ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2024

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ATI Scenario: MI

**To Be Completed Before the Simulation**

*****Blue boxes should be completed using textbook information. What do you expect to find? This information should be collected before you start the ATI simulation*

## Medical Diagnosis: MI

**NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation**

Anatomy and Physiology
Normal Structures

**Normal blood flow-**
Superior and inferior vena cava →right atrium →tricuspid valve →right ventricle →pulmonic valve →pulmonary artery →lungs (the pulmonary artery carries blood to the lungs to get oxygenated) →blood leaves the lungs→pulmonary vein→left atrium→ mitral valve→left ventricle (the left ventricle pumps blood through the aortic valve) →aorta→the aorta pushes blood out the rest of the body

**Four Chambers-**
-Right Atrium thin wall, low pressure, receives blood from vena cava, outflow through tricuspid valve
-Right Ventricle thin wall, low pressure, receives blood from right atrium outflow through pulmonic valve to pulmonary artery
-Left Atrium thicker wall, medium pressure receives blood from pulmonary veins outflow through mitral valve
-Left Ventricle thick wall, high pressure, receives blood from left atrium, outflow through aortic valve to aorta

**Heart Valves-**
-AV Valves ➔ tricuspid, mitral
-Semilunar Valves ➔ pulmonic, aortic

**Two major coronary arteries-**
-Left coronary artery branches L anterior descending and L circumflex, supply blood to

**NCLEX IV *(7)*: Reduction of Risk**

Pathophysiology of Disease

**Causes →**
-plaque rupture, new coronary artery thrombosis, coronary artery spasm
-Abrupt stoppage of blood flow through a coronary artery that causes irreversible myocardial cell death (necrosis). 80%-90% secondary to thrombus, with most MIs occurring in the setting of preexisting CAD.

**STEMI vs NSTEMI →**
-Ischemia starts in subendocardium (NSTEMI) vs STEMI (transmural)
-Transmural = involves entire thickness of myocardium
-Necrosis of entire thickness of myocardium takes 4 to 6 hours

**STEMI:**
-Caused by occlusive thrombus
ST elevation in leads facing the area of infarction EMERGENCY!
- Need to reopen artery within 90 minutes of presentation.
-PCI as first line treatment.
-Thrombolytics/Fibrinolytics (if PCI not available).

**NSTEMI:**
-Nonocclusive thrombus
-No ST elevation
-Need cath within 12-72 hours
-Thrombolytic therapy not indicated

**Time is Tissue!**
-Hypoxia occurs within 10 seconds to the heart muscle in a MI and can withstand for 20 minutes

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|---|---|---|
| LA, LV, interventricular septum, and part of RV<br>-Right coronary artery branches supplies blood to RA, RV, part of posterior LV. AV node and bundle of His<br>-Coronary veins- drain into coronary sinus<br>**Three Distinct Layers-**<br>-Endocardium thin innermost Layer<br>-Myocardium muscular layer<br>-Epicardium outermost layer<br>-The heart is covered by a fibrotic sac the pericardium<br>**Two layers-**<br>Visceral Layer (thin inner layer)<br>Parietal Layer (tough fibrous outer layer)<br>Pericardial fluid (10-15ml) lies between these layers to lubricate the layers and prevent friction as the heart contracts. | | before cell death.<br>- Most MIs will affect left ventricle.<br>-Anaerobic metabolism produces lactic acid.<br>-During a MI, nerves become stimulated and will send pain messages through thoracic.<br>-Degree of collateral circulation influences the severity of MI. |

**To Be Completed Before the Simulation**

Anticipated Patient Problem: **Acute Pain: Chest**

Goal 1: ATI will report a pain score of 0/10 on a numeric pain scale of 1-10 during my time of care.

Goal 2: ATI will appear relaxed and able to sleep/rest appropriately i.e. care channel, reading, analgesics, and low stimuli environment during my time of care.

| **Relevant Assessments**<br><br>(Prework) What assessments pertain to your patient's problem? Include timeframes | **Multidisciplinary Team Intervention**<br><br>(Prework) What will you do if your assessment is abnormal? |
|---|---|
| Assess pain score on a numerical pain scale of 1-10 q2 hr and PRN. | Administer morphine, nitroglycerin, and aspirin as ordered |
| Assess PQRST as well as verbal and nonverbal complaints of pain q4hr and PRN. | Cluster care and encourage diversional activities i.e. care channel, reading, and music during my time of care. |
| Assess HR, BP, RR q4 hr and PRN | Administer supplemental oxygen PRN |
| Assess desire for analgesics q4hr and PRN. | Educate to report any sudden pain immediately. |
| Monitor use of relaxation techniques during my time of care. | Provide a quiet and low stimuli environment for optimal rest during my time of care. |
| Assess knowledge of signs and symptoms of an MI and medications for an MI and how to act quickly during my time of care. | Evaluate effectiveness of pain control measures and educate on medication regimen during my time of care. |

