ATI Real Life Student Packet
N202 Advanced Concepts of Nursing
2022

Student Name: Drew Morris

ATI Scenario: Kidney Disease

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: Kidney Disease

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

Anatomy and Physiology

Normal Structures

The kidneys are 11 centimeters long, paired, reddish brown organs situated on the posterior wall of the abdominal cavity, one on each side of the vertebral column and capped by the adrenal gland. Due to the presence of the liver, the right kidney is slightly lower than the left kidney. The kidneys are located between muscles of the back and the peritoneal cavity. There are 1 million nephrons in each kidney, each nephron consists of two parts: a glomerulus and a tubule. Blood flows to the kids via the renal artery by means of the afferent arteriole, then drains from the glomerulus through the efferent arteriole. This vessel carries blood from the glomerulus to the capillaries of the kidneys.

The ability of the kidney to alter blood composition and maintain homeostasis is based on three processes:

- **Glomerular Filtration**– the physical separation of the blood's formed elements and its plasma proteins from the fluid component. It allows water and small molecules to move from the glomerular capillary into the lumen of Bowman's capsule. The fluid product is called glomerular filtrate. Normal GFR is 180 liters per day.
- **Selective Reabsorption**– substances in the filtrate pass from the nephrons back into the blood of the peritubular capillaries avert their loss. Not all the filtrate is reabsorbed, some are excreted. Selection depends on the relative permeability of the tubule to various components.
- **Tubular Secretion**– Upon completion of the reabsorption and secretion processes,

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Chronic Kidney Disease (CKD) involves progressive, irreversible loss of kidney function. The most common causes of CKD are diabetic nephropathy, hypertensive nephrosclerosis, and various primary and secondary glomerulopathies. Metabolic syndrome is also a large and growing cause of renal damage.

Decreased renal function interferes with the kidneys' ability to maintain fluid and electrolyte homeostasis. The ability to concentrate urine declines early and is followed by decreases in ability to excrete excess phosphate, acid, and potassium. When renal failure is advanced (GFR </= 15mL/min), the ability to effectively dilute or concentrate urine is lost; therefore, urine osmolality is usually fixed at about 300-320 mOsm/kg, and urinary volume does not respond readily to variations in water intake.

the remaining fluid is transported to components of the urinary system to be secreted as urine. **Urine** is composed of water and materials that has been filtered but not reabsorbed. Substances present in urine represents amount in excess of those required for homeostasis.		

Anticipated Patient Problems, Goals, & Interventions Based on Medical Diagnosis

** This worksheet should be completed before you begin the ATI simulation.

Problem #1: Electrolyte imbalance r/t impaired kidney function.

Patient Goals:

1. Pt will have a potassium level between 3.5-5.0 during my time of care.

2. Pt will be able to verbally teachback the need for sodium and potassium restrictions during my time of care.

Assessments:

- Monitor heart rate, rhythm, and EKG continuously for signs of PVCs. Assess LOC and neuromuscular function, including sensation, strength, and movement q shift. Monitor urinary output q 8 hours.

Interventions (In priority order):

1. Encourage frequent rest periods and assist with daily activities as indicated.
2. Teach and assist the client with range-of-motion exercises as tolerated.
3. Identify and discontinue dietary sources of potassium such as beans, dark leafy greens, potatoes, squash, yogurt and fish as indicated.
4. Prepare for and assist with dialysis prn.
5. Teach to avoid salt substitutes because they contain potassium chloride as indicated.
6. Teach signs and symptoms of hyperkalemia such as fatigue, nausea, and muscle weakness continuously and instruct to notify the nurse immediately.

Problem #2: Risk for decreased cardiac output r/t impaired renal function.

Patient Goals:

1. Pt will maintain adequate cardiac output AEB by BP and HR within patient's normal range.

2. Pt will maintain adequate cardiac output AEB peripheral pulses strong and equal with prompt capillary refill time <3 seconds.

Assessments:

- Auscultate heart and lungs q 8 hours. Assess orthostatic vital signs q 4 hours. Assess peripheral pulses and capillary refill time q 8 hours. Assess activity level and response to activity as indicated.

