Medications (Jones, 2021)

Enoxaparin – 40mg – SQ – Daily: Enoxaparin is a low-molecular-weight heparin and an anticoagulant that is used to prevent clotting that creates thrombosis especially with DVTs. The client is taking this to help prevent DVTs and other clotting. Key nursing assessments for this medication are assessing for heparin induced thrombocytopenia and to assess for any active or major bleeding. **Metoprolol – 25mg – PO – Daily**: Metoprolol is an antianginal, antihypertensive and a $Beta_1$-adrenergic blocker. This medication is used to treat hypertension which is in this client's past medical history. Key nursing assessments that are important for this medication are assessing the client's heart rate, blood pressure, oxygen saturation, and respirations prior to administration. **Clopidogrel – 75mg – PO – Daily**: Clopidogrel is a platelet aggregation inhibitor and a $P2Y_{12}$ platelet inhibitor. This medication is used for reducing thrombotic events in clients at risk for myocardial infarction, which this client is at risk for due to the a-fib and troponin levels Key nursing assessments for this medication are checking for allergies to this medication or its components and monitoring CBC value levels throughout treatment. **Aspirin – 81mg – PO – Daily:** Aspirin is a salicylate and a NSAID. This medication is used to reduce the risk of myocardial infarction which this client is at risk for due to the a-fib and troponin levels. Key nursing Assessments for this medication are checking for coagulation disorders or active bleeding and assessing for history of current or recent GI bleed or ulcers. **Amiodarone – 400mg – PO – Daily:** Amiodarone is a class III antiarrhythmic and a benzofuran derivative. This medication is used to control, treat and prevent fibrillations such as atrial fibrillation which this patient has. Key assessments for this medication are monitoring heart rate, blood pressure, oxygen saturation, ECG and checking serum amiodarone levels prior to administration. **Nitroglycerin – 0.4mg – SL – Q5M PRN**: Nitroglycerin is a nitrate and an antianginal/vasodilator. This medication is used for preventing acute anginal attacks which this patient experienced in the emergency room on 11/06/2022. The key nursing assessments prior to administration is assessing the client's vital signs before every dose and making sure the client understands the steps of taking a sublingual medication.

Lab Values/Diagnostics (Kee, 2018)

This client had a few abnormal values and diagnostic results during his stay this far. His serum CO2 was 2.3% which is elevated from the expected range of 0 to 0.8%. This elevation is related to his chronic obstructive pulmonary disorder. The client's blood sugar was 126 on 11/06/2022 and 119 on 11/07/2022. These values are elevated from their expected range of 74 to 109 mg/dL which is related to his diabetes mellitus type II and could also be a result of his expected urinary tract infection. When the client arrived at the ER on 11/05/2022 his troponin level was 0.099 ng/mL which is higher than the desired level of 0.03 ng/mL. When troponin is elevated, it indicates a probable myocardial infarction or expected myocardial infarction soon. The client's BNP was also elevated with a value of 119 pg/mL when the desired level is under 100 pg/mL. The elevated BNP is related to the client's diagnosis of congestive heart failure. The client had his A1C tested, and it was elevated at a value of 6.9%, when we want diabetic clients to keep theirs under 6.5%. This value indicates poor diabetes management for the client over the past few months. The client's average glucose was 151 mg/dL when it is desired to be under 117 mg/dL. This value is related to the client's past diagnosis of hyperlipidemia. He also had an elevated d-dimer value of 1.18 mcg/mL which is expected to be under 0.62 mcg/mL. This elevated value indicates that there is a blood clot somewhere in the body. The client's hemoglobin was low with a value of 11.9 g/dL when it should be 13 to 17 g/dL. This low value could be caused by the client's recent GI bleed or the long-term aspirin use. His hematocrit level was also low with a percentage of 35.8% when it's supposed to be 38.1% to 48.9%. This value is probably low due to the recent GI bleed as well. The client had a urinalysis performed on the urine that was catheterized from his urostomy that was cloudy, mucous, and had positive results for leuk est of 2+, positive result of nitrate, white blood cells of 5 and had over 100,000 gram – bacilli. A normal urinalysis is clear, yellow with no positive leuk est, nitrate, or glucose results with a maximum amount of trace levels of white blood cells and bacteria present. This result shows a highly likely urinary tract infection. The client had four EKGs performed while in the emergency room on 11/06/2022. The first one showed atrial fibrillation with rapid ventricular response with premature ventricular or aberrantly conducted complexes, nonspecific ST and T wave abnormalities, and an overall abnormal rate and rhythm. The second test was normal with sinus rhythm and no abnormal findings. The third test showed normal sinus rhythm, but now with a septal infarct and an inferior infarct observed. The last EKG showed sinus rhythm with premature atrial complexes and still showed those previous infarcts. These results showed the progression from atrial fibrillation with rapid ventricular response, back to a normal rhythm, and then the infarcts showed evidence of a myocardial infarction that occurred between the second and third test. They also had the client undergo a chest x-ray. This x-ray was performed because the client had chest pain, and it showed mild central vascular engorgement. This engorgement is indicative of his congestive heart failure, but when it was compared to the chest x-ray from a previous visit within a few weeks of each other, it indicated that the congestive heart failure was worsening.

