Medications

Furosemide 40 mg IV push bid Therapeutic: Antihypertensive Pharmacological: Loop diuretic

The patient takes it to reduce excess fluids in tissues due to fluid retention in edematous extremities.

Nursing Considerations: Prepare the drug for infusion with normal saline solution, lactated ringer solution, or D5W (Jones,2021, p.500).

Obtain patient weight before and periodically during furosemide therapy to monitor fluid loss (Jones,2021,500).

Administer the drug slowly for 1 to 2 minutes to prevent ototoxicity.

Tramadol: 50 mg 1 tab PO every 4-6 hours Therapeutic: Opioid Analgesic Pharmacological: Opioid agonist

The patient takes it for moderate to moderately severe pain.

Be aware that tramadol should not be given to patients with a history of anaphylactoid reactions to codeine or other opioids (Jones,2021, p.1,092).

The use of tramadol may lead to abuse, addiction, misuse, overdose, and possibly death (Jones,2021, p 1,092).

Acetaminophen-: Therapeutic: Non opioid analgesic Pharmacological: Non-salicylate

Many over-the-counter and prescription products contain acetaminophen be aware of this when calculating the total daily dose (Jones,2021, p.10).

The patient takes it for mild pain instead of ibuprofen since it was an antidiuretic.

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Lab Values/Diagnostics

RBC:3.49 10^6/mcL (4.28-5.5610^6/mcL): There is a loss of red blood cells due to not enough oxygen being delivered to the tissue to do the patient's probable heart failure and insufficient amount of blood being pumped into the rest of the body. As well as possible injured vessels.

Hct:34 % (38.1-48.9%) : Insufficient red blood cells which then correlates to the low hematocrit levels. The patient has probable heart failure insufficient amount of blood being pumped into the rest of the body.

Hgb:11.7 g/dL (13-17 g/dL): There is a lack of oxygen being provided to the red blood cells that caused insufficient red blood cells which then correlates to low hemoglobin levels. The patient has probable heart failure which vessels are more than likely damaged and not enough blood circulates the body due to the heart not pumping efficiently as it used to.

Platelets:431 K/mcL (149-393 K/mcL): Possibly high due to possible injured blood vessels where the body platelets proceeded to protect them which caused elevation in the platelet count.

D-Dimer:6.07 (0.0-.62)**:** Possibly high due to the heart not pumping enough blood to meet the body's needs, which then slows down blood flow and can cause clots to form. The patient may have clots, so an ultrasound venous duplex was performed.

Computed tomography angiography:(-) Showed pulmonary edema: The patient presented with possible heart failure and pulmonary edema, so this test was done to show any blockage in coronary arteries as well as in pulmonary vessels.

Chest X-Ray: (-) Patient presents with pulmonary edema and heart failure symptoms, so a chest x-ray was done to show any abnormalities in the heart, vessels, or lungs.

Ultrasound Venous Duplex Bilateral: (-)11.9 cm popliteal cyst (bakers' cyst) on the right.

The patient's d -dimer being abnormal, edema of lower extremities, and a suspected blood clot are why the duplex was done. A cyst is due to fluid accumulation which can be caused by the patient's history of osteoarthritis.

Demographic Data

Date of Admission:10/30/22
Admission Diagnosis/Chief Complaint: Generalized Edema/Pulmonary Edema (Suspension of new onset congestive heart failure)
Age:50
Gender: Male
Race/Ethnicity: Caucasian
Allergies: No known allergies
Code Status: Full Code
Height in cm: 182.88
Weight in kg:120
Psychosocial Developmental Stage: This patient is in generativity vs. stagnation stage. The patient is in generativity due to caring for others. The patient has older kids and expresses the love and care he has for them. He does not express to be in stagnation as he is content with his life other than trying to figure out why he has been having edema recently. The patient has a healthy developing relationship with his spouse. Patient contributes to the community and works as a contractor.
Cognitive Developmental Stage: Appropriate for age. Formal Operation.
Braden Score:20
Morse Fall Score:45
Infection Control Precautions: N/A

