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EDITORIAL COMMENT



This manuscript by Canales et al describes the effects of calcium and vitamin B6 supplementation on oxalate excretion in a rat Roux-en-Y gastric bypass model. Medical advances in the treatment of calcium oxalate stones have only made modest gains over the past several decades and the common misconception that excessive calcium in one's diet exacerbates stone formation has been hard to overcome. While this study deals specifically with enteric hyperoxaluria and Roux-en-Y gastric bypass, it does hold similarities between other calcium oxalate stone forming patients. The primary principles proven in this rat model indicate the importance of oral dietary calcium supplementation in patients with excessive oxalate in the gut. In the case of enteric hyperoxaluria, calcium becomes saponified by excessive fat in the intestine and is therefore unavailable to bind to dietary oxalate. In this study, dietary calcium supplementation decreased urinary oxalate excretion by 28% without a rise in urinary calcium. This same principle is often true in many calcium oxalate stone formers. Dietary supplementation with either milk or calcium-fortified orange juice taken with meals is an important treatment to reduce urinary oxalate. Prescribing calcium citrate to your stone forming patient with hyperoxaluria is also beneficial and should be in the armamentarium of all practicing urologists.

Similarly, this study also showed the importance of vitamin B6 (pyridoxine) supplementation, with a 15% reduction in urinary oxalate in these patients. Vitamin B6 is a coenzyme of oxalate metabolism and is an important treatment in primary hyperoxaluria. Clinically, patients with excessive hyperoxaluria can be tested for the disease with genetic testing or a liver biopsy. Practicing urologists should also understand the importance of making this diagnosis in their patients. Oftentimes, oxalate can be lowered by dietary modifications, but in this difficult subset of enteric hyperoxaluria patients, Canales et al show that vitamin B6 supplementation is also effective.

This well-done prospective rat study is important in unraveling the understanding of oxalate metabolism in the interaction between calcium and vitamin B6. It is important that urologists understand that calcium citrate supplementation and vitamin B6 supplementation can and should be utilized in difficult calcium oxalate stone forming patients. The utilization of 24-hour urine collections in patients will help unravel the underlying urinary metabolic problems and confirm the effectiveness of these 2 medications in the patients you treat.

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