



Severe Diarrhea Leading to Pre-Renal Kidney Injury and Hyperkalemia Secondary to Amoxicillin-Clavulanic Acid

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Introduction

Amoxicillin-clavulanic acid is a widely used drug for treatment of skin and upper respiratory tract infections. It has predictable pharmacokinetics and diarrhea is a well-known side effect. It rarely causes severe diarrhea in the absence of *Clostridium Difficile* infection. We present a case of severe diarrhea leading to pre-renal kidney injury and severe hyperkalemia.

Case Description

Our patient was a 76-year-old-man with PMH of hypertension, gout and chronic lymphedema of the legs who presented to the hospital with confusion and profuse watery diarrhea for 3 days. History was obtained from his wife. His home medications included furosemide, aspirin, allopurinol, and KCL. His wife reported compliance with these medications. He was recently diagnosed with Right leg cellulitis for which he finished a 7-day course of amoxicillin-clavulanic acid. He developed diarrhea 3 days later. Physical exam revealed an obese male, awake, in no acute distress, lying on the bed. Mucous membranes were dry, chronic lymphedema of bilateral lower extremities along with skin changes due to venous stasis with superimposed cellulitis were noted. Patient was afebrile, systolic blood pressure 80 mm Hg, HR 122, SaO₂ 100% on 2L O₂ via NC. Admission labs included WBC 9.6k, Hgb 10.7 mg/dl, Na 127 mmol/L, K 8.2 mmol/L, serum bicarb 16 mmol/L, BUN 107 mg/dl and creatinine 5.3 mg/dl (baseline BUN 25 mg/dl with creatinine 0.8 mg/dl). LFTs and bilirubin were normal. Calculated FeNa was <1. Troponin was negative. CXR did not show any infiltrates. EKG showed peaked T waves. *Clostridium difficile* testing was negative. Echo cardiogram was normal. Fluid resuscitation with normal saline was started to which the patient responded. His Blood pressure improved to 100/65. Calcium gluconate 1000 mg IV, dextrose 50% and 10 units of regular insulin were given with no effects on the plasma potassium levels. Temporary Dialysis catheter was placed, and arrangements were made for urgent hemodialysis. The follow up blood work post-dialysis was normal. He was maintained on maintenance IV fluids. Patient was observed in ICU for few more days and then was discharged.

Discussion

Antibiotic associated diarrhea is usually mild and self-remitting. Amoxicillin-clavulanate is known to have this side effect. Its rare to find severe diarrhea leading to Renal failure. Our patient developed severe diarrhea leading to severe intravascular volume depletion and pre-renal failure. *C. Difficile* testing was negative and temporal association of diarrhea and amoxicillin-clavulanate made it the probable cause. Furosemide also might have contributed to volume depletion and taking KCl tablets also worsened the hyperkalemia. This case is another eye-opener as we observed a life-threatening presentation of a known side effect of a commonly used antibiotic. We need to emphasize the reduction of unnecessary use of antibiotics which remains a clinical challenge in United States.