

Carbimazole-Associated Vasculitis

Feline hyperthyroidism can be treated medically, surgically, or with radioactive iodine. In this case study, a 9-year-old spayed cat presented to a primary care veterinarian. Emaciated and tachycardic, it had a large palpable goiter on the right side of its neck. It was aggressive, and blood sampling was not possible. The cat was treated with 15 mg of carbimazole once daily for presumptive hyperthyroidism with a plan to evaluate suitability for radioactive iodine treatment. On day 72, the cat presented with acute onset of left pelvic-limb lameness. On day 77, necrosis of the tail tip was reported and carbimazole was discontinued. By day 83, the lameness had progressed and the left digits II to IV were firm, cold, and discolored with deep pain absent. There was no sensation in the distal part of the tail. Although ultrasonography of the kidneys on day 70 was unremarkable, repeat examination revealed multiple renal infarcts. Mid-femoral amputation and tail amputation were performed. Histological examination of the tissue revealed the vascular lumens partially to fully occluded by mature fibrin thrombi; vasculitis was present. The cat recovered and was eventually treated with radioactive iodine.

Commentary

Previously, carbimazole for hyperthyroidism in cats has been reported as well-tolerated with limited side effects.

Carbimazole or methimazole have been administered to hyperthyroid cats for 2 weeks before attempting other therapy to assess for renal insufficiency. A recent spot-on formulation of carbimazole has made this pro-drug even more appealing. In this case report, the authors describe the first occurrence of an immune complex deposition-mediated condition in a cat with digital and tail necrosis following carbimazole administration. Although this is compelling and vasculitis is evident on histopathology, hypersensitivity reactions to medications with immune complex deposition are neither common nor unique to carbimazole. Although the authors reference a similar condition in humans, there is no way of confirming a link between the two conditions without diagnostic testing in recently affected animals. Dermatologic signs and lameness are strong reasons to temporarily discontinue any drug regimen. Further work is needed to discover whether humans provide a reasonable model for immune complex hypersensitivity in cats experiencing carbimazole side effects.—*Ewan Wolff, DVM, PhD*

Source

Carbimazole-associated hypersensitivity vasculitis in a cat. Bowlit K, Cattin I, Stewart J. *J SMALL ANIM PRACT* 55:643–647.

Reducing Postoperative Hemorrhage



Hyperfibrinolysis is a risk factor for bleeding. Antifibrinolytic drugs have been used in veterinary medicine

to reduce postoperative hemorrhage in greyhounds, a breed at greater risk for postoperative bleeding complications. In humans, tranexamic acid (TEA) and ϵ -aminocaproic acid (EACA) inhibit fibrinolysis. This study sought to determine the minimum plasma concentrations of TEA and EACA needed to completely inhibit fibrinolysis in canine blood after induction of in vitro hyperfibrinolysis. The concentration of EACA and TEA needed to inhibit fibrinolysis was 511.7 $\mu\text{g/mL}$ and 144.7 $\mu\text{g/mL}$, respectively. This study confirmed that dogs are hyperfibrinolytic compared to humans.

Commentary

The use of antifibrinolytic agents (TEA and EACA) has increased in veterinary patients for treatment of observed or anticipated postoperative hemorrhage. Although evidence has

supported the notion that these drugs may reduce postoperative complications in dogs, ideal therapeutic blood concentrations and doses have not been established. This study demonstrates that higher concentrations of TEA or EACA are necessary to inhibit in vitro fibrinolysis in canine plasma as compared with human plasma. This work opens the door for further pharmacokinetic studies, which will bring veterinarians closer to establishing antifibrinolytic treatment protocols for dogs. Once dose ranges have been established, our profession will be better-suited to assess therapeutic efficacy. Although antifibrinolytic treatment already shows promise in reducing postoperative hemorrhage in greyhounds, additional benefits (and possibly additional complications) may be observed when higher doses are used in dogs.—*Julie Walker, DVM, DACVECC*

Source

Evaluation of tranexamic acid and ϵ -aminocaproic acid concentrations required to inhibit fibrinolysis in plasma of dogs and humans. Fletcher DJ, Blackstock KJ, Epstein K, Brainard BM. *AM J VET RES* 75:731–738, 2014.

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