

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Acid-Base Balance-Electrolyte Quiz – Case 10

A 70-year-old woman with uncontrolled diabetes mellitus was admitted to the hospital. Laboratory investigation showed glucose 420 mg/dL, HbA_{1c} (%) 11%, urea 68 mg/dL, creatinine 1.4 mg/dL, serum sodium 121 mEq/L, total cholesterol 670 mg/dL and triglycerides 11,284 mg/dL.

Which is the cause of the patient's hyponatremia?

- a) Volume depletion due to uncontrolled diabetes mellitus
- b) Pseudohyponatremia due to hyperglycemia
- c) Pseudohyponatremia due to the severe hypertriglyceridemia
- d) Syndrome of inappropriate antidiuresis

Comment

In this case, the diagnosis of pseudohyponatremia due to severe

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secondary hypertriglyceridemia (chylomicronemia) was made. In fact, plasma osmolality was normal (Posm 288 mosmoL/kg). Uncontrolled diabetes mellitus may be accompanied by severe hypertriglyceridemia, which may result in pseudohyponatremia, when serum sodium is measured by indirect ion-selective electrode method. Pseudohyponatremia is due to the displacement of the plasma water by lipid so that the water content of a given volume of plasma is depressed below its normal value of 94.5%.

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Answer: The correct answer is "c"

Diagnosis: Pseudohyponatremia due to the severe hypertriglyceridemia