Admission History

The patient is a 50-year-old who presents to the ER with complaints of joint pain, pulmonary edema, and bilateral edema on the hands and lower extremities. The patient has a history of osteoarthritis and tonsillectomy. The patient mentioned he would have surgery on his knees on December 12th but said he is having trouble completing activities of daily living. The patient believes it is from the swelling of his lower extremities which is what brought him to the hospital. The edema started about a month ago on his lower extremities and his hands. The patient expresses pain and tenderness. He also states that his extremities are sore to the touch. Aggravating factors consist of standing and moving around too much. Pushing himself off the chair is painful due to putting too much effort into standing back up and bending the knees. Relieving factors consist of resting and not bending his knees so often. The patient says his treatment were managed at home by taking Ibuprofen three times a day, 800mg by mouth, as prescribed by the doctor.

Medical History

Previous Medical History: Osteoarthritis, Tonsilitis

Prior Hospitalizations: Prior hospitalization in 2006 due to Arthroscopy of knee and 1978 due to tonsillectomy.

Previous Surgical History: Arthroscopy of knee (2006), Tonsillectomy (1978)

Social History: Patient has been a smoker since the age of eighteen he smokes 1.5 packets per day. Patient denies alcohol and drug use.

Pathophysiology

Disease process:
Heart failure can present itself in various amount of ways. There is a difference between right and left-sided heart failure. According to Overbaugh (2021, p.794), this cardiac disorder is unable to pump enough blood to meet the body's metabolic demands or needs. This process can be chronic to where if the not lifestyle is not changed, the patient will be more prone to having hospital visits often and have complications present more often than wanted. Capriotti (2020, p.399) states that an insufficient ejection of blood volume into the arterial circulation is known as systolic dysfunction in heart failure.
In contrast, heart failure is caused by the ventricle's inability to relax, expand, and fill with adequate blood volume, known as diastolic dysfunction. The heart is not working as efficiently as it used to. Capriotti (2020, p.404) states that edema occurs because of high hydrostatic pressure in capillary blood into interstitial and intracellular spaces. Overall, this can affect the body in different manifestations, which in this case was edema in the lower extremities and the hands, and pulmonary edema, not enough oxygen being perfused into the blood since the heart does not eject as efficiently as it should.
S/S of disease:
Various complications can arise from heart failure right side, especially with insufficient blood filling into the pulmonary circulation. Left-sided heart failure coincides with the inability of the left ventricle to as left-sided heart failure cannot supply or eject sufficient blood into the systemic circulation. A patient with chronic heart failure can present with left and right-sided heart failure and cause pulmonary edema. According to Overbaugh (2021, p.797), pulmonary edema occurs when the left ventricle fails, and increased fluid pressure is transferred back through the lungs, leading to damage to the right side of the heart. According to Overbaugh (2021, p.795), signs and symptoms of left-side heart failure include dyspnea, orthopnea, cough, pulmonary crackles, weight gain (rapid), and dependent edema. Capriotti (2020, p.420) states that right-sided heart failure has jugular vein distention, ascites, and ankle or sacral edema. Many patients can go undiagnosed until they present with edema, which is my patient's probable case.
Method of Diagnosis:
In heart failure, the recommended test to be done to diagnose is an Echocardiogram. An echocardiogram will show the function and size of the heart. According to Capriotti (2020, p.422), it is commonly used to evaluate the size and function of the ventricles, valve structure, and valve function. Other diagnostics according to Capriotti (2020, p.422) include cardiac catheterization and angiography, multiple-gated, brain natriuretic peptide, acquisition scan, electrocardiogram, brain natriuretic peptide, and a Chest X-Ray. A BNP can be obtained and if it is above 500 it is indicative of heart failure. My patient had an x-ray done as well as an echocardiogram scheduled in the afternoon.
Treatment of disease:
Treatments can vary to the extent of heart failure but changing the patients to a healthy lifestyle is beneficial. According to Overbaugh (2021, p.803), treatments include oxygen (if needed due to pulmonary congestion), a low-sodium diet, diuretics, smoking cessation, and increasing physical activity. My patient's treatment is being prescribed furosemide, a diuretic, increased activity to three times a day at the hospital, placed on a heart failure diet, and 1500 fluid restriction.

