CASE REPORT

Persistent Hypokalemia: Case Report and Literature Review

Iulia CIOBOTARIU[1], Catalina CORIU[1], Alexandra PURCARU[1], Elena GAINOIU[1], Camelia DIACONU[1,2,3]

[1]*Departament of Internal Medicine, Clinical Emergency Hospital of Bucharest, Bucharest, Romania*
[2]*Carol Davila University of Medicine and Pharmacy, Bucharest, Romania*
[3]*Academy of Romanian Scientists*

Address for correspondence: Iulia Ciobotariu, Departament of Internal Medicine, Clinical Emergency Hospital of Bucharest, Bucharest, Romania; E-mail: ciobotariu_iulia@yahoo.com

Abstract

Introduction. *Hypokalemia is a common clinical disorder. The most common causes of hypokalemia are decreased intake, intracellular shift and increased loss of potassium. In clinical practice, most frequently patients present with hypokalemia due to increased loss of potassium, especially renal loss.*

Case presentation*. A 62-year-old woman, known with hypothyroidism under treatment with Euthyrox, diagnosed with COVID-19 four months before, presented for nausea and vomiting, headache, generalised muscular hypotony and palpitations, with the onset three weeks before. On physical examination, the blood pressure was 140/90 mmHg, regular pulse frequency of 96/min, the patient had pale skin and mucosa and abolition of osteotendinous reflexes at the inferior members. The laboratory tests revealed severe hypokalemia and moderate normocytic normochromic anemia, mixed alkalosis. The patient had no history of treatment with diuretics or penicilines, or any other condition that could have explained the severe hypokalemia. The patient was admitted in the Internal Medicine Clinic and treatment with high doses of intravenous potassium chloride, potassium - sparing diuretic (Spironolactone) and supplements of potassium and magnesium was initiated, with partial correction of the serum potasssium level. The patient was extensively investigated, to establish the etiology of kypokalemia. Finally, the only identified cause was a nephropathy with losses of potassium.*

Conclusions. *Hypokalemia can be determined by multiple factors, such as digestive or renal losses, during a long term hospitalization. Proper treatment of substitution may lead to normal values of serum potassium and a better life quality.*

Keywords: *persistent severe hypokalemia, mixed alkalosis, COVID-19.*

DOI https://doi.org/10.56082/annalsarscimed.2022.1.34

Introduction

Potassium is the main intracellular cation, only 2% of the total potassium in the body is extracellular [1]. The serum potassium levels are maintained by the uptake of K^+ into cells (governed by the activity of Na^+/K^+-ATPase), renal excretion (increased by aldosterone) and extrarenal losses (e.g. gastrointestinal, skin) [2]. Hypokalemia is defined as a serum potassium level of less than 3.5 mEq/L and