

Lidocaine

SCHEDULING STATUS: S4

CURRENTLY COMPOUNDED FORMULATIONS:

| Active ingredient(s) | Injectable | Oral equine paste | Oral carnivore paste | Orals for exotics | Oral solution/suspension | Topical treatment | Shampoo | Capsules/Tablets | Oral powder |
|-------------------------|------------|-------------------|----------------------|-------------------|--------------------------|-------------------|---------|------------------|-------------|
| Lidocaine hydrochloride | ✓ | | | | | | | | |

REGISTERED PRODUCT/ TRADE NAME: Lignocaine 2%

PHARMACOLOGICAL CLASSIFICATION: Antiarrhythmic/ local anaesthetic

PHARMACOLOGICAL ACTION: Is considered to be a class IB (membrane-stabilizing) antidysrhythmic agent. It is thought that lignocaine act by combining with fast sodium channels when inactive which inhibits recovery after repolarisation. Class IB agents demonstrate rapid rates of attachment and dissociation to sodium channels. At therapeutic levels, it causes phase 4 diastolic depolarization attenuation, decreased automaticity and either a decrease or no change in membrane responsiveness and excitability. These effects will occur at serum levels that will not inhibit the automaticity of the SA node and will have little effect on AV node conduction or His-Purkinje conduction. Lignocaine has some enhancing effects on intestinal motility in patients with postoperative ileus. The mechanism for this effect is not well understood, but probable involves more than just blocking increased sympathetic tone.^[1]

INDICATIONS: Local anaesthetic; may be useful to prevent post-operative ileus, reperfusion injury in horses.^[1]

DOSAGE AND DIRECTIONS FOR USE:

GENERAL COMMENT:

For local anaesthesia the duration of its effect can be extended by combining it with epinephrine.

Veterinarians have used it at a ratio of epinephrine : lidocaine of 0.75 : 100

*the combination of the two compounds is not stable, thus solution should be made up and used straight away

DOGS:

Initial bolus of 2 mg/kg slowly IV; or rapid IV infusion of 0.8 mg/kg/minute, if effective, then five constant rate infusion of 25-80 µg/kg/minute (0.025-0.08 mg/kg/minute)^[1]

CATS:

Caution: cats are reportedly very sensitive to the CNS effects of lignocaine, monitor carefully and treat seizures with diazepam.

Initially, IV bolus of 0.25-0.5 mg/kg given slowly; can repeat at 0.15-0.25 mg/kg in 5-20 minutes; if effective 10-20 µg/kg minute (0.01-0.02 mg/kg/min) as a constant rate IV infusion.^[1]

HORSES:

For post-operative ileus: initially, IV bolus of 1.3 mg/kg followed by an IV infusion of 0.05 mg/kg/minute for 24 hours.^[1]

WARNINGS/ PRECAUTIONS/ CONTRA-INDICATIONS:

- Cats seem to be more sensitive to the CNS effects, use with caution.

- Use with caution in patients with liver disease, congestive heart failure, shock, hypovolaemia, severe respiratory depression or marked hypoxia.
- When preparing lignocaine for IV injection, be certain of the concentration and do not use products containing epinephrine.

REFERENCES:

1. Plumb's Veterinary Drug Handbook, Sixth Edition by Donald C. Plumb
2. Medicines and Related Substances Act, 1965 (Act No. 101 of 1965) www.doh.gov.za
3. IDR, Volume 10 2009/2010