

POISON PREVENTION and Management Primer

Jill A. Richardson, DVM

National Poison Prevention Week is March 17 to 23, 2002. In celebration, teach your clients how to make their pets' homes poison-safe.

Thousands of pets needlessly suffer and many die each year by accidental ingestion of household poisons, including pesticides, popular houseplants, and common foods.¹ Veterinary technicians play a key role in preventing and treating toxicosis. This article aims to help you manage poisoning cases more effectively and educate your clients about the importance of poison safety.

The ASPCA Animal Poison Control Center is an emergency hotline staffed by board-certified veterinary toxicologists, licensed veterinarians, and certified veterinary technicians that provides around-the-clock telephone assistance

Patient Assessment in Toxicosis

Initial Assessment

- What is the patient's respiratory rate?
- What is the patient's capillary refill time?
- Is the animal seizing?
- Is the animal breathing?
- What is the animal's heart rate?
- What color are the animal's mucous membranes?
- Is the animal in shock?
- What is the core body temperature?
- Is there evidence of hemorrhage?

to veterinary staff and pet owners. The Center's staff members share over 110 years of combined call center experience and over 75 years of combined toxicology, clinical, and diagnostic experience. The Center also works in partnership with the Environmental Protection Agency to help educate pet owners to "Read the label first!"

ASPCA TIPS FOR MANAGING A POISON EMERGENCY Assessment

Assessing the condition of the animal is the first step in managing a potential toxicosis. The assessment should be performed quickly. Examination of an animal that is unconscious, in shock, seizing, or in cardiovascular or respiratory distress must be conducted simultaneously with stabilization measures.

If the animal is stable, you should obtain a comprehensive history of the animal and the exposure and perform a thorough physical examination. Signalment and history are crucial when dealing with toxicosis and often affect the manner in which the animal is treated.

Stabilization

Stabilization of the patient is a priority! Administer oxygen if necessary. Seizures must be controlled, and



cardiovascular abnormalities should be corrected.

Prevention of Toxicant Absorption

To prevent absorption of the toxicant, the appropriate method(s) of decontamination should be performed.

Control Signs

Clinical signs should be controlled as needed. Acid-base balance, hydration, and electrolytes should be monitored and corrected as needed. The appropriate antidote or antagonist should be administered; however, very few poisons actually have specific antidotes. Therefore, most cases are handled by monitoring the patient and treating the symptoms as they arise. Appropriate supportive care should be given until the animal completely recovers.

Ancillary Support

Ancillary measures, such as nutritional support and client education, are key components for complete recovery for the animal. Technicians play a critical role by routinely evaluating vital signs and any parameters likely to be affected by toxicants. Preventive measures, such as the use of gastric protectants or antibiotics, may

Obtaining a Toxicosis History from Clients

Primary Questions

- What was the animal exposed to?
- When was the exposure?
- How was the animal exposed (oral, dermal, inhalation, injected)?
- How much was ingested?
- When did signs occur?

Secondary Questions

- How old is the animal?
- Is the animal male or female? Is the animal intact?
- Is the animal lactating or pregnant?
- Does the animal have a history of health problems?
- Has the animal had any recent surgeries?
- Is the animal currently on any medication?
- What was the milligram strength or concentration of the toxicant, if applicable?
- Has the owner taken any steps to treat the animal?
- If the animal is showing signs, what are they?

be needed. For example, ingestion of alkali agents (e.g., sodium or potassium hydroxide) found in some drain cleaners can cause corrosive damage to the mouth, tongue, and stomach. Supportive care would include several days of gastric protection and antibiotics. Checking skin turgor, capillary refill time, and the moisture of the

oral mucous membranes can help assess hydration.

Complete blood cell counts, chemistry panels, or clotting profiles may be needed to monitor the delayed effects of the poison.

