

WOODVALE PARK

VETERINARY HOSPITAL



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Anticoagulant Rodenticide Poisoning

Basics

OVERVIEW

- An “anticoagulant” is something that prevents blood from clotting; a “rodenticide” is a product that kills rodents (such as mice and rats)—commonly known as “rat bait”
- Blood-clotting disorder (known as a “coagulopathy”) caused by reduced vitamin K1–dependent clotting factors in the circulation after exposure to anticoagulant rodenticides
- “Clotting factors” are components in the blood involved in the clotting process—the clotting factors are identified by Roman numerals I through XIII

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats

Mean Age and Range

- Younger pets may be more likely to ingest rat bait than older pets

SIGNS/OBSERVED CHANGES IN THE PET

- Difficulty breathing (known as “dyspnea”) and exercise intolerance
- Bleeding
- Localized mass of blood in a tissue or organ (known as a “hematoma”)—often along the lower areas of the body (known as the “ventrum”) and at sites where intravenous catheters were placed or blood was drawn (known as “venipuncture sites”); may have multiple hematomas
- Muffled heart or lung sounds
- Pale gums and moist tissues of the body (known as “mucous membranes”)
- Sluggishness (lethargy)
- Depression

CAUSES

- Exposure to anticoagulant rodenticide products (rat bait)
- First-generation coumarin anticoagulants (such as warfarin, pindone)—have been largely replaced by more potent second-generation anticoagulants
- Second-generation anticoagulants (such as brodifacoum, bromadiolone, diphacinone, and chlorophacinone)—

are generally more toxic and some persist longer in the animal's body than first-generation agents

- Difentialone (D-Cease Mouse and Rat Bait Pellets)—highly toxic to mice and rats; less toxic to dogs than are brodifacoum, bromadiolone, chlorophacinone, and warfarin

RISK FACTORS

- Use of anticoagulant rodenticides
- Anticoagulant rodenticide poisoning may be slightly more likely in the spring and fall, when rodenticide products are used
- Small doses over several days more dangerous than a single large dose; either type of exposure may cause bleeding problems
- Secondary poisoning by consumption of poisoned rodents—unlikely

Treatment

HEALTH CARE

- Inpatient—sudden (acute) crisis
- Outpatient—consider once the blood-clotting disorder (coagulopathy) is stabilized
- Fresh whole blood or plasma transfusion—may be required if pet is bleeding; provides immediate access to vitamin K₁-dependent clotting factors; whole blood may be preferred with severely low red blood cell count (known as “severe anemia”) from sudden (acute) or long-term (chronic) blood loss

ACTIVITY

- Confine the pet during the early stages; activity enhances blood loss

DIET

- No recognized effect

SURGERY

- Procedure to tap the chest (known as “thoracocentesis”)—may be important for removing free blood in the space between the chest wall and lungs (known as the “pleural space”), which causes difficulty breathing (dyspnea) and breathing failure
- Must correct blood-clotting disorder (coagulopathy) before surgery

Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Vitamin K₁—administered by mouth, as directed by your pet's veterinarian; length of treatment depends on the specific anticoagulant rodenticide product to which the pet was exposed; feeding of a small amount of fat, such as canned dog food, helps absorption of vitamin K₁

Follow-Up Care

PATIENT MONITORING

- Blood tests (activated clotting time [ACT] and prothrombin time [PT]) to evaluate clotting status—assess effectiveness of therapy; monitoring continued 3–5 days after discontinuation of vitamin K₁ treatment

PREVENTIONS AND AVOIDANCE

- Do not allow pets to have access to anticoagulant rodenticides (rat bait)

POSSIBLE COMPLICATIONS

- Secondary bacterial pneumonia after bleeding into the lungs
- Bleeding into or around the brain (known as “intracranial hemorrhage”), leading to nervous system signs (such as stupor or coma)
- Bleeding into the joints (known as “intra-articular hemorrhage”), leading to lameness
- Death

EXPECTED COURSE AND PROGNOSIS

- If the pet survives the first 48 hours of sudden (acute) blood-clotting disorder (coagulopathy)—prognosis improves

Key Points

- Anticoagulant rodenticide (rat bait) poisoning is a common problem—many rodent baits are sold over the counter and widely used in homes
- Reexposure of the pet to anticoagulant rodenticides could be a serious problem
- Do not allow pets to have access to anticoagulant rodenticides

Notes

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