Interventions (In priority order):

1. Investigate reports of chest pain, noting location, radiation, and severity promptly and as indicated.
2. Administer antihypertensives as ordered.
3. Provide a calm environment and minimize environmental activity and noise continuously.
4. Implement dietary sodium, fat, and cholesterol restrictions as indicated.
5. Instruct in relaxation techniques, guided imagery, and distractions prn.
6. Provide comfort measures continuously.

To Be Completed During the Simulation

Nursing Notes

Time	*I Or E*	Notes	Specify Problem #
0600	E	Admitted with increased shortness of breath and weakness. BP= 80/62, RR= 30, HR= 164, and in A-fib. PMH= chronic renal failure, CAD, Type 2 DM, PVD, and a-fib. Sodium low at 128, potassium high at 5.1, BUN high at 44, creatinine high at 3.0, GFR= 45, WBC high at 16.1, Hgb and Hct low, right lung opacities greater than left lung, on 2 L/min NC and pulse ox= 91%. ----------DM	1,2,5
0715	E	AO x4. HR irregular and crackles in lungs. O2 sats= 88% on 2L/min NC. Started antibiotics yesterday, for infection of foot. Diminished feeling in right lower extremity. ----------DM	2,5
0715	I	Increased NC to 3L/min and changed dressing.	2,5
0800	E	Pulse ox= 88% on 3L/min NC. States this their breathing does not feel much better and “I just can’t seem to get a deep breath.”----------DM	2
0800	I	Placed in semi-Fowler’s. ----------DM	2
0830	I	Administer Lasix. ----------DM	2,4
0900	E	States “I feel a little better” after IV Lasix administration. Voided 150 mL. ----------DM	2,3,4
0900	I	Decreased oxygen and discontinued IV fluids. ----------DM	2,3

0915	E	HR irregular. SOB present. “Feel like my heart is racing.” Bladder scan shows only a scant amount of urine. K+= 6.0, BUN= 52 and Creatinine= 3.6. Elevated T wave on telemetry. HR= 140. Denies chest discomfort, numbness, and tingling.---------- DM	1,2,3
1000	I	Administered IV Lasix, did not give vancomycin. ----------DM	2
1030	E	SOB and visibly uncomfortable. RR increased and states “My heart is beating faster; I feel really sick like I’m about to throw up and I’m so hot. ----------DM	1,2
1500	E	V-tach on EKG. ----------DM	1
1505	I	Called Rapid Response Team. ----------DM	1
1530	E	Now stabilized, HR back to 100. ----------DM	1
1630	E	States “I did not get any sleep last night.” ----------DM	N/A
1630	I	Educated about reason for Sodium Polystyrene Sulfonate administration. ----------DM	1
1630	E	Verbalized understanding. ----------DM	1
1730	E	Two large BMs. Small amount of dark, concentrated urine present in urinal. States “I’m feeling a little bit better. It’s not as tough to breathe.”- ----------DM	1,2
1730	I	Assisted back into bed. ----------DM	N/A
1735	E	Verbalized comfort. ----------DM	5
1800	I	Administered IV Lasix. ----------DM	1,3,4
1830	E	Stated “I had to urinate a lot” since Lasix administration. K+= 4.8. --DM	1,3,4
1830	I	Emptied urinal. ----------DM	4
1835	E	Pain and tenderness at peripheral IV site. Red and swollen and warm to the touch. ----------DM	5
1840	I	Removed peripheral IV. Instructed about PICC line placement. ------DM	5
1900	I	Educated about home-health visits. ----------DM	N/A
1900	E	Expressed gratitude and verbalized understanding about antibiotic administration out-patient and follow up appointments. ----------DM	5

Initials/ Signature: DM/ D. Morris SNB

Actual Patient Problems & Goals

** This worksheet should be completed after you complete the ATI simulation.

Problem #1: Electrolyte imbalance

Patient Goals:

1. R.J. will have a normal potassium level during my time of care. Met ☐ Unmet ☐
2. R.J. will have an adequate urinary output of 30mL/hour during my time of care. Met ☐ Unmet ☐

Problem #2: Impaired gas exchange

Patient Goals:

1. R.J. will have clear lung sounds during my time of care. Met ☐ Unmet ☐

2. R.J.'s pulse ox will be between 95-100% on RA prior to discharge. Met ☐ Unmet ☐

Problem #3:

