

In-Hospital Pharmaceuticals

Class and Action: Sedatives



Drug	Dosage	Advantages	Disadvantages	Notes	Contraindications
ACEPROMAZINE	<p>Dog: 0.01-0.03 mg/kg IV or IM (up to 0.2 mg/kg IM; don't exceed a total of 2 mg per dog);</p> <p>Cat: 0.03-0.05 mg/kg IV or IM (up to 0.2 mg/kg IM);</p> <p>Can be used alone or in combination with alpha-2 agonists, opioids or benzodiazepines.</p> <p>Dog/Cat: Oral transmucosal (OTM): 0.025-0.05 mg/kg</p>	Mild to moderate sedation that lasts several hours; high safety margin; can be given orally as part of a PVP protocol at 0.5-2 mg/kg, but onset of effects are slow and unpredictable	Not reversible; no analgesia; slow onset; duration may be longer than desired	If anxiolysis rather than sedation is required, a benzodiazepine should be added to the protocol; recent evidence proves that acepromazine does NOT cause seizures	No absolute contraindications but not recommended for patients with anemia, clotting dysfunction, or hypotension; use with caution in patients with hepatic disease (may cause prolonged sedation); testing collie-type dogs for ABCB-1 mutation is recommended
ALFAXALONE	<p>Cats & Small Dogs: 0.5-2.0 mg/kg IM or IV. Can be used alone or in combination with alpha-2 agonists, opioids, or benzodiazepines for deeper sedation & more predictable effects</p>	Fairly fast onset; fewer cardiac effects than alpha-2 agonists; shorter duration than acepromazine	Not reversible, no analgesia; volume limits IM administration to small patients (cats and small dogs); recoveries can be rough if used as a sole agent	Alfaxalone is primarily used as an IV induction drug but can be used at lower dosages as a sedative; sedation level is generally light to moderate	No contraindications

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Class and Action: Alpha-2 agonists, sedative-analgesics



Drug	Dosage	Advantages	Disadvantages	Notes	Contraindications
DEXMEDETOMIDINE	<p>For light to moderate sedation: Dog: 1.0-3.0 microg/kg IV or 3.0-10.0 microg/kg IM; Cat: 1.0-5.0 microg/kg IV or 5.0-15.0 microg/kg IM;</p> <p>For profound sedation: Dog: 8.0-28.0 microg/kg IV or 12-40 microg/kg IM; Cat: 20-40 microg/kg IM</p> <p>High-end of the dose can be used OTM to produce mild-moderate sedation</p> <p>Use low end of dosing range for older patients, low level of FAS, & when used with opioid; high end range for younger patients, higher level of FAS or when used solo.</p>	Reversible; provides analgesia; can titrate sedation from mild to profound; rapid onset	Causes hypertension and increased cardiac work due to vasoconstriction; patient can suddenly react to painful stimulus even when deeply sedated	Most predictable effects when used in combination with opioids to avoid sudden arousal; generally the best drugs for patients exhibiting moderate to profound FAS and/or aggression	Do not use in patients with most types of cardiovascular disease
MEDETOMIDINE	Dosages are exactly double the dexmedetomidine microg/kg dosages	Same as above	Same as above	Same as above	Same as above

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Class and Action: Benzodiazepines – anxiolytic

Drug	Dosage	Advantages	Disadvantages	Notes	Contraindications
MIDAZOLAM	Dog or Cat: 0.1 - 0.2 mg/kg IM or IV	Reversible; fast onset; minimal to no adverse physiologic effects; enhances calming when used in combination with true sedatives	Not potent sedation; may not be not effective if patient is already exhibiting FAS and/or aggression; possible paradoxical excitation	Due to possible paradoxical excitation, use in combination with a true sedative unless patient is very ill	none
DIAZEPAM	Dog or Cat: 0.1-0.2mg/kg IV only	Same as above	Same as above	Same as above	Oral, but not injectable, form can (rarely) cause hepatic necrosis in cats

