# O B S E R V A T I O N S FROM THE FIELD

The procedures reported in Observations from the Field are individual accounts from practicing clinicians. These techniques are not specifically endorsed by Exotic DVM but are published as a means of sharing clinical information.

## TIPS FOR TREATING ANTICOAGULANT RODENTICIDE TOXICITY IN SMALL MAMMALS

#### Jill A. Richardson, DVM

Sharon M. Gwaltney-Brant, DVM, PhD, ABVT



Small mammals with free access to the home could become exposed to toxicants, such as rodenticides. There are three common commercial types of rodenticides: anticoagulants, bromethalin and cholecalciferol. The anticoagulant rodenticides act through competitive inhibition of vitamin K.

Clinical signs of ingestion of an anticoagulant rodenticide include hemorrhage, pale mucous membranes, weakness, lethargy, dypsnea, coughing, and swollen joints. The onset of clinical signs in anticoagulant toxicity is dose-dependent and may not occur for several days post-ingestion because of the presence of circulating clotting factors.

Prothrombin Time (PT) could be monitored between 36-72 hours postexposure, however, the information on established PT times is not available for most exotic pets.

Type of Anticoagulant	Minimum Duration of Therapy
Warfarin	I4 days
Bromodiolone	21 days
Brodifacoum and others	30 days

## **Treatment Tips**

- Stabilize the animal if clinical signs are evident. Transfusions with whole blood or plasma may be necessary to replace clotting factors.
- Decontamination is only effective early; 3% hydrogen peroxide is an effective emetic for ferrets. Following its use, the mouth could be gently rinsed with water to dilute the remaining peroxide. (An option would be apomorphine 5 mg/kg SC, however, adverse effects include sedation or hyperexcitability.) Do not attempt to induce emesis in rodents, rabbits, or birds. Activated charcoal (I-3 g/kg body weight) effectively adsorbs anticoagulants and can facilitate excretion via the feces.
- Injectable forms of Vitamin K<sub>1</sub> can be given orally at a dose of 5 mg/kg/day q8-12h. Give with a fatty meal, such as peanut butter, to enhance absorption.

Vitamin  $K_1$  should not be given intravenously, and it is possible to have an anaphylactic reaction when it is given subcutaneously.



#### References

- 1. Dorman DC: Anticoagulant, cholecalciferol, and bromethalin-based rodenticides. Vet Clin No Am Sm Anim Prac 20(2):339-52, 1990.
- 2. Plumb DC: Veterinary Drug Handbook 3<sup>rd</sup> ed. Ames, Iowa State University Press, 1999.
- 3. POISINDEX Editorial Staff: Anticoagulants long acting. Rumack BH, et al (eds): POISINDEX System Vol. 103. Englewood, CO. MICROMEDEX.
- 4. Tokumura T, Tsushima Y, Machida Y, Kayano M, Nagai T: Evaluation of bioavailability upon oral administration of phytonadione preparations in beagle dogs. Tsukuba Research Laboratories, Eisai Co., Ltd., Ibaraki, Japan. Biol Pharm Bull 6(3):319-21, 1993.
- 5. Carpenter JW et al: Exotic Animal Formulary, 2nd ed. Philadelphia, WB Saunders Co, 2001.

## CONTRIBUTORS:

## Vittorio Capello, DVM

Clinica Veterinaria S. Siro Milano, Italy capellov@tin.it

#### Rob L. Coke, DVM

Oklahoma City Zoo Oklahoma City, OK rcoke@okczoo.com

### Gwen Flinchum, DVM

The Bird Hospital Lake Worth, FL afgreydoc@aol.com

#### William G.V. Lewis, BVSc MRCVS

South Beech Veterinary Surgery Wickford, Essex, UK william@surfing45.freeserve.co.uk

**Joerg Mayer**, Dr med vet Tufts University North Grafton, MA joerg.mayer@tufts.edu

## Jill A. Richardson, DVM Sharon M. Gwaltney-Brant,

DVM, PhD, ABVT ASPCA Animal Poison Control Center Urbana, IL jar@apcc.aspca.org

#### Janice Vannevel, DVM

LaSalle Animal Clinic Sudbury, Ontario, Canada jyv@cyberbeach.net