Diuresis may be beneficial for exposures to nephrotoxic agents (e.g., lilies [in cats], ethylene glycol) by enhancing elimination of a poison. An infusion pump should be used to prevent overhydration. Adverse effects associated with diuresis include pulmonary edema, cerebral edema, metabolic acidosis or alkalosis, or water intoxication; therefore, close monitoring is necessary. Good nursing care should be continued until the animal completely recovers.

QUIRKY CASES

The ASPCA Animal Poison Control Center has handled many unusual cases over the years. Here is a sampling of some of the more interesting cases.

Monkey See, Monkey Do

Two chimpanzees from a primate sanctuary had seen their caretakers cleaning the facility. After the caretakers left the room, the chimps grabbed a bottle of cleanser and started cleaning windows. They were fine after they were cleaned with a good bath.

Yuck!

Shortly after an owner administered medication to her dog, it vomited. The

owner's other dog promptly ate the vomitus, including the medication. This kind of case also occurred after a dog ingested its owner's vomitus. In both cases, the dogs recovered well with supportive care and monitoring.

Human-Animal Bond

One very memorable case involved a little boy on chemotherapy whose dog had eaten a tremendous amount of his medication. The boy's mother told us how close her son and his dog were and how important the dog had been to her son's ability to deal with his disease. The dog became quite ill, and the prognosis was questionable for a time. Our group worked closely with the referring veterinary staff to manage the dog's condition, and the dog completely recovered and went home.

Dead or Alive?

A frantic pet owner called to say that she had used a flea spray on her dog, which was now dead under her trailer. The veterinarian who received the call informed her that the flea spray contained only small amounts of insecticides that would not be expected to cause problems. The owner was told to take the animal's body to her veterinarian for a necropsy to determine the cause of death. Two days later, we called the owner to follow up. She told us that her dog wasn't dead but had just run away from home for a day. The thing under her trailer was a tree stump!

Go USA!

A veterinarian in Thailand sent us a fax regarding a herd of elephants that had become sick after grazing in a pineapple field that had been sprayed with a very toxic insecticide. The only problem was that the fax did not include the veterinarian's fax or phone number, and we were unable to find any other means of contacting him. So we sent a fax to the US embassy in Thailand asking the staff to forward the information to the veterinarian. Eventually, the veterinarian received the information and was able to treat the animals successfully.

Drugs Commonly Used in Toxicologic Emergencies*

Decontamination

- Hydrogen peroxide
- Syrup of ipecac
- Apomorphine (in dogs only)
- Activated charcoal
- Cathartics (for sorbitol, magnesium sulfate, sodium sulfate)

Tremor or Seizure Control

- Diazepam
- Barbiturates (pentobarbital/phenobarbital)
- Methocarbamol
- Inhalant anesthetics

Chelators

- Succimer (for lead, arsenic, mercury)
- Deferoxamine mesylate (for iron)
- Calcium EDTA (for lead)
- D-Penicillamine (for mercury and lead)
- Dimercaprol (British antilewisite [BAL]; for lead, arsenic, mercury)

Miscellaneous

- Ethylene glycol test kit

*This list is not all-inclusive. Because some medications are expensive and may be needed only rarely, it is advisable to know how to obtain them when necessary.



Decontamination Do's and Don'ts

Do's

Treat the patient, not the poison.

Stabilize the animal before attempting decontamination procedures.

Get a complete history of the animal and the exposure data.

Keep abreast of current toxicology literature (e.g., Toxicology Briefs in *Veterinary Technician* and the American Board of Veterinary Toxicology Toxicosis of the Month [www.abvt.org]).

Keep the ASPCA Animal Poison Control Center phone number handy in your clinic (888-4ANI-HELP).

Don'ts

Don't bathe a seizing animal (always stabilize the animal first).

Don't use salt as an emetic.

Don't induce vomiting in an animal that is seizing, extremely stimulated, hyperactive, vomiting, severely lethargic, comatose, debilitated, has had recent abdominal surgery, has a megaesophagus, has ingested a corrosive substance or a hydrocarbon-petroleum distillate product (in most cases), or in a bird, rabbit, rat, horse, or ruminant.