Active Orders

Echocardiogram-Due to suspected new onset congestive heart failure
Furosemide 40 mg IV push-Due to fluid retention causing the edema, a diuretic was ordered. It removes the excess amount of fluid in the body.
Heart failure diet-Suspected heart failure this patient needs to watch what they eat because the heart no longer pumps as efficiently, so if the patient can manage the workload by eating healthy can prevent increasing the workload that the heart has to do.
Stress Test-Due to the patient's admission being caused by a probable heart condition, A stress test is ordered to look at blood flow to the heart muscle and check if blood flow is adequate under stress.
1500 fluid restriction-
Due to the patient having fluid retention and possible heart failure. As well as to avoid overloading the heart, as more fluid is introduced into the body, the more workload the heart will have to do, and it will become harder for the heart to pump and manage it.
Ambulating three times a day- Helps with fluid edema, pumping it back to the heart to some extent and stimulating circulation.
Consult Cardiology- Due to suspected new onset congestive heart failure and aid in detecting the heart problems.

Physical Exam/Assessment

General: The patient is alert and oriented to person, place, time, and situation. Alert and oriented times four. (A&O x4) The patient responds to verbal stimuli. The patient showed no signs of distress at the time. Overall physical hygiene is well cared for and maintained. The patient is pleasant, and calm, with no grimacing.

Integument: The patient's skin color is an even tone throughout the skin and fair white color. Skin turgor is tight, dry, warm, and edematous. The patient expresses to have tenderness on lower extremities in the edematous area. Skin is warm to the touch with red and erythema bilaterally on legs starting slightly above the knee down to the end of the foot. Edema warm to touch bilaterally on hands. Hands and lower extremities showing 2+ pitting edema. Braden scores 20. No clubbing of nails. Even hair distribution except on legs and the lower calves have no hair present.

HEENT: Head normocephalic with symmetry of all facial features. PERRLA, sclera white bilaterally, conjunctival sac pink bilaterally. Lips, tongue, and oral mucosa are pink and moist.

Cardiovascular: Heart sounds assaulted, S1 and S2 noted with no abnormal beats or murmurs. Sinus rhythm on a cardiac monitor. Peripheral pulses strong +3. No jugular vein distention, cap refill less than three seconds. 2+ pitting edema present bilaterally on legs starting from starting slightly above the knee down to the end of the foot. 2+ pitting edema on both hands.

Respiratory: Breath sounds clear with equal aeration on inspiration and expiration in all lobes anteriorly and posteriorly. Nonlabored respiratory on room air with no accessory muscle used

Genitourinary: Patients 'output of 650 mL of clear yellow urine. No pain with urination, no dialysis.

Gastrointestinal: The patient presented with active bowel sounds on all four quadrants. Last bowel movement 10/29/22. No wounds, bruises, incisions, scars, or drains are present. Upon palpation no signs of ascites, no pain or mass felt.

Musculoskeletal: The patient's neurovascular status is intact. Active range of motion present and demonstrated. The patient expresses slight pain with movement felt on hands and bilaterally on legs. The patient uses a walker as a support device. The patient showed 3+ strength in the upper extremitie with limitation to right hand-to-hand being swollen and could not grip his hand as strongly as the left one. The patient showed 3+ strength in the lower extremities. The patient expresses having difficulty walking these past few days due to swollen extremities. The patient's fall score was 45. Mobility status patient requires one personal assistance for completion of activity of daily living.

