Medications

Furosemide

- Pharmacological- "Loop diuretic" (Nurse's Drug Handbook, 2021, p. 601).
- Therapeutic- "Antihypertensive, diuretic" (Nurse's Drug Handbook, 2021, p. 601).
- This client is taking this medication because the patient is still producing urine therefore trying to excrete the excess fluid.
- Be aware of patients with a sulfonamide allergy. Obtain patients weight before administering the dose and during medication therapy. Monitor for hypokalemia.

Folic acid

- Pharmacological- "Vitamin B" (Drugs.com, 2022).
- Therapeutic- "Nutraceutical" (Drugs.com, 2022).
- This patient is taking this medication due to the kidneys not producing enough erythropoietin in the bone marrow to produce red blood cells.
- Check for allergies before administration.

Warfarin

- Pharmacological- "Coumarin derivative" (Nurse's Drug Handbook, 2021, p. 1380).
- Therapeutic- "Anticoagulant" (Nurse's Drug Handbook, 2021, p. 1380).
- The patient is taking warfarin for dialysis to clot her blood. During and after the treatment they give the patient small doses.
- Monitor INR and assess therapeutic effects. Monitor closely for bleeding.

Lab Values/Diagnostics

The patient had a chest x-ray done on 11/6/2022. The patient came into the ED with shortness of breath. Doctors wanted to rule out the heart. Scans showed the heart size is mildly enlarged. There was no visualized pneumothorax or pleural effusion. The scans indicate mild interstitial thickening. Cardiomegaly and mild pulmonary edema were found upon reading the scan.

The patient had a CT of the abdomen and pelvic without contrast on 11/6/2022. The patient complained of abdominal distention and pain. Thickening of both lung bases with interstitial edema which indicated left basilar atelectasis. Small bilateral pleural effusions were found. Mild cardiomegaly with severe coronary artery calcification. Scans showed a 2.8 cm cyst on the left hepatic lobe, but no concerning liver mass. Attenuation of the liver was found which could indicate storage disorders, iron deposition, or form medication affects. No biliary ductal dilation of the gallbladder and bile ducts. Normal views of the pancreas, spleen and adrenal glands were noted. Bilateral renal atrophy noted with bilateral perinephric edema likely chronic. There was no nephrolithiasis, hydronephrosis or discrete renal mass. Scans showed the stomach collapsed with unremarkable duodenum. Small bowel appears within normal limits. High density barium is noted within multiple loops of a small bowel. The colon collapsed. No evidence of the appendix noted. No enlarged lymph nodes and ascites noted. Abdominal aorta is atherosclerotic but no aneurysmal. Urinary bladder and reproductive organs were within normal limits without masses and fluid. Mild degenerative changes bilaterally hips and SI joints with moderate degenerative changes lower lumbar spine. Superficial soft tissue edema with lower abdominal pannus with overlying skin thickening that could indicate acute cellulitis.

The patient had an electrocardiogram on 11/6/2022. The test was ordered due to shortness of breath upon arrival. Sinus rhythm, with 1st degree A-V block. Moderate voltage criteria for left ventricular hypertrophy. This test was not able to rule out anterior infarction.

The patient's sodium value is 134 mmol/L with normal range being 135-145 mmol/L. The lab value is low due to the kidneys unable to excrete water because the patient is in end stage renal failure.

The patient chloride value is 95 mEq/L with normal range being 96-106 mEq/L. The lab value is lower due to the patient being in congestive heart failure (Medline Plus, 2022).

Demographic Data

Date of Admission: 11/6/2022

Admission Diagnosis/Chief Complaint: abdominal distention and shortness of breath

