

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?**

-Patients history? Does she have a history of cardiovascular diseases (HTN, CAD, MI)? Does the patient have co-morbidities that increase her risk of HF such as diabetes, metabolic syndrome, cardiomyopathy, hyperthyroidism, valvular disorders, anemia, sleep apnea, or vascular disease? How old is the patient? Is the patient obese? Does the patient smoke or consume alcohol? What is the patient's ethnicity? Does heart disease run in the patient's family?

-What medications is the patient on?

-What other symptoms is the patient experiencing? Is it consistent with right, left, or biventricular HF? (right sided: peripheral edema, abdominal ascites, hepatomegaly, jugular venous distention, weight gain, fatigue, tachycardia, anorexia, and nausea) (left sided: pulmonary congestion (crackles, cough, tachypnea), dyspnea, tachycardia, restlessness, cyanosis, poor O<sub>2</sub> exchange, pink tinged sputum, and changes in mental status)

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

**Assessment/Interventions**

- Drug therapy
- Circulatory assist devices
- Daily weights
- Sodium and/or fluid restriction diet
- O<sub>2</sub> supplementation
- High-Fowler's position
- Frequent vitals
- Strict I+O's
- continuous ECG
- continuous SpO<sub>2</sub> monitoring
- ultrafiltration
- pulse checks in bilateral lower extremities (doppler)

**Diagnostic Studies**

- History and physical assessment to help determine underlying cause
- Left heart cath to visualize arteries, determine LV and aortic pressures, and ejection fraction
- Right heart cath to look at hemodynamic pressures and/or diagnose pulmonary hypertension
- Echocardiogram to gather information on chamber size and function, EF, valvular function, wall thickness, pressures, and presence of effusion or thrombus
- 12-lead ECG to monitor for dysrhythmias
- Laboratory studies such as cardiac biomarkers, BNP, liver function tests, kidney function tests, thyroid function tests, CBC, urinalysis, and lipid profile
- Chest x-ray

**3. What would you anticipate the healthcare provider to order?**

I would anticipate the healthcare provider to order:

-Diagnostic studies: physical assessment, heart catheterization, 12-lead ECG, chest x-ray, echocardiogram, and blood studies.

-Nursing intervention: High-Fowler's position, oxygen via NC, continuous SpO<sub>2</sub> monitoring, continuous ECG monitoring, daily weights, strict I+O's, frequent vital signs, sodium/fluid restricted diet, and pulse checks of the lower extremities along with assessment of the edema.

-Medication:

\* Anticoagulants

\* Antidysrhythmics (amiodarone)

\* Beta-blockers (metoprolol, carvedilol, bisoprolol)

\* Diuretics (furosemide, bumetanide, hydrochlorothiazide, spironolactone)

\* Morphine

\* Vasodilators (Isosorbide, nitroglycerin, nesiritide)

\* Positive inotropes B-adrenergic agonists (dobutamine, dopamine)

\* Digitalis glycoside (digoxin)

\* Phosphodiesterase inhibitor (milrinone)

\* ACE inhibitors (captopril, lisinopril, enalapril)

\* ARBS (losartan, valsartan)

\* Neprilysin-Angiotensin Receptor Inhibitors (entresto)

-Nonpharmacologic therapies: ultrafiltration, circulatory assist devices, pacemaker, structured exercise program or bed rest, mechanical cardiac assist devices such as an intraaortic balloon pump or ventricular assist devices

**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.**

-ACE Inhibitors: captopril, lisinopril, enalapril

\* Doses:

Captopril-25mg BID

Lisinopril-2.5mg, 5mg, 10mg, 20mg, 30mg, 40mg

Enalapril-2.5mg, 5mg, 10mg, 20mg

\* Nursing Interventions:

Monitor BP, manage hypotension with IV fluids, monitor and report dry cough, report angioedema and treat with IV epinephrine, monitor potassium levels, and monitor WBC count

-Antidysrhythmics: Amiodarone

\* Doses:

IV drip-900mg/500ml D5W (glass bottle) concentration: 1.8mg/ml

Premixed infusion- 150mg/100ml D5W or 360mg/200ml D5W

Injection-50mg/ml

Tablets-100mg, 200mg, 400mg

\* Nursing Interventions:

Monitor ECG continuously, monitor heart rate, respiratory assessment, cardiovascular assessment, neurological assessment, and frequent vital signs

-ARBs: losartan, valsartan

\* Doses:

Losartan-25mg, 50mg, 100mg

Valsartan-40mg, 80mg, 160mg, 320mg

\* Nursing Interventions:

Monitor and report angioedema, treat angioedema with IV epinephrine, monitor CNS effects, assess BP prior to administration, and manage hypotension with IV fluid infusion

-Digitalis Glycoside: digoxin

\* Doses:

tablets-0.0625mg, 0.125mg, 0.25mg injection-0.25mg/ml

\* Nursing Interventions:

monitor for digoxin toxicity, monitor GI symptoms, monitor and report CNS effects, take apical pulse for 1 full minute before administering and hold drug if pulse below 60bpm, monitor digoxin levels, monitor potassium levels, monitor for dysrhythmias, and recognize that Digibind is the antidote for digoxin

-Calcium Channel Blockers: diltiazem

\* Doses:

IV bolus-0.25mg/kg or 0.35mg/kg push over 2 minutes and follow with drip

IV drip-5-15mg/hr

Tablets-30mg, 60mg, 90mg, 120mg

\* Nursing Interventions:

Frequent vital signs, monitor ECG continuously, monitor I+O's, daily weights, and avoid grapefruit juice

