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: Myocardial Infarction

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

Anatomy and Physiology
Normal Structures

A 4 chambered, fist-sized, hollow and muscular organ within the thorax in the mediastinal space. Composed of three layers: endocardium (inner), myocardium (middle), and epicardium (outer). It is covered in a sac called the pericardium consisting of two layers: the visceral (inner) and parietal (outer). Pericardial fluid lines the space between these layers for lubrication and the prevention of friction.
The septum (interatrial and interventricular) divides the heart into four chambers. The left ventricular wall is thicker than the right in order to effectively pump the blood into systemic circulation.

Blood Supply to Myocardium:
Blood flow into the two major coronary arteries occurs primarily during diastole. The L coronary artery arises from the aorta and divides into two main branches (L anterior descending artery and L circumflex artery) which supply the L atrium, L ventricle, interventricular septum, and part of the R ventricle. The R coronary artery supplies the R atrium, R ventricle, and part of the posterior wall of the L ventricle. The AV node and bundle of His also receive supply from the R coronary artery.

Conduction System:
Consists of specialized tissues responsible for creating and sending electrical impulses or the action potential which starts depolarization of the heart cells leading to contraction. The impulse normally begins at the SA node and usually travels through interatrial pathways to depolarize the atria, causing contraction.
It travels from the atria to the AV node through intranodal pathways, the signal moves through the bundle of His and the L (anterior and posterior) and R bundle branches. The potential moves through the walls of both ventricles through the Purkinje fibers which causes a synchronized R and L ventricular contraction and ejection of blood into circulation.
Repolarization of the heart occurs when the contraction and conduction pathway calls regain their resting position.

Cardiac Output: amount of blood pumped by each ventricle in 1 minute.
Cardiac Index: CO divided by the body surface area.
Preload: The volume of blood stretching the ventricles at the end of diastole before the next contraction.
Afterload: The peripheral resistance that the L ventricle must pump against.
Cardiac Reserve: The ability to respond to demands by altering CO.

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Myocardial infarction (MI) is due to an abrupt stoppage of blood flow through the coronary artery with a thrombus caused by platelet aggregation causing irreversible myocardial cell death.
Coronary Artery Disease (CAD) is commonly the precursor to MI. CAD usually begins as atherosclerosis characterized by lipid deposits on the intima of the arteries causing injury to the endothelium producing inflammation. Injury causes a fatty streak which turns into a fibrous plaque (the most dangerous stage).

STEMI: caused by an occlusive thrombus resulting in ST elevation in an ECG lead facing the infarction. (Significant if the ST elevation is 1mm or more above the isoelectric line in at least 2 neighboring leads). A STEMI is an emergency.

NSTEMI: nonocclusive thrombus that does not cause ST segment elevation.

The degree of collateral circulation influences the severity of the MI.

Manifestations:
-Severe chest pain not relieved by rest, position change, or nitrate admin. (heavy, pressure, tight, burning, constricted, crushing feeling)
-Epigastric pain (indigestion)
-Weakness
-Nausea
-SOB
-Fatigue
-Change in LOC (elderly)
-Pulmonary edema (elderly)
-Dysrhythmias!

To Be Completed Before the Simulation

Anticipated Patient Problem: Decreased Cardiac Output

Goal 1: Pt will have a urinary output of at least 30mL/hour during my shift.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess HR and BP with telemetry continuously.	Administer cardiac medications for contractility, rate control, and BP control as ordered by provider.
Assess skin color, temperature, and moisture Q4h.	Encourage rest to reduce tissue oxygenation demand.
Assess urine output Q1h.	Maintain optimal fluid balance/restrict fluids as needed if ordered by provider.
Monitor respiratory rate, rhythm, and breath sounds Q shift.	Maintain adequate ventilation and perfusion by raising the head of bed.
Assess oxygen saturation with pulse oximetry continuously.	Provide supplemental oxygen as ordered by the provider.
Assess peripheral pulses and capillary refill Q4h.	Apply compression stockings and SCD's.

Goal 2: Pt will have a HR between 60-100 bmp and strong peripheral pulses during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain (Chest)

Goal 1: Pt will report chest pain of 0/10 on numeric scale by the end of my care.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess PQRST of pain Q1h.	Administer morphine and nitroglycerin as ordered by provider.
Assess HR and BP Q1h.	Administer aspirin as ordered by provider.
Assess for restlessness or facial grimacing Q shift.	Encourage distraction techniques such as watching television, listening to music, or reading.
Assess response to pain management Q shift.	Administer repeat dose of nitroglycerin. (up to 3x Q5mins)
Assess respiratory effort Q1h.	Provide supplemental oxygen.
Assess heart rhythms by EKG continuously.	Notify provider of possible ST elevation and prepare for cardiac cath lab.

