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Acid-Base Balance-Electrolyte Quiz – Case 26

G. Miltiadous,
M. Elisaf

Department of Internal Medicine, Medical School, University of Ioannina, Ioannina, Greece

A 42-year-old man was admitted to the hospital with weakness and postural dizziness (due to postural hypotension).

Laboratory investigation showed: Urea 70 mg/dL, creatinine 1.5 mg/dL, sodium 136 mEq/L, potassium 3.1 mEq/L, chloride 110 mEq/L, arterial pH 7.30, bicarbonate 16 mEq/L. Urine sodium was 12 mEq/L.

Which is the most probable diagnosis?

a. Salt wasting nephropathy

b. Adrenal insufficiency

c. Diarrhea

d. Vomiting

Comment

The patient presented with both clinical (postural hypotension) and laboratory (increased urea/creatinine ratio, as well as low urine sodium concentration) findings of volume depletion (hypovolemia). The low urine sodium level can exclude the diagnosis of both salt wasting nephropathy and adrenal insufficiency. Vomiting is associated with metabolic alkalosis and not metabolic acidosis, which was the case in our patient. Thus, the patient exhibited diarrhea-induced hypovolemia associated with hypokalemia and hyperchloremic metabolic acidosis.

Corresponding author:

M. Elisaf, Department of Internal Medicine, Medical School, University of Ioannina, GR-451 10 Ioannina, Greece
e-mail: egepi@cc.uoi.gr

Diagnosis: *Diarrhea-induced hypovolemia*