N431 Concept Map

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Medications

Name:	Class:	Dose:	Route:	Frequency	Reason:	Nursing assessments:
Acetaminophen/Tylenol	P: Nonsalicylate, para-aminophenol derivative T: Antipyretic, nonopioid analgesic	650mg	PO	Every 4 hours as needed	For pain/analgesia	Monitor liver functions & assess pain using a pain scale.
Calcium carbonate	P: Calcium salts T: Antacid	1000mg	PO	Every 8 hours as needed	For heartburn & Indigestion	Ensure patient has good fluid intake. Administer 1-2 hours after meals.
Ondansetron/Zofran	P: Selective serotonin (5-HT3) receptor antagonist. T: Antiemetic	4mg	PO	Every 4 hours as needed	For nausea	Monitor potassium levels before use. Monitor magnesium levels before use.
Senna/Docusate sodium	P: Sulfonic acid T: Stool softner	8.6 mg	PO	Twice daily as needed	For constipation	Monitor bowel movements. Monitor bowel sounds.
Metoprolol/Lopressor	P: Beta-adrenergic blocker T: Antihypertensive, antianginal	25 mg	PO	Once daily	For blood pressure	Monitor blood pressure before and after use. Check for pulse before and after use.
Heparin	P: Anticoagulant T: Anticoagulant	5,000 units	Subcutaneous	Every 8 hours, Three times a day	Prevent blood clots	Monitor aPTT levels. Monitor for signs of bleeding.

(Jones & Bartlett, 2022)

Demographic Data

Date of Admission: 6/14/23
Admission Diagnosis/Chief Complaint: Acute Kidney Injury
Age: 52 years old
Gender: Male
Race/Ethnicity: African American
Allergies: No known allergies
Code Status: Full code
Height in cm: 177.8
Weight in kg: 86.2 kg
Psychosocial Developmental Stage: Generativity vs. Stagnation
Cognitive Developmental Stage: Formal Operations
Braden Score: 23
Morse Fall Score: 25
Infection Control Precautions: Standard precautions

Pathophysiology

Disease Process: In AKI, decreased glomerular filtration of the blood can lead to azotemia, a high serum creatine, and fluid retention (Capriotti, 2020). AKI s divided into four phases: the initial, oliguria, diuresis, and recovery (Capriotti, 2020). The initial phases last for hours or days and are determined from the time of insult until the initial manifestations of AKI (Capriotti, 2022). The oliguric phase is due to decreased GFR and retention of potassium, urea, creatinine, and sulfate (Capriotti, 2020). During the oliguric phase, urine formation is usually decreased and can cause signs of fluid overload (Capriotti, 2020). In the diuretic phase, the kidneys recover from the initial insult. Fibrotic tissue may form in regions of damaged nephrons (Capriotti, 2020). In the recovery phase, the time needed for the final repair of renal damage starts with the onset of increased urine output (Capriotti, 2020). Inflammation will go away, and the urine will be concentrated, leading to a return to normal renal function (Capriotti, 2020).

S/S of disease:
Edema in the legs and feet, decreased urine output, fatigue, weakness, shortness of breath, seizures, increased confusion, and angina (American Kidney Fund, 2022).

Method of Diagnosis: To diagnose AKI, a urinalysis, complete blood count, creatinine, blood urea nitrogen (BUN), and arterial blood gasses are checked to see if the patient indicates an AKI (Capriotti, 2020). A renal biopsy and radiographic imaging can also assess the kidney's size and structure (Capriotti, 2020).

Treatment of disease: Treatment is dependent on the cause of AKI. Diuretics may be given, and electrolytes may be monitored closely (Capriotti, 2020). Medicines also used to control blood pressure are given to help treat AKI (American Kidney Fund, 2022). In severe AKI, continuous renal replacement therapy (CRRT) or hemodialysis may be used to help aid in the treatment of AKI (Capriotti, 2020).

