ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2024

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ATI Scenario: CKD

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: Chronic Kidney Disease

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

Anatomy and Physiology
Normal Structures
The kidneys are the main organs of the urinary system. Primary functions include the regulation of volume and composition of extracellular fluid AND the excretion of waste products from the body. They function to control BP (RAAS), make erythropoietin, activate vitamin D, and regulate acid-base-balance.
Macrostructure: paired and bean-shaped located behind the peritoneum and on either side of the vertebral column. The adrenal gland lies on top of each. The kidneys are surrounded by fat and connective tissue (capsule) acting as a shock absorber. The Hilus is where the medial artery and nerves ENTER and the renal vein and ureter EXIT. Parenchyma is the tissue of the kidney which as an outer (cortex) layer and inner (medulla) layer. The apices (tops) 0f the kidneys are the papillae through which urine passes to enter the calyces. Minor calyces widen to form major calyces which end in a funnel shaped sac to collect urine called the renal pelvis which drains through the ureters to the bladder.
Microstructure: The nephron is the functional unit of the kidney. Each one is composed of the glomerulus, bowman's capsule, and a tubular system consisting of the proximal convoluted tubule, loop of Henle, distal convoluted tubule, and collecting tubules. The cortex includes the glomerulus, bowman's capsule, and prox/dist tubules. The medulla includes the loop of Henle and collecting tubules. Many tubules join to form a single duct merging to empty via the papilla.
Ureters: tubes carrying urine from renal pelvis to the bladder. They insert to either side of the bladder base at the ureterovesical junctions. The ureteropelvic junction is the narrow area where each ureter joins the renal pelvis.
Bladder: Stretchable/sac-like hollow organ behind the symphysis pubis and anterior to the vagina and rectum. It is a reservoir for urine and contracts when empty.
Normal UO: 30/mL/hr
Urine formation: process of filtration, reabsorption, secretion/excretion of water, electrolytes, and metabolic wastes. Filtration begins at the glomerulus as a semipermeable membrane allowing a portion of filtered blood to go into the bowman's capsule. From there, it begins to pass down the tubule. The tubules and collection ducts reabsorb essential materials and excrete others. Reabsorption is the passage of substance from the lumen of the tubules to through the tubule cells and into capillaries. Tubular secretion passes the substance from the capillaries through tubular cells into the lumen of the tubule. Reabsorption continues in the loop of Henle where water is conserved. The descending loop is permeable to water and moderately permeable to sodium, urea, and other solutes. Chloride ions are actively reabsorbed in the ascending loop followed by passive reabsorption of sodium ions. ADH is needed for water reabsorption. It allows water to be absorbed into the peritubular capillaries and return to circulation. Osmoreceptors detect a decrease in plasma osmolality signaling the posterior pituitary to inhibit ADH secretion, causing tubules to become impermeable to water and leaving the body as urine.

GFR: amount of blood filtered by the glomeruli per minute.
BUN: Blood urea nitrogen (waste product created in the liver when breaking down protein) Normally, kidneys filter out this waste.

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease
Chronic Kidney Disease **(CKD)** is a progressive, irreversibly kidney disease with 5 stages.
Stage 1: Minimal kidney damage when GFR within expected reference range (greater than 90mL/min)
Stage 2: Mild kidney damage with mildly decreased GFR (60-89mL/min)
Stage 3: Moderate kidney damage with moderate decrease in GFR (30-59mL/min)
Stage 4: Severe kidney damage with severe decrease in GFR (15-29mL/min)
Stage 5: Kidney failure and end-stage renal disease with little or no glomerular filtration. (less than 15mL/min)
End stage kidney disease exists when 90% of the functioning nephrons are destroyed and no longer able to maintain fluid. Dialysis or kidney transplant can maintain life but is not a cure.

Risk factors:
AKI
DM
Chronic glomerulonephritis
Nephrotoxic medication (gentamicin, NSAIDS)
HTN (esp. African Americans)
Autoimmune disorders
Polycystic kidney disease
Pyelonephritis
Renal artery stenosis
Recurrent severe infections

Expected findings:
MOSTLY related to fluid volume overload.
Neuro: lethargy, decreased attention span, slurring, jerky/tremors.
Cardiovascular: fluid overload, JVD, ocular/peripheral edema, hyperlipidemia, hypertension, arrythmia, HF, peaked T-waves (hyperkalemia)
Resp: uremic halitosis, yawning, SOB, tachy, Kussmaul, crackles, pleural friction rub, frothy sputum.
Hematologic: anemia, ecchymoses, petechiae, melena.
GI: ulcers in mouth, foul breath, bloody stools, vomiting.
Musculoskeletal: osteodystrophy
Renal: proteinuria, hematuria, change in amount, color, and concentration.
Skin: decreased turgor, jaundice, dryness, pruritis, uremic frost.
Repro: ED

Laboratory testing: UA, increased creatinine and BUN, Electrolytes (decreased sodium and calcium, increased potassium, phosphorus, and magnesium), CBC (decreased H&H from anemia and loss of erythropoietin).

