**SIMULATION SCENARIO**

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| **CASE TITLE:** | Hypertension Emergencies: Aortic Dissection |

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| **TARGET LEARNING GROUP:** | Mid-Sr Emergency Medicine Residents |

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| **LEARNING OBJECTIVES:** |  |  |
| ***Knowledge:***  1. Diagnose aortic dissection  2. Manage BP/HR in aortic dissection  3. Approach to hypotension in aortic dissection | |  |
| ***Skills:***  1. Coordinate resus team in HTN emergency  2. interpret ECG in setting of aortic dissection  3. Interpret CXR + EDTU in aortic dissection | |  |
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**SCENARIO ENVIRONMENT:**

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| ***Location*** | * Emergency department resuscitation room |
| ***Monitors*** | * Typical emergency department resuscitation gear |
| ***Props/Equipment*** | * Nothing special |
| ***Make-Up/Moulage*** | * Nothing special |
| ***Multi-Media*** | * Portable CXR with wide mediastinum, ECG (inf STEMI), ECHO (no PCE) |
| ***Personnel*** | * Nurse, RT |
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**INITIAL SIMULATOR SETUP:**

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| ***Mannikin Position*** | Sitting up in bed, sweaty, c/o chest pain |
| ***Pupils***  *Size:*  *Reactivity:*  *Blinking:* | **5mm**  **normal**  **yes** |
| ***Breathing***  *Resp Rate:*  *Resp Pattern:*  *Chest Rise:*  *Breath Sounds:*  *Airway Sounds:*  *% Cyanosis:*  *Oxygen Saturation:* | **20/min**  **normal**  **normal**  **normal**  **normal**  **97%** |
| ***Cardiovascular***  *Heart Rate:*  *Cardiac Rhythm:*  *Blood Pressure:* | **110-115/min**  **Sinus tachy**  **190/115 (same in both arms)** |
| ***Other Setup*** | Participants must hook up to monitor, establish IVs etc.  Patient is sitting in bed, able to talk, but uncomfortable. |
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**SCENARIO PROGRESSION:**

***Case Introduction:*** *(initial information provided to participants)*

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| * 47 yo man with 1 hour of chest pain and diaphoresis |

***Available Collateral Information:*** *(information given if requested)*

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| * patient can speak and give this information * smoker * history of HTN * no street drugs * meds: ramipril * says was working at computer, writing an angry email to a colleague when developed severe sharp, non-pleuritic central chest pain; radiated to neck initially; now feels it in his upper back too; diaphoretic and nausea; no SOB; no presyncope; never had this before.   Patient will be complaining of pain, especially in back if participants get too hung up on ACS.  Symptoms will improve with analgesics and with lowering BP and HR.  Once BP and HR measures are controlled, patient will suddenly deteriorate.  BP 70/40, HR 60, RR 20, sats 95%  Patient awake, c/o presyncope, nausea  Participants need to work differential of hypotension in aortic dissection. |

***The Script:*** *(Scenario flow & management outcomes)*

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| **Scenario Transitions**  **& Evolution** | **Effective Management** | **Ineffective Management** | **Notes** |
| 1.  presenting vitals | -do good Hx/PE  -check BP both arms  -identify atypical for STEMI  -initiate both HR and HTN control with NTP/GTN+BB/CCB or labetolol | -thrombolysis/cath lab activation prematurely  -control BP, but not HR |  |
| 2. If use labetotol eventually HR goes to 50, but BP still 170/100 | -need to continue to treat BP with agent that won’t lower HR any further | -not getting BP down  -continuing to use BB/CCB/labetolol when HR<60 (HR will go to 40-45) |  |
| 3. Once HR<70 and BP <120/90 | Should consider getting formal imaging  -CT if deem stable enough  -consider TEE if feel unstable |  |  |
| 4. Once imaging decided BP drops to 70/40 HR 65 | -need to consider differential  -BPs in both arms  -EDTU to r/o PCE  -stop BP meds  -fluid load  -listen for AI murmer (call cardiology/cardiac surgery) | -not considering big differential in aortic dissection hypotension |  |
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