

### QUESTION

1. A patient with a long history of alcohol abuse presents with a 2-week history of weight loss, weakness, and confusion. On admission, the patient is found to have a serum glucose of 100 mg/dL, serum sodium of 125 mEq/L, and serum bicarbonate of 18 mEq/L. The patient's arterial blood gas (ABG) shows a pH of 7.35, a partial pressure of carbon dioxide (PCO<sub>2</sub>) of 38 mmHg, and a partial pressure of oxygen (PO<sub>2</sub>) of 100 mmHg. The patient's anion gap is 16 mEq/L. The patient's serum lactate is 2.5 mmol/L. The patient's serum ketones are negative. The patient's serum ammonia is 45 μmol/L. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%.

Parameter	Value	Reference Range
Serum Glucose	100 mg/dL	70-100 mg/dL
Serum Sodium	125 mEq/L	135-145 mEq/L
Serum Bicarbonate	18 mEq/L	22-28 mEq/L
ABG pH	7.35	7.35-7.45
ABG PCO <sub>2</sub>	38 mmHg	35-45 mmHg
ABG PO <sub>2</sub>	100 mmHg	80-100 mmHg
Anion Gap	16 mEq/L	8-16 mEq/L
Serum Lactate	2.5 mmol/L	<2.0 mmol/L
Serum Ketones	Negative	<0.5 mmol/L
Serum Ammonia	45 μmol/L	<35 μmol/L
Serum Ferritin	100 ng/mL	<100 ng/mL
Serum Iron	100 μg/dL	50-150 μg/dL
Serum Transferrin Saturation	20%	20-50%

2. A patient with a long history of alcohol abuse presents with a 2-week history of weight loss, weakness, and confusion. On admission, the patient is found to have a serum glucose of 100 mg/dL, serum sodium of 125 mEq/L, and serum bicarbonate of 18 mEq/L. The patient's arterial blood gas (ABG) shows a pH of 7.35, a partial pressure of carbon dioxide (PCO<sub>2</sub>) of 38 mmHg, and a partial pressure of oxygen (PO<sub>2</sub>) of 100 mmHg. The patient's anion gap is 16 mEq/L. The patient's serum lactate is 2.5 mmol/L. The patient's serum ketones are negative. The patient's serum ammonia is 45 μmol/L. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%.

### ANSWER



3. A patient with a long history of alcohol abuse presents with a 2-week history of weight loss, weakness, and confusion. On admission, the patient is found to have a serum glucose of 100 mg/dL, serum sodium of 125 mEq/L, and serum bicarbonate of 18 mEq/L. The patient's arterial blood gas (ABG) shows a pH of 7.35, a partial pressure of carbon dioxide (PCO<sub>2</sub>) of 38 mmHg, and a partial pressure of oxygen (PO<sub>2</sub>) of 100 mmHg. The patient's anion gap is 16 mEq/L. The patient's serum lactate is 2.5 mmol/L. The patient's serum ketones are negative. The patient's serum ammonia is 45 μmol/L. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%. The patient's serum ferritin is 100 ng/mL. The patient's serum iron is 100 μg/dL. The patient's serum transferrin saturation is 20%.