Don't administer xylazine or apomorphine as an emetic in a depressed animal.

Don't administer activated charcoal for most heavy metals, corrosives, or petroleum distillates or to an animal that is vomiting, is in ileus, or has a gastric obstruction.

Don't administer a cathartic to a dehydrated animal or one with diarrhea.

Don't use a magnesium sulfate cathartic in a renally compromised animal.

Don't use premixed enema solutions (e.g., hypertonic phosphate solutions).

Don't perform a gastric lavage without using a cuffed endotracheal tube.

Toxic Agents

Liver

Iron
Phenols (in some cleaning products)
Acetaminophen
Arsenic
Tannic acid
Copper
Vitamin A
Blue-green algae
Cycad species
Amanita mushrooms
Hepatotoxic mycotoxins

Kidney

Lilies (in cats)
Nephrotoxic antibiotics
Diquat
NSAIDs
Oxalic acid
Cholecalciferol
Cadmium
Zinc
Rhubarb
Mercury
Cantharidin
Ethylene glycol
Phenolics

Frisky Dog

An older woman called to say that her golden retriever had gotten into her houseguest's male potency medication. She said that she was very worried

about her dog's penis but that it looked just fine right now.

Bathing a Spider

A beloved pet tarantula was accidentally sprayed with a flea spray. Fortunately, the spider recovered with treatment, which included a bath.

Party Dog

A dog became hyperstimulated after it was found chewing on a bag of pills at a slumber party for a young girl's ballet class. None of the ballerinas claimed the pills, but tests showed that they contained an ephedra compound that is often used as an herbal diet supplement. Fortunately, the dog was treated aggressively by the veterinary staff and recovered 3 days later.

A Not-So-Hot Relationship

A pet owner told us that her soon-to-be exboyfriend had chopped up several ibuprofen tablets, mixed them with cat food, and fed it to her four kittens. (The kittens were in heat, and the boyfriend thought they were in pain from menstrual cramps because

they were walking in a crouched position and meowing.) With aggressive treatment, all of the kittens recovered; the relationship wasn't so lucky.

The Energizer Dolphin?

A dolphin ingested a battery that had dropped out of a tourist's camera. Because it was an alkaline battery, it could have been corrosive if punctured. However, radiographs indicated that the battery was intact, so the veterinary staff chose to monitor the dolphin and wait for the battery to pass on its own.

PET POISON SAFETY TIPS TO SHARE WITH CLIENTS

The best way to avoid serious problems due to toxicosis is poison prevention. Being cautious with harmful substances by animal-proofing the home is the only safe choice. You can lead a "Make Your Pet's Home Poison-Safe" campaign in your community by using the guidelines in this article (p. 156). Pass the following recommendations on to your clients to help them make their homes poison-safe.

Be Safe!

- Be aware of the plants you have in your home and yard. Ingestion of azalea, oleander, sago palm, or yew plant material by an animal can be fatal. Many lily species (e.g., Easter lily, day lily, tiger lily) can cause kidney failure in cats.
- Never allow pets access to areas in which cleaning agents are being used or stored. Cleaning agents have a variety of properties; some may only cause mild stomach upset, but others can cause severe burns to the tongue, mouth, and stomach.
- Place baits (for rats, mice, or snails) or traps (for ants or roaches) in areas that are inaccessible to pets. Some bait contains sweet-smelling ingredients (e.g., jelly, peanut butter, sugar) that can attract pets.
- Never give your pet medication unless you are directed to do so by a veterinarian. Many medications that are safe for humans can be deadly for animals.