**To Be Completed Before the Simulation**

Anticipated Patient Problem: **Decreased Cardiac Output**

Goal 1: ATI will show adequate cardiac output as evidence by BP < 140/90, HR within 60-100bpm, and produces 30mL/hr of clear yellow urine during my time of care.

| **Relevant Assessments**<br><br>(Prework) What assessments pertain to your patient's problem? Include timeframes | **Multidisciplinary Team Intervention**<br><br>(Prework) What will you do if your assessment is abnormal? |
|---|---|
| Assess BP, HR, RR, and LOC q4 hr and PRN | Administer antihypertensives as ordered. |
| Monitor daily weights. | Provide education alongside a dietician following a cardiac heart healthy diet during my time of care. |
| Monitor heart rhythm, peripheral pulses, and JVD continuously and PRN. | Maintain cardiac monitoring and educate on the need to be on telemetry during my time of care. |
| Monitor Troponin, MAP, and CKMB q shift and PRN. | Educate and provide resources on signs and symptoms of a MI and encourage family members to learn CPR. |
| Assess for edema, skin turgor, and mucous membranes q8hr and PRN. | Administer diuretics as ordered. |
| Assess lung sounds for crackles and SpO2 q4 hr and PRN. | Administer supplemental oxygen as needed during my time of care. |

Goal 2: ATI will exhibit warm, dry skin, clear lung sounds with the absence of crackles, and no edema during my time of care.

**To Be Completed During the Simulation:**

**Actual Patient Problem: Acute pain: Chest**

Clinical Reasoning: 8/10 squeezing chest pain, intense weakness after shoveling snow, MI
Goal: RD will report a pain score of 0/10 on a numeric pain scale of 1-10 during my time of care.(**UNMET**)
Goal: RD will appear relaxed and able to sleep/rest appropriately i.e. care channel, reading, analgesics, and low stimuli environment during my time of care. (**MET**)
**Actual Patient Problem**: **Decreased cardiac output**

Clinical Reasoning: blockage of coronary artery, MI, decreased urine output, MAP 54
Goal: RD will show adequate cardiac output as evidence by BP < 140/90, HR within 60-100bpm, and produces 30mL/hr of clear yellow urine during my time of care. (**UNMET**)

Goal: RD will exhibit warm, dry skin, clear lung sounds with the absence of crackles, and no edema during my time of care.(**UNMET**)

Additional Patient Problems: #3 risk for bleeding, #4 risk for adverse reaction to iodinated contrast media, #5 risk for infection, #6 deficient knowledge #7 risk for electrolyte imbalance, #8 anxiety

Below will be your notes, add more lines as needed. **Relevant Assessments:** Indicate pertinent assessment findings. **Multidisciplinary Team Intervention:** What interventions were done in response to your abnormal assessments? **Reassessment/Evaluation:** What was your patient's response to the intervention?

| Patient Problem | Time | Relevant Assessments | Time | Multidisciplinary Team Intervention | Time | Reassessment/ Evaluation |
|---|---|---|---|---|---|---|
| 1,2,8 | DAY 1 1725 | T 37.2, HR 106, RR 24, BP 100/66, SpO2 96% 4L/min NC, 8/10 pian squeezing over heart, hx of blocked arteries | 1725 | ECG tech performing a 12 lead ECG | 1725 | ST segment elevation and a myocardial infarction |
| 1,2,3,5,6 | 1730 | wife stated "can you explain this reopening a bit more" | 1730 | Dr. Patterson provided education on a heart catheter and how it works, Inserted a 1.5in Angiocatheter | 1735 | HR, 104, RR 22, BP 102/68, SpO2 97% 4L/min NC, pain 8/10, Verbalizes understanding of procedure |
| 1.2,7 | 1745 | HR 100, RR 22, BP 102/58, SpO2 96% 4L/min NC, 8/10 pain, UO 600mL, K 3.6 | 1745 | Placed on continuous telemetry monitoring, off to cath lab | 1750 | CXR shows no fluid, pneumothorax, no enlargement, with mild calcifications |
| 1,2,3,5,6 | 2100 | T 36, HR 96, RR | 2100 | Edcucated | 2100 | "That chest pain I |

