CLASS PREP: CARDIAC DAY 2

Video – Heart Failure

- Watch the following video about the fundamentals of heart failure then complete the case study below.
- https://youtu.be/Y1lUFGh2T_E?si=U5fo4s5Y7BsRw55x

CASE STUDY

You are working in the internal medicine clinic at Beebe. Today your first patient is 70-year-old J.M., a man who has been coming to the clinic for several years for management of coronary artery disease (CAD) and hypertension (HTN). A cardiac catheterization done a year ago showed 50% stenosis of the circumflex coronary artery. He has had episodes of dizziness for the past 6 months and orthostatic hypotension, shoulder discomfort, and decreased exercise tolerance for the past 2 months. On his last clinic visit 3 weeks ago, a chest x-ray (CXR) examination revealed cardiomegaly. You review J.M.'s morning blood work and initial assessment.

Laboratory Results

Chemistry

Sodium	142
Chloride	95
Potassium	3.9
Creatinine	0.8
Glucose	132
BUN	35

Complete Blood Count

WBC	5.4
Hgb	11.5
Hct	37%
Platelets	229

J.M. reports increased fatigue and shortness of breath, especially with activity, and "waking up gasping for breath" at night, for the past 2 days.

Vital Signs

Temperature	97.9 ° F (36.1 ° C)
Blood pressure	155/93
Heart rate	105 beats/min
Respiratory rate	18 breaths/min

1. Highlig**ht the lab results that cause you concern and explain why.**

His low HgB/HcT suggest he can be slightly anemic which can harm his blood's ability to carry oxygen. This might make him tired or short of breath. His BUN is elevated, which might indicate that he doesn't have much renal perfusion that could be r/t reduced cardiac output. His blood sugar is also slightly elevated which might increase CVD progression.

His blood pressure is in stage 2 hypertension, likely to progress heart failure and increases afterload and workload for the left ventricle of his heart. His heart rate is also elevated, might be r/t decreased output and higher oxygen demand making his heart compensate and pump faster.

CASE STUDY PROGRESS

J.M. tells you he becomes exhausted and has shortness of breath climbing the stairs to his bedroom and must lie down and rest ("put my feet up") at least an hour twice a day. He has been sleeping on 2 pillows for the past 2 weeks. He has not salted his food since the provider told him not to because of his high blood pressure, but he admits having had ham and a small bag of salted peanuts 3 days ago. He states that he stopped smoking 10 years ago. He denies having palpitations but has had a constant, irritating, nonproductive cough lately.

1. **You think it's likely that J.M. has heart failure (HF). From his history, what do you identify as probable causes for his HF**

50% stenosis of the circumflex coronary artery
Long term hypertension (several years)
Older age

2. **For each potential assessment listed, specify whether it is associated with left-sided HF or right-sided HF.**

Potential Assessment Finding	Left-Sided HF	Right-Sided HF
a. Weakness	Yes	
b. Jugular (neck) vein distention		Yes
c. Dependent edema (legs and sacrum)		Yes
d. Hacking cough, worse at night	Yes	
e. Enlarged liver and spleen		Yes
f. Exertional dyspnea	Yes	
g. Distended abdomen		Yes
h. Weight gain		Yes
j. Crackles and wheezes in lungs	Yes	

CASE STUDY PROGRESS

The provider confirms your suspicions and indicates that J.M. is experiencing symptoms of early left-sided heart failure. An echocardiogram is ordered. Medication orders are written.

Medication Orders

- ✓ Enalapril 10 mg PO twice a day
- ✓ Furosemide 20 mg PO every morning
- ✓ Carvedilol IR 6.25 mg PO twice a day
- ✓ Digoxin 0.5 mg PO now, then 0.125 mg PO daily
- ✓ Potassium chloride 10-mEq tablet PO once a day

4. For each medication listed, identify its class and nursing assessments related to each.

Medication	Classification	Nursing Assessments
Enalapril	**ACE Inhibitor**	**Monitor BP & HR** **Monitor potassium** **Monitor kidney function**
Furosemide	**Loop diuretic**	**Monitor potassium** **Monitor hydration** **Monitor HR**
Metoprolol	**Beta-blocker**	**Monitor BP and HR** **Monitor for signs of hypoglycemia**
Digoxin	**Positive Inotropic Agent**	**Monitor for N/V** **Monitor for GI disturbance**
Potassium Chloride	**Electrolyte Replacement**	**Monitor potassium** **Monitor renal function**

5. When you go to remove the medications from the RX Station, you see that carvedilol (Coreg ER) is stocked. Will you give it to J.M.? Explain.

No – I will need to clarify with the provider or pharmacy.

Carvedilol IR 6.25 mg PO twice a day is whats ordered.
Coreg ER is extended release and given once daily, and J.M. is ordered an immediate release medication given twice daily.
Giving an extended-release medication instead of immediate would change how J.M. absorbs it.

6. As you remove the digoxin tablet from the automated medication dispensing machine, you note that the dose on the tablet label is 250 mcg. How many tablets would you give?

250 mcg = 0.25 mg

250mcg x 2 = 500mcg = 0.5 mg

J.M. should receive two tablets total.

7. Based on the new medication orders, which blood test or tests will be monitored carefully? Explain your answer.

Potassium

BUN

Creatinine

Digoxin level

END