

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 (PCO₂) of 38 mmHg, and a partial pressure of oxygen (PO₂) of 100 mmHg. The patient's anion gap is 16 mEq/L. The patient's urine is found to have a glucose of 2+ and a ketone of 2+.

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
Arterial pH	7.35	7.35-7.45
Arterial PCO ₂	38 mmHg	35-45 mmHg
Arterial PO ₂	100 mmHg	80-100 mmHg
Anion Gap	16 mEq/L	8-12 mEq/L
Urine Glucose	2+	None
Urine Ketone	2+	None

2. The patient's physical examination is notable for tachycardia, tachypnea, and hyperreflexia. The patient's laboratory studies are as follows:

ANSWER



3. The patient's physical examination is notable for tachycardia, tachypnea, and hyperreflexia. The patient's laboratory studies are as follows: