

Firelands Regional Medical Center School of Nursing  
AMSN 2023  
Unit 6: Heart Failure online assignment (1.5H)

Directions:

- Read Lewis Chapter 34, review ATI Pharmacology Made Easy 4.0: Cardiovascular Module: Drug Therapy for Heart Failure, and review the Unit 6 Pharmacology List.
- Utilizing the resources above, complete the case study. There will be many items for each question.
- Utilizing the Pharmacology List and ATI/Skyscape, complete three ATI Medication Templates from the Pharmacology List.
- This assignment is due in the Unit 6: HF assignment drop box by March 13, 2023 at 0800.
- Be prepared to discuss this assignment in class.
- You must complete the assignment in full to receive the 1.5H theory credit.

Assignment Objectives:

- Determine overall goals in the treatment of heart failure.

**CASE STUDY:**

Frannie Failure, a patient on 4P, calls the nurse and states, "I feel really puffy. My rings feel so tight on my fingers and I am having trouble catching my breath." The patient is lying flat in the bed and is alert and oriented x 3. NS @ 125mL/HR running.

Assessment:

- Vital Signs: T 97.9 oral, HR 120, RR 24, SpO2 86% RA, BP 152/94, pain 0/10.
- Respiratory: Lung sounds- crackles throughout bilaterally, non-productive cough.
- Cardiac: Heart sounds- S3, pedal pulses not palpable, 3+ pitting edema bilateral feet and ankles.
- Skin intact, pale and cool.
- Gastrointestinal: Bowel sounds x4 WNL, BM yesterday morning.
- Intake/Output: Patient has had 900ml in and 200ml out.

- 1. What additional information would you want to know?** I would want to know the patient and family's medical history. I would specifically ask the patient if she has ever been diagnosed with hypertension or coronary artery disease because these play a big role to leading up to heart failure. I would also want to know if the patient is diabetic, has metabolic syndrome, if they use tobacco, or have vascular disease. I will also want to discover if the patient has any primary causes of heart failure such as cardiomyopathy, congenital heart defects, CAD, HTN, hyperthyroidism, myocarditis, pulmonary HTN, rheumatic heart disease, or valvular disorders. Heart failure also has a genetic link, so I would ask about other family members experiencing heart failure. You also would want to note the previous assessment on the patient to determine

what her baseline was prior to this happening. I would also want to check when the IV fluids started running.

**2. What assessment/ interventions would be appropriate for this patient?**

An intervention would be to immediately stop the fluids and raise the patients head of bed. I would also gather all information on the patient and use SBAR to call the doctor and inform him of what's going on.

**3. What would you anticipate the healthcare provider to order?** I would anticipate the healthcare provider to order lab work such as serum chemistries, cardiac biomarkers, BNP, liver function tests, CBC, lipid profile, kidney function test and urinalysis. I would also expect him to order a chest x-ray, 12 lead ECG, and do some more in-depth cardiac tests depending on what is seen on other things. I would expect him to determine the underlying cause to move ahead with treating it. Drugs would be ordered to manage the issues going on, such as a diuretic to get excess fluid out of the body would be necessary. Daily weights, with possible sodium and fluid restricted diet as well as O2 if indicated as needed.

**4. What medications would be appropriate for this patient (include all pertinent from the Pharmacology List) ? Doses? Nursing Interventions? You will pick three of these medications to complete the ATI Medication Templates.**

The medications that would be appropriate for this patient include

Ace Inhibitors (captopril) PO Adult 25 mg 3 times a day. Nursing interventions monitor weight and assess patient routinely for resolution of fluid overload (peripheral edema, rales/crackles, dyspnea, weight gain, jugular venous distension)

ARBs (losartan) PO adults' Initiate therapy at 25 mg once daily in patients who are receiving diuretics or are volume depleted. Nursing interventions include assessing blood pressure lying sitting and standing and pulse frequency during initial dose adjustment and periodically during therapy. Notify HCP of significant changes. Monitor frequency of prescription refills to determine compliance. Assess patient for signs of angioedema.

Digoxin IV, IM 0.5-1 mg given as 50% of the dose initially and one quarter of the initial dose in each of the 2 subsequent doses at 6-12 hr intervals. PO adult 0.75-1.5 mg given as 50% of the dose initially and one quarter of the initial dose in each of 2 subsequent doses at 6-12 hr intervals. Maintenance dose 0.125-0.5 mg/day depending on patients lean body weight, renal function, and serum level. Nursing interventions monitor apical pulse for 1 full minute before administering withhold dose and notify health care professional if pulse rate is <60 bpm in an adult <70 bpm in a child or <90 bpm in an infant notify HCP of changes in rate, rhythm, or quality of pulse.

