

QUESTION

1. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum sodium level is 125 mEq/L. The patient's serum potassium level is 2.5 mEq/L. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL. The patient's serum bicarbonate level is 15 mEq/L. The patient's serum creatinine level is 3.0 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL. The patient's serum albumin level is 3.5 g/dL. The patient's serum total protein level is 6.5 g/dL. The patient's serum total cholesterol level is 200 mg/dL. The patient's serum triglyceride level is 150 mg/dL. The patient's serum HDL cholesterol level is 30 mg/dL. The patient's serum LDL cholesterol level is 130 mg/dL. The patient's serum ferritin level is 100 ng/mL. The patient's serum transferrin saturation level is 20%. The patient's serum erythropoietin level is 100 U/mL. The patient's serum parathyroid hormone-related protein level is 100 pg/mL. The patient's serum parathyroid hormone level is 100 pg/mL. The patient's serum parathyroid hormone-related protein level is 100 pg/mL. The patient's serum parathyroid hormone level is 100 pg/mL.

Parameter	Value
Serum sodium	125 mEq/L
Serum potassium	2.5 mEq/L
Serum calcium	8.5 mg/dL
Serum phosphate	2.5 mg/dL
Serum magnesium	0.5 mg/dL
Serum bicarbonate	15 mEq/L
Serum creatinine	3.0 mg/dL
Serum urea nitrogen	25 mg/dL
Serum albumin	3.5 g/dL
Serum total protein	6.5 g/dL
Serum total cholesterol	200 mg/dL
Serum triglyceride	150 mg/dL
Serum HDL cholesterol	30 mg/dL
Serum LDL cholesterol	130 mg/dL
Serum ferritin	100 ng/mL
Serum transferrin saturation	20%
Serum erythropoietin	100 U/mL
Serum parathyroid hormone-related protein	100 pg/mL
Serum parathyroid hormone	100 pg/mL

2. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum sodium level is 125 mEq/L. The patient's serum potassium level is 2.5 mEq/L. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL. The patient's serum bicarbonate level is 15 mEq/L. The patient's serum creatinine level is 3.0 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL. The patient's serum albumin level is 3.5 g/dL. The patient's serum total protein level is 6.5 g/dL. The patient's serum total cholesterol level is 200 mg/dL. The patient's serum triglyceride level is 150 mg/dL. The patient's serum HDL cholesterol level is 30 mg/dL. The patient's serum LDL cholesterol level is 130 mg/dL. The patient's serum ferritin level is 100 ng/mL. The patient's serum transferrin saturation level is 20%. The patient's serum erythropoietin level is 100 U/mL. The patient's serum parathyroid hormone-related protein level is 100 pg/mL. The patient's serum parathyroid hormone level is 100 pg/mL. The patient's serum parathyroid hormone-related protein level is 100 pg/mL. The patient's serum parathyroid hormone level is 100 pg/mL.

ANSWER

The patient has severe hyponatremia, hypokalemia, hypocalcemia, hypophosphatemia, hypomagnesemia, metabolic acidosis, and severe renal impairment. The patient's serum sodium level is 125 mEq/L, which is significantly below the normal range of 135-145 mEq/L. The patient's serum potassium level is 2.5 mEq/L, which is significantly below the normal range of 3.5-5.0 mEq/L. The patient's serum calcium level is 8.5 mg/dL, which is significantly below the normal range of 9.0-10.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL, which is significantly below the normal range of 2.5-4.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL, which is significantly below the normal range of 0.7-1.0 mg/dL. The patient's serum bicarbonate level is 15 mEq/L, which is significantly below the normal range of 22-28 mEq/L. The patient's serum creatinine level is 3.0 mg/dL, which is significantly above the normal range of 0.6-1.2 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL, which is significantly above the normal range of 7-20 mg/dL. The patient's serum albumin level is 3.5 g/dL, which is significantly below the normal range of 3.5-5.0 g/dL. The patient's serum total protein level is 6.5 g/dL, which is significantly below the normal range of 6.0-8.0 g/dL. The patient's serum total cholesterol level is 200 mg/dL, which is significantly above the normal range of 125-200 mg/dL. The patient's serum triglyceride level is 150 mg/dL, which is significantly above the normal range of 50-150 mg/dL. The patient's serum HDL cholesterol level is 30 mg/dL, which is significantly below the normal range of 30-60 mg/dL. The patient's serum LDL cholesterol level is 130 mg/dL, which is significantly above the normal range of 70-130 mg/dL. The patient's serum ferritin level is 100 ng/mL, which is significantly above the normal range of 10-100 ng/mL. The patient's serum transferrin saturation level is 20%, which is significantly below the normal range of 20-50%. The patient's serum erythropoietin level is 100 U/mL, which is significantly above the normal range of 10-100 U/mL. The patient's serum parathyroid hormone-related protein level is 100 pg/mL, which is significantly above the normal range of 10-100 pg/mL. The patient's serum parathyroid hormone level is 100 pg/mL, which is significantly above the normal range of 10-100 pg/mL.