Emergency Management and Treatment of the Poisoned Small Animal Patient

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KEYWORDS

• Toxicology • Poisoning • Charcoal • Decontamination • Antidote • Toxicosis • Emetics

KEY POINTS

- Clinicians should be aware of the importance of history, triage, decontamination, and emergency management of the poisoned patient.
- Knowledge of the underlying mechanism of action, the pharmacokinetics, and the toxic dose of the toxicant are imperative in determining appropriate decontamination and therapy for the patient.
- Particular attention to the cardiorespiratory system, central nervous system, and gastrointestinal tract are important in the poisoned patient.

Accidental poisoning of pets occurs frequently because of the availability of toxicants in the household, the kitchen, the yard, and the garden, and because of the prevalence of over-the-counter and prescription medications. As a result, emergency clinicians commonly encounter poisoned patients. Management of the acutely poisoned patient includes initial telephone triage, appropriate communication and history gathering from the pet owner, thorough physical examination, initial stabilization, decontamination (if appropriate), and treatment to ensure the best outcome.

When managing the poisoning patient, it is imperative to understand the toxicant's mechanism of action, the pharmacokinetics (ie, absorption, distribution, metabolism, and excretion), and whether a potentially toxic dose was ingested. Consultation with an animal poison helpline is often recommended, particularly if the underlying toxicant is not well recognized by the clinician, if the toxicant has a narrow margin of safety (eg, baclofen, macrocyclic lactones, calcium channel blockers, cholecalciferol), or if it is an unknown human medication (eg, calcipotriene, 5-fluorouracil).

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OBTAINING AN APPROPRIATE HISTORY

With the poisoned patient, a specific toxicologic history should be obtained to determine what the active ingredient (AI) is, whether the toxicant or dosage ingested was poisonous, when the ingestion or poisoning occurred, whether any home antidotes were administered (eg, milk, salt), or whether the patient developed any clinical signs at home. Once presented to the veterinary clinic, poisoned patients should be appropriately triaged by the veterinary staff; they cannot sit and wait in the waiting room, because the time to decontamination may have passed. In addition, veterinarians should appropriately assess and triage the poisoned patient on presentation, focusing on airway, breathing, circulation, and dysfunction (ABCDs). Readers are directed to the article "Monitoring of the Emergent Small Animal Patient" elsewhere in this issue for more information.

Following initial triage, appropriate next steps include:

- Verification of the spelling of the product and confirmation of the AI.
- Evaluation of the prescription vial label to verify whether it is a sustained-release (SR), extended-release (XR), or long-acting (LA) product. These initials follow the name of the drug on the vial. If the vial is not available, the pet owner should be counseled to call the pharmacy for further information (including amount dispensed, AI, and drug strength).
- Evaluation of whether the pet owner has already attempted emesis induction and, if so, with what emetic agent.
- Stabilization of the patient based on triage and physical examination findings (eg, temperature, heart rate, pulse rate, pulse quality).

Additional important questions to include as part of a thorough toxicology history are listed in **Table 1**.

WHEN TO DECONTAMINATE

The goal of decontamination is to inhibit or minimize further toxicant absorption and to promote excretion or elimination of the toxicant from the body.[1,2] Decontamination can only be performed within a narrow window of time for most substances; therefore, it is important to obtain a thorough history and time since exposure to identify whether or not decontamination is medically appropriate. Decontamination categories may include ocular, dermal, inhalation, injection, gastrointestinal (GI), forced diuresis, and surgical removal to prevent absorption or enhance elimination of the toxicant.[1,2]

One of the primary ways of decontaminating veterinary patients is via emesis induction. However, veterinarians should be aware of which circumstances are appropriate or contraindicated for GI decontamination (eg, emesis induction, gastric lavage). **Box 1** and **Table 2** show indications for emesis induction and gastric lavage.

With decontamination, whether performed at home or by the veterinarian, the appropriate emetic agent should always be used. There are currently no safe, effective emetic agents for pet owners to use at home in cats. Hydrogen peroxide is not recommended in cats, because it can cause a severe hemorrhagic esophagitis and/or gastritis. Instead, cats should have emesis induction performed by the veterinarian with the use of alpha$_2$-adrenergic agonists (eg, xylazine, dexmedetomidine).[2] In dogs, the use of hydrogen peroxide can be recommended for at-home emesis for pet owners; however, the use of salt, mustard, liquid dish soap, or syrup of ipecac is no longer recommended.[2] In the clinical setting, hydrogen peroxide and/or apomorphine are the emetics of choice for dogs,[2] and are of similar efficacy.[3] A summary of appropriate emetic agents is given in **Table 3**.