Class and Action: Opioids – analgesics

Drug	Dosage	Advantages	Disadvantages	Notes	Contraindications
BUTORPHANOL BUPRENORPHINE	Mild-Moderate Pain BUTORPHANOL Dog & Cat: 0.2-0.4 mg/kg IM or IV; BUPRENORPHINE Dog & Cat: 0.02-0.03 mg/kg IM or IV, up to 0.05 IM	Mild to potent analgesia depending on the drug, dose and multimodal use; wide safety margin; fast onset except buprenorphine; reversible; many to choose from; variety of routes of administration; synergistic with sedatives	May cause vomiting, slowed GI motility, and/or mild respiratory depression; more potent opioids may cause excitement in cats if not used with a sedative; hyperthermia can also occur in cats	Choose the opioid based on expected level of pain; vomiting can cause or exacerbate FAS so premedication with an antiemetic (.e.g., maropitant) is recommended	No absolute contraindications. Antiemetics should be used in patients in which vomiting could exacerbate health conditions (e.g. esophageal foreign body); use with caution in patients with increased intra-cranial pressure as even mild respiratory depression could increase pressure
HYDROMORPHONE METHADONE MORPHINE	Moderate-Severe Pain HYDROMORPHONE Dog: 0.1-0.2 mg/kg IM or IV; Cat: 0.1 mg/kg IM or IV; METHADONE Dog: 0.3-0.5 mg/kg IM or IV; Cat: 0.3-0.5 mg/kg IM or IV; MORPHINE Dog: 0.3-1.0 mg/kg IM or SLOWLY IV; Cat: 0.1-0.3 mg/kg IM or SLOWLY IV				

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Class and Action: Dissociative anesthetics – immobilizers



Drug	Dosage	Advantages	Disadvantages	Notes	Contraindications
KETAMINE	<p>Dog & Cat: 1.0-2.0 mg/kg IM, when used in combination with a sedative, may provide dissociation without anesthesia. The same dose IV will provide light anesthesia.</p> <p>2.0-5.0 mg/kg IV or 5.0-10.0 mg/kg IM + a sedative will produce anesthesia (volume too large for medium-large dogs)</p> <p>5.0-10.0 mg/kg OTM can produce light sedation</p>	<p>Decreases CNS response to circulating neurotransmitters in those already exhibiting FAS and/or aggression;</p> <p>decreases incidence of sudden arousal to stimulus; minimal to no cardiovascular and respiratory adverse effects</p>	<p>Duration may be longer than desired; not reversible;</p> <p>painful on injection;</p>	<p>These drugs can produce anesthesia rather than sedation so prepare for anesthesia-level physiologic monitoring and support; must administer with a muscle relaxant (e.g., alpha-2 agonist)</p>	<p>No absolute contraindications; use with caution in patients with sympathetically driven cardiac arrhythmias; in cats, eliminated in part unchanged by the kidney so high dosages could potentially cause prolonged sedation</p>
TILETAMINE-ZOLAZEPAM	<p>Dog & Cat-1.0-2.0 mg/kg IM or IV for sedation; IM for true anesthesia; small volume so can be used IM in any sized patient</p> <p>2.0-5.0 mg/kg IV or 5.0-10.0 mg/kg IM will produce anesthesia</p> <p>5-7.5 mg/kg OTM can produce light-moderate sedation</p>	<p>Same as above; Very potent and small volume so can be used in larger patients IM</p>	<p>Duration may be longer than desired; not reversible;</p> <p>prolonged, rough recoveries are possible, especially in dogs</p>	<p>Same as above; use with sedatives to decrease dose and improve recovery quality</p>	<p>Same as above</p>

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Pharmaceutical Use and Owner Consent



Not all of the drugs in these charts are FDA-approved for use in dogs and cats. Drugs like the alpha-2 agonists and acepromazine are often used at **lower** than the FDA-approved dose as profound sedation is not always necessary. However, all of the dosages in this chart are commonly used in practice and are referenced in the veterinary literature.

The AVMA Policy on Owner Consent states that veterinarians or staff should provide sufficient information in a form and manner that enables owners or their authorized agents to make appropriate decisions when choosing the veterinary care provided. An assessment of risks and benefits of recommended treatments should be provided. In response owners or their authorized agents should indicate:

- Their questions have been answered to their satisfaction
- The information received by them has been understood
- They are consenting to the recommended treatments

The consent can be verbal or written and should be documented in the medical record by the veterinarian or staff member.

Taken from the AVMA Policy on Owner Consent in Veterinary Medicine. You should review the complete policy here:

<https://www.avma.org/KB/Policies/Pages/Owner-Consent-in-Veterinary-Medicine.aspx>