Diltiazem PO adult 30-120 mg 3-4 times daily or 180-240 mg once daily as CD or XR capsules or LA tablets IV adults 0.25 mg/kg may repeat in 15 min with a dose of 0.35 mg/kg may follow with continuous infusion at 10 mg/hr for up to 24 hours. Nursing interventions Monitor BP and pulse prior to therapy during dose titration and periodically during therapy monitor ECG periodically during prolonged therapy may cause prolonged PR interval. Monitor intake and output ratios in daily weight access for signs of heart failure. Monitor frequency of prescription refills to determine adherence. Patients receiving digoxin concurrently with calcium channel blockers should have routine serum digoxin level checked and be monitored for signs and symptoms of

digoxin toxicity. Assess for rash periodically during therapy. May cause Steven Johnson's syndrome. Discontinue therapy if severe or if accompanied with fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis, or eosinophilia

Dobutamine IV adults 2.5-15mcg/kg/min. Monitor BP, heart rate, ECG, pulmonary capillary wedge pressure, cardiac output, CVP, and urinary output continuously during the administration. Report significant changes in vital signs or arrhythmias. Consult physician for parameters for pulse, BP, ECG changes for adjusting dose or discontinuing medication. Palpate peripheral pulses and assess appearance of extremities. Notify HCP if quality of pulse deteriorates or if extremities become cold or mottled.

Dopamine IV adults 1-5 mcg/kg/min. Same as dobutamine for nursing interventions and if HTN occurs administration rate should be increased if hypotension continues, more potent vasoconstrictors (norepinephrine) may be administered

Entresto 49 mg Valsartan 51 mg twice daily initially May double dose every 2 to 4 weeks to Target dose of 97 mg Valsartan 103 mg as tolerated. Nursing interventions Assess blood pressure lying sitting standing and pulse frequency during initial dose adjustment and periodically throughout therapy correct volume or salt depletion prior to administration of therapy. if hypotension occurs, consider reducing the dose of diuretics, antihypertensive agents, and treatment of other causes of hypotension if hypotension persists, reduce the dose or temporarily discontinue therapy. Permanent discontinuation of therapy is usually not required. monitor daily weights and assess patients routinely for resolution of fluid overload. monitor frequency of prescription refills to determine compliance. assess patients for signs of angioedema may occur more frequently in Black patients. discontinuation therapy provides supportive therapy and monitors Airway compromise.

Furosemide Po adults 20 to 80 mg a day as a single dose initially, may repeat in 6 to 8 hours. may increase dose by 20 to 40 mg every 6 to 8 hours until desired response. maintenance doses may be given once or twice daily. IV IM adults 20 to 40 mg May repeat in one to two hours and increase by 20 mg every 1 to 2 hours until response is obtained maintenance dose may be given every 6 to 12 hours. Nursing interventions are to assess fluid status, monitor daily weight intake and output ratios, amount and location of edema, lung sounds, skin turgor, and mucous membranes. notify Healthcare professionals if thirst, dry mouth, lethargy, weakness, hypotension, or oliguria occurs. monitor blood pressure and pulse before and during administration. monitor frequency of prescription refills to determine compliance and patients treated for hypertension.

Bumetanide Po adults 0.5-2 mg/day given in one to two doses (maximum daily dose 10 mg/day) IM, IV Adults 0.5-1 mg/dose May repeat every two/three hours as needed. Assess fluid status during therapy. monitor daily weight, intake and output ratios, amount and location of edema, lung sounds, skin turgor, and mucous membranes. notify Healthcare professionals if thirst, dry mouth lethargy, weakness, hypotension, or oliguria occurs. Monitor blood pressure and pulse before and during administration. monitor frequency of prescription refills to determine compliance. assess patients receiving digoxin for anorexia, nausea, vomiting, muscle cramps, paresthesia, and confusion. risk of digoxin toxicity due to potassium depleting effect of diuretic. Potassium supplements

or potassium sparing diuretics may be used concurrently to prevent hypokalemia. assess patients for tinnitus and hearing loss. Audiometry is recommended for patients receiving prolonged high dose IV therapy. hearing losses are more common after Rapid or high-dose IV Administration in patients with decreased renal function or those taking Ototoxic drugs. Assess for allergies to sulfonamides. assess patient for skin rash frequently during therapy discontinue butanamide at first sign of rash. maybe life-threatening. Steven Johnson syndrome or toxic epidermal necrosis May develop. treat symptomatically. May recur once treatment is stopped.