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| | | 14, BP 112/66, SpO2 98% 2L/min, arterial pressure 114/70, CVP 10, regular sinus rhythm with PVCs | | importance to lay flat, keep leg flat, and press down gently on puncture site to cough | | had earlier is gone" pain 0/10 |
| 2,3,5 | 2100 | R neck CVP catheter intact, opaque dressing, scant amount of red drainage, arterial line left radial artery opague dressing no drainage, and urinary cath intact draining clear yellow urine | 2115 | Adminsietred NS IV fluids at 250mL/hr and NS 250mL via pressure bag | 1215 | No SOB, reports irritating cough and nasal congestion |
| 4,8 | 2115 | "I am feeling itchy over my arm and chest." "I ate shrimp one time and my tongue swelled" Reports feeling very SOB | 2115 | Reported symptoms to provider and administered diphenhydramine 25mg IV bolus, called rapid response team | 2120 | HR 116, RR 32, 87% non-rebreather mask, BP 155/98, heart rhythm tachycardia with PVCs, appears ashen and anxious |
| 4,8 | 2120 | Allergic reaction to contrast dye during cardiac cath procedure | 2130 | Administered epinephrine 0.3mg IM Stat | 2200 | "I feel much better, I'm breathing much better and I don't itch anymore" |
| 2,3,4,5,6 | 2200 | HR 88, RR 14, BP 108/74, 100% 3L/min NC, RSR with PVCs, UO 125mL | 2200 | Reinforced education of keeping right leg straight and gently pressing puncture site when coughing to no dislodge and make sure to tell doctors in the future about shellfish allergy. | 2200 | Verbalizes understanding "I'll make sure to remember that" |
| 3,5,8 | 2205 | Puncture site bleeding, 3in groin hematoma, gauze saturated with bright red blood | 2205 | Applied pressure to the right groin site, and outlined the hematoma site | 2230 | Right groin bleeding stopped hematoma 6in in diameter |
| 2,3,6,7 | 2300 | HR 74, RR 12, BP 112/72, 99% 3L/min NC, RSR with PVCs, UO 175mL, pressure | 2305 | Administered potassium 20 mEq PO, and provided education on cardiac risk factors | 2310 | Verbalizes understanding of modifiable risk factors |

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|---|---|---|---|---|---|---|
| | | dressing clean and dry, K 3.2 | | | | |
| 2,8 | DAY 2 1940 | HR 96, RR 12, BP 80/52, SpO2 99% 3L/min NC, arterial blood pressure 78/52, CVP 7, Tachycardia with PVCs, skin cool/clammy, restless and agitated, MAP 54, UO 48mL | 2010 | Administered Dobutamine continuous IV bolus 250mg at 16.5 mL/hr Norepinephrine continuous IV bolus 0.5mcg/min | 2040 | HR 64, RR 14, SpO2 96% 2L/min NC, BP 96/56, sinus rhythm PVCs |
| 1,2,6 | DAY 3 1900 | T 36.8, HR 68, RR 12, BP 124/72, SpO2 98% RA, breath sounds clear, sinus rhythm, pain 0/10, UO 250mL | 1915 | Educated on lifestyle changes and medication regimen prior to discharge to cardiac step-down | 1920 | Verbalized understanding and reported “I will reduce my sodium intake to 1,500mg/day” |
| 3,6 | 1720 | “Can you tell me more about this blood thinner medication” | 1725 | Provided education on the antiplatelet medication clopidogrel and the s/sx to look out for while taking it | 1730 | Verbalized understanding and d/c to cardiac stepdown |

# To Be Completed Ater the Simulation

*The orange boxes should be filled out with your simulation patient's actual results, assessments, medications, and recommendations*

**NCLEX IV *(7)*: Reduction of Risk**

Actual Labs/ Diagnostics
-ECG- elevated ST wave
-serum cardiac biomarkers
-Troponin T- 0.2, 0.4, 0.6ng/mL
-Troponin I-0.06, 0.07, 0.08ng/mL
-cardiac cath
-ECHO
-CXR-calcification of aorta, causing left ventricular heart damage
-Potassium 3.6, 3.2mEq/L
-Creatinine- 0.8, 0.7, 1.0 mg/dL
-CK-MB
-myoglobin