CR: byproduct of from muscle and protein metabolism.		

To Be Completed Before the Simulation

Anticipated Patient Problem: Excess Fluid Volume

Goal 1: Pt will remain normovolemic as evidenced by a UO of at least 30mL/hr 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?
Assess weight with same scale and amount of clothing daily.	Educate on importance of maintaining a low sodium diet.
Assess HR, BP, and RR q4h	Educate on signs and symptoms of excessive fluid volume r/t chronic kidney disease.
Auscultate lung sounds q4h	Administer Lasix as ordered by provider.
Assess for peripheral edema q4h.	Elevate edematous extremities and handle with care.
Assess intake and output q1h.	Maintain fluid restriction as ordered.
Monitor serum electrolytes (especially Na+ and K+) qshift.	Notify provider and correct imbalances as ordered.

Goal 2: Pt will have absence of pulmonary crackles during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: Risk for electrolyte imbalance

Goal 1: Pt will maintain a serum potassium level within normal limits (3.5-5) 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?
Assess potassium level qshift	Administer diuretics promoting potassium excretion as ordered by provider.
Assess sodium level qshift	Educate on decreasing dietary sodium intake.
Assess accurate intake and output q1h	Maintain seizure precautions as indicated.
Assess for changes in LOC qshift	Notify provider of changes upon reassessment.
Assess HR, noting changes in rate and rhythm qshift	Apply and maintain continuous EKG leads
Assess musculoskeletal function as well as muscle strength qshift.	Maintain fall precautions as indicated.

Goal 2: Pt will maintain a serum sodium level within normal limits (135-145) during my time of care.

To Be Completed During the Simulation:

Actual Patient Problem: Excess Fluid Volume

Clinical Reasoning:
weight gain of 13.2 kg over 2 days, +3 edema to LE, rhonchi bilaterally, admitted for hypervolemia.

Goal: AS will have a urine output of at least 30mL/hr during my time of care.
Met: ✓ **Unmet:** ☐
Goal: AS will not have worsening respiratory crackles/rhonchi during my time of care.
Met: ✓ **Unmet:** ☐
Actual Patient Problem: Risk for electrolyte imbalance

Clinical Reasoning: dx of CKD, hypervolemia, K+: 6
Goal: AS will maintain a potassium level wnl during my time of care. (3.5-5)
Met: ☐ **Unmet:** ✓
Goal: AS will maintain a sodium level wnl during my time of care (135-145)
Met: ☐ **Unmet:** ✓

Additional Patient Problems: activity intolerance(3), hopelessness(4), readiness for enhanced nutrition(5), deficient knowledge(6)

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
1,2,3,	1600	States "I'm just so tired… moving around by myself is very difficult at times" and "my legs feel so tight." +2 pitting edema to bilateral LE. BP:170/92 HR: 110	1730	Administered 20mg furosemide PO.	1900	UO: 150mL +3 edema and rhonchi unchanged. Potassium: 5.9
1,3	1600	SOB, scattered rhonchi bilaterally, tachypneic, and labored with activity. CXR: bilateral pulmonary venous congestion with infiltrates. SpO2: 94% RA RR: 22	1730	RN raised HOB and applied 2L O2 via nasal canula.	1800	SpO2: 96% 2L NC RR: 18
2	1600	K+: 6 Na+: 132 Glucose: 174	1730	RN applied cardiac telemetry monitor	1800	Sinus tachycardia with peaked T waves.

