Stabilizing |

**References:**

[**IH STEMI Emergency Management PPO**](http://insidenet.interiorhealth.ca/infoResources/forms/Documents/829729.pdf)

**LABS – click** [here](https://extranet.interiorhealth.ca/IHUBCFaculty/Diagnostics/Forms/AllItems.aspx?RootFolder=%25252FIHUBCFaculty%25252FDiagnostics%25252FLabs&View=%25257bFD97E2FE-FD01-433F-B9CB-D75A4195924E%25257d) **OR fill out below**

LABORATORY \*LIVE\* Lab Summary Report

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| **Test** | **DATE/TIME here** | **Flag** (H or L) | **Reference** |
| **CBC** | | | |
| WBC | 7.6 |  | 3.5 – 10.8 10^9/L |
| RBC |  |  | 4.3 – 5.7 10^12/L |
| Hgb | 142 |  | 130 – 170 g/L |
| HCT |  |  | 0.37 – 0.47 L/L |
| Platelets | 285 |  | 150 – 400 10^9/L |
| D-Dimer |  |  | <250 mcg/L |
| **Chemistry** | | | |
| Na | 140 |  | 137 – 145 mmol/L |
| K | 3.9 |  | 3.5 – 5.0 mmol/L |
| Cl | 107 |  | 98 – 107 mmol/L |
| HCO3 | 24 |  | 22-26 mmol/L |
| Urea | 4.0 |  | 2.5 – 6.1 mmol/L |
| Creat | 67 |  | 62 – 106 umol/L |
| GFR Est | 102 |  | > 60 ml/min |
| Glucose - Random | 7.9 |  | 3.0 – 11.0 mmol/L |
| Lactate |  |  | 0.9 – 1.8 mmol/L |
| CK |  |  | 5 – 130 U/L |
| Troponin |  |  | <0.03 mcg/L |
| **Coags** |  |  |  |
| INR |  |  | 0.9 – 1.2 |
| PTT | 28 |  | 28 – 38 s |
| **ABGs** | | | |
| **Arterial** | | | |
| pH |  |  | 7.35- 7.45 |
| pCO2 |  |  | 35 – 45 mmHg |
| PO2 |  |  | 80-100 mmHg |
| BE |  |  | -2.0 to +2.0 mmol/L |
| HCO3 |  |  | 22 – 26 mmol/L |
| O2 Sat |  |  | 95 – 100% |

**EKGs – click** [here](https://extranet.interiorhealth.ca/IHUBCFaculty/Diagnostics/Forms/AllItems.aspx?RootFolder=%25252FIHUBCFaculty%25252FDiagnostics%25252FECGs&View=%25257bFD97E2FE-FD01-433F-B9CB-D75A4195924E%25257d) **or paste**