Demographic Data

Date of Admission: 11/6/2022
Admission Diagnosis/Chief Complaint: Client complained of chest pain with irregular palpitations. The admitting diagnosis was atrial fibrillation with rapid ventricular response.
Age: 78 years
Gender: Male
Race/Ethnicity: Caucasian
Allergies: Sulfa drugs, amoxicillin, codeine, levofloxacin and lisinopril.
Code Status: Full Code
Height in cm: 178cm
Weight in kg: 102.8kg
Psychosocial Developmental Stage: Generativity (Orenstein & Lewis, 2021)
Cognitive Developmental Stage: Formal operational stage (Babakr et al., 2019)
Braden Score: 19
Morse Fall Score: 85
Infection Control Precautions: No infection control precautions necessary.

Admission History

The client presented to the emergency room on 11/05/2022 with complaints of chest pain and irregular palpitations. The pain and palpitations began at 2300 on 11/05/2022 and were constantly there. The client describes the palpitations as a "flutter" in his chest along with an "overwhelming feeling of tightness". He also stated that he "came into the ER because nothing was making it go away". The pain and palpitations were not relieved or aggravated by anything when at home, but the client received nitroglycerin at the hospital that reduced the pain. The chest pain was rated on a numeric scale as an 8 out of 10 and described as a tight feeling in the chest area. The client was admitted on 10/06/2022 with a probable diagnosis of atrial fibrillation with rapid ventricular response.

Medical History

Previous Medical History: This client has a past medical history of cancer of the prostate, chest pain, edema of lower extremity, positive fecal occult blood test, heart failure with preserved ejection fraction, hyperlipidemia, hypertension, hypertensive cardiovascular disease, mild coronary artery disease, obesity, paroxysmal atrial fibrillation, type II diabetes mellitus, chronic peripheral venous insufficiency and venous insufficiency of the lower extremity.
Prior Hospitalizations: This client came to the emergency room four times this year and was admitted three out of the four times. On 10/21/22 the patient was complaining of shortness of breath, on 03/21/22 the client was complaining of shortness of breath and chest pain, and on 12/21/21 the was complaining of chest pain.
Previous Surgical History: The client has a past surgical history of cardiac catheterization on 04/04/2018, phacoemulsification cataract with intraocular lens implantation of the right eye on 05/04/2017, and unspecified surgeries on the arm, bladder, gall bladder and prostate.
Social History: The client denied any alcohol, tobacco or drug use.