Neurological: Patient arouses easily, is oriented to person, time, and place, and has no focal neurologic deficits. Speech is clear and sensory is intact.

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

10/31/22 07:00 AM

Temp:97.6°F

HR:75 bpm

Respirations:20 bpm

Blood Pressure: 134/80

Oxygen Saturation:96% RA

Pain and pain scale used:

0/10 **Numerical Scale**

"Only feel pain to the touch on my lower legs currently I do not have pain"

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
At risk for falls related to weakness due to swollen extremities as evidenced by the patient stating having difficulty walking and needing increased need of assistance.	At risk for fluid overload related to possible heart failure as evidence by pitting edema of lower extremities and hands and pulmonary edema.	Knowledge deficit related to insufficient education about edema as evidence by patients taking antidiuretics to help with the pain.
Rationale This nursing diagnosis was chosen due to patient's decreased activity tolerance. The patient expresses recently needing to use a cane due to pain in the lower legs due to the swelling and pain when bending knees. It was also chosen due to him being an up-with-one assistant provided at the hospital with a walker to get around when ambulating.	**Rationale** This nursing diagnosis was chosen due to the patient experiencing lots of symptoms related to heart failure The patient also has 2+ pitting edema present which correlates to excess fluids in the tissues.	**Rationale** The patient expressed not knowing that ibuprofen could cause water retention. He did not know what home remedies to help treat edema. He also had no education on what heart failure symptoms to watch out for and how to take care of himself properly to avoid more complications.
Interventions **Intervention 1:** The patient was provided with a walker to help take off the pressure of full body weight on the legs as well as provide a wide base of support. **Intervention 2:** Implementation of fall risk precautions such as fall risk band, chicklet, and alarm on. Call light in reach in case of needing staff members to come and assist with anything the patient needs. As well as when rounding asking the patient if he needs to void.	**Interventions** **Intervention 1:** The patient's intake and output are closely monitored. Patients are restricted to 1500 ml per day by the provider. As a nurse make sure fluid intake and output are documented correct and make sure he does not exceed his fluid intake. **Intervention 2:** The patient's weight is obtained daily at the same time each day to ensure no abnormal weight is gained. Also, to show progress or any changes with the swelling in his extremities. Attempt to see any fluid loss or fluid gain.	**Interventions** **Intervention 1:** The patient was educated on how Ibuprofen (the medication he takes) can cause water retention. The patient was taught how acetaminophen would be recommended over ibuprofen due to the NSAID being an antidiuretic. **Intervention 2:** The patient was taught on why elevating extremities is important to do when a patient presents with edema. Elevating extremities will bring extra fluid to move back toward the heart for circulation to the rest of the body. Pillows placed underneath the legs and maintained elevated when the patient lied in bed.
Evaluation of Interventions The patient agreed to ask for help from staff to get up for any activity as he is used to getting around on his own. The patient understood why the precautions were in place and followed protocol and pressed the light when needing assistance.	**Evaluation of Interventions** The patient was not too happy to be placed on a fluid restriction as he no longer had the freedom to drink as much as he liked. He eventually understood why the precautions were in place and he agreed to follow the plan	**Evaluation of Interventions** The patient was interested in finding out how many symptoms of his correlated to heart failure. The patient had no idea ibuprofen was not helping his edema. The patient took education well and elevated their extremities when laying down in

	of care. The patient was careful with how much fluid he had to make sure he would not run out of fluids by nighttime if he needed it.	bed for a few hours.

References (3) (APA):

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Overbaugh, Janice L. Hinkle, Kerry H. Cheever, K. (2021). Lippincott Course Point Enhanced for Brunner & Suddarth's Textbook of Medical-Surgical Nursing (15th ed.). Wolters Kluwer Health. https://fadavisreader.vitalsource.com/books/9781975186722

Jones, D.W. (2021). *Nurse's drug handbook.* (A. Bartlett, Ed.) (19th ed.). Jones & Bartlett Learning.