Patient Goals: Excess fluid volume

1. R.J. will have a urine output of at least 30mL/hour during my time of care. Met ☐ Unmet ☐
2. R.J. lungs will be free of crackles prior to discharge. Met ☐ Unmet ☐

Problem #4: Impaired urinary elimination

Patient Goals:

1. R.J. will have a urine output of at least 30mL/hour during my time of care. Met ☐ Unmet ☐
2. R.J. will be absent of bladder distension prior to discharge. Met ☐ Unmet ☐

Problem #5: Impaired skin integrity

Patient Goals:

1. R.J. describes measures to protect and heal the tissue, including wound care during my time of care. Met ☐ Unmet ☐
2. R.J.'s wound decreases in size and has increased granulation tissue prior to discharge. Met ☐ Unmet ☐

Patient Resources: Nephrologist, endocrinologist, cardiologist, home health.

Patient Teaching: Medication regimen, PICC lines, oxygen administration.

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
Chem-7

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

Signs and Symptoms
Fluid retention
Cardiac dysrhythmias
Weakness
Nausea
Lethargy
Fatigue

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

Contributing Risk Factors
Chronic renal failure CAD Type 2 DM PVD

Therapeutic Procedures
Non-surgical Loop diuretics Fluid restriction Surgical

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)
Waste product accumulation within the bloodstream Electrolytes and acid-base imbalances More prone to infection Metabolic acidosis

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

Medication Management
Furosemide Sodium Polystyrene Sulfonate

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

Non-Pharmacologic Care Measures
Comfort measures Caring for secondary issues (respiratory issues) Thorough education

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

Stressors the client experienced?
Anxiety Discomfort Depression

Client/Family Education

Document 3 teaching topics specific for this client.
• Education about sodium polystyrene sulfonate • Education about side effects of imbalanced potassium • Education about home health visits and care for a PICC line.

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

Multidisciplinary Team Involvement (Which other disciplines were involved in caring for this client?)
Nephrologist Cardiologist Endocrinologist

Reflection Paper

Directions: Write a 1-page reflection paper using Times New Roman, 12 pt. font and double-spaced. Include the following:

1. Describe an "Aha" moment you experienced during this learning experience.
2. What were the most important aspects of this simulation and what did you learn?
3. How will this simulation experience impact your nursing practice?

An "Aha" moment I experienced during the virtual clinical experience was forgetting the potassium is mainly excreted in feces and not urine. This is why the sodium polystyrene sulfonate was administered. I have grown accustomed to the majority of medications being excreted via the kidneys.

The most important aspects of the simulation to me was the thorough bedside shift report in the beginning of the simulation. I feel like with a patient coming in with vital signs this concerning and a slightly elevated potassium level, thoroughness is vital to ensure proper care. Another important aspect during the simulation was how quickly a patient's condition can worsen when their kidneys are not working properly. R.J. came in with elevated potassium and despite the multiple administrations of Lasix, he was still retaining a large amount of metabolic waste products that were circulating in his bloodstream. Due to chronic renal disease, his body was also holding onto large amounts of potassium. Because of this, his condition almost became fatal when his potassium was as high as 6 (only 1 unit above baseline) and sent him into ventricular tachycardia, a potentially deadly rhythm if not treated promptly. The main thing I learned from this experience was that potassium is mostly excreted in your feces and not your urine, and the early signs of elevated potassium such as restlessness, nausea and possibly vomiting.

This simulation will impact my nursing practice because now, if I ever have a patient come in with acute kidney injury (AKI) or chronic kidney disease (CKD), I know all of the signs to watch out for and how to prevent them. I also know when to notify the doctor. For example, in the simulation when the nurse notifies the doctor about R.J.'s potassium level, the doctor tells the nurse to hold the vancomycin due to its' nephrotoxicity. There are many antibiotics that are extremely nephrotoxic and in this situation, despite the patient having an

active infection, it was more beneficial to the patient to withhold the antibiotic and let the kidneys have time to rest and recover. These are situations that nurses always have to be mindful of. Even though R.J. did not arrive to the emergency department due to kidney issues, the doctor and the nurse both agreed that at that time, the secondary problem was of more importance than the chief complaint.