

QUESTION

1. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum potassium level is 2.8 mEq/L. The patient is also taking a beta-blocker. The patient's blood pressure is 160/90 mmHg. The patient's heart rate is 55 bpm. The patient's respiratory rate is 18 breaths per minute. The patient's oxygen saturation is 92% on room air. The patient's physical examination is unremarkable. The patient's electrocardiogram (ECG) shows a sinus rhythm with a PR interval of 180 ms, a QRS duration of 100 ms, and a QT interval of 420 ms. The patient's chest X-ray is normal. The patient's renal function is stable. The patient's hemoglobin level is 12 g/dL. The patient's hematocrit level is 36%. The patient's serum creatinine level is 1.5 mg/dL. The patient's serum urea nitrogen level is 18 mg/dL. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphorus level is 2.5 mg/dL. The patient's serum magnesium level is 0.8 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 180 mg/dL. The patient's serum triglyceride level is 150 mg/dL. The patient's serum glucose level is 100 mg/dL. The patient's serum insulin level is 10 mU/L. The patient's serum C-peptide level is 0.5 ng/mL. The patient's serum HbA1c level is 7.5%. The patient's serum ferritin level is 100 ng/mL. The patient's serum transferrin saturation level is 20%. The patient's serum iron level is 50 µg/dL. The patient's serum total iron-binding capacity level is 250 µg/dL. The patient's serum transferrin level is 100 µg/dL. The patient's serum transferrin receptor level is 100 µg/dL. The patient's serum transferrin receptor-folate receptor 2 level is 100 µg/dL. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0.

Parameter	Value	Reference Range
Serum potassium	2.8 mEq/L	3.5-5.0 mEq/L
Serum calcium	8.5 mg/dL	8.8-10.0 mg/dL
Serum phosphorus	2.5 mg/dL	2.5-4.5 mg/dL
Serum magnesium	0.8 mg/dL	0.7-1.1 mg/dL
Serum albumin	3.5 g/dL	3.5-5.0 g/dL
Serum total protein	6.5 g/dL	6.0-8.0 g/dL
Serum total cholesterol	180 mg/dL	<200 mg/dL
Serum triglyceride	150 mg/dL	<150 mg/dL
Serum glucose	100 mg/dL	70-100 mg/dL
Serum insulin	10 mU/L	5-20 mU/L
Serum C-peptide	0.5 ng/mL	0.5-2.0 ng/mL
Serum HbA1c	7.5%	<5.7%
Serum ferritin	100 ng/mL	50-500 ng/mL
Serum transferrin saturation	20%	20-50%
Serum iron	50 µg/dL	50-150 µg/dL
Serum total iron-binding capacity	250 µg/dL	250-450 µg/dL
Serum transferrin	100 µg/dL	100-400 µg/dL
Serum transferrin receptor	100 µg/dL	100-400 µg/dL
Serum transferrin receptor-folate receptor 2	100 µg/dL	100-400 µg/dL
Serum transferrin receptor-folate receptor 2:transferrin ratio	1.0	1.0-2.0

2. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum potassium level is 2.8 mEq/L. The patient is also taking a beta-blocker. The patient's blood pressure is 160/90 mmHg. The patient's heart rate is 55 bpm. The patient's respiratory rate is 18 breaths per minute. The patient's oxygen saturation is 92% on room air. The patient's physical examination is unremarkable. The patient's electrocardiogram (ECG) shows a sinus rhythm with a PR interval of 180 ms, a QRS duration of 100 ms, and a QT interval of 420 ms. The patient's chest X-ray is normal. The patient's renal function is stable. The patient's hemoglobin level is 12 g/dL. The patient's hematocrit level is 36%. The patient's serum creatinine level is 1.5 mg/dL. The patient's serum urea nitrogen level is 18 mg/dL. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphorus level is 2.5 mg/dL. The patient's serum magnesium level is 0.8 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 180 mg/dL. The patient's serum triglyceride level is 150 mg/dL. The patient's serum glucose level is 100 mg/dL. The patient's serum insulin level is 10 mU/L. The patient's serum C-peptide level is 0.5 ng/mL. The patient's serum HbA1c level is 7.5%. The patient's serum ferritin level is 100 ng/mL. The patient's serum transferrin saturation level is 20%. The patient's serum iron level is 50 µg/dL. The patient's serum total iron-binding capacity level is 250 µg/dL. The patient's serum transferrin level is 100 µg/dL. The patient's serum transferrin receptor level is 100 µg/dL. The patient's serum transferrin receptor-folate receptor 2 level is 100 µg/dL. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0. The patient's serum transferrin receptor-folate receptor 2:transferrin ratio is 1.0.

ANSWER



Parameter	Value	Reference Range
Serum potassium	2.8 mEq/L	3.5-5.0 mEq/L
Serum calcium	8.5 mg/dL	8.8-10.0 mg/dL
Serum phosphorus	2.5 mg/dL	2.5-4.5 mg/dL
Serum magnesium	0.8 mg/dL	0.7-1.1 mg/dL
Serum albumin	3.5 g/dL	3.5-5.0 g/dL
Serum total protein	6.5 g/dL	6.0-8.0 g/dL
Serum total cholesterol	180 mg/dL	<200 mg/dL
Serum triglyceride	150 mg/dL	<150 mg/dL
Serum glucose	100 mg/dL	70-100 mg/dL
Serum insulin	10 mU/L	5-20 mU/L
Serum C-peptide	0.5 ng/mL	0.5-2.0 ng/mL
Serum HbA1c	7.5%	<5.7%
Serum ferritin	100 ng/mL	50-500 ng/mL
Serum transferrin saturation	20%	20-50%
Serum iron	50 µg/dL	50-150 µg/dL
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Serum transferrin	100 µg/dL	100-400 µg/dL
Serum transferrin receptor	100 µg/dL	100-400 µg/dL
Serum transferrin receptor-folate receptor 2	100 µg/dL	100-400 µg/dL
Serum transferrin receptor-folate receptor 2:transferrin ratio	1.0	1.0-2.0

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