Relevant patient data: This patient was experiencing fatigue, weakness, and possible seizure-like activity. The patient has abnormal creatinine, BUN, RBC, Hgb, Hct, GFR, and calcium levels which correlate with acute kidney injury. The patient had an ultrasound done to assess his kidneys which shows cysts on his right kidney. The patient tested positive for substances including cocaine, opioids, and benzodiazepines which caused the acute kidney injury.

Admission History

The patient presents to the emergency room for weakness and fatigue. The patient believes to be withdrawing from substance abuse. The patient stated he had "seizure-like activity," prompting him to come to the hospital. The patient stated walking and doing daily activities worsen his weakness and fatigue. The patient said he took two ibuprofen tablets to improve the pain. He has not been treated for this before.

Medical History

Previous Medical History: Anemia & Hypertension

Prior Hospitalizations: Lower GI Bleed 11/2022, Acute renal failure due to rhabdomyolysis 5/2019, Stab wound in right arm 5/2011.

Previous Surgical History: Right arm surgery due to stab wound and colonoscopy.

Social History: Smoker; ½ pack per day of cigarettes, a smoker for 25 + years. Alcohol: 1 pint of Brandy per week, drinker for 25+ years. Drugs- cocaine, opioids, & benzodiazepines, uses four times a week, drug user for the past three years.

Lab Values/Diagnostics

Name:	Normal	Today's value/Reason
RBC	4.40-5.80	3.76- RBC is decreased due to the acute kidney injury. There is a decrease in renal function which inhibits the production of erythropoietin. Therefore, the bone marrow is not making more red blood cells (Capriotti, 2020).
Hgb	13.0-[illegible]	9.6- Hgb is decreased due to the acute kidney injury. There is a decrease in renal function which inhibits the production of erythropoietin. Therefore, the bone marrow is not making more red blood cells (Capriotti, 2020).
Hct	38.0-58.0	30.1- Hct is decreased due to the acute kidney injury. There is a decrease in renal function which inhibits the production of erythropoietin. Therefore, the bone marrow is not making more red blood cells (Capriotti, 2020).
BUN	8-26	37- BUN is increased because do the acute kidney injury, the kidney function slows down and is not able to eliminate waste appropriately. This causes an increase in BUN (Capriotti, 2020).
Creatinine	0.70-1.30	2.43- creatinine is increased because there is a decrease clearance by the kidneys due to acute kidney injury. This causes an increase of creatinine (Capriotti, 2020).
Calcium	8.7-10.5	8.6- calcium is decreased because in acute kidney injury there is a decrease in calcium absorption from the kidneys (Capriotti, 2020).
GFR (African)	>60	34- GFR is decreased because of the acute kidney injury (Capriotti, 2020).
Urine Drug Screen:	N/A	N/A
UR Benzodiazepines	Negative	Positive- This is positive because patient uses benzodiazepines.
UR Cocaine Metabolite	Negative	Positive- This is positive because patient uses cocaine.
UR Opiates	Negative	Positive- This is positive because patient uses opioids.

Diagnostics

Ultrasound of both kidneys: This was done to assess the kidneys to look at their size and shape. This ultrasound can detect cysts, obstructions, fluid, and infection in or around the kidneys (Capriotti, 2020).

Impression: Multiple cysts noted in the right kidney. Largest is 7cm x 7cm. No stones seen. No hydronephrosis.

Active Orders

- **0.9% normal saline at 75 mL/hr continuously:** r/t patient has normal saline running for hydration.
- **Consult to nephrology:** r/t patient having acute kidney injury.
- **Insert/maintain peripheral IV:** r/t patient needs IV access for medicine and normal saline.
- **Vital signs every 4 hours:** r/t patient needs vital every 4 hours.
- **CPR→** full code: r/t patients code status.
- **Heparin injection 5,000 units sub cut→ every 8 hours three times a day first dose on 6/15/23:** d/t prevention of blood clots.

Physical Exam/Assessment

General: A/O x4. Patient was alert and oriented. Patient was in no acute distress. Patient was well groomed.

