

## PHARMACEUTICAL TOXICOSES

*Kenneth R. Welle, DVM, Dip. ABVP (Avian)*

---

**Abstract**

Exotic pets can present therapeutic challenges owing to the lack of scientifically derived information regarding drug therapy. Therefore, unexpected adverse events may occur when drug therapy is instituted for many of the species that are classified as companion exotic animals. This article reviews specific guidelines to prevent and treat adverse responses to drug therapy. There are well documented harmful side effects associated with the administration of therapeutic agents, all of which the clinician should be aware. Copyright 2015 Elsevier Inc. All rights reserved.

**Key words:** exotics; nontraditional; toxicosis; drugs; pharmaceuticals; antibiotics; anthelmintics

---

**W**ild, exotic, and nontraditional companion species provide a significant challenge to treat when presented to a veterinary hospital. As the classification of aforesaid animals is a relatively small percentage of the veterinary case load, they are considered small markets for pharmaceutical companies and, as such, very few drugs are developed for approved use in these species. Exotic animal practitioners have long been accustomed to this extralabel use of pharmaceutical products. Indeed, very little medical therapy would be applied to exotic pets without the use of extralabel drugs. Although extrapolation of drug indications and dosing schedules from humans, laboratory species, or traditional pets is appropriate, occasionally, unexpected problems associated with the use of a therapeutic product occur. In a survey of avian cases for the American Society for the Prevention of Cruelty to Animals (ASPCA) National Animal Poison Control, 29% of toxic exposure in birds involved medications.<sup>1</sup> When adverse drug events occur, it is helpful for the practitioner to report the incident so that the veterinary community is informed and patient health is protected.

**GUIDELINES FOR AVOIDING TOXICOSES** \_\_\_\_\_

Before using a new drug in an exotic animal patient, a search of available literature, online forums, and formularies helps identify if there have been problems encountered with that particular product's use in the species to be treated.

Exotic animal formularies can provide a summary of available information on pharmaceutical use in exotic pets.<sup>2</sup> Often, there is a wide range of drug dosages listed for each product in a formulary. Several factors should be considered to determine the "best" dose. Dosages for birds are all listed together, but there are many different species of birds. Some dosages may be

derived from a personal communication or conference proceeding. These "personal communications" are often based on a clinician's empirical observations. Other dosages are determined through scientific pharmacokinetic studies. It is valuable to check dosage references to determine the source and underlying basis for the recommendation. Although a clinician's empirical observation through many years of experience may provide more information regarding a drug's safety, pharmacokinetic studies detail actual therapeutic levels achieved in the animal based on how they are administered and used. It is also helpful to read the comment section assigned to

*From the College of Veterinary Medicine, University of Illinois, Urbana, IL USA.*

*Address correspondence to: Kenneth R. Welle, DVM, Dip. ABVP (Avian), College of Veterinary Medicine, University of Illinois, Urbana, IL 61802. E-mail address: kwelle@illinois.edu*

© 2015 Elsevier Inc. All rights reserved.

1557-5063/15/2101-\$30.00

<http://dx.doi.org/10.1053/j.jepm.2015.08.004>

each drug to determine if any known adverse side effects have been noted.

At this time, literature searches are relatively rapid and simple. A variety of search engines can be used to identify recent publications associated with a specific drug, its use in a given species, or other important information. Minimally, a literature search may help prevent one from repeating common mistakes and the iatrogenic adverse side effects associated with the use of that particular drug. If there is no information available for the specific species and/or drug in question, a search for related drugs and/or related species is recommended.

Information regarding adverse drug reactions is often widely known within the veterinary and pet owning community long before it is published. Informal discussions and knowledge transfer regarding medical issues commonly occur in the small but well-connected field of exotic animal medicine. Contacting other practitioners who treat exotic animals, personally or online, is an invaluable resource to discuss drug treatment options for a particular patient. There are professional associations comprising veterinarians who have an interest in treating different animal groups within the field of zoological medicine. The Association of Avian Veterinarians, the Association of Exotic Mammal Veterinarians, the Association of Reptile and Amphibian Veterinarians, and the American Association of Zoological Veterinarians all provide networking opportunities for interested veterinarians. The Veterinary Information Network (VIN) is known for its online discussion groups and as a resource for conference proceedings. Although much of the information found through VIN may not be peer reviewed, it is timely and often useful in providing answers to common veterinary questions. There are search features for previous references to a specific subject, and as stated earlier, a popular forum is available for veterinarians to pose questions to VIN consultants and colleagues who are exotic companion animal specialists.

The extralabel use of pharmaceutical products is commonly practiced by most veterinarians who treat exotic animal patients. It would be virtually impossible to treat these animals if only approved drugs were used. However, this should not encourage complacency regarding extralabel drug use. There is inherent risk in using drugs that have not been scientifically validated for a given animal species. To determine safety and efficacy, label approval requires a large number of a target species to be treated and evaluated. Even the most

common drugs used to treat exotic animal species do not have enough data to definitely determine the safety of that product. Owners should be informed of the extralabel nature of drug therapy in exotic species. The use of certain drugs is inherently unsafe in any patient; therefore, these compounds are not discussed in this article, unless a specific exotic animal species is particularly susceptible to the drug.

## IDENTIFICATION OF PHARMACEUTICAL TOXICOSES

---

It is quite challenging for a veterinarian to identify adverse effects of drugs. Most of the patients that are treated already have a variety of clinical signs. It can be difficult to distinguish changes in the course of the underlying disease from changes that occur because of a drug. Exotic species are not always amenable to a full diagnostic workup and therapy is often started with a tentative diagnosis. This can make the course of the disease process difficult to predict. A more specific and definitive diagnosis makes the disease process easier to predict and to monitor.

Before using unfamiliar drugs, it is helpful to research the drug to predict what the possible side effects could be. This allows for more specific monitoring for those effects. This type of information can usually be found on the package insert of the drug. Monitoring may include specific observations, diagnostic tests for organ damage, or even blood levels of the drug. This should allow some problems to be identified and rectified before the effects are catastrophic.

If possible, patients that die during the course of treatment should undergo a necropsy. This can help identify the underlying disease and any pathology induced by the drug. Some toxicoses may show little or no pathology, but this still provides the best means of determining what went wrong with the animal.

Adverse drug reactions should always be documented and, if not previously reported in the literature, submitted for publication. This can help guide other practitioners in their use of the drug in the species in question, whether this is to dissuade the use of the drug altogether, or to adjust the dosing to avoid similar complications.

## TREATMENT OF PHARMACEUTICAL TOXICOSES

---

Unlike many toxicoses, adverse physical effects caused by pharmaceutical use usually involve a known toxin (drug) and a known exposure

Download English Version:

<https://daneshyari.com/en/article/2396858>

Download Persian Version:

<https://daneshyari.com/article/2396858>

[Daneshyari.com](https://daneshyari.com)