Goal 2: Pt will have a heart rate between 60-100bpm during my tome of care.

To Be Completed During the Simulation:

Actual Patient Problem: Acute Pain: Chest

Clinical Reasoning: STEMI, crushing chest pain rated 8/10.
Goal: RD will report a pain of 0/10 on numeric scale during my time of care.
Met: ✓ Unmet:☐

Goal: RD will have a HR between 60-100bpm during my time of care.
Met: ✓ Unmet:☐
Actual Patient Problem: Impaired Gas Exchange

Clinical Reasoning: Allergic reaction to contrast die, dyspnea, wheezing, stridor.
Goal: RD will have a RR between 12-20 during my time of care.
Met: ✓ Unmet:☐

Goal: RD will have an SpO2 of at least 95% on RA by the end of my care.
Met: ✓ Unmet:☐

Additional Patient Problems:

decreased cardiac output (STEMI, shock)

readiness for enhanced knowledge

risk for bleeding

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
1,3	Mon 1655	Gripping chest in pain after shoveling snow stating, "I just don't feel well" and "It feels so tight and the squeezing won't go away"	Mon 1715	Wife gave Mr. Davis 3 doses of nitroglycerin and 350mg of ASA.	Mon 1715	EMS transported Mr. Davis to the ED for unrelieved chest pain and shortness of breath after nitroglycerin. Stated "it's just as intense, if not worse"
1,3,4	Mon 1720	Stated "it feels like my chest is being squeezed" c/o shortness of breath and nausea. Wife reports a "hx of blocked arteries"	Mon 1725	RN applied EKG leads and educated that the EKG will determine if the pain is from a heart attack. Oxygen 4L NC maintained.	Mon 1730	BP: 96/56, HR: 104 RR: 26, SpO2: 94% on 4L NC EKG showed ST elevation, a PVC, and prolonged P waves.

1,3,4,5	Mon 1725	Reports pain 8/10 on numeric scale continuing to grip at chest.	Mon 1730	Provider at bedside in the ED educated on the dx of a STEMI and need for immediate cardiac cath.	Mon 1810	Stent placed in LAD coronary artery through R femoral site. No more chest pain present once transferred to ICU.
1,3,4,5	Mon 1900	Transferred to ICU following cardiac catheterization with stent placement to the LAD through R femoral. Stated that chest pain is gone. Troponin T: 0.2 Troponin I: 0.06 Lactic Acid: 0.6 Cholesterol: 324 ABG: pH 7.35, PaO2 88, PaCO2 40, HCO3 26, SpO2 95%.	Mon 1930	ICU RN educated on holding pressure to R femoral puncture sight if need to cough.	Mon 2225	Developed hematoma with dressing saturated in bright red blood. After RN applied pressure and dressing, bleeding stopped and remined clean, dry, and intact up to discharge.
2	Mon 1945	Stated feeling itchy over arms, sinus congestion, and difficulty catching breath. Wheezing and stridor heard upon auscultation. RN asked about allergies and reported previous reaction to shrimp causing tongue to swell.	Mon 1945	RN administered 25mg of diphenhydramine IV bolus for itching, applied more O2 via nonrebreather face mask at 15L/min, and notified provider of concern of allergic reaction due to breathing effort.	Mon 1950	HR: 116 RR: 36 BP:155/98 SpO2: 87% on 15L nonrebreather face mask.
2	Mon 2130	Dusky nailbeds with ashen skin, stridor, and coughing present with signs of distress.	Mon 2130	RN called a rapid response and administered 0.3mg of epinephrine IM. Maintained nonrebreather mask at 15L/min with 100% oxygen.	Mon 2200	Reversal of anaphylactic manifestations. Nonrebreather replaced with the NC since SpO2 reached 100%, stated “I’m breathing much better and I don’t itch anymore”
5	Mon 2225	Developed 3inch hematoma at puncture site.	Mon 2225	RN applied firm pressure to the R groin puncture site	Mon 2230	Pressure dressing applied and bleeding stopped.

