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

Heart: fist sized organ that pumps blood through circ system, 4 chambers (LA, LV – largest/strongest, RA, RV), made of muscle, controlled by electrical impulses, controls rhythm/speed of HR, maintains BP, slightly behind & to left of sternum, protected by ribcage, has walls (endo/myo/epicardium), chambers, valves (AV: mitral/tricuspid SL: aortic/pulmonary), BVs, electrical conduction system (SA node, AV node, Bundle of His, purkinje fibers)
Chordae tendinae: pulls valves shut to prevent regurg (attached to papillary muscles)
Pericardium: membrane (visceral & parietal) w 10-15 mL serous fluid, protects from friction w mvmt
Blood flow: O2 poor blood from body circ → RA (via IVC/SVC) → RV (via tricuspid) → pulmonary valve → Lungs → O2 rich blood from lungs → LA (via pulm veins) → LV (via mitral) → aortic valve → aorta → rest of body
Coronary Arteries: L coronary, circumflex **(occlusion causes lateral MI),** L marginal, L anterior descending **(occlusion causes anterior MI),** R coronary **(occlusion causes inferior MI),** R marginal – deliver blood/O2/nutrients to heart

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

MI: occurs from abrupt stoppage of blood flow through a coronary artery (plaque rupture, thrombus, spasm) causing irreversible cell death in heart muscle beyond the blockage
*Most occur w/ pre-existing CAD
-Cardiac Biomarkers released into blood: Troponin, CKMB, BNP, D-Dimer
-4-6 hrs for entire thickness of myocardium to become necrotic
-Degree of collateral circulation influences severity of the MI (those w long hx of CAD may develop good collateral circulation)
-Women: increased mortality, vague sx, more back/jaw pain, loss of appetite
-Elderly: change in mental status, SOB, pulm edema, dizziness
STEMI: caused by occlusive thrombus
-ST elevation in leads facing infarction (1 or more mm above isoelectric line in at least 2 contiguous leads)
-EMERGENCY!
-Limit infarct size: cardiac cath (PCI) to open artery w/I 90 minutes (thrombolytic therapy w/I 30 minutes for hospitals w/o PCI)
-**PCI** opens artery w/ balloon & stent
NSTEMI: caused by nonocclusive thrombus
-No ST segment elevation, may show ST depression or T Wave inversion in leads facing area of infarction
-Cardiac cath w/I 12-72 hrs *thrombolytic tx not indicated

-Healing process: w/I 24 hrs leukocytes invade area of cell death, macrophages remove necrotic tissue by day 4 → thin wall, 10-14 days after scar tissue is still weak (caution pt activity) → less compliant, uncoordinated wall motion, vent dysfx/pump failure → compensate by thickening, dilating, remodeling = CHF
-6 wks post: scar tissue replaced necrotic tissue → area "healed" but less compliant
-Ventricular remodeling: myocardium hypertrophy & dilation to compensate for infarcted muscle → dec CO
-Complications: dysrhythmias, HF, ADHF, pulm edema, thromboemboli, pericarditis, Dressler syndrome, septal & free wall rupture, ventricular aneurysm, papillary muscle rupture

To Be Completed Before the Simulation

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

Goal 1: ATI will report a chest pain score no greater than 0/10 during my time of 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?
Pain score q15min/q 30min/q 1hr (& after analgesic admin – 60 minutes for PO, 30 for IV)	Administer NTG sublingual per MD orders
Anxiety level (subjective description & objective sx: RR, concentration, sweating, restlessness) q2h	Administer morphine sulfate per MD orders
Continuous VS	Administer O2 via NC 3L/min (per O2 protocol/MD order) PRN
EKG & continuous cardiac monitoring	Prepare for transport to cath lab within 90 minutes (establish IV access, 12-lead EKG, MONA, obtain consent, contact family members)
Facial grimacing, crying, guarding q1h	Educate on non-pharmacological methods for pain relief (guided imagery, breathing exercises, distraction) q shift
Pain PQRST q2h	Provide rest periods q4h

Goal 2: ATI will utilize non-pharmacological methods of pain relief (breathing exercises, guided imagery, distraction, etc.) during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: **Decreased Cardiac Output**

Goal 1: ATI demonstrates adequate cardiac output as evidenced by BP 120/80 and HR 60-100 (return to baseline), strong peripheral pulses, and the absence of dyspnea, syncope, and chest pain during my time of care.

