11.6: Chapter 6

Chapter 6 Critical Thinking Answers

You can review additional information regarding these answers in the corresponding section in which the Critical Thinking activities appear.

Critical Thinking Activity Section 6.7a

1. A nurse should assess the apical pulse for a full minute before administering digoxin due to its positive inotropic action (it increases contractility, stroke volume, and, thus, cardiac output), negative chronotropic action (it decreases heart rate), and negative dromotropic action (it decreases electrical conduction of the cardiac cells). These actions can lead to bradycardia. If the patient’s heart rate is less than 60 beats per minute, the nurse should notify the provider before administering digoxin unless other parameters are provided.

2. The nurse evaluates the effectiveness of digoxin based on the patient’s blood pressure, apical pulse, and decreased symptoms of heart failure for which it is indicated.

3. The nurse should monitor the patient’s serum potassium level because a decreased potassium level places the patient at increased risk of digoxin toxicity. Normal potassium level is 3.5 to 5.0 mEq/L, and a result less than 3.5 should be immediately reported to the provider due to the risk for sudden dysrhythmias. Serum digoxin levels should also be monitored, with a normal therapeutic range being 0.8 to 2 ng/mL.

4. The nurse should assess the patient’s apical pulse and withhold the administration of digoxin. The nurse should also check for current lab results related to the serum digoxin and potassium levels. The nurse should notify the provider of the patient’s change in condition that could indicate digoxin toxicity and provide information regarding the patient’s apical pulse and recent digoxin and potassium levels. An order for a serum digoxin level may be received from the provider.
Based on the serum digoxin level, the patient may receive a new order for digibind. Digibind is used to treat digoxin toxicity.

**Critical Thinking Activity Section 6.8**

The nurse should monitor the patient’s blood pressure and heart rate. After 5 minutes, the pain level should be reassessed and a second dose of nitroglycerin administered if the patient’s chest pain continues. If there is no improvement in chest pain, emergency services should be obtained by calling 911 or the rapid response team.

**Critical Thinking Activity Section 6.9**

1. Before administering a diuretic, the nurse should assess blood pressure, the daily weight trend, serum potassium and other electrolyte levels, hydration status including 24-hour input/output, and current renal function.

2. Signs of toxicity include blurred vision, nausea, and visual impairment (such as seeing green and yellow halos). A low potassium level can increase the risk of digoxin toxicity. If a patient has digoxin toxicity, severe bradycardia and even death can occur if not treated promptly. The normal range for serum potassium is 3.5-5.0 mEq/L.

3. Furosemide (Lasix) is a loop diuretic.

4. Patients receiving loop diuretics are at high risk of dehydration. Loop diuretics work in the loop of Henle where a great deal of sodium and water are either reabsorbed or eliminated by the kidney tubules.

5. The nurse should assess for the development of dehydration in patients receiving diuretics by monitoring skin and mucus membranes for dryness, blood pressure for hypotension, heart rate for tachycardia, decreased urine output, concentrated urine, and increased serum sodium levels.

6. All electrolyte levels can be decreased in patients taking loop diuretics, but potassium in particular is at high risk for depletion due to the rapid water loss that occurs.

7. Furosemide can deplete potassium levels, which then increases the risk for developing digoxin toxicity.

**Critical Thinking Activity Section 6.10**

1. Metoprolol is a selective Beta-1 blocker that decreases the heart rate and force of contraction to reduce blood pressure. Lisinopril is an ACE inhibitor that reduces blood pressure through vasodilation and reduces fluid retention. Verapamil is a calcium channel blocker that causes vasodilation to reduce blood pressure. Hydrochlorothiazide is a thiazide diuretic that reduces fluid retention. For this patient, all four medications may be required to maintain a blood pressure within normal range.

2. The nurse should explain that each medication works in different ways within the body to treat high blood pressure. It is vital to explain the importance of maintaining blood pressure within normal range to prevent additional complications such as a heart attack, heart failure, stroke, and kidney failure.

**Critical Thinking Activity Section 6.12**

1. Warfarin will not dissolve the existing clot, but it will help prevent additional clot formation.
2. When a patient is taking warfarin, the nurse should closely monitor INR and PT levels to verify they are in normal range to prevent bleeding complications. Specifically, the therapeutic range for INR is between 2.0 to 3.5 depending upon the indication.

3. Dietary instructions should be provided to maintain a consistent intake of foods high in vitamin K like leafy green vegetables. Daily changes in intake of foods that are high in vitamin K will influence the effectiveness of warfarin, as well as the patient’s INR levels used to maintain the warfarin levels in therapeutic range.

4. Patient education should emphasize bleeding precautions, avoidance of NSAIDs and aspirin, the need for routine therapeutic monitoring, and when to call the provider with signs of increased bleeding or clotting.

5. The reversal agent for warfarin is vitamin K.