

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Acid-Base Balance-Electrolyte Quiz – Case 61

Which of the following is not compatible with the diagnosis of Gitelman syndrome?

- Hypokalemia
- Increased fractional chloride excretion
- Hypercalciuria
- Hypomagnesemia
- Metabolic alkalosis

Comment

Gitelman syndrome is characterized by reduced sodium chloride reabsorption in the early distal convoluted tubules resulting in an increased fractional chloride excretion (>0.5%). Furthermore, renal potassium wasting (defined as potassium/creatinine in a random urine specimen >18 mmol/g) leading to hypokalemia is a common finding due to hypovolemia-induced aldosteronism, as well as to increased tubular flow rate in the collecting tubules. Hypokalemia

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**E. Pappa,
T. Dimitriou,
M. Elisaf**

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

is associated with metabolic alkalosis. In these patients hypomagnesemia is commonly found due to inappropriate magnesuria (fractional magnesium excretion >4%) probably due to decreased magnesium reabsorption through downregulation of the TRPM6 channels in the distal convoluted tubules.

Finally, hypocalciuria (spot calcium to creatinine <0.07 mg/mg) is a typical laboratory finding in these patients owing to increased passive calcium reabsorption in the proximal renal tubules.

Corresponding author:

M. Elisaf, Department of Internal Medicine, Medical School,
University of Ioannina, GR-451 10 Ioannina, Greece
e-mail: melisaf54@gmail.com

Answer: Hypercalciuria