



Alfaxan[®]

(alfaxalone 10 mg/mL)
Intravenous Injectable Anesthetic

Safety of Alfaxan[®] in dogs and cats

INDICATIONS: Alfaxan[®] is indicated for the induction and maintenance of anesthesia and for induction of anesthesia followed by maintenance with an inhalant anesthetic, in cats and dogs.

Important Alfaxan[®] Risk Information: Warnings, Precautions and Contraindications: When using alfaxalone, patients should be continuously monitored, and facilities for the maintenance of a patent airway, artificial ventilation, and oxygen supplementation must be immediately available. Alfaxan[®] does not contain an antimicrobial preservative. Do not use if contamination is suspected. Strict aseptic techniques must be maintained because the vehicle is capable of supporting the rapid growth of microorganisms. Careful monitoring of the patient is necessary due to possibility of rapid arousal. Alfaxan[®] is contraindicated in cats and dogs with a known sensitivity to alfaxalone or its components, or when general anesthesia and/or sedation are contraindicated. **Adverse Reactions:** The most common side effects of alfaxalone include respiratory and cardiovascular derangements, such as apnea, hypotension and hypertension. Appropriate analgesia should be provided for painful procedures.

Repeatable. Reliable. Relax.

Safety of Alfaxan® in dogs and cats

Alfaxan® Intravenous Injectable Anesthetic is registered for the induction and/or maintenance of anesthesia in dogs and cats. It can be used for maintenance of anesthesia by repeated bolus administration.

It is marketed in many countries around the world including Australia, New Zealand, UK, Republic of Ireland, France, Germany, Spain, Canada and the Netherlands. In Australia where it was first registered, it has been marketed for over 10 years. A survey of anesthetic use throughout Australia conducted in 2011 showed that **Alfaxan®** is now used in over 50% of all inductions in dogs and over 75% of all inductions in cats.^[1]

For veterinarians who are yet to use **Alfaxan®** the first question is, "How safe is the product?" Whilst authorities frown upon use of the word "safe" when speaking of any drug, especially anesthetic agents, extensive trial work has been done examining the safety of **Alfaxan®** in both dogs and cats and it is presented below.

This data, along with the product's track record since its introduction over ten years ago, should give veterinarians a high degree of comfort when considering the addition of the product to their anesthetic protocols.

Over-dosage studies

A. Single, acute over-dosage

Acute tolerance to over-dosage with **Alfaxan®** has been demonstrated at up to **5 times** the recommended dose of 5 mg/kg in cats and up to **10 times** the recommended dose of 2 mg/kg in dogs.^[2,3]

B. Repeated over-dosage

Repeated overdosing of **Alfaxan®** at **5 times** the recommended rate in dogs and **5 times** the recommended rate in cats, at 48 hour intervals on 3 occasions over 7 days, caused no clinical pathology effects.^[4,5]

The tolerance to such high levels of over-dosage in dogs and cats, (either as a single dose, or in a schedule of repeated over-dosage) demonstrates that, used as recommended, **Alfaxan®** is a stress-free anesthetic agent.

Tissue tolerance

Alfaxan® does not cause tissue irritation should accidental peri-vascular, subcutaneous or intramuscular injection occur.^[6]

This is important when a product is new to the clinic and staff may be inexperienced in its use. The lack of tissue reaction is due to the fact that **Alfaxan®** is a clear, aqueous, pH neutral, iso-osmolar solution.

Age tolerance

Alfaxan® can be used to supply anesthesia in juvenile patients, puppies from 10 weeks of age^[7] and kittens from 4 weeks of age.^[8]

Whilst surgery on very young animals may be infrequent, it is useful for veterinarians and technicians to know that with **Alfaxan®** they have an anesthetic agent that will cover this age group.

Sighthounds

Alfaxan® has been proven to be a reliable and effective anesthetic induction agent in sight hounds.^[9]

Greyhounds and other breeds in this group have shown different responses to sedation and anesthesia when compared with other dog breeds. Use of **Alfaxan®** in sighthounds, as the paper cited above demonstrates, is incident-free and similar to that seen in other breeds. Premedication agents however, have the capacity to significantly increase the duration of anesthesia seen in these animals.

Caesarean section

Alfaxan[®] has been proven to be reliable and effective as an anesthetic induction agent in canine Caesarean section.^[10]

In the above study 48 bitches were induced with **Alfaxan**[®] in a multi-site study at four veterinary hospitals. The use of **Alfaxan**[®] was compared with propofol (Rapinovel[®]) at the same hospitals on a total of 26 bitches undergoing Caesarean section. An analysis of anesthetic induction scores and puppy survival and puppy vigour data showed **Alfaxan**[®] to be equal to, or better than propofol in this study.

Thus **Alfaxan**[®] can be used with confidence in Caesarean sections.

Cardio-vascular and respiratory function

Alfaxan[®] has dose dependant effects on cardiovascular function.^[2, 3]

When **Alfaxan**[®] is used for induction, blood pressure is generally well maintained and this provides acceptable tissue perfusion, important in sustaining normal tissue/organ function.

Alfaxan[®], when administered as recommended, causes minimal dose-dependent respiratory depression.^[11, 12]

When **Alfaxan**[®] is administered for induction in accordance with the label patients generally breathe spontaneously, which allows smooth transition to gaseous maintenance.

Compatibility

Alfaxan[®] has been proven compatible with the major groups of premedication agents.^[7-9, 11, 12, 14-25] This means, in practical terms, the introduction of **Alfaxan**[®] to the clinic does not alter the premedication protocols which are in place.

In fact it is strongly recommended that anxiolytics, premedicants and pain modulation agents are used as part of every procedure to ensure optimal induction, transition, anesthesia and recovery.

Muscle relaxation

Alfaxan[®] provides good muscle relaxation,^[2, 3] therefore there is no need for adjunctive muscle relaxants.

General

Alfaxan[®] is based on alfaxalone, a neuroactive steroid, very similar in structure to progesterone (though it does not have its pharmacological activity). Alfaxalone acts on the neuronal cell membrane chloride ion transport by binding to the GABA_A cell surface receptors. Due to its similarity to endogenous steroids, which have well-developed metabolism pathways, alfaxalone is eliminated rapidly from the body via the bile and urine. It is cleared within a few hours.^[13]

Based on the above studies and a wealth of field experience, veterinarians can incorporate **Alfaxan**[®] into their anesthetic procedures for dogs and cats with a high level of confidence.



References

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The FOI for Alfaxan® (NADA#141-342) statement can be reviewed at:
<http://www.fda.gov/downloads/AnimalVeterinary/Products/ApprovedAnimalDrugProducts/FOIADrugSummaries/UCM326904.pdf>

For more information contact:

Jurox Inc.

American Century Tower II,
4520 Main Street,
Kansas City, MO 64111

Enquiries +1-844-ALFAXAN
alfaxan@jurox.com

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www.Alfaxan.com

