

Module 3
CV-PV Case Studies

Scenario One:

A 46 year old male client with a history of familial hyperlipidemia presents to the medical clinic. He states he used to smoke 2 packs of cigarettes a day but has cut back to 1 pack a day over the past 2 months. He has recently begun walking his dog twice a day because "it's good for the dog and my doctor says it's good for me too." However, he states he cannot make it as far as he used to. He complains of pain to his right calf that starts after only a couple minutes of walking. Once he goes inside and sits down the pain goes away.

1A) What is the medical term for this symptom?

1B) What disease process is this an indicator of?

1C) Name some symptoms of progression of this disease?

1D) What interventions can be used to assist him? (Don't forget teaching!)

Scenario Two:

A female client, 57 years of age, is admitted to the emergency department (ED) with a diagnosis of heart failure. She was discharged from the hospital 10 days ago and comes in today stating, "I just had to come to the hospital today because I can't catch my breath and my legs are as big as tree trunks." After further questioning you learn she is strictly following the fluid and salt restriction ordered during her last admission. She reports she has been gaining 1 to 2 lbs every day since her discharge.

2A) What error in teaching most likely occurred when the patient was discharged 10 days ago?

The client had been taking furosemide (Lasix) 40 mg PO daily. The doctor changes her dose to 80 mg IV push twice daily.

2B) Identify several strategies you would use to monitor effectiveness of this medication.

Scenario Three:

Your client is a 70 yr-old retired bus driver who has just been admitted to your floor with a right leg DVT. He has a 48-pack-year smoking history but states he quit 2 years ago. He has had pneumonia several times and has frequent bouts of A-fib. His history includes two previous DVTs. Two months ago he began experiencing shortness of breath on exertion and noticed swelling of his right lower leg that became progressively worse until it involved his thigh to groin. His wife brought him in because of complaints of increasingly severe leg pain. A Doppler study indicated probable thrombus of the external iliac vein extending distally to the lower leg. He is admitted for bed rest and heparin therapy. His lab values are PT 12.4 second and INR 1.11 (*Both low: we prefer for the INR to be 2.5-3.0*) PTT 25 seconds (*also low*) H/H 13.3 & 38.9, cholesterol 206 mg/dl. BMP is normal.

3A) Identify problems in this client's history that represent his personal risk for DVT.

3B) Based on his history, this client should have been taking an important medication. What is it, and why should he be on it?

3C) What are the most important assessments you should make during his physical assessment?

3D) What is the most serious complication of DVT?

Scenario Four:

You are assigned a 76 year-old female client. Two nights before her admission to your cardiac unit, she awoke with heavy substernal pressure accompanied by epigastric distress. The pain was reduced somewhat when she rolled onto her side but did not completely subside for about 6 hours. The next night she experienced the same chest pressure. The following morning her husband brought her to the ER and she was hospitalized to rule out a myocardial infarction (MI).

4A) What steps will be taken to evaluate if her chest pain is due to a cardiac problem?

4B) What interventions should we begin immediately?

A thorough assessment and health history are performed. Her vitals are 132/86, 88, 18, and 97.9. She has moderate edema of both ankles and peripheral pulses are 1+. She has a soft systolic murmur. She denies any discomfort at this time. She has no history of smoking or alcohol use, good general health except for osteoarthritis of her hands, knees, and spine. She takes Protonix, ibuprofen for joint and bone pain, and some "herbs".

4C) Why are we concerned about her murmur and edema?

4D) What other sources, besides cardiac ischemia, might be responsible for her chest pain/abdominal discomfort? (think of a couple)

Scenario Five:

S.L., a 74-year-old woman, has recently moved to your town and is looking for a new primary care provider. For her first appointment she brings all of her medications from her previous provider. You note that she is on warfarin (Coumadin).

5A) When you ask her when her last PT (prothrombin time) test was done and the results, she is vague and doesn't seem to know much about it. How would you explain a PT test and why it is important?

S.L. reports she has had an irregular heartbeat for many years. There was an unsuccessful attempt at cardioversion and she has been on warfarin ever since. From this story you know that she probably has atrial fibrillation and is on lifelong warfarin therapy. You ask her what education was provided to her about warfarin and she says she was given a booklet but she never read it.

5B) What information should you share with S.L. about warfarin....

Side effects:

Nutrition:

When to notify physician:

Scenario Six:

G.P. is a 60-year-old retired businessman, is married and has three grown children. As you take his health history he tells you that he began feeling changes in his heart rhythm about 10 days ago. He has hypertension and a 5-year history of angina pectoris. During the past week he has had more frequent episodes of midchest discomfort. The chest pain has awakened him from sleep but does respond to NTG, which he has taken sublingually about 8 to 10 times over the past week. During the week he has also experienced increased fatigue. He states, "I just feel crummy all the time anymore." A cardiac catheterization done several years ago revealed 50% occlusion of the RCA (right coronary artery) and 50% occlusion of the LAD (left anterior descending) coronary artery. He tells you that both his mother and father had CAD. He is taking amlodipine, metoprolol, atorvastatin (Lipitor), and baby aspirin daily.

6A) What other information are you going to ask about his episodes of chest pain?