Goal 2: ATI utilizes teach back demonstration to explain an understanding of prescribed medications, administration schedule and side effects to report to provider before discharge.

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?
VS q4h	Administer Metoprolol (or other Beta Blocker) per MD order
S/SX HF (pulmonary sx: crackles, dyspnea, cyanosis, fatigue, restlessness, systemic sx: JVD, weight gain, edema, ascites) q4h	Administer diuretics/Digoxin per MD orders
Strict I & Os q8h	Maintain fluid restriction (at all times) or encourage PO hydration (q2h) per MD orders
Peripheral pulses, skin temperature/moisture, capillary refill q8h	Position in high Fowler's when lying in bed
Ejection fraction q shift (with initial/ updated echo results)	Maintain bedrest/low activity levels to decrease myocardial O2 demand at all times
Caregiver/family knowledge about BLS before discharge	Educate family/caregivers on emergency cardiac support, provide resources for BLS training, encourage at home defibrillator (prn) before discharge

To Be Completed During the Simulation:

Actual Patient Problem: Acute Pain – Chest
Clinical Reasoning: c/o CP 8/10 described as squeezing, facial grimacing, 12-Lead EKG shows ST-Segment elevation
Goal: ATI will report a chest pain score no greater than 0/10 during my time of care. Met: ☐ Unmet:☐
Goal: ATI will utilize non-pharmacological methods of pain relief (breathing exercises, guided imagery, distraction, etc.) during my time of care. Met: ☐ Unmet:☐
Actual Patient Problem: Decreased Cardiac Output
Clinical Reasoning: EKG shows ST-Segment elevation, Hx "blocked arteries", Angina unrelieved by NTG
Goal: ATI demonstrates adequate cardiac output as evidenced by BP 120/80 and HR 60-100 (return to baseline), strong peripheral pulses, and the absence of dyspnea, syncope, and chest pain during my time of care. Met: ☐ Unmet:☐
Goal: ATI utilizes teach back demonstration to explain an understanding of prescribed medications, administration schedule and side effects to report to provider before discharge. Met: ☐ Unmet:☐

Additional Patient Problems: 3. Impaired Gas Exchange 4. Risk for Bleeding 5. Risk for Electrolyte Imbalance 6. Readiness for Enhanced Health Management

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	MON 1655	Reports chest pain with physical activity "I just don't feel well… my chest is tight… the squeezing won't go away."	1715	(Wife) Administered 3 doses NTG & 325 mg ASA	1720	In ambulance on way to ED, PIV established
1,2	1725	Pain unrelieved by NTG "Feels like my chest is being squeezed & it's hard to breathe… it's as intense if not worse, I feel dizzy & sick to my stomach"	1725	O2 applied via NC, applied new ECG leads	1725	Wife reports hx of "blocked arteries", reports pain 8/10 described as "squeezing"
1,2	1730	12-Lead EKG shows ST-Segment elevation	1730	(MD) Explained need for transport to cardiac cath lab is a priority	1730	Wife: "Can you explain the re-opening a bit more?"
2,4	1730	(MD) "A catheter is inserted into the vessel in the wrist or the groin area. And then we inject a dye so that we can see the arteries that supply blood and oxygen to your husband's heart. If we find a blockage, we'll attempt to reopen the	1730	Printed out & provided written information about cardiac catheterization procedure	1730	Wife accepted & is reading over printed out information