Age: 75 years old

Gender: Female

Race/Ethnicity: White

Allergies: prednisone, Cymbalta

Code Status: Full code

Height in cm: 160.02 cm

Pathophysiology

Disease process: My patient is in end-stage renal failure. Kidney failure increases the risk of cardiovascular problems such as heart attacks and strokes. Erythropoietin production is in the kidneys, and renal failure will slow the production. End-stage renal patients are more susceptible to infection (Laminate Medical, 2017). In the skeletal system, the protein amyloid is deposited in the joints and tendons caused by kidney failure (Laminate Medical, 2017). Due to kidney failure, there are high levels of urea which causes nausea and poor appetite symptoms. The harmful toxins that are built over time in the bloodstream can cause harm to all organs. There are several nephrons in the kidney that contribute to the function. "Each nephron in a normal kidney contributes to the total glomerular filtration rate" (Benjamin & Lappin, 2021). Kidney function gradually declines over time and could start asymptomatic. The history of renal failure depends on the etiology, which includes a homeostatic mechanism of the hyperfiltration of the nephrons (Benjamin & Lappin, 2021). "The kidney maintains GFR, despite progressive destruction of nephrons, because the remaining normal nephrons develop hyperfiltration and compensatory hypertrophy" (Benjamin & Lappin, 2021). The nephron adapts and continues to have average clearance of plasma solutes. "This adaptive mechanism will run its course and eventually cause damage to the glomeruli of the remaining nephrons" (Benjamin & Lappin, 2021). Some medications can slow the progress of the disease and maintain renal function, such as ACE inhibitors and Angiotensin II receptor blockers. "Plasma levels of substances such as urea and creatinine show measurable increases only after total GFR has decreased 50%" (Benjamin & Lappin, 2021). Hyperfiltration and hypertrophy are used to maintain GFR, which is also found to be the cause of progressive renal dysfunction. "The increased glomerular capillary pressure may damage the capillaries, leading to focal and segmental glomerulosclerosis (FSGS) and eventually to global glomerulosclerosis" (Benjamin & Lappin, 2021).

S/S of disease:
There are several different signs and symptoms that the patient could be experiencing. These symptoms can include nausea, vomiting, loss of appetite, fatigue, weakness, changes in how much you urinate, chest pain when fluids build up, and shortness of breath (Mayo Clinic, 2022). Other common symptoms include swelling of feet and ankles, hypertension, headaches, difficulty sleeping, decreased mental sharpness, muscle twitches and cramps, persistent itching, and metallic taste (Mayo Clinic, 2022).

Method of Diagnosis: There are several ways that end-stage renal disease can be diagnosed with several tests. Blood tests are taken to measure the amount of waste, creatinine, and urea is what you are looking for in the blood (Mayo Clinic, 2022). Urine tests to see if there is protein albumin in their urine. Ultrasound, CT, or MRI can be taken to look at the size and shape of the kidneys for their unusual appearance. Other diagnoses can include removing a sample of the kidney tissue to see how much damage is done and what stage of renal failure you are in.

Treatment of disease: Some interventions can slow the progression of this disease, but no treatment will cure the disease. They treat the underlying cause, such as high blood pressure and proteinuria. "Other preventive care and monitoring targets

Admission History

The patient was experiencing abdominal distention which was causing her shortness of breath. The description the patient used that she was struggling for air and felt like she was filling up with fluid. The patient expressed pain was constant with no relieving symptoms. The patient drove to the emergency department after still experiencing difficulty breathing after trying nasal cannula oxygen source on 2 Liters prior.

Medical History

Previous Medical History: Atrial tachycardia, CHF, CAD, Type 2 diabetes mellitus, End stage renal failure, hypercholesterolemia, hyperlipidemia, hypertensive cardiovascular disease, hypothyroidism, and paroxysmal atrial fibrillation

Prior Hospitalizations: No prior hospitalization

Previous Surgical History: Bilateral cataracts (3/5/2020), Arterial Venous shunt creation (7/29/2019), Dialysis catheter (5/24/2019), Arthroscopy left knee (6/13/2018), Mitral valve operation (3/20/2018), Cardiac catheterization (3/18/2014), Appendectomy, Cardiac ablation system, Cholecystectomy, Hysterectomy, and Open heart surgery.

Social History: No social history noted.

Active Orders

The patient's active order includes a bed/chair alarm because she is a huge fall risk. The patient has an unsteady gait and history of previous falls.

The patient has an active order for oxygen via a nasal cannula when stats drop below 92%. The patient's oxygen has been an averaging 90% during her stay.

The patient is under bleeding precautions as well. The patient is taking warfarin which

Physical Exam/Assessment

General: Patient is alert and oriented to the person, place, time, and situation. The patient is well groomed and has no acute distress.