6B) What are common sites for radiation of ischemic cardiac pain?

You know that G.P. has atherosclerosis of the coronary arteries but he has not told you about his risk factors. You need to know his risk factors for CAD in order to plan teaching for lifestyle modifications.

6C) What risk factors will you ask him about?

Although he has been taking SL NTG (sublingual nitroglycerin) for a long time, you want to be sure he is using it correctly.

6D) What information would you make sure he understands about the side effects, use, and storage of sublingual NTG?

Scenario 7:

The time is 1900. You are working in a small, rural hospital. It has been snowing heavily all day, and the medical helicopters at the large regional medical center, 4 hours away by car (in good weather), have been grounded by the weather until morning. The roads are barely passable. W.R., a 48-year-old construction worker with a 36-pack-year smoking history, is admitted to your floor with a diagnosis of unstable angina/rule-out MI. He has significant male-pattern obesity ("beer belly," large waist circumference), a barrel chest, and reports a dietary history of high-fat food. His wife brought him to the ED after he complained of unrelieved "indigestion." His admission VS were 202/124, 96, 18, 98.8 ° F. W.R. was put on O₂ via nasal cannula titrated to maintain SaO₂ > 90% and an IV of NTG was started in the ED. He was also given aspirin 325 mg and was admitted to Dr. A's service. There are plans to transfer him by helicopter to the regional medical center for a cardiac catheterization in the morning when the weather clears. Meanwhile you have to deal with limited laboratory and pharmacy resources. The minute W.R. comes through the door to your unit, he announces he's just fine in a loud and angry voice and demands a cigarette.

7A) From the perspective of basic human needs, what is the first priority in his care?

7B) Are these VS reasonable for a man his age? If not, which one(s) concern(s) you? Explain why or why not.

7C) Identify five priority problems associated with the care of a patient like W.R.

7D) What laboratory tests might be ordered to investigate W.R.'s condition?

7E) How are you going to respond to W.R.'s angry demands for a cigarette? He also demands something for his "heartburn." How will you respond?

You phone Dr. A's partner, who is "on call." She prescribes 4 to 10 mg morphine sulfate IV push q1hr for pain (burning, pressure, angina).

7F) Explain two reasons for this order.

7G) One of the housekeeping staff asks you, "If the poor guy can't smoke, why can't you give him one of those nicotine patches?" How will you respond?

7H) What personality characteristic do you observe in W. R. that places him at high risk for coronary artery disease?

8. A patient presents to his primary care physician with uncontrolled hypertension. In addition to new medication regimen the physician recommends exercise and the DASH diet. **What are the concepts of following the DASH diet?**

Scenario 9:

You are in the middle of your shift in the coronary care unit (CCU) of a large urban medical center. Your new admission, C.B., a 47-year-old woman, was just flown to your institution from a small rural community more than 100 miles away. She had an acute anterior wall myocardial infarction (MI) last evening. Her current vital signs are 100/60, 86, 14. After you make C. B. comfortable, you receive this report from the flight nurse:

“C. B. is a full-time homemaker with 4 children. She has had episodes of ‘chest tightness’ with exertion for the past year, but this is her first known MI. She has a history of hyperlipidemia and has smoked one pack of cigarettes daily for more than 30 years. Surgical history consists of total abdominal hysterectomy (TAH) 10 years ago after the birth of her last child. She has no other known medical problems. Yesterday at 2000 hours she began to have severe substernal chest pain that referred into her neck and down both arms. She rated the pain 9 or 10 on a 0-10 scale. She thought it was severe indigestion and began taking Maalox with now relief. Her husband then took her to the local emergency department, where a 12-lead ECG (EKG) showed hyperacute ST elevation. She was started on nitroglycerin and heparin. She also was given IV metoprolol and aspirin 325 mg to chew and swallow. This morning her systolic pressure dropped into the 80s. She was placed on a vasoactive drip (dopamine, will learn in IM 7) to raise her blood pressure and urgently flown to your institution for coronary angiography (cardiac cath) and possible percutaneous coronary angioplasty (PTCA). Currently she has the heparin at 1200 units/hr and dopamine at 5 mcg/kg/min. (Again, don’t have to know dopamine this IM.) The nitroglycerin has been stopped due to low blood pressure. Lab work done yesterday showed Na⁺⁺ 145 mmol/L, K⁺ 3.6 mmol/L, ABGs were drawn (Mrs. Thomas will talk briefly about it but will learn more in IM 7.) BUN 9 mg/dL, creatinine 0.8 mg/dL, WBC 14.5 thou/cmm, Hct 44.3% and Hgb 14.5g/dL.”

9a) Given the diagnosis of acute MI, what other lab results are you going to look at?

9b) The flight nurse reports the patient had ST elevation. What does this mean?

9c) An hour after her admission, you are preparing C. B. for her coronary intervention (Cardiac Cath and possible PTCA). Evaluate her readiness for teaching and her learning needs. What would you tell her?

The following day you care for C. B. again. She is still on a heparin drip. Her blood pressure has stabilized so other drips have been discontinued.

9d) Since she is still on the heparin drip, what lab level needs to be measured?