Medications

Medication	Classification (Thera. & Pharma.)	Why client is taking	Key nursing assessment(s)
Aspirin/ acetylsalicylic acid 324mg given once	T: Antiplatelet P: "Salicylate" Therapeutic	This medication was given in the ED to reduce risk for thrombosis and to reduce pain.	Continue to monitor the patient for chest pain. Be sure to tell the patient to let the aspirin dissolve under the tongue (Vallerand & Sanoski, 2023).
Nitroglycerin	T: Antihypertensive P: Nitrate vasodilator	This medication was given in the ED for acute chest pain.	The nurse can give up to 3 doses and must monitor blood pressure Q15. Do not administer nitroglycerin to the pt. if systolic blood pressure is below 100 mmHg (Vallerand & Sanoski, 2023).
Amlodipine 10mg PO daily	T: antihypertensive P: calcium channel blockers	The patient takes this medication for hypertension	Monitor for signs off hypotension and peripheral edema, especially when given nitroglycerin (Vallerand & Sanoski, 2023).
Losartan 50mg PO daily	T: Antihypertensive P: Angiotensin II receptor blocker (ARB)	This medication is taken by the patient for hypertension	Assess for hypotension, arrythmias, headache, and malaise, especially when given nitroglycerin (Vallerand & Sanoski, 2023).
Atorvastatin 20mg PO daily	T: Antihyperlipidemic P: HMG-CoA reductase inhibitor	This patient takes this medication at home for hypercholesteremia	Monitor for signs of arrythmias and hypoglycemia. Continue to monitor cholesterol and triglyceride levels. (Vallerand & Sanoski, 2023).

Vallerand, A. H, & Sanoski, C. A., (2023). Davis'sDrugGuide.com. F. A. Davis Company. https://www.drugguide.com/ddo

Lab Values/Diagnostics

Lab	Normal value	Today's value	Relation to diagnosis
Covid Test	Negative	Positive	The patient has been covid positive since 06/05/2023, and this infection could be exacerbating or related to his acute chest pain. He could also be experiencing endocarditis that has been associated with COVID-19 (Van Leeuwen & Bladh, 2021).
Glucose	79-100	142	The patient does not have a history of diabetes, and he had just eaten a bagel. However, 142 could be cause for concern and relate to his history of heart disease (Hypertension and Hypercholesterolemia). His high blood sugar could exacerbate his chest pain in this acute admission (Van Leeuwen & Bladh, 2021).
Chloride	98-107	109	The patient has a minor electrolyte imbalance with a high chloride value. With all other electrolytes being within the normal range, this value is not the focus for this patient (Van Leeuwen & Bladh, 2021).

(No other Laboratory values were out of range for this patient upon admission to the ED)

Imaging:

1. Chest x-ray – impression: left ventricle hypertrophy
   The patient underwent a chest x-ray while in the ED, and the results of the imaging showed left ventricle hypertrophy, or an enlarged left ventricle. Left ventricular hypertrophy is common among those with chronic hypertension (Mayo Clinic, 2022).
2. CT angiography w/ contrast – Left coronary artery calcifications with mild fatty infiltration of the liver, otherwise non-remarkable. This is likely related to his acute chest pain in the ED today (Van Leeuwen & Bladh, 2021).
3. EKG – Normal sinus rhythm at 89 bpm left ventricular hypertrophy. This is consistent with his X-ray result and his history of heart disease (Van Leeuwen & Bladh, 2021).

Demographic Data

Date of Admission: 6/8/2023
Admission Diagnosis/Chief Complaint: Chest Pain
Age: 52
Gender: Male
Race/Ethnicity: White
Allergies: No known allergies
Code Status: Full code
Height in cm: 180cm
Weight in kg: 120.2Kg
Psychosocial Developmental Stage: Generativity vs. Stagnation (Videbeck, 2023)
Cognitive Developmental Stage: Formal Operational Stage (Videbeck, 2023)
Braden Score: 21
Morse Fall Score: 35
Infection Control Precautions: Standard precautions

Admission History

Patient presented to the emergency department (ED) with complaints of Chest pain. Upon admission to the ED, the patient stated he had been experiencing chest pain for approximately 30 minutes. He was eating a bagel, his chest started hurting, and he checked his rhythm on his apple watch; the result from the apple watch was "inconclusive." He then came to the ED reporting 7/10 chest pain. The chest pain was in the center of his chest. Nothing made the pain better or worse, and he did not take anything for the pain. The patient stated, "It might be phantom pain, but it feels like the pain is radiating down my left arm."

