
ALFAXALONE AS AN INTRAMUSCULAR INDUCTION AGENT IN REPTILES

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ABSTRACT: Alfaxalone is an injectable anesthetic agent used for induction and maintenance of anesthesia in dogs in cats. It has been found to be efficacious and safe as an intramuscular induction agent in a variety of reptile species in clinical practice. While formal studies in these species are lacking, clinic experience has demonstrated a useful induction dose range of 5-25 mg/kg injected intramuscularly.

KEY WORDS: alfaxalone, alfaxan, induction agent, reptiles

INTRODUCTION

Anesthesia in reptiles is well described in terms of anecdotal use in clinical practice; however there are few scientific studies for use in this diverse group of patients. Complicating a uniform approach to anesthesia is markedly variable resting metabolic rate among species, and the effects of environmental temperature on metabolism, among other factors. A 2005 survey of reptile veterinarians showed that the most commonly utilized agents for anesthesia, sedation and/or analgesia were isoflurane, ketamine, propofol and butorphanol. These veterinarians agree that anesthesia is challenging, and respiratory depression, difficulty in measuring anesthetic depth, prolonged recovery and hypothermia were listed as the most common complications.

Alfaxalone (Alfaxan, Jurox, NSW, Australia) is an injectable anesthetic agent used for induction and maintenance of anesthesia in dogs and cats. The drug is available in Australia, and the UK, but not currently manufactured and distributed in the United States. Information of legal acquisition of Alfaxan for personal use in clinical practice in the United States is reported below. The active molecule binds to GABBA_A cell surface receptors. The plasma elimination half-life is approximately 25 minutes in dogs and 45 minutes in cats. Alfaxalone is completely cleared within a few hours after single intravenous dosing in these species, and is metabolized by the liver.

The drug can be used as a repeated bolus, or as a constant rate infusion (CRI) as part of total intravenous anesthesia (TIVA). As a CRI, the drug does not accumulate and recovery does not appear prolonged. This is supported by the observation that repeated bolus doses in reptiles do not appear to prolong recovery.

Alfaxan is frequently used with pre-medications, including benzodiazepines and opiates. It is described for slow intravenous use, with a recommended rate of administration of about 60 seconds. Alfaxan is labeled for intravenous use only. However the drug causes no irritation or

untoward effects if administered extravascularly. The manufacturer does not recommend combining Alfaxan with other drugs into the same syringe.

Alfaxan appears to have a wide margin of safety. In a study in dogs, patients were administered a 10 times overdose and survived, but required respiratory support. Cats survived a similarly at a 5 times overdose.

USE OF ALFAXAN IN OTHER SPECIES

Of significant benefit for the exotic animal practitioner, the drug appears to be highly effective when administered intramuscularly. There is no official manufacturer labeling or recommendations for IM use, or for use in species other than dogs and cats. However, the Australian Alfaxan website has a page suggesting anecdotally derived dosages for use in a wide variety of exotic species, including birds, guinea pigs, rabbits, ferrets, kangaroos and a variety of reptile species. (It should be noted that some of the pre-medications suggested for use with Alfaxan are not commonly used in exotic pet practice.) In some species for which IV access is likely to be problematic, the site recommends IM administration. IM dosages in general tend to be higher than recommended IV dosages. Off-label recommendations for reptiles are reported at 2-5 mg/kg IV, with a single recommendation for 10-20 mg/kg intra-celomically in the broad-shelled turtle.

USE OF ALFAXALONE IN REPTILES IN CLINICAL PRACTICE

The author and others have experience with the use of Alfaxan in reptiles in clinical practice. The motivation for use of Alfaxan are two fold: frustration with the array of drugs currently recommend for IM use in reptiles available in the United States, and technical difficulties associated with reliable intravenous administration.

Some reptile practitioners claim near 100% success rate with intravenous administration of anesthetics such as propofol in reptile patients. Skepticism aside, for those in practice with lesser talent, an effective, consistent intramuscular anesthetic agent with a reasonable recovery time is attractive.

The best uses for Alfaxan in reptiles appear to be the following: a) induction (with or without pre-anesthetics) followed by immediate intubation and maintenance with isoflurane; and b) sedation (with or without other agents) combined with local analgesia for brief, minor procedures. Even when combined with pre-medications, Alfaxan alone does not appear to achieve an acceptable surgical plane of anesthesia at currently explored dosages. Duration of action is variable but in general brief, often no more than 15 minutes. Full recovery is usually within one hour, but can be longer when combined with other agents, especially in debilitated patients.

The presentation will review the use of Alfaxan in 30 client-owned reptile patients with complete medical records. The author has also used the drug in many injured wildlife patients, which are

not reported here. Experience has revealed the following trends; however it should be kept in mind significantly higher case volumes are required to support the following conclusions: Dosages ranges are 5-25 mg/kg. Ill or debilitated patients require significantly less drug than fractious, more stable patients. Dosages required appear to be higher in chelonians and green iguanas, and lower in snakes and leopard geckos. The author always begins with the lower end of the dosage range (5-10 mg/kg), adding boluses as needed to effect.

The author has experienced only one fatality directly related to administration of Alfaxan, in a moderately debilitated green tree frog with a rectal prolapse. The author also was unable to inject enough Alfaxan (before running out) to achieve anything close to sedation in a 25-pound sulcata tortoise.

NOTES ON IMPORTATION OF FOREIGN DRUGS

Current US law permits importation of legal foreign drugs into the United States as long as the quantity does not exceed that representing a 30-day supply, and the drug is intended for personal use, e.g. within the veterinarian's hospital, and not intended for redistribution. These rules are reflected in FDA's Regulatory Procedures Manual, Chapter 9-Import Operations and Actions, Section 9-2, Coverage of Personal Importations, updated March 2009.

If a shipment is intercepted at the US border by FDA personnel, the recipient will likely receive a phone call requesting more information. Explain the shipment is a 30-day quantity of a legal foreign drug for personal use, and refer to section C of the personal drug importation guidelines as listed above. In nearly every case of which the author is aware, the shipment is released to the recipient. The worse consequence is return of the shipment to the country of origin. As long as the shipment does not contain an illegal or prohibited substance, there will be no legal action taken against the recipient.

To Order Alfaxan:

Contact Jurox directly (www.jurox.com), or contact Vetafarm in Australia: www.vetafarm.com.au. This product is *not* listed on the company website, but can be requested via e-mail.

<http://www.alfaxan.co.uk/default.html><http://www.alfaxan.com.au>

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