Yes, Acid Diets Dissolve Uroliths

It is estimated that 10% to 20% of cats with feline lower urinary tract disease (FLUTD) have urolithiasis or urethral plugs, 80% of which comprise struvite or calcium oxalate (CaOx). Current nonsurgical methods to remove bladder uroliths in cats include voiding urohydropropulsion or dietary dissolution. The purpose of this study was to evaluate the efficacy of canned and dry calculolytic diets in dissolving naturally occurring struvite bladder uroliths in cats. Both the canned and dry diets passed Association of American Feed Control Officials maintenance feeding trials before the study was begun.

Cats were selected based on clinical signs of FLUTD (hematuria, stranguria, dysuria, inappropriate urination), radiographic findings (radiodense bladder uroliths), and supportive urinalysis results. All cats were client-owned and otherwise healthy. None of the cats had previously been on a diet designed to dissolve struvite bladder uroliths. No control group was used. Treatment was considered successful if uroliths dissolved during the 12-week period that the diet was being fed. Of the 39 cats in the study (16 fed canned and 23 fed dry), the uroliths in 31 (79%) dissolved completely. The average time to dissolution for cats fed either type of diet was 4.28 weeks (30 days). In most cases, clinical signs of FLUTD subsided before the uroliths completely dissolved; the average time to resolution was 2.77 weeks (19 days). Of the remaining 8 cases, 2 were dropped from the study due to food refusal and owner noncompliance, 5 had uroliths that did not dissolve by 12 weeks (later surgical removal and stone analysis showed these stones to be composed of other minerals), and 1 cat had all but 1 stone dissolve by 12 weeks. The last stone in this cat was later voided and found to be composed of 90% struvite and 10% CaOx. The authors concluded that acidification of urine in cats appeared to be the most important factor in dissolving and preventing struvite uroliths. The study results strongly suggested that the diets will dissolve naturally occurring struvite uroliths.

COMMENTARY: This study demonstrates again that pH adjustment in urine is the most important factor influencing the ability of a diet—whether canned or dry—to dissolve uroliths. Similar to findings in previous studies, the number of uroliths in an individual patient had no effect on the rate of dissolution. Although it is well established that urease-producing infections are usually not involved in the formation of struvite uroliths in cats and antimicrobials do not affect the rate of dissolution, many cats inappropriately received antimicrobials. The high rate of inappropriate antimicrobial administration in these patients, particularly of fluoroquinolones, is striking in light of continued development of fluoroquinolone resistance in microbial isolates.—David F. Senior, BVSc, Diplomate ACVIM & ECVIM-CA