Pathophysiology

Disease process:
Atrial fibrillation is described as irregular and rapid contractions of the atrial cardiomyocytes (Bereda, 2022). On a cellular level, atrial fibrillation is initiated by focal ectopic firing and is maintained by "re-entry mechanisms in a vulnerable atrial substrate" (Bereda, 2022). A combination of these structural and some electrophysical atrium abnormalities lead to the cause of atrial fibrillation. This irregular heart rate is caused when abnormal electrical impulses override the heart's natural pacemaker, and they focus in on firing within the atria (Bereda, 2022). By overriding the natural pacemaker, the heart's synchronicity is thrown way off, and the rhythm becomes chaotic and uncontrolled which causes many of the symptoms felt by the patient experiencing atrial fibrillation.
S/S of disease:
The cardinal signs and symptoms of atrial fibrillation are irregular heart rate, palpitations, dizziness, shortness of breath, and overall fatigue/tiredness of the patient (Bereda, 2022). The variation of a-fib is diagnosed by examining the length of symptoms such as if it is a sudden onset that lasts less than seven days but reoccurs that is considered paroxysmal or persistent a-fib is when the symptoms last more than seven days continuously. My client has been in the emergency room four times in the past year with symptoms such as shortness of breath, palpitations, fatigue, and even chest pain. He was diagnosed with paroxysmal atrial fibrillation on his last visit and returned this visit with chest pain and elevated troponins.
Method of Diagnosis:
The diagnosis of atrial fibrillation involves a combination of evaluating the patient's history and physical along with observing electrocardiogram changes that coincide with a-fib such as: an atrial rate of 300-600, ventricular rate of 120-200, a highly irregular heartbeat, no discernable P wave or severely corrupted waves described as fibrillatory waves, the PR interval cannot be measured and the P:QRS ratio is frequent and measures as 1 (Overbaugh, 2021). My client was at increased risk for atrial fibrillation due to his past medical history of increased age, hypertension, obesity, and heart failure. His diagnosis came specifically from his EKG upon arrival to the ER that showed atrial fibrillation with rapid ventricular response with premature ventricular or aberrantly conducted complexes, nonspecific ST and T wave abnormalities, and an overall abnormal rate and rhythm. My client also went down for a stress test right before we left to determine if the ischemic damage to the heart and if the atrial fibrillation was exercise induced.
Treatment of disease:
Treatment for atrial fibrillation is a case-by-case plan depending on the pattern, causes, and duration of the arrythmia, the ventricular response rate, as well as the presence of structural or valvular failure (Overbaugh, 2021). Most of the time, the two factors that are trying to be control are the heart's rate and rhythm. The options for treatment of atrial fibrillation are antithrombotic medications to reduce the risk of a clot, medications to control the heart rate such as an antiarrhythmic or channel blocker, medications that convert the heart rhythm or prevent a-fib, electrical cardioversion for the a-fib, and in some cases cardiac rhythm therapies are needed which include catheter ablation, maze and mini-maze procedures, convergent procedures and sometimes left atrial appendage occlusion (Overbaugh, 2021). My client is taking enoxaparin, aspirin, and clopidogrel to help thin the blood to prevent clots, and also the metoprolol and amiodarone which are used to control the rate and rhythm of the heart.

Active Orders

The client had not been seen by the primary provider by the time we left for clinical, but he did have some essential orders in place for his condition. The client was placed on a heart healthy diet throughout his stay to ensure proper nutrition for his heart. At midnight of the previous night, he was also placed on a caffeine-free diet because he was scheduled for a nuclear medicine stress test this morning. The stress test was ordered to observe how the heart functions under stress, and why the patient was experiencing the symptoms that he was experiencing as often as he was. It also helps with diagnosing and determining damage done from a myocardial infarction. The client was also ordered to be put on continuous cardiac monitoring to watch the cardiac rate and rhythm throughout the client's hospital stay due to his recent diagnosis of atrial fibrillation and monitor for dysrhythmias. The client was also on intake and output monitoring due to his past diagnosis of congestive heart failure and the importance of monitoring the fluid throughout the body since he recently developed fluid in his chest. The last order that was in the computer for the client was orders for physical therapy and occupational therapy. These consults are important to assess the client's ability to move about and support themselves during ADL's since he lives somewhat independently with his daughter. A precaution that the client needs to be put on is bleeding precautions because he is on enoxaparin to help prevent the formation of a deep vein thrombosis.

Physical Exam/Assessment

General: The client was alert and oriented x4 to person, place, situation, and time. He appeared well-groomed and showed no signs of acute distress. The client's skin was appropriate for ethnicity and there was equal hair distribution.

Integument: The client's skin was appropriate for ethnicity and was warm and dry upon palpation. There were no rashes, lesions, or bruising observed throughout the assessment. The client's lower extremities had some 2+ pitting edema from his congestive heart failure, and his left shin area had a dry, flaky, reddened area that was blanchable upon pressure application. There was a normal quantity and distribution on hair throughout the body. The client's nails were without clubbing or signs of cyanosis. The skin turgor was elastic with a capillary refill of less than 3 seconds in the upper and lower extremities.

HEENT: The client's head and neck are symmetrical; trachea is midline without signs of deviation. The thyroid is not palpable upon swallowing, and no nodules were noted. Bilateral carotid pulses were palpable and assessed to be 2+ bilaterally. There were no signs of lymphadenopathy in the head or neck. The client's sclera was white, corneas were clear, conjunctiva was pink and there was no visible drainage or abnormalities visualized upon examination. Outward examination of the client's ears was only performed due to the lack of examination equipment for inward examination. The ears were free from drainage, erythema, lumps, nodules, or other abnormalities. The client did have a large amount of hair in his ear. The client's nose and throat were examined with a pen light, and both were patent, moist, and free from polyps, drainage, erythema, or other abnormalities.

