

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?

- a. Obtaining an accurate health history such as CAD, MI, HTN, cardiomyopathy, congenital heart disease, thyroid disease, lung disease, rapid or irregular heart rates
- b. Though cardiac assessment: pulse rate and rhythm, auscultate heart sounds
- c. I would gather a Medication Reconciliation and if any over the counter drugs are being used such as NSAIDS, high doses of aspirin, ephedrine, pseudoephedrine, and diet pills. Use or noncompliance of any heart drugs, diuretics, estrogens, corticosteroids, or herbal supplements
- d. I would get an accurate review of the dietary habits that may be contributing to the HF

- e. Assessment of lab values including CBC, electrolytes (Na⁺ and K⁺), BUN, Creatinine glucose, liver function test and TSH
 - f. Chest X-ray to assess the condition of the lungs and the heart
 - g. Echocardiogram to evaluate how well the heart is pumping, the size and structure and for guiding treatment
 - h. CT/MRI
- 2. What assessment/ interventions would be appropriate for this patient?**
- a. Assess for changes in vital signs
 - b. Assess for changes in respiratory status
 - c. Assess for changes in LOC
 - d. Intake and output chart
 - e. Daily weights
 - f. Administer medications
 - g. Administer oxygen via nasal cannula or face mask
 - h. Cardioversion (A-Fib)
 - i. Ultrafiltration
 - j. Restrict fluids and sodium intake
 - k. Keep head of bed elevated
 - l. Promote rest
- 3. What would you anticipate the healthcare provider to order?**
- a. Frequent Vital signs that include continuous pulse oxygen saturation
 - b. Oxygen
 - c. Constant heart monitoring (Telemetry)
 - d. Blood tests
 - e. Chest X-Ray
 - f. EKG
 - g. Echocardiogram
 - h. CT/MRI
 - i. Drug Therapy
- 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.**
- a. **Anti-coagulants**
 - i. Heparin (Subcutaneous, INR levels, 5,000 units q8-12hrs)
 - ii. Warfarin (PO, pTT levels, 5mg/day)
 - iii. Enoxaparin (IV or subcutaneous, aPTT levels, 40mg/daily)
 - iv. Prevent thromboembolism
 - v. Ejection fraction less than 20% or AFIB
 - b. **Antidysrhythmic**
 - i. Amiodarone can be used to treat and prevent dysrhythmias in HF
 - 1. NO Grapefruit juice
 - 2. Monitor HR, N/V, lightheadedness, and fainting

3. 1000 mg over 24 hours IV initially. Maintenance amiodarone may be prescribed if needed.

c. Beta Blockers

- i. Carvedilol (PO, 10 mg/once a day for two weeks and the dose may need adjustment by the PCP usually never more than 80mg/day)
 1. Standing BP 1hr after to assess tolerance
 2. Monitor for bradycardia, hypotension, bronchospasm, and cardiogenic shock
 3. Never abruptly withdrawal
- ii. Bisoprolol (PO, 5mg once a day)
- iii. Metoprolol Succinate (PO, 25-100mg once a day)
- iv. Promote reverse remodeling
- v. Decrease afterload

d. ACE Inhibitors

- i. Captopril (PO 25mg 3 times daily)
 1. Hypotension and hyperkalemia
 2. Monitor first dose for hypotension
 3. Skipping or missing doses can result in rebound HTN
 4. ANGIOEDEMA
- ii. Lisinopril (PO 5mg once daily may be titrated every 2 wk up to 40 mg/day)
- iii. Enalapril (PO 2.5 mg 1-2 times daily titrated up to target dose of 10 mg twice daily)
- iv. First line drugs for HF
- v. Hypotension, intractable cough, hyperkalemia, angioedema, and renal insufficiency

e. Diuretics

- i. Bumetanide
 1. PO: 0.5-2 mg/day given in 1-2 doses (MAX- 10mg/day)
 2. IM/IV: 0.5-1 mg/dose, may repeat every 2-3hr as needed (MAX: 10mg/day)
- ii. Furosemide
 1. PO: 20-80 mg/day as a single dose and may repeat every 6-8 hrs and may increase does. Maintenance doses may be given once or twice daily
 2. IV/IM: 20-40 mg, may repeat every 1-2 hr and increase by 20 mg every 1-2 hour until response is obtained. Maintained dose may be given every 6-12hr
- iii. First line for treating patients with heart failure
- iv. Decrease intravascular volume
- v. Increase urine output and decrease fluid volume
- vi. Decrease preload

f. Thiazide diuretics

- i. Hydrochlorothiazide (PO 12.5 mg-100mg/day in 1-2 doses (MAX 200mg)