						HR: 114
6	1745	Expressed confusion about the difference between hemodialysis and peritoneal dialysis.	1745	RN educated AS on hemodialysis using an illustration.	1750	Stated "I see," verbalizing understanding.
1,2,5	1750	H&P: Stage 5 kidney failure, Type II DM, AV vistula for dialysis. GFR: 8mL/min A1C: 7.4% BUN: 42 Cr: 8.0	1755	RN maintained strict intake and output. Renal diet with 1.8g of sodium maintained.	1800	total input: 572ml total output: 370ml glucose: 124
1	2130	BP: 182/90 HR: 114	2200	RN notified provider of BP and administered 20mg labetalol IV bolus.	2230	BP: 164/80 HR: 108 BP stable and reports being able to rest well through the night.
1,2,3	0730	Returned to unit from hemodialysis. c/o severe fatigue, chills, emesis, and no appetite. Scattered rhonchi bilaterally in all fields. RR 18, slightly labored and still requiring 1L O2 NC. +2 pitting edema and weakness with gait.	0930	Administered furosemide 20mg and Losartan 50mg after completion of hemodialysis. RN monitoring for disequilibrium syndrome.	1100	BP: 134/76 HR: 88 SpO2: 97% RA +2 edema UO: 35mL
4	1245	Sitting up in chair crying, "I just feel so sorry for myself… this is all so overwhelming." Explains that hemodialysis takes away from living her usual life.	1245	RN utilized therapeutic communication and provided comfort for AS during a time of uncertainty.	1255	AS collaborated with RN and case management to utilize ways for her to regain some control and normalcy even while going through dialysis.
4,6	1400	SDHQ shows signs of inability to afford food and medication, along with transportation issues.	1415	RN reported findings to case management for further assistance.	1500	Case manager arranged a van for transportation to dialysis.
5	1700	Reports having trouble selecting the foods she can and cannot have.	1730	Home health RN educates AS on types of food to incorporate into her diet.	1730	"I feel more comfortable with my hemodialysis and my lab work has improved"

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
BUN: 42
CR: 8.9
K+: 6
Na+: 132
CXR: bilateral pulmonary venous congestion with infiltrates.
EKG: sinus tach with peaked T waves

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

Signs and Symptoms
Fatigue
SOB
Pitting edema
Adventitious breath sounds
Decreased UO
Hyperkalemia
Hypervolemia

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

Contributing Risk Factors
Type II DM
Hypertension

Therapeutic Procedures
Non-surgical
Peritoneal Dialysis
Hemodialysis
Hx of peritoneal dialysis

Surgical
none

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)

Disequilibrium syndrome
Cardiac dysrhythmias

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

Medication Management
Furosemide
Labetalol
Aspirin
Ferric citrate
Tramadol
Docusate
Gabapentin
Atorvastatin
Epoetin
Glipizide

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

Non-Pharmacologic Care Measures

Therapeutic communication
O2 therapy
Intake and Output
Renal diet teaching
Electrolyte monitoring
Continuous telemetry

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

Stressors the client experienced?
Financial burden of food and medicine.
Transportation limitation.
New hemodialysis schedule.
Loss of control
Uncertainty/Fear

Client/Family Education

Document 3 teaching topics specific for this client.
• Renal diet modification, maintaining 1.8g sodium/day.
• Process of hemodialysis and mechanism of therapy.
• Strategies to maintain control/independence.

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

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
RN
Nephrology/Providers
Case Management
Home Health

Patient Resources
home health, case management (van rides to hemodialysis), therapy/support person or group.

Reflection Questions

Directions: Write reflection including the following:

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

   One of the biggest takeaways from this ATI scenario is the apparent emotional toll that having a chronic disease can have on a patient. Although this scenario was very informative by way of showing the different manifestations of CKD and treatment measures to follow in the acute care setting, I think what was most memorable was how much this diagnosis and new plan of care/management impacted her life. She was originally receiving peritoneal dialysis, and after being educated on the process of hemodialysis and the steps to follow, she felt as though she was losing control of her own life, which is hard. The RN was very compassionate and kind, using therapeutic communication to comfort the patient and validate her feelings.

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

   Something that surprised me with the care of this patient is that case management was able to provide van rides three times a week for AS to receive hemodialysis. I didn’t know that this was an option and I thought it was nice and helpful to AS, as she struggles with transportation, but dialysis is necessary for the management of her CKD.

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

   Something I would do differently/better in this scenario with the care of AS is keep a more consistent eye on intake and output. Although I was able to see it in the chart, some tabs of the chart go away with each video, so continuing to either write notes, or add them to my nurse’s notes as they occur, that might help me to keep better track. I think I did well with my physical reassessment’s r/t the excess fluid volume and stayed on top of respiratory symptoms right away.

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

   This simulation will impact my nursing practice by way of better preparation for any CKD patients in the future. Also, I learned a lot about hemodialysis education that I could provide for my patients who might have questions like AS did. Seeing the way these nurses, especially Sam, used her therapeutic communication and comfort measures was a very great example of how to care for a patient with a chronic illness going through a difficult time and big change in their day-to-day life and routine. It was a good reminder to put yourself in the patient’s shoes and provide the reassurance and kindness you would also want to receive.