-B-Adrenergic Agonists: dobutamine, dopamine

\* Doses:

dobutamine- 250mg/250ml, 500mg/250ml, 1000mg/250ml

dopamine- 200mg/250ml, 400mg/250ml, 400mg/500ml, 800mg/250ml, 800mg/500ml

\* Nursing Interventions:

monitor for dysrhythmias during infusion, monitor VS during infusion, treat dysrhythmias PRN and D/C drug for tachydysrhythmias

-Neprilysin-Angiotensin Receptor Inhibitors: entresto

\* Doses:

Tablets- sacubitril 24mg/valsartan 26mg, sacubitril 49mg/valsartan 51mg,

sacubitril 97mg/valsartan 103mg

\*Nursing Interventions:  
assess BP, daily weights, and monitor and report angioedema

-Loop Diuretics: bumetanide, furosemide

\*Doses:  
furosemide-20mg, 40mg, 80mg bumetanide-0.5mg, 1mg, 2mg

\*Nursing Interventions:  
monitor electrolyte levels, monitor for dysrhythmias, monitor BP, monitor for hearing loss or tinnitus, monitor for vertigo, monitor blood glucose, and monitor uric acid levels

-Thiazide Diuretics: hydrochlorothiazide

\*Doses:  
12.5mg, 25mg, 50mg

\*Nursing Interventions:  
monitor electrolyte levels, monitor for dysrhythmias, monitor blood glucose levels, monitor BP, and monitor uric acid levels

-Aldosterone Antagonists Potassium-Sparing Diuretics: spironolactone

\*Doses:  
Tablets-25mg, 50mg, 100mg

\*Nursing Interventions:  
Monitor I+O's, assess BP prior to administering, monitor potassium levels, be aware of manifestations of hyperkalemia, and monitor for dysrhythmias

-Beta Blockers: metoprolol, carvedilol, bisoprolol

\*Doses:  
Metoprolol-25mg, 37.5mg, 50mg, 75mg, 100mg  
Carvedilol-3.125mg, 6.25mg, 12.5mg, 25mg  
Bisoprolol-5mg, 10mg

\*Nursing Interventions:  
Monitor heart rate, educate patient to not suddenly stop taking, and taper dose slowly over 1-2 weeks when D/C

-Phosphodiesterase Inhibitor: milrinone

\*Doses:  
Injection-1mg/ml  
Infusion-20mg/100ml, 40mg/200ml

\*Nursing Interventions:

correct fluid deficit/hypokalemia before infusion, monitor potassium levels, monitor VS during infusion, monitor for dysrhythmias during infusion, decrease dosage for dysrhythmias or low BP, and monitor for chest pain during infusion

-Opioids: morphine sulfate

\*Doses:

Tablets-15mg, 30mg

Injection-1mg/ml, 2mg/ml, 4mg/ml, 5mg/ml, 8mg/ml, 10mg/ml, 25mg/ml, 50mg/ml

\*Nursing Interventions:

Assess pain level, assess LOC, frequent VS, assess bowel function, and be aware that naloxone is the antidote

-Vasodilators: nesiritide, isosorbide, nitroglycerin

\*Doses:

Nitroglycerin- 5-20mcg/min (start at 5mcg/min increase by 5mcg every 3-5min PRN)

Nesiritide-2mcg/kg bolus followed by 0.01mcg/kg/min infusion

Isosorbide- tablets-5mg, 10mg, 20mg, 30mg, 40mg

\*Nursing Interventions:

Monitor ECG continuously, medicate PRN for headache, educate patient to make slow position changes, frequent vital signs, monitor BP, monitor pulse,

**5. What patient education would you include?**

**Diet:**

-Low sodium diet:

\* Do not add salt when preparing meals

\* Avoid high sodium food such as canned soups, processed meats, cheese, and frozen meals

\* Aim for less than 2,400 mg of sodium/day

\* Examine labels to determine sodium content

\* Consume small frequent meals

-Fluid restriction:

\* Limit fluids to <1500ml/day

\* Daily weights in the morning before breakfast

\* Notify HCP if weight gain of 3lbs over 2 days or a weight gain of 3-5lbs over a week

**Activity Program:**

- \* Increase physical activity such as walking
- \* Stop physical activity if fatigued or experiencing shortness of breath
- \* Consider a cardiac rehabilitation program
- \* Avoid extreme heat or cold

**Monitoring HF:**

- \* Signs & symptoms of worsening HF: increasing shortness of breath, cough, orthopnea, weight gain, paroxysmal nocturnal dyspnea, edema, fluid retention, fatigue, and tiredness with physical activity
- \* Report any of the following to your HCP: weight gain, difficulty breathing, waking up breathless at night, dry cough, fatigue, weakness, swelling of lower extremities or abdomen, nausea, abdominal swelling/tenderness, dizziness, fainting,
- \* Attend regular follow ups with your HCP
- \* Consider joining a support group for HF

**Health Promotion**

- \* Influenza vaccination
- \* Reduce risk factors: control hypertension, smoking cessation, A1C control, and losing weight
- \* Get adequate rest and plan rest periods after activity

**Medication Compliance and Regimen**

- \* Take all medication as prescribed by HCP
- \* Create a system that works for you to help remember to take prescribed medications (pillbox)
- \* Check pulse rate before taking medication
- \* Take BP regularly
- \* If taking anticoagulants be aware of the manifestations of bleeding and what to do
- \* Signs and symptoms of orthostatic hypotension and how to prevent it