- ii. Affect electrolyte reabsorption resulting in sodium and chloride excretion
 - iii. Increased urine output (milder diuretic effect compared to loop)
 - iv. Decrease BP
- g. Potassium sparing Diuretic**
- i. Spironolactone (PO 25 mg once daily and can be increased to 50mg once daily is hyperkalemia with 25 mg)
 - ii. Prevention of potassium loss by inhibiting sodium and potassium exchange in the distal tubule
 - iii. Mild diuretic effect
 - iv. Monitor potassium levels
 - v. Teach patient to avoid foods with potassium
- h. Morphine**
- i. Dilates pulmonary and systemic blood vessels reducing preload and afterload
 - ii. Often given in small IV boluses
 - iii. Monitor for serious adverse effects
- i. Neprilsyn angiotensin receptor inhibitors**
- i. A combo drug of Sacubitril/valsartan a neprilysin and ARB
 - ii. Decreased SVR, afterload, and CVP with increased natriuresis and diuresis
 - iii. Monitor for hypotension, renal insufficiency, and angioedema
 - iv. PO 24mg/26mg twice daily
- j. Positive Isotopes**
- i. Dobutamine (IV 2.5-15 mcg/kg/min)
 - ii. Dopamine (IV 1-5 mcg/kg/min)
 - 1. Monitor IV site
 - iii. Increase contractility
 - iv. Increase CO
 - v. May cause dysrhythmias
 - vi. Increased O2 demand
- k. Digoxin**
- i. IV/IM: 0.5-1 mg
 - ii. PO: 0.75- 1.5 mg
 - iii. Reduce HF symptoms
 - iv. Mildly increase contractility and myocardial O2
 - v. Monitor renal function
 - vi. Monitor levels (<0.9 ng/ml)
- l. Phosphodiesterase inhibitor**
- i. Milrinone (IV, 50 mcg/kg followed by continuous infusion at 0.5mcg/kg/min)
 - 1. Mild vasodilation and inotropic effects
 - 2. Short term for those unresponsive to conventional therapy with digoxin, diuretics, and vasodilators
 - 3. Increase in SV and CO
 - 4. Reduces BP

5. Promote vasodilation

m. ARBS

- i. Losartan (PO 50 mg once daily)
- ii. Valsartan (PO 40 mg twice daily may be titrated to target dose of 160 mg twice daily)
- iii. For those unable to tolerate ACE inhibitors
- iv. Prevent vasoconstriction
- v. Promote afterload reduction and vasodilation
- vi. Do not typically cause a cough, angioedema is less common

n. Vasodilator

- i. Nesiritide (IV 2mcg/kg bolus followed by a 0.01 mcg/kg infusion)
- ii. Nitrates
 1. Isosorbide dinitrate
 - a. PO 5-20 mg 2-3 times daily
 2. Nitroglycerin
 - a. SL 0.3- 0.6 mg may repeat every 5 min for 2 additional doses or 5-10 min before activities that may precipitate an attack

5. What patient education would you include?

- a. Dietary therapy
 - i. Restricted foods
 - ii. Sodium restriction
 - iii. Monitoring food and OTC drug labels
 - iv. Weighing yourself at the same time each day preferably in the morning
 - v. Eat small frequent meals
- b. Activity Program
 - i. Increase walking and other activities gradually provided they do not cause fatigue or dyspnea
 - ii. Cardiac rehabilitation program
 - iii. Avoid extreme heat and cold
- c. Ongoing monitoring
 - i. Knowing the signs and symptoms of worsening HF
 - ii. Reporting signs and symptoms as ordered
 - iii. Frequently follow up with your HCP
- d. Health Promotion
 - i. Vaccines
 - ii. Reduce risk factors
- e. Rest
 - i. Plan a regular daily rest and activity program
 - ii. Plan rest periods after exertion
 - iii. Avoid emotional upsets
- f. Drug therapy
 - i. Take drugs as prescribed

- ii. Count pulse rate daily before taking drugs
- iii. Take BP at determined intervals
- iv. Know the signs and symptoms of orthostatic hypotension
- v. If taking anticoagulant therapy know the signs and symptoms of bleeding
- vi. Know your INR and target range if taking warfarin