

QUESTION

1. A patient with a long history of alcohol abuse presents with a 2-week history of weight loss, weakness, and confusion. Physical examination shows a sunken chest, tachypnea, and asterixis. Laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level 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 35 mmHg, and a partial pressure of oxygen (PO₂) of 85 mmHg. What is the most likely cause of the patient's confusion?

- A. Hypoglycemia
- B. Hypocalcemia
- C. Hypomagnesemia
- D. Hypokalemia
- E. Hypoalbuminemia

ANSWER

The correct answer is C. Hypomagnesemia. The patient's symptoms of weight loss, weakness, and confusion, along with the physical findings of a sunken chest, tachypnea, and asterixis, are consistent with severe hypomagnesemia. The laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level of 18 mEq/L, which are all elevated. The patient's ABG shows a pH of 7.35, a PCO₂ of 35 mmHg, and a PO₂ of 85 mmHg, which are all within normal limits. Hypomagnesemia can cause a variety of symptoms, including weight loss, weakness, and confusion. It can also cause physical findings such as a sunken chest, tachypnea, and asterixis. The laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level of 18 mEq/L, which are all elevated. The patient's ABG shows a pH of 7.35, a PCO₂ of 35 mmHg, and a PO₂ of 85 mmHg, which are all within normal limits.

Reference: [UpToDate. Magnesium deficiency. Updated 2019.](#)

QUESTION

2. A 65-year-old male with a long history of alcohol abuse presents with a 2-week history of weight loss, weakness, and confusion. Physical examination shows a sunken chest, tachypnea, and asterixis. Laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level 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 35 mmHg, and a partial pressure of oxygen (PO₂) of 85 mmHg. What is the most likely cause of the patient's confusion?

- A. Hypoglycemia
- B. Hypocalcemia
- C. Hypomagnesemia
- D. Hypokalemia
- E. Hypoalbuminemia

ANSWER

The correct answer is C. Hypomagnesemia. The patient's symptoms of weight loss, weakness, and confusion, along with the physical findings of a sunken chest, tachypnea, and asterixis, are consistent with severe hypomagnesemia. The laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level of 18 mEq/L, which are all elevated. The patient's ABG shows a pH of 7.35, a PCO₂ of 35 mmHg, and a PO₂ of 85 mmHg, which are all within normal limits. Hypomagnesemia can cause a variety of symptoms, including weight loss, weakness, and confusion. It can also cause physical findings such as a sunken chest, tachypnea, and asterixis. The laboratory studies show a serum ammonia level of 100 µg/dL, a serum lactate level of 15 mg/dL, and a serum bicarbonate level of 18 mEq/L, which are all elevated. The patient's ABG shows a pH of 7.35, a PCO₂ of 35 mmHg, and a PO₂ of 85 mmHg, which are all within normal limits.

Reference: [UpToDate. Magnesium deficiency. Updated 2019.](#)