		blocked artery with a procedure called a percutaneous transluminal coronary angioplasty. We use a special balloon. And we hold the artery open with a device called a stent."				
1,2	1735	New orders for CXR, Troponin, Potassium, Creatinine levels, & Morphine	1735	Administered Morphine, drew labs	1755	Troponin 0.4, Potassium 3.2, Creatinine 0.7, transferred to cardiac cath lab
1,4	1955	Transfer to ICU: post PTCA w stent placed in LAD, central venous catheter, A-line, indwelling urinary catheter, IVF, O2 2L NC, vascular closure device used after lines removed from R femoral puncture site, no bleeding or hematoma present	2000	Introduced self, explained frequent checks on VS, insertion site & circulation to lower extremities, instructed to lay flat for 2 hrs, keep R leg in a straight position, & when coughing to press down gently on the puncture site dressing	2000	"The chest squeezing I was having earlier is gone."
3	2000	"I am feeling itchy over my arm & chest… I ate shrimp one time, my tongue swelled. I never ate it again"	2005	Notified provider of possible allergic reaction to contrast dye	2010	"While you were gone I started coughing. It feels like I'm coming down with a cold & my nose is stuffy too, I can't quite catch my breath"
3	2010	Dyspnea, wheezing & intermittent stridor upon lung auscultation	2015	Administered Diphenhydramine 25mg IV Bolus, applied O2 15L via non-rebreather mask	2030	SpO2 87%, skin ashen, nail beds dusky
3	2030	strider, distressed	2030	Called Rapid Response Team, Administered 1 dose Epinephrine	2045	Anaphylaxis reversed "I feel much better. I'm breathing much better & I don't itch anymore"
3	2100	SpO2 100%	2100	Replace non-rebreather with NC	2105	SpO2 100% via NC, breath sounds clear, unlabored breathing
3,4	2110	"I still have a nagging cough"	2110	Instructed to keep right leg straight & apply pressure to right groin puncture site while coughing, explained this will keep the clot sealing the site from dislodging. Added shellfish allergy to medical record & informed to let provider/caregivers	2115	"I'll make sure I remember that"

				know about allergy to contrast dye in future.		
4	2200	Hematoma developing on R groin insertion site	2210	Applied pressure to site, outlined hematoma with marker, informed bruise may develop but should disappear over time	2215	“Is that why it felt like I was sitting on something wet?”
5	2230	Potassium 3.2	2235	Administered Potassium PO	2235	“Can I have some crackers with this?”
6	TUES 0900	“I don’t have time to go to the gym, my wife and I occasionally go for a walk. I probably eat fast food 4x/week.”	0915	Educated on cardiac risk factors, and ways to change modifiable risk factors & provided written information	0915	Reports eating red meat, breads, “diets don’t work for me”, stopped smoking a month ago, no current use of tobacco products
2	WED 0900	Skin cold & clammy to touch, restless, agitated, O2 increased to 3L NC	0910	Notified Provider, Administered KCl IV @ 250 mL/hr & dobutamine drip	0910	“I need something to help me feel better”
2	0900	MAP 54, SBP less than 90 for the last 15 mins, UO 48mL/hr	0915	Administered Norepinephrine via central line	0930	Continued norepinephrine titration maintaining BP “I’m less shaky & not as dizzy or sweating anymore”
6	1030	Lines & IVs discontinued, orders to transfer to CV step down unit	1035	Educated about lifestyle changes, diet modifications, medications that will now be required at home, provided notes from dietitian, encouraged to read labels on food items	1100	(Wife) “Can you tell me more about the blood thinner medication”
6	1100	“Will he need to continue taking ASA with the clopidogrel?”	1110	Educated on dual antiplatelet therapy to prevent clotting of new coronary stent & informed to look for unusual bleeding, bruising, blood in stool, notify MD if having dental work done	1115	Transferred to CV ICU with provided written information on lifestyle modifications & home medications

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

CBC, Cardiac Enzymes, Coagulation Panel, Blood Glucose, CMP, ABGs, UA, 12-Lead EKG, MRI