**NCLEX II *(3)*: Health Promotion and Maintenance**

Signs and Symptoms
-pain (heavy, constriction, tightness, burning, pressure, or crushing) (arm, back, jaw, chest, and epigastric region)
cool and clammy skin
-HR and BP changes
-diaphoresis
-crackles in lungs
-JVD
-abnormal heart sounds (s3 or s4)
-new murmur (due to fluid)
-n/v
-vasovagal reflex
-fever

**NCLEX II *(3)*: Health Promotion and Maintenance**

Contributing Risk Factors
-smoking
hx of MI
-high LDL levels
-sedentary lifestyles
-obesity
-CAD
-diabetes
-HTN
-endocarditis
-family hx
-substance abuse

Therapeutic Procedures
Non-surgical
-morphine
-oxygen
-nitro
-aspirin
(MONA)
Surgical
-cardiac cath
-CABG
-intra-aortic balloon pump
-ventricular assist device
-trans myocardial laser revascularization
-MIDCAB

**NCLEX IV *(7)*: Reduction of Risk**

Prevention of Complications
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
-dysrhythmias
-cardiogenic shock
-heart failure
-papillary muscle dysfunction or rupture
-left ventricular aneurysm
-ventricular septal wall rupture and left ventricular free wall rupture
-pericarditis
-endocarditis
-dressler syndrome
-acute pulmonary edema
-thromboembolism

**NCLEX IV *(6)*: Pharmacological and Parenteral Therapies**

Medication Management
-lisinopril PO
-ASA PO
-clopidogrel
-norepinephrine
-epinephrine
-nitroglycerin sublingual
-dobutamine IV
-morphine

**NCLEX IV *(5)*: Basic Care and Comfort**

Non-Pharmacologic Care Measures
-education
-nutritional therapy
-support system education
-chaplin
-promote independence

**NCLEX III *(4)*: Psychosocial/Holistic Care Needs**

Stressors the client experienced?
-fear of unknown
-anxiety
-repeat MI
-money
-family role changes
-lifestyle changes

-oxygen
-anticoagulants
-MONA
-antianginals
-ACES
-beta blockers
-lipid-lowering

**Client/Family Education**

Document 3 teaching topics specific for this client.

- educate on medication regimen
- smoking cessation and risk factor management
- provide the client and family with resources for support groups and encourage them to learn CPR

**NCLEX I *(1)*: Safe and Effective Care Environment**

Multidisciplinary Team Involvement

(Which other disciplines were involved in caring for this client?)

-cath lab
-pharmacy
-cardiology
-radiology
-RN
-case management

Patient Resources

-support system
-cardiac rehab
-cardiovascular support group

**Reflection Questions**

Directions: Write reflection including the following:

1. What was your biggest “take away” from participating in the care of this client?

   My biggest takeaway from participating in the care for this client is the importance of acting fast when you're suspicious of an MI it is imperative to get to the Cath lab ASAP. We are taught that “time is tissue” and the health care team was able to collaborate fast and provide education to the family in this hectic time. Also, Nurse Carl did a great job when new things arose he acted swiftly and if he didn’t know he used his resources to help. This simulation represented that you're treating more things than when they came in for, and clients don’t always tell you all their allergies upon admission.

2. What was something that surprised you in the care of this patient?
   Something that surprised me with the care of this patient is he wasn’t administered all of the aspects of MONA (morphine, oxygen, nitro, and aspirin) once it was a suspected MI. before arriving at the hospital Mr. Davis had nitroglycerin and aspirin and when admitted to the ED he was given supplemental oxygen. With a pain score of 8/10 on a numeric scale of 1-10, I was surprised that he was never given a dose of morphine.

3. What is something you would do differently with the care of this client?
   _Something I would do differently in the care for this client is I would ask Mr. Davis if he was allergic to shellfish prior to administering the iodine contrast media. As we know many patients don’t think there could be a correlation to the too or they don’t share all of their allergy documentation. It is always best practice to ask before anyways to be safe and then when you learn more always add to the chart.

4. How will this simulation experience impact your nursing practice?

   This simulation experience impacted my nursing care as it reinforced how important education and health literacy is to the community. By having a solid support system and fast action Rodney & Maggie were able to act fast and get him the help he needed. Before arriving to the hospital he took a nitro and aspirin and when arriving at the ER he was quickly taken to the Cath lab. It is scenarios like these that excite me to share with the community so that one day if they're ever in an emergency situation they can to make swift life saving choices.