Cardiovascular: The client's heart sounds were auscultated anteriorly and S1 and S2 were identified with a rate and rhythm within normal limits. There were no murmurs, gallops, or rubs auscultated. The client's peripheral pulses were assessed and deemed to be 3+ in all areas except the pedal pulse location where the lower extremity edema was located. The pedal pulses were 2+ bilaterally. Capillary refill was assessed, and refill occurred in less than 3 seconds.

Respiratory: The client's breath sounds were auscultated on both anterior and posterior sides. The breaths were equal and non-labored bilaterally and remained on the upper side or the normal range with a rate of 20 to 22 breathe per minute due to his COPD diagnosis. The lung sounds were clear with no evidence of wheezes, rhonchi, or crackles noted.

Genitourinary: The client has a urostomy that is used to void urine. His urostomy has not been draining well, therefore the nurse had to catheterize it for urine output. The urine that was collected was not observed by the student but was described by the nurse as amber color with a thick, mucous consistency that also contained a very strong odor. The output amount is unknown, but a urinalysis was to be performed on the output due to the previous urinalysis indicating a urinary tract infection.

Gastrointestinal: The client's abdomen was slightly distended in the lower right quadrant around the urostomy location. The rest of the abdomen was inspected, auscultated, percussed and palpated. The abdomen was nontender upon palpation with no edema or masses observed. The bowel sounds were auscultated and deemed to be active in all four quadrants. The client had a small, formed, brown bowel movement at 0800 on 11/07/2022.

Musculoskeletal: The client's active and passive range of motion was intact in all upper and lower extremities. The upper and lower extremities were tested for strength and the client has 5+ strength bilaterally in the upper extremities, but 4+ strength in the lower extremities when resistance was applied. The client uses a 4-wheel walker for ambulation and is considered a one-assist to move around and perform ADLs. The client does require assistance with ambulation, equipment, and performing activities.

Neurological: The client was alert and oriented x4 to person, place, situation, and time. The client had normal cognition and was able to follow commands. The client moved all extremities well. PERLA was intact upon assessment. The client's speech was quiet and slightly slurred but is considered a "normal" for this client. The client was awake and alert the entire assessment, able to respond to both verbal and physical stimuli. Strength was equal in all extremities.

Most recent VS (include date/time and highlight if abnormal): The client's vitals were obtained at 0755 on 11/07/2022. His temperature was 36.1℃, heart rate was 80 beats per minute, blood pressure was 143/69mmHg, oxygen saturation was 96% on room air, and respirations were 20 breaths per minute.

Pain and pain scale used: The client reported no pain today other than his "normal aches and pains" located in his back and hips which he rated as a 1 on a numeric scale that ranged from 0 to 10.

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
Knowledge deficit related to disease process as evidenced by frequent prior hospitalizations	Risk for infection related to diabetes mellitus type II as evidenced by elevated glucose levels, elevated A1c, and current urinary tract infection	Risk for fluid volume excess related to congestive heart failure and impaired urinary output as evidenced by mild vascular engorgement, peripheral edema, and the inability to produce urine through the urostomy
Rationale This diagnosis was chosen due to the client having a history of frequent prior hospitalization, specifically four in the past year, for very similar symptoms associated with the paroxysmal atrial fibrillation	**Rationale** This diagnosis was chosen because the patient's A1c was elevated which indicates high glucose levels over the past few months and he also had high glucose readings while hospitalized. Poor diabetes management puts a client at increased risk for infection, which the client seems to have in his urinary tract	**Rationale** This diagnosis was chosen because the client had a chest x-ray that showed worsening central vascular engorgement over a short period of time and the client currently has no urinary output without catheterization of his urostomy which puts him at increased risk for fluid volume excess
Interventions **Intervention 1:** Educate client on disease process of atrial fibrillation **Intervention 2:** Educate client on the signs and symptoms of the disease and when to seek medical attention	**Interventions** **Intervention 1:** Educate the client on diabetes management and importance of infection control **Intervention 2:** Educate patient on maintain asepsis during urostomy catheterization for home use	**Interventions** **Intervention 1:** Strictly monitoring input and output **Intervention 2:** Obtaining a daily weight on the client to monitor weight changes
Evaluation of Interventions • The client was receptive to information about his condition and seemed engaged in teaching • He was able to explain the disease in his own words to the student • He stated that he understood when to seek medical attention and when not to • Goals were met	**Evaluation of Interventions** • The client did not seem very receptive to information about controlling his diabetes • He stated that he "knew how to drain his bladder" but did listen to the importance of aseptic techniques • Goals partially met	**Evaluation of Interventions** • The client was downstairs for his stress test when I was going to teach him about the risk for this • The nurse was notified of the recommendations and stated she "thought that was going to be the next part of his treatment" • Goals were partially met

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