Integument: Skin color is right for ethnicity. Patient is warm and dry upon palpation. No rashes, lesions, or bruising. Normal quantity, distribution, and texture of hair. Nails without cladding or cyanosis. Skin turgor normal motility. Capillary refill less than 3 seconds finger and toes bilaterally. Non pitting edema was present on lower extremities.

HEENT: Head and neck are symmetrical, trachea is midline without deviation, thyroid is not palpable, no noted nodules. Bilateral carotid pulses are palpable and 2+. No lymphadenopathy in the head and neck noted. Bilateral sclera white, bilateral cornea clear, bilateral conjunctiva pink. No visible drainage from eyes bilaterally. Eyelids are without lesions and discharge bilaterally. PERRLA bilaterally. EOMs intact bilaterally. Bilaterally auricles are without palpable deformities, lumps, or lesions. Septum is midline with no bleeding or polyps. Bilateral frontal sinuses are nontender to palpation. Posterior pharynx and tonsils are moist and pink without exudate noted. Uvula is midline; soft palate rises and falls symmetrically. Hard palate intact. Detention is good, oral mucosa overall is moist and pink without lesions noted.

Cardiovascular: Clear S1 and S2 without murmurs, gallops, and rubs. PMI palpable at the 5th intercostal space at MCL.

Respiratory: Normal rate and pattern of respirations, respiration symmetrical and non-labored, lung sounds clear throughout anterior and posterior bilaterally. No wheezes, crackles, or rhonchi noted.

Genitourinary: Urine is yellow and clear. Patient urinated a moderate amount with hesitancy. Patient does not have pain when urinating. Patient is on dialysis 3 days a week.

Gastrointestinal: Bowel sounds are hyperactive while on a regular diet. Patient weighs 80.300 kg with height being 63 inches. The patient's abdomen was slightly distended. There is no ostomy, nasogastric tube, or feeding tubes.

Musculoskeletal: All extremities have full range of motion. Hand grips and pedal pushes and pulls demonstrate a +4 bilaterally. Unsteady gait. Patient alert and oriented to person, place, time, and situation. PERRLA bilaterally. Cranial nerves intact bilaterally. The patient does need ADL assistance. The patient's fall score is a 45. Patient needs support to stand and walk.

Neurological: The patient is oriented to person, place, time, and situation. Patient has normal cognition, ability to follow commands, with memory intact. Speech is clear and the patient

Nursing Diagnosis 1	**Nursing Diagnosis 2**	**Nursing Diagnosis 3**
Impaired gas exchange related to congestive heart failure as evidenced by low oxygen saturation.	Excess fluid volume related to end stage renal failure as evidenced by abdominal distention with fluid buildup.	Risk for falls related to difficulty with gait as evidenced by previous falls.
Rationale The patient was admitted to the hospital due to shortness of breath. The patient's oxygen status still remains around 90% and has an active order for oxygen via nasal cannula <92%.	**Rationale** The patient was admitted to the emergency department for fluid buildup in the abdomen that was causing shortness of breath. The patient receives dialysis three times a week to remove the fluid and toxins that the kidney cannot filter anymore.	**Rationale** The patient scored a 45 on the Morse fall risk scale putting the patient at the highest risk for falling.
Interventions **Intervention 1:** "Place patients in the position that best facilitates chest expansion to enhance gas exchange" (Phelps, 2020, p. 253). **Intervention 2:** "Change patients position at least every 2 hours to mobilize secretions and allow aeration of all lung fields" (Phelps, 2020, p. 253).	**Interventions** **Intervention 1:** "Monitor vital signs and breath sounds at least every 4 hours and report changes" (Phelps, 2020, p. 242). **Intervention 2:** "Weigh patients daily before breakfast to provide consistent readings. Check for signs of fluid retention, such as dependent edema, sacral edema, and ascites (Phelps, 2020, p. 243).	**Interventions** **Intervention 1:** "Improve environmental safety factors as needed" (Phelps, 2020, p. 209) **Intervention 2:** "Teach patients with unstable gait the proper use of assistive devices" (Phelps, 2020, p. 210).
Evaluation of Interventions The patient was able to maintain at least a 92% on room air before discharge.	**Evaluation of Interventions** The patient will be able to monitor her vitals and weight after discharge.	**Evaluation of Interventions** The patient will be able to evaluate the safety of the environment along with using assistive devices to help steady her gait.

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