11.9: Chapter 9

Chapter 9 Critical Thinking Activities

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

Critical Thinking Activity Section 9.3

1. The patient is at risk for a fracture due to a previous history of osteoporosis that weakens the bones and increases the risk for a fracture when injury occurs. Corticosteroids can cause muscle weakness that can lead to falls and fractures.

2. Alendronate, a bisphosphonates class of medication, is often used to treat osteoporosis and reduce the patient’s risk of fractures. Other preventative measures can be implemented such as weight-bearing exercise and calcium/vitamin D supplementation.

3. The patient should be instructed to avoid getting up without assistance. The room should be well-lit without loose rugs that can cause tripping. If the patient uses assistive devices like a cane or walker, these devices should be readily available.

4. The use of glucocorticoids can increase glucose levels. Although the patient has no history of diabetes, the increased blood glucose levels may require the temporary use of insulin.

5. Signs of adrenal suppression include severe fatigue, gastrointestinal upset, and a suppressed immune response that places the patient at risk for developing infections.

Critical Thinking Activity Section 9.4
1. Type 1 diabetes is an autoimmune disease affecting the beta cells of the pancreas so they do not produce insulin; synthetic insulin must be administered by injection or infusion.

Type 2 diabetes is acquired, and lifestyle factors such as poor diet and inactivity greatly increase a person’s risk for developing this disease. In type 2 diabetes, the body’s cells become resistant to the effects of insulin. In response, the pancreas increases its insulin secretion, but over time, the beta cells become exhausted. In many cases, type 2 diabetes can be reversed by moderate weight loss, regular physical activity, and consumption of a healthy diet. However, if blood glucose levels cannot be controlled with these measures, oral diabetic medication is implemented and eventually insulin may be required.

2. Surgery and hospitalization often stimulate a patient’s stress response, which includes the release of cortisol. Cortisol increases blood glucose levels, so the patient may require insulin to control blood sugar levels while hospitalized.

3. The nurse should administer 12 units of Humalog insulin along with the scheduled 20 units of Humulin-N insulin at breakfast.

4. Metformin may be discontinued because it is contraindicated in patients with kidney disease (e.g., serum creatinine levels ≥1.5 mg/dL [males] or ≥1.4 mg/dL [females]).

5. The patient is displaying signs of hypoglycemia. A supplementary carbohydrate, such as 4 ounces of orange juice, should be administered as soon as possible. However, if the patient seems confused or unable to swallow, glucagon should be administered.

6. The patient has hypoglycemia because the peak effect of Humulin-N is about 6 hours. Because the medication is peaking between meal times, the patient’s blood sugar continues to decrease. On the other hand, the onset of Humalog insulin is 15-30 minutes, with the peak effect in 1-3 hours, so the food eaten during meal time maintains a normal blood sugar as long as the meals and the insulin administration are matched.

7. The hemoglobin A1C test indicates the patient’s average level of blood sugar over the past 2 to 3 months. It is also referred to as HbA1c, glycated hemoglobin test, or glycohemoglobin. Normal hemoglobin A1C is less than 5.7%. In patients with diabetes, the goal is to maintain hemoglobin A1C levels less than 7%. The patient’s recent lab result of 10% indicates the need for additional diabetes medication, as well as patient education regarding diabetes management, to avoid the development of long-term complications of diabetes.

8. Lantus is a long-acting insulin that has a duration over 24 hours. It does not have a peak and should be administered once daily at the same time each day. Lantus should only be administered subcutaneously and should not be mixed with other insulin.

**Critical Thinking Activity Section 9.5**

The patient should be advised to take levothyroxine at the same time every morning, before eating or drinking. It should not be taken with other medications that may interfere with its absorption and should be taken at least 30 minutes before eating or 2 hours after eating. The patient should monitor for signs of hypothyroidism from too low of a dose of levothyroxine, such as constipation, weight gain, and fatigue. It is also important to watch for signs of too high of a dose of levothyroxine such as rapid or irregular heart rate.