Hydrochlorothiazide When used as a diuretic in adults generally given daily, but maybe given every other day or two to three days a week. PO adults 12.5 to 100 mg a day in one to two doses. Monitor blood pressure intake output and daily weight and assess feet, legs, and sacral area for edema daily. assess patients, especially if taking digoxin, for anorexia, nausea, vomiting, muscle cramps, paresthesia, and confusion. notify Healthcare professional if these signs of electrolyte imbalance occur. patients taking digitalis glycosides are at a risk of digitalis toxicity because of the potassium depleting effect of the diuretic. assess patients for allergy to sulfonamides. assess patient for skin rash frequency during therapy. discontinued diuretic at first sign of rash. maybe life-threatening. Steven Johnson syndrome May develop. treat symptomatically May recur one's treatment is stopped.

Beta blockers (Carvedilol) PO heart failure 3.125 mg twice daily for 2 weeks. maybe increase to 6.25 mg twice daily dose may be doubled every two weeks as tolerated not to exceed 25 mg twice daily and patience less than 85 kg or 50 mg twice daily impatience greater than 85 kg. Monitor blood pressure and pulse frequently during dose adjustment period and periodically during therapy assess for orthostatic hypotension when assisting patients from supine position. if heart rate decreases below 55 beats a minute decreased dose. monitor intake and output ratios and daily weight. assess patients routinely for evidence of fluid overload. patients May experience worsening symptoms during initiation of therapy for heart failure.

Nesiritide IV adult: 2 mcg/kg bolus followed by 0.01 m cg/kg/min as a continuous infusion. may increase by 0.005 mcg/kg/min every 3 hours up to a maximum infusion rate of 0.03 mcg/kg/min. Assessment monitor BP, pulse, EKG, respiratory rate, cardiac index, PCWP, and Central Venous pressure frequently during Administration period may cause hypotension, especially in patients with blood pressure less than 100 mm hg. reduce dose or discontinue if patient develops hypotension. hypotension may cause renal compromise. use IV fluids and changes in body position to support blood pressure If symptomatic hypotension occurs. it may be restarted at a dose reduced by 30% with no bolus Administration once patient is stabilized hypotension may be prolonged for hours. requiring a period of monitoring prior to restarting. monitor intake and output and way daily. assess for decrease in signs of heart failure. obtain history for reactions to recombinant peptides. may increase risk of allergic reaction. observe patient for signs and symptoms of allergic reactions. discontinue the drug and notify healthcare provider immediately if these occur epinephrine and antihistamine, IV fluids, pressure amines and resuscitation equipment close by of the event of the anaphylactic shock.

Spironolactone PO Adult 25 mg once daily. may increase to 50 mg once daily. If you develop hyperkalemia with 25 mg once daily, decrease the dose to 25 mg every other day. monitor intake and output ratios and daily weights during therapy. if medication is given as an adjunct to anti-hypertensive therapy, evaluate blood pressure before administering and periodically during therapy. assess patients frequently for development of hyperkalemia. Patients who have diabetes mellitus or kidney disease and elderly patients are at an increased risk of developing these symptoms. periodic ECGs may be recommended in patients receiving prolonged therapy. assess patients for skin rash frequently during therapy discontinued diuretic at first sign of rash. Maybe life-threatening Steven Johnson syndrome is toxic epidermal necrolysis. Treat symptomatically. May reoccur once treatment is stopped.

**What patient education would you include?**

I would include patient education about heart failure including what it is, treatments, diagnostics, and management. I would educate on medications including what each one is for, how and when to take it, and include why the compliance is important. Signs and symptoms would be another big topic to educate on so the patient knows when to come to the hospital or when to contact the healthcare provider. The patient would need to know about dietary therapy which includes adherence to specific sodium restriction guidelines outlined by the healthcare provider. Examining labels to determine the sodium content. Also examining the labels of over-the-counter drugs such as laxatives, cough medicines and antacids for sodium content. Avoiding using salt when preparing food or adding salt to foods. Weighing yourself at the same time each day, preferably in the morning using the same scale and wearing similar clothes. As well as eating small frequent meals. I would recommend an activity program which includes increasing walking and other activities gradually, and possibly considering a cardiac rehab program. I would also recommend avoiding extreme heat and cold too. I would use the teach back method to have my patient tell me what to report to the healthcare provider which includes a weight gain of 3 lb in 2 days or 3 to 5 lb in a week, difficulty breathing especially with activity or when lying flat, waking up breathless at night, frequent dry hacking cough especially when lying down, fatigue and weakness, swelling of the ankles feet or abdomen, swelling of the face or difficulty breathing, nausea with abdominal swelling pain and tenderness, dizziness or fainting. For the health promotion of my patient, I would want them to obtain annual influenza vaccination and pneumococcal vaccination. As well as developing a plan to reduce risk factors. I would be sure to go over a rest plan with my patient which includes a regular daily rest and activity program. I would educate them about resting after exercise and ADLs, encourage them to work shorter hours, and inform them about avoiding emotional upsets and sharing any concerns, fears, feelings and depression with the healthcare provider.