		States feeling something wet. Saturated dressing with bright red drainage.		and outlined the hematoma area with a marker.		
3	Mon 2250	Potassium 3.2	Mon 2300	RN administered PO potassium 20mEq.	Wed 1700	Normal sinus rhythm.
3,4	Mon 2300	Troponin T: 0.4 Troponin I: 0.07	Mon 2300	RN educated on modifiable risk factors such as exercise and diet.	Mon 2315	Verbalizes understanding of modifiable risk factors and gives example of quitting smoking.
3	Tue 1930	Restless and agitated with cool and clammy skin. Tachy w/ PVC's MAP: 54 BP: 80/52 Arterial BP: 78/52 UO: 48mL/hr. Troponin T: 0.8 Troponin I: 0.09	Tue 1940	RN Increased O2 to 3L NC, notified provider, and administered 1L NS at 250mL/hr and Dobutamine 250mg in D5W 250mL at an initial rate of 2.5mcg/kg/mL. (16.5mL/hr)	Tue 2005	HR: 58 RR: 12 BP: 78/56 Sinus bradycardia
3	Tue 2005	HR: 58 RR: 12 BP: 78/56 Sinus bradycardia	Tue 2010	Administered norepinephrine 4mg D5W 1000mL at 0.5-1mcg/min. (max 30mcg/min)	Tue 2040	States "I'm less shaky and not dizzy or sweating anymore." BP: 96/56 RR: 14 HR: 64 SpO2: 96% 2L NC
3,4,5	Wed 1700	HR: 68 RR: 12 BP: 124/72 Normal sinus rhythm.	Wed 1715	RN educated on importance of changing modifiable risk factors (especially diet) and the importance of medication compliance, including clopidogrel and ASA following stent placement.	Wed 1730	Stated he will reduce sodium intake to 1500mg/day. Discharged from ICU to stepdown unit.

To Be Completed After 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
EKG
CATH
Troponins
ABG's
Electrolytes
Urine Output

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

Signs and Symptoms
Crushing chest pain
- Unrelieved by nitroglycerin

SOB
Nausea

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

Contributing Risk Factors
CAD
Obesity
Unhealthy diet
No physical activity
High cholesterol
Hypertension

Therapeutic Procedures
Non-surgical
Medication

Surgical
Cardiac catheterization with LAD stent placement through the R femoral.

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)
Heart failure
Cardiogenic shock
Sudden cardiac death

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

Medication Management
Nitroglycerin
ASA
Clopidogrel
Norepinephrine
Dobutamine
Epinephrine
Potassium

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

Non-Pharmacologic Care Measures
Diet modification/Weight loss
Exercise
Smoking cessation
Follow-up care

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

Stressors the client experienced?
Pain
Fear of cardiac catheterization
ICU (sounds, alarms)

Client/Family Education

Document 3 teaching topics specific for this client.
• Diet modifications for cardiac health.
• Increase in exercise and activity for cardiac health.
• Medication compliance following hospitalization. (ASA & clopidogrel after stent)

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

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
EMS
ED (nurses/providers)
EKG Tech
Cardiac Cath Team
ICU (nurse, intensivist)
Pharmacy

Patient Resources
Dietician/Nutritionist
Cardiology
Exercise program

Reflection Questions

Directions: Write reflection including the following:

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

   The biggest take-away from this scenario is that when admitted for a single issue, anything can happen. Especially considering the administration of new medications and invasive interventions that Mr. Davis experienced. It is a reminder that as the nurse, there are many other assessments and interventions to keep in mind other than those centered around the admitting diagnosis. It is important to be thorough in your assessments and be knowledgeable of the possible risks associated with your patient's treatment.

2. What was something that surprised you in the care of this patient?

   Something that surprised me in this scenario is when Mr. Davis underwent cardiogenic shock following the stent placement in the cath lab. I was expecting that after his cardiac catheterization, he would recover in the ICU for monitoring, not really anticipating further decline. The ICU team in the scenario did a great job at recognizing subtle changes and acting fast once they suspected the shock occurring.

3. What is something you would do differently with the care of this client?

   Something in this scenario that I would do differently, or better, is constantly remembering to recheck my labs and EKG strips after each section I complete as the scenario unfolds. Although I did frequently go back into the chart to check vitals and view the medication administration tabs, I could have done better at staying on top of the other things just as frequently. Subtle changes in EKG strips can signal electrolyte imbalances, and in this case, it was that low potassium causing dysrhythmias. I'm glad I recognize how the two go together, but I do want to strengthen that area of chart updates in my next ATI clinical scenario and in-hospital districts. Something the nurses or cardiac cath lab team could have done better in this scenario is asking in detail if Mr. Davis has ever had any reactions to shellfish prior to the procedure to prevent allergic reactions.

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

   This clinical simulation will most definitely impact my nursing practice. It was a great example and reminder of how important initial and follow-up assessments are for every single patient. It will remind me to not focus my nursing assessments on a single patient problem, to stay on-top of my chart research as much as possible throughout my shift, and always use the resources around me such as other experienced nurses, providers, pharmacists, etc. to provide the best and safest nursing care to my patients. This scenario also did a great job showing adequate and intentional patient teaching on multiple occasions.