

## Alfaxan Quick Reference – Based upon my (HLS) experience – April 16, 2020

### Overview

- Drug Class: Neuroactive Steroid, however it does not interfere with Endogenous Steroid Function
- Mode of action: GABA<sub>A</sub> receptors that is similar to Propofol
- History of molecule
  - 1971: alfaxalone/alfadalone in castor oil
  - 2001: alfaxalone in aqueous solution; Alfaxan used extensively in other countries
  - 2012 FDA approved Alfaxan® for US distribution
  - 2018 Alfaxan Multidose® approved in US
  - 2020 Alfaxan Multidose IDX® Indexed in US = unapproved though legally marketed for minor species, Off-Label use of this indexed drug is Prohibited

### Standard use of Alfaxan (label use in US)

- IV induction agent for dogs & cats
- Smooth induction, you wouldn't be able to tell the difference between quality of induction between Alfaxan and Propofol
- Can be used in all patients: dogs & cats & exotics of various ages, sickness, pregnant, etc
- Longer duration of action than Propofol makes for smooth transition to inhalant
  - This is why Alfaxan has become my primary induction agent
- More likely to preserve spontaneous breathing after induction compared with propofol
- Elevated heart rate is very predictable after Alfaxan induction, particularly in dogs
- Can give "top-up" doses of Alfaxan to increase depth of anesthesia, as needed, during anesthesia, just like you would with Propofol; it will cause respiratory & cardiovascular depression
- If larger cumulative doses of Alfaxan administered, recovery from anesthesia can be rough: muscle tremors, rigidity, opisthotonos can be seen
  - Pre-treat with acepromazine prior to discontinuing anesthesia to smooth recovery
  - In my experience, increased respiratory secretions can also be seen in cats if >3 mg/kg administered; treat with glycopyrrolate

### Unique features

- IM & SC route of administration – currently off-label in US
  - This unique feature is one I recommend taking advantage of regularly
  - This is the reason Alfaxan has become an important tool in my toolbox
  - Can see muscle tremors, rigidity, opisthotonos following IM sedation
- Does not sting on injection, or if given extravascularly
- Short-duration chemical restraint (dogs ~ 10 min; cats ~ 15 - 20 min)

### Alfaxan doses

- IV induction: Cat (2 – 5 mg/kg, IV to effect); Dog (1 – 3 mg/kg, IV to effect)
- Cat (and cat-sized dogs) IM/SC when part of sedative combination:
  - 1 – 2 mg/kg, repeat if need more sedation (may need 2 – 4 mg/kg)

**Alfaxan is not really a Sedative...**

- At the doses I feel comfortable giving IM (~2 mg/kg, IM)
  - I am comfortable giving 1 – 1.5 ml Alfaxan in sedative combo IM to cats (~2 mg/kg, IM)
  - Use a new needle & inject SLOWLY
  - You can repeat the Alfaxan if insufficient sedation
  - Alfaxan will produce sedation if give higher doses (ie, repeat injection or larger volumes)
- Thus, **it does not replace Dexmedetomidine**
- **Alfaxan should be given with sedative** (might use lower dose) **AND an opioid**:
  - Acepromazine + Alfaxan + Butorphanol/opioid
  - Dexmedetomidine + Alfaxan + Butorphanol/opioid
  - Midazolam + Alfaxan + Butorphanol/opioid in older or sick patient when midazolam tends to act as sedative
- Alfaxan can replace Ketamine in heavy sedation protocols (ie, with alpha-2 agonist & opioid)
- Alpha-2 agonist/opioid/ketamine combo still option of first choice for consistent/reliable sedation in very fearful/fractious cats mainly because Alfaxan is larger volume (1 – 1.5 ml per cat)
- Yes, at high doses (4 mg/kg) it will produce sedation but those are large volumes
- I think of IM Alfaxan as an “Enhancer”: it combines with other sedatives to improve sedation quality

	<b>Alfaxan</b>	<b>Propofol</b>
Analgesia	No	No
Cardiovascular depression	Yes – dose dependent	Yes – dose dependent
Respiratory depression	Yes – dose dependent	Yes – dose dependent
Route of admin	IV SC, IM – off label but effective	IV only Cannot be given IM, SC
Constant Rate Infusion (CRI) for Maintenance of Anesthesia	Yes, dogs & cats Longer, rough recoveries following CRI	Propofol– Yes, dogs & cats Propofol28® – Yes, dogs Longer, smooth recoveries
Controlled	Yes – C4	Just wait
Duration of single injection	Short if IV, though noticeably longer than propofol!  If part of IM sedation combo: Dogs ~ 10 min; Cats ~ 15 – 20 min	Shorter duration than Alfaxan IV  Not given IM, SC
Change in anesthetic depth	Less rapid than Propofol	Rapid
Shelf-life	Alfaxan Multidose® = 28 days	6 hrs or Propofol28® = 28 days
Vial size	10 ml & 20 ml	20 ml & 50 ml