Hgb 15.9, Hct 54%, WBC 6,000, Plt 220,000, CK 0, Troponin T 0.2, Troponin I 0.06, Lactic Acid Venous 0.6, PT 12, INR 0.9, Blood Glucose 118, Na 140, K 3.6, BUN 18, Creatinine 0.8, Co2 24, pH 7.35, PaO2 80, CO2 40, HCO3 26, SaO2 95%, ST-Segment Elevation

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

Signs and Symptoms

Pain (heaviness, constriction, tightness, burning, pressure, crushing in chest/back/epigastric/jaw/arm/shoulder) 8/10, unrelieved by NTG
Diaphoresis
Vasoconstriction of peripheral blood vessels → ashen, clammy, cool touch to skin
Crackles in lungs, JVD, S3/4/murmur, N/V, Fever
Early: inc HR & BP, later dec BP & CO

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

Contributing Risk Factors

Hx CAD
Hx Smoking
Diet consisting of fast food, red meat
Lack of exercise
African American
Male

Therapeutic Procedures

Non-surgical

Surgical
Cardiac Catheterization
PTCA w stent placement

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)

Arrhythmias, HF, cardiogenic shock, papillary musc dysfx/rupture, LV aneurysm, septum rupture, LV free wall rupture, pericarditis, Dressler Syndrome, pulmonary edema, thromboembolism

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

Medication Management

Clopidogrel
ASA
Dobutamine
Norepinephrine
KCl
Diphenhydramine
NTG
Morphine

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

Non-Pharmacologic Care Measures

O2
Nutrition Consult
Education

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

Stressors the client experienced?

Cardiac Catheterization
Anaphylactic Shock
Bleeding from catheter insertion site
Lifestyle modifications

Client/Family Education

Document 3 teaching topics specific for this client.

•Reduction of Na in diet
• Addition of aerobic exercise to daily regimen
•Medication management

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

Multidisciplinary Team Involvement

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

Dietitian, Cardiologist, Respiratory, Pharmacy, Nursing

Patient Resources

Nutrition Program, PT, Cardiac Rehabilitation, Personal Exercise Trainer, Allergen Sensitivity Testing

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 take away from this simulation is that it lines up with what the ICU guest speaker said to us… "It's never just one thing." You can think that you're simply receiving a patient from a cardiac catheter procedure and that your priority is going to be performing neurovascular checks and monitoring for bleeding, but then the next thing you know you have multiple other issues to deal with that are changing the patient's condition. From this the big take away was how important it is to always be prepared, to have emergency equipment ready at the bedside and to have open lines of communication with support staff.

2. What was something that surprised you in the care of this patient?
   It was surprising to go from learning about an MI, and picturing in your head the chaos of patient arrival to the emergency department, and then seeing it in a simulation. It's a medical emergency that requires prompt treatment, but the health care team did a great job of remaining composed and following protocol to ensure safe delivery of the patient to the cath lab within the 90-minute recommended window of time.

3. What is something you would do differently with the care of this client?
   Something I would have done differently in the care of this patient is to ask them if they have ever undergone a procedure or diagnostic test in which they received contrast dye. This patient's wife reported a history of "blocked arteries" so I would think that at some point they may have had some catheterization done to evaluate blockages in the arteries. However, since not every patient is a good historian, it would be a good idea to follow up with questioning whether they ever had an adverse reaction to shellfish. I would explain to the patient that a cardiac catheterization is going to include the administration of contrast dye which could cause a serious reaction if they have a sensitivity.

4. How will this simulation experience impact your nursing practice?
   This simulation is going to stick with me in remembering the importance of asking future patients about allergies, especially to contrast dye, prior to procedures or medication administration. I'm also going to take away from this experience the importance of being prepared for any situation that could require emergent intervention. Again, like the ICU guest speaker mentioned… anything can happen on any floor and nurses from all specialties need to be able to respond to the change in patient condition in the immediate timeframe because it's not going to be an ICU problem until the patient can actually get to the ICU.