Abstract: FR-PO630

Acute Renal Failure Due to Dietary Hyperoxaluria

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Introduction

We present a case of rapid drop in GFR attaining CKD stage 5 from CKD stage 3 caused by excessive dietary oxalate intake.

Case Description

A 51-year-old male with the PMH of chronic kidney disease stage 3b, benign prostatic hypertrophy and kidney stones was admitted in February 2018 for unintentional weight loss, abdominal discomfort, and a creatinine of 6.9. Patient reportedly lost 14 lbs over 4 months. Detailed interviewing revealed a recent change in his diet. He was on a “Microbiome-intense diet” for two months in December 2017 to accompany his wife in her weight loss regimen. This diet included whole meals of raw fruits and vegetables, and later included eggs and cheese, as well as a lot of almonds, spinach, kale and berries. Pertinent positives on physical exam included BP of 100/60 mm Hg and dry mucous membranes. Labs: BUN 111, Creatinine 6mg/dL (baseline 2.0) and eGFR 8 mL/min/1.73m2. Chart review revealed a history of oxalate kidney stones in 2014 with high oxalate excretion. Prior CT abdomen/pelvis without contrast showed bilateral non-obstructing renal stones. Patient denied taking any herbal products, over the counter drugs including NDSAIDs, or any “diet pills”. Family history was negative for renal stones. 24-hour urine collection for stone analysis demonstrated high urinary oxalate excretion. Renal biopsy showed chronic interstitial nephritis, with intraparenchymal deposition of oxalate and phosphate He was discharged with recommendations to stop the microbiome diet and restart potassium citrate.

Discussion

Oxalate is widely found in both plants and animals and is normally excreted by the kidneys. Increased oxalate excretion in the urine causes supersaturation and deposition of calcium oxalate crystals in the renal tissue. The most common cause of hyperoxaluria is excessive oxalate absorption from the gastrointestinal tract, enteric hyperoxaluria from fat malabsorption or excessive endogenous oxalate production (primary hyperoxaluria). The diagnosis of dietary hyperoxaluria in this patient was suggested by the patient’s extreme diet which altered the gut flora and consequently, the oxalate homeostasis.

Most commonly implicated vegetables and fruits are peanuts, celery, carrots, parsley, beets, spinach, nuts and rubarb. As patient's GFR fell, his serum oxalate increased leading to more deposition.