

### QUESTION

1. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum electrolyte levels are as follows: sodium 135 mEq/L, potassium 3.0 mEq/L, calcium 8.5 mg/dL, and magnesium 1.5 mg/dL. The patient is also receiving a beta-blocker for hypertension. The patient's current symptoms include muscle weakness, fatigue, and dizziness. The patient's physical examination is unremarkable. The patient's electrocardiogram (ECG) shows a sinus rhythm with a heart rate of 60 bpm, a PR interval of 180 ms, a QRS duration of 100 ms, and a QT interval of 400 ms. The patient's renal function is stable with a creatinine clearance of 30 mL/min. The patient's blood pressure is 140/90 mmHg. The patient's weight is 70 kg. The patient's height is 170 cm. The patient's age is 65 years. The patient's gender is male. The patient's race is white. The patient's education level is high school graduate. The patient's occupation is retired. The patient's insurance status is private. The patient's marital status is married. The patient's number of children is two. The patient's number of siblings is three. The patient's number of pets is one. The patient's number of vehicles is one. The patient's number of jobs is one. The patient's number of hobbies is two. The patient's number of friends is five. The patient's number of family members is six. The patient's number of pets is one. The patient's number of vehicles is one. The patient's number of jobs is one. The patient's number of hobbies is two. The patient's number of friends is five. The patient's number of family members is six.

Parameter	Value
Sodium	135 mEq/L
Potassium	3.0 mEq/L
Calcium	8.5 mg/dL
Magnesium	1.5 mg/dL

2. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum electrolyte levels are as follows: sodium 135 mEq/L, potassium 3.0 mEq/L, calcium 8.5 mg/dL, and magnesium 1.5 mg/dL. The patient is also receiving a beta-blocker for hypertension. The patient's current symptoms include muscle weakness, fatigue, and dizziness. The patient's physical examination is unremarkable. The patient's electrocardiogram (ECG) shows a sinus rhythm with a heart rate of 60 bpm, a PR interval of 180 ms, a QRS duration of 100 ms, and a QT interval of 400 ms. The patient's renal function is stable with a creatinine clearance of 30 mL/min. The patient's blood pressure is 140/90 mmHg. The patient's weight is 70 kg. The patient's height is 170 cm. The patient's age is 65 years. The patient's gender is male. The patient's race is white. The patient's education level is high school graduate. The patient's occupation is retired. The patient's insurance status is private. The patient's marital status is married. The patient's number of children is two. The patient's number of siblings is three. The patient's number of pets is one. The patient's number of vehicles is one. The patient's number of jobs is one. The patient's number of hobbies is two. The patient's number of friends is five. The patient's number of family members is six.

### ANSWER

The patient's symptoms and physical examination findings are consistent with hypokalemia. The patient's serum potassium level is 3.0 mEq/L, which is below the normal range of 3.5-5.0 mEq/L. The patient's serum sodium level is 135 mEq/L, which is within the normal range of 135-145 mEq/L. The patient's serum calcium level is 8.5 mg/dL, which is within the normal range of 8.5-10.5 mg/dL. The patient's serum magnesium level is 1.5 mg/dL, which is within the normal range of 1.5-2.5 mg/dL. The patient's ECG findings are consistent with a sinus rhythm and a normal heart rate. The patient's renal function is stable with a creatinine clearance of 30 mL/min. The patient's blood pressure is 140/90 mmHg, which is within the normal range of 120/80-140/90 mmHg. The patient's weight is 70 kg, which is within the normal range of 60-80 kg. The patient's height is 170 cm, which is within the normal range of 160-180 cm. The patient's age is 65 years, which is within the normal range of 60-70 years. The patient's gender is male, which is within the normal range of male and female. The patient's race is white, which is within the normal range of white, black, and other races. The patient's education level is high school graduate, which is within the normal range of high school graduate, college graduate, and other education levels. The patient's occupation is retired, which is within the normal range of retired, employed, and other occupations. The patient's insurance status is private, which is within the normal range of private, public, and other insurance statuses. The patient's marital status is married, which is within the normal range of married, single, and other marital statuses. The patient's number of children is two, which is within the normal range of zero, one, two, three, and other numbers of children. The patient's number of siblings is three, which is within the normal range of zero, one, two, three, and other numbers of siblings. The patient's number of pets is one, which is within the normal range of zero, one, two, and other numbers of pets. The patient's number of vehicles is one, which is within the normal range of zero, one, two, and other numbers of vehicles. The patient's number of jobs is one, which is within the normal range of zero, one, two, and other numbers of jobs. The patient's number of hobbies is two, which is within the normal range of zero, one, two, three, and other numbers of hobbies. The patient's number of friends is five, which is within the normal range of zero, one, two, three, four, five, and other numbers of friends. The patient's number of family members is six, which is within the normal range of zero, one, two, three, four, five, six, and other numbers of family members.