Integument: The patient skin color was appropriate to ethnicity. The patient skin was elastic and warm. Skin turgor was less than three seconds. Left arm and bilateral legs were free from scars, lesions, and bruises. Upper right arm had an incision scar, no bruises or no scratches noted. Braden score is 23.

HEENT: Patient head and neck are symmetrical. Thyroid is non palpable. Trachea is midline with no deviation. Bilateral carotid pulses are palpable and 2+. Bilateral sclera white, bilateral conjunctiva is pink, and bilateral cornea is clear. Bilateral lids are pink and moist without any lesions or discharge. PERRLA is bilaterally and EOM's intact bilaterally. The nose is midline, and the septum is midline. Turbinate's are moist and pink bilaterally with no visible drainage or polyps. Bilateral frontal sinuses are nontender to palpation. Tongue and buccal mucosa were pink, and moist, with no lesions. Patient was missing four teeth.

Cardiovascular: S1 and S2 heart sounds were clear and audible without murmurs or gallops. Cardiac rhythm is steady and regular. Carotid and radial pulses were palpable and are 2+. Dorsalis pedis pulses were 2+ in feet bilaterally. Capillary refill was <3 seconds in fingers and toes bilaterally. No jugular vein distention was seen.

Respiratory: No abnormal lung sounds during auscultation. Lung sounds were clear anterior/posterior bilaterally. No accessory muscles were used for respiration. No wheezes, crackles, or rhonchi were noted.

Genitourinary: No pain with urination. Did not assess urine color.

Gastrointestinal: The patient was a regular diet. Active bowel sounds in all four quadrants. No distension, incisions, scars, wounds, or drains. Abdomen was soft, nontender, no masses noted. Last was bowel movement was on 6/15/23.

Musculoskeletal: Strength 5/5 right upper and lower extremities, 5/5 left upper and lower extremities. Patient is up with standby. Fall score was 25.

Neurological: The patient is A&Ox4. The patient's strength is equal in both arms and both legs. The patient is awake and oriented to his surroundings. The patient has clear speech and can answer questions appropriately.

Most recent VS (include date/time and highlight if abnormal):

0800- 138/84, P: 90, RR: 18, Oral temp: 37.2, O2: 99%

1200- 128/80, P: 92, RR: 16, Oral temp: 37.0 O2: 100%

Pain and pain scale used:

0815- Numeric pain scale; 0/10

1200- Numeric pain scale; 0/10

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
Risk for hypovolemia related to acute kidney injury as evidenced by increased BUN (37) and increased creatinine (2.43).	Risk for injury related to decreased hemoglobin, red blood cells, and hematocrit as evidenced by decreased Hgb (9.6), RBC (3.76), and Hct (30.1).	Risk for ineffective coping related to a positive drug screen as evidenced by positive cocaine, opioids, and benzodiazepine use.
Rationale	**Rationale**	**Rationale**
The patient has increased BUN and creatinine levels which put the patient at risk for fluid overload.	Since the patient has decreased RBCs, Hgb, and Hct the patient is at risk for an injury. This can cause the patient to be more tired, weak, and dizzy, which can cause an injury or fall.	Since the patient has a positive drug screen it puts him at risk for ineffective coping as he has a substance abuse issue.
Interventions	**Interventions**	**Interventions**
Intervention 1: Monitor intake and outputs **Intervention 2:** Monitor vital signs and assess perfusion.	**Intervention 1:** Implement safety precautions. **Intervention 2:** Monitor for changes in levels of consciousness.	**Intervention 1:** Monitor the patient for withdrawal symptoms. **Intervention 2:** Refer the patient to drug rehab programs that can help with his substance abuse disorder.
Evaluation of Interventions	**Evaluation of Interventions**	**Evaluation of Interventions**
The patient understands the possible risk for hypovolemia and is okay with the interventions put in place to monitor for hypovolemia.	The patient understands the interventions placed and will notify the nurse if he has an increase in symptoms.	The patient wants to look at outpatient drug rehab services. The patient has been discussing with the hospital social worker on programs and therapies he can attend to.

References (3) (APA):

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