Medical History

Previous Medical History: Hypertension and Hypercholesterolemia

Prior Hospitalizations: One prior visit to the ED for a sprain ankle in 2021

Previous Surgical History: No surgical history

Social History: Former cigar smoker, occasional alcohol use, and occasional marihuana use to sleep.

Pathophysiology

Disease process: Coronary artery disease occurs when atherosclerotic plaques begin to form within the blood vessels. These plaques are the result of progressive buildup of calcified fats that narrow the blood vessels, resulting in impeded blood flow (Shahjehan & Bhutta, 2023). In the case of this patient, the CT scan showed evidence of coronary artery calcifications, indicating that the patient has some evidence of coronary artery disease. Initially, Fat gets deposited on the lining of the vessels, causing the formation of foam cells. Foam cells occur when macrophages take up LDL cholesterol and attach themselves to the lining of the aerial wall. Over time, these foam cells accumulate and form plaques. The accumulation of foam cells can continue or become stable. When they become stable, a cap made from calcium will form. This lesion could lay dormant and have little effect on hemodynamics on its own; however, the accumulation of these lesions can have a dramatic effect on blood flow. The accumulation of these lesions can become overbearing on the circulatory system, causing severe blockages that can lead to hypoxia in some tissues (Shahjehan & Bhutta, 2023). In the case of this patient, the combination of his health history, CT scan, and lack of medication compliance could result in acute angina related to coronary artery disease.

S/S of disease: The main signs and symptoms of coronary artery disease are typically defined in stages from precautionary to advanced: Stable ischemic heart disease and acute coronary syndrome which includes ST-elevation myocardial infarction, non-ST elevation myocardial infarction, and unstable angina. Some general signs and symptoms include symptoms consistent with metabolic and heart disease. For example, hypertension, tachycardia, angina, and tachypnea can all occur (Shahjehan & Bhutta, 2023). This patient was likely experiencing unstable angina since he wasn't exerting himself at the onset of angina. He was also experiencing hypertension and tachypnea.

Method of Diagnosis: This disease process can be diagnosed using a combination of diagnostic tests including CT scans, calcium scans, EKGs, blood work (CK, troponin, CRP, ESR, and LFT), chest x-rays, and most importantly, cardiac catheterization. Cardiac catheterization is the most effective and accurate way to visualize and diagnose the extent of coronary artery disease (Shahjehan & Bhutta, 2023).

Treatment of disease: Treatment of this disease process includes medications (beta-blockers, statins, and vasodilators), lifestyle modifications (weight-loss, physical activity, healthier diet, and smoking cessation), and if necessary, a percutaneous coronary intervention (PCI) or a coronary artery bypass graft (CABG). All of these treatment interventions come with risks that need to be evaluated and discussed with a physician to determine which interventions are right for individual patients (Shahjehan & Bhutta, 2023).

Active Orders

1. Insert/Maintain IV – Related to acute medication administration
2. Intake and output Q8H – related to maintenance of fluid balance
3. Bedrest – related to high fall risk
4. NPO – related to unknown admission status
5. Vital signs Q1H – related to identification of acute status changes

Physical Exam/Assessment

General: Patient currently is alert and oriented x4 to person, place, time, and situation. The patient well groomed, resting in a clean bed, and in no acute distress.

Integument: Skin warm, pink, and color is appropriate for ethnicity. Patient's skin was diaphoretic. Overall skin intact. Skin turgor returns to place promptly. No inspected rashes, bruises, wounds, or drains. Braden score 21, indicating a low risk for skin integrity issues.

HEENT: Head and neck symmetrical. Trachea midline without deviation. No lymphadenopathy inspected or palpated in head or neck. Carotid pulses palpable and 2+ bilaterally. Bilateral auricles symmetrical with no lesions, lumps, or drainage. Ear canals clear bilaterally. PERRLA present bilaterally. EOMs intact bilaterally. Sclera white and conjunctiva pink and moist bilaterally. No inspected drainage from eyes. Overall oral mucosa pink and moist with no lesions or drainage. Uvula midline. Tonsils present and 1+ bilaterally. Overall dentition intact.

Cardiovascular: S1 and S2 heart sounds present with no auscultated murmurs, gallops, or rubs. Cardiac rate and rhythm regular. Radial and posterior tibial pulses 2+ bilaterally. Capillary refill < 3 seconds in fingers and toes bilaterally. No neck vein distention noted. No edema inspected or palpated.