Ten Ways You Can Lead a "Make Your Pet's Home Poison-Safe" Campaign in Your Community

1. Teach your clients how to make their homes poison-safe, and discuss common household dangers with new pet owners. Distribute or display client education materials concerning poison safety (www.aspca.org/apcc).
 2. Attend the "Managing Toxicoses" free online course for veterinary staff offered through the Veterinary Support Personnel Network (www.vspn.org; you must first register online). Afterward, hold a seminar with other staff to share the information.
 3. Speak to local pet clubs or school groups about ways to make pets' homes poison-safe. Teach pet owners how to be prepared for poison emergencies, such as how to make a pet safety kit.
 4. Update your clinic's web site with poison safety information (www.aspca.org/apcc).
 5. Include poison safety tips in your client newsletter or as an informational message on receipts.
 6. Make sure your clinic has (or has access to) drugs commonly used in toxicology.
 7. Send out a public service announcement to your local media. Make a list of dangerous items that you can discuss with reporters.
 8. Add poison safety information to your on-hold message. This can be seasonal and changed as needed.
 9. Create an outdoor sign that says, "National Poison Prevention Week is March 17-23, 2002. Ask us how to make your pet's home poison-safe."
 10. Remember: National Poison Prevention Week is only 1 week a year, but poison safety is important all year long!
- Keep all prescription and over-the-counter drugs out of your pet's reach, preferably in closed cabinets. Be cautious when disposing of old medication (your trash can may not be pet-resistant). Painkillers, cold medicines, anticancer drugs, antidepressants, vitamins, asthma inhalers, and diet pills can be lethal to animals, even in small doses.
 - Many common household items can be hazardous to pets (e.g., mothballs, potpourri oils, coffee grounds, homemade play dough, fabric-softener sheets, dishwashing detergent, batteries, cigarettes, alcoholic drinks, pennies, hand and foot warmers).
 - Automotive products (e.g., gasoline, oil, antifreeze) should be stored in areas that are inaccessible to your pets. As little as one teaspoon of antifreeze can be deadly to a 7-lb cat.
 - Before buying a flea product for use on your pet, ask your veterinarian for a recommendation.
 - Read the label first! Read all of the information on the label before using a product on your pet or in your home. Always follow the directions.
 - If a product is for use only in dogs, it should never be used in cats; if a product is for use only in cats, it should never be used in dogs.
 - Make sure your pets do not enter areas in which insecticide foggers or house sprays have been used for the period of time indicated on the label. Birds are especially sensitive to inhalants. If you own pet birds, always check with your veterinarian before using any spray product (even perfumes, aerosol deodorants, or room fresheners) in your home.
 - Make sure your pets do not go on lawns or in gardens treated with fertilizers, herbicides, or insecticides until the products have dried completely. Always store such products in areas that are inaccessible to your pets.
 - If you are uncertain about the use of any product, ask the manufacturer and/or your veterinarian for instructions.
- Be Prepared!**
- Because your pet may become poisoned despite your best efforts to prevent it, you should be prepared:
- Pets should be seen regularly by a veterinarian to maintain overall health. You should know the veterinarian's procedures for emergencies, especially ones that occur after usual business hours. Telephone numbers for your veterinarian, the ASPCA Animal Poison Control Center, and a local emergency veterinary service should be kept in a convenient location.
 - It may help to keep a pet safety kit on hand for emergencies.
 - Do not attempt any therapy on your pet without first contacting either the ASPCA Animal Poison Control Center or your veterinarian. If your animal is seizing, losing consciousness, unconscious, or having difficulty breathing, contact your veterinarian immediately. Most veterinarians are familiar with the consulting services of the Center. Depending on your particular situation, your veterinarian may want to contact the Center personally while you bring your pet to the animal hospital.
 - If you suspect that your pet has been exposed to a poison, it is important not to panic. While rapid response is important, panicking generally interferes with the process of helping your animal.

REFERENCE

1. Unpublished data, ASPCA Animal Poison Control Center, Urbana, IL, 2002.

About the Author

Dr. Richardson is a 1994 graduate of Tuskegee University. After graduation, she practiced in Knoxville, TN, and Charleston, WV. In 1996, she joined the ASPCA Animal Poison Control Center as a veterinary poison information specialist and is now the coordinator for Professional and Public Relations. Dr. Richardson is also a contributing editor for Veterinary Information Network, maintains a poison prevention board for Pet Forum, and is a member of the Cat Fancier's Association Health Committee.