Respiratory: Breath sounds clear and present anteriorly and posteriorly bilaterally. No adventitious breath sounds noted. No accessory muscle use noted. Respirations symmetrical with normal rate and rhythm.

Genitourinary: Pt. states urine has been light yellow. Patient reports no pain associated urination. Genitals not inspected.

Gastrointestinal: Bowel sounds auscultated and normoactive at 5-34 per minute in all four quadrants. Abdomen soft and non-tender with no inspected or palpated distention, incisions, scars, wounds, or drains in all four quadrants. Patient reports last bowel movement of yesterday, 6/8/23. Patient is on a regular diet with no restrictions at home. NPO upon admission to ED.

Musculoskeletal: Neurovascular status intact. Range of motion full and active in all extremities. Finger grips and pedal pushes display 5/5 strength bilaterally. Patient uses no assistive devices when ambulating. Morse fall score 35 which indicates a risk for falls.

Neurological: Patient is alert and oriented x4. Patient's mental status appropriate for age and development. Patient speech is clear and sensory intact. Strength equal overall.

Most recent VS (include date/time and highlight if abnormal): 10:35

HR: 85	BP: 161/104	RR: 22	O2: 96%	T: 37.0 C

Pain and pain scale used: Numerical 0-10 scale – rating 7/10

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
Risk for unstable blood pressure related to inconsistency with medication regimen as evidence by patient stating he isn't taking his medications regularly and his high blood pressure reading in the ED (Phelps, 2020).	Readiness for enhanced knowledge related to expressing a desire to enhance learning as evidenced by asking questions pertaining to his health and wanting to know more about his health (Phelps, 2020).	Overweight related to average daily physical activity is less than recommended for gender and age as evidenced by his BMI of 37 and his acknowledged sedentary lifestyle (Phelps, 2020).
Rationale This diagnosis was chosen because the patient might not be experiencing acute angina if he had been consistent with his prescription medications.	**Rationale** This diagnosis was chosen because it can have a big impact on his health. His curiosity about his own health is a great first step to improving his long-term health.	**Rationale** This nursing diagnosis was chosen due to his BMI indicating that the patient is obese and at high risk for heart and metabolic disease. His weight plays an impactful role in the exacerbation of his acute illness.
Interventions **Intervention 1:** Provide the patient with information on modifiable risk factors (Phelps, 2020). **Intervention 2:** Assess hemodynamic status including blood pressure, heart rate, SPO2, and respiratory rate for abnormal findings (Phelps, 2020).	**Interventions** **Intervention 1**: Assist the patient in acquiring knowledge needed for decision making (Phelps, 2020). **Intervention 2:** Be able to answer questions and correct misconceptions for the patient (Phelps, 2020).	**Interventions** **Intervention 1:** With input from the patient, set realistic weight loss goals (Phelps, 2020). **Intervention 2:** discuss the importance of incorporating physical activity into his daily life (Phelps, 2020).
Evaluation of Interventions These interventions will give the patient education on the importance of medication adherence. Changing some modifiable risk factors will reduce the risk for acute angina greatly.	**Evaluation of Interventions** These interventions will give the patient the knowledge he needs to make impactful choices regarding his health. His acute chest pain changed his view on the importance of medication adherence and education regarding his health conditions.	**Evaluation of Interventions** Balancing diet and exercise for a patient with HTN and HLP can be very beneficial for overall health and prevention od exacerbating symptoms.

References (3) (APA):

Mayo Clinic. (2022, September 24). *Left ventricular hypertrophy*. Retrieved on June 11, 2023, from https://www.mayoclinic.org/diseases-conditions/left-ventricular-hypertrophy/symptoms-causes/syc-20374314

Phelps, L.L. (2020). *Sparks and Taylor's nursing diagnosis reference manual* (11th ed.) Wolters Kluwer.

Shahjehan, R., & Bhutta, B. (2023, February 9). *Coronary artery disease*. National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK564304/

Vallerand, A.H. & Sanoski, C.A.(2023). *Davis'sDrugGuide.com*. F.A. Davis Company. https://www.drugguide.com/ddo

Van Leeuwen, A.M., & Bladh, M.L. (2021). *Davis's comprehensive handbook of laboratory & diagnostic tests with nursing implication* (9th ed.). F. A. Davis Company

Videbeck, S. (2023). *Psychiatric-mental health nursing* (9th ed.). Wolters Kluwer.