Guidelines for Dissociative and Alpha-2 Adrenergic Agents Perioperatively
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Dexdomitor has flexible indications
FDA-approved for sedation and analgesia in dogs and cats. FDA-approved as a preanesthetic prior to general anesthesia in dogs and cats. Dexmedetomidine can be used in cats as young as 12 weeks of age and dogs as young as 16 weeks of age
D EXDOMITOR is a full agonist of the α-2 adrenoceptor. Greater degree of α-2 selectivity provides more predictable sedation, analgesia, and muscle relaxation

Hemodynamic effects of α-2 agonists
Peripheral vasoconstriction > initial hypertension followed by normo- or slight hypotension > compensatory reduction in heart rate > decreases in body temperature and respiratory rate. Bradycardia - May Be Advantageous During Anesthesia, Provided That Tissue Perfusion of the Vital Organs Meets Oxygen Demand
Atropine = Inc HR; Possible Inc in BP; Minimal improvement of Cardiac Output; if atropine is used, administered at least 10 minutes prior to administration of Dexmedetomidine

Pt benefits
Less Physiological Stress; Less Risk of Physical Harm; Better Experience

Staff benefits
Decreased Risk of Injury and Radiation Exposure; Less Stress; Less Time and Personnel to Complete Procedure.

Pet owner benefits
Decrease their own anxiety about visit; Improve perception regarding their pet's levels of comfort and anxiety; Demonstrate compassionate treatment of pet

Uses
Grooming, nail clipping, bathing; Ear exam and treatment; Ophthalmologic exams; Abscess or wound treatment; Cast or bandage application/removal; Diagnostic imaging; Skin biopsies/scrapings; Suture removal; etc

Product features
Reduces Induction agent by 30 – 61%; Reduces Inhalant requirements by 40 – 60%. The Percent in Reduction is Dose Dependent.

Antisedan (atipamezole) reverses dexomitor effects
Administered as an IM injection at a dose volume equal to Dexdomitor dose volume. Reversal effects are noted approximately 5–10 minutes after administration of Antisedan is only approved for use in the dog. Antisedan reverses both the sedative and analgesic effects of Dexdomitor. Antisedan is an α-2 antagonist that competitively inhibits α-2 adrenergic receptors

Dexdomitor micro-dosing
Provides short duration of action ~15 minutes; Micro dose: 1 ug/kg (Sedative dose: 5-20 ug/kg); Spare propofol induction dose; “Smooth out” effect before recovery; Rapid resolve of delirium during recovery. Very Small Volume = Dexdomitor 0.1 (NEW)

Telazol uses
Restraint for diagnostic procedures; Induction and maintenance of anesthesia; Restraint and sedation of various exotic species

Precautions
Respiratory and cardiovascular depression may be seen; Transient tachycardia may occur in dogs (30 min); Avoid in patients with pancreatic disease, preexisting renal pathology, severe cardiac dysfunction and/or respiratory dysfunction; Not to be used in pregnant bitches or queens; Contraindicated in caesarian sections.

Advantages
Rapid induction of dissociative anesthesia; two active ingredients in one product; low volume; Analgesia and muscle relaxation

Disadvantages
Fixed ratio of tiletamine/zolazepam = In cats duration of activity of zolazepam is longer than tiletamine (tranquilization longer than anesthesia during recovery). In dogs the duration of activity of tiletamine is longer than zolazepam (anesthesia longer than tranquilization during recovery). Salivation, bradycardia, hypotension noted in cats. Salivation, tachycardia noted in dogs. Pupillary dilation; Respiratory depression; Hypothermia; Low pH (2.2 – 2.8) associated with pain on IM injection; Prolonged recovery (vocalization, muscle twitching, vomiting)

Telazol-Torbugesic-Dexmedetomidine (TTDex)
Reconstitute tiletamine-zolazepam (Telazol) with 2.5 mL of butorphanol (10mg/ml) and 2.5 mL of dexmedetomidine (0.5 mg/ml). Each ml TTDex contains: 100 mg of tiletamine-zolazepam; 5 mg of butorphanol; 250 ug of Dexmedetomidine. Based on clinical experience, the TTDex can be stored at room temperature for up to 3 months after reconstitution. (Not Studied)
Induces various depths of sedation and a surgical plane of anesthesia within 3 to 5 minutes after a single intramuscular injection. Can be used both in dogs and cats with the same combination and dose rates. Visceral and somatic analgesia both intraoperatively and postoperatively. Small injection volume to facilitate drug administration. Potency of this drug combination makes it economical. PROVIDE OXYGEN via ET; Nasal Cannula or Face Mask.

**Dosing TTDex**
- **Mild sedation** = 0.005 ml/kg: Tiletamine-zolazepam 0.5 mg/kg; Butorphanol 0.025 mg/kg; Dexmedetomidine 1.25 ug/kg
- **Moderate sedation** = 0.01 mL/kg: Tiletamine-zolazepam 1 mg/kg; Butorphanol 0.05 mg/kg; Dexmedetomidine 2.5 ug/kg
- **Profound sedation** = 0.02 mL/kg: Tiletamine-zolazepam 2 mg/kg; Butorphanol 0.1 mg/kg; Dexmedetomidine 5 ug/kg
- **Surgical plane of anesthesia** = 0.03 mL/kg: Tiletamine-zolazepam 3 mg/kg; Butorphanol 0.15 mg/kg; Dexmedetomidine 7.5 ug/kg

**Intramuscular Injections**
- Onset of action: 3-4 minutes; Duration of effect: 30 – 40 minutes.
- Induction → recovery → walking = 2 hours

**Intravenous Injection**
Halve the recommended intramuscular doses for both dogs and cats. Onset of action: immediate. Duration of effect: approximately two thirds the length of intramuscular administration

**Reversal of TTDex**
Dexmedetomidine: reversed with atipamezole; Butorphanol: antagonized with naloxone or naltrexone; Zolazepam of the Telazol: antagonized with flumazenil. If using Antisedan: If TTDex < 0.02 ml/kg wait 30 minutes; If TTDex > 0.025 ml/kg wait 50 minutes.

**TTDex Side Effects**
Hypoxia – oxygen responsive usually seen in the first 5 minutes of injection. ALWAYS supply O2. Pain on injection. Apneustic breathing pattern inspiratory breath holding followed by a few rapid breaths No treatment needed.

**Ketamine HCl:**
- **Uses**
  - Induction and maintenance of anesthesia
- **Precautions**
  - Poor muscle relaxant and should not be used alone for major surgery; Can cause increases in CSF pressure and should not be used in patients with head trauma or elevated CSF pressure; Potentially epileptogenic; Avoid in patients with hepatic or renal insufficiency; Doses > 50 mg/kg cats or primates > 40 mg/kg should not be used
- **Advantages**
  - Inexpensive; Maintains cardiorespiratory function; Rapid onset, long duration of action
- **Disadvantages**
  - Hypersalivation; Increased muscle tone; Slight hypothermia (cats); Eyes remain open, must apply ophthalmic lubricant; Slow recovery when used alone; Possible vocalization and tremors on recovery; Acidic pH may lead to pain on injection; Respiratory depression at high doses.

**Dexdomitor-ketamine**
Overall healthy and exercise tolerance CV wise; Single IM injection; Rapid onset of lateral recumbency (5-8 min); Heart rate higher than Dexdomitor alone; Excellent muscle relaxation and analgesia; Reversible with Antisedan ~ 40 min after Ketamine.

**Kitty magic**
The original kitty magic IM formula for 4 KG cat: 0.1 mL Ketamine; 0.1 mL butorphanol 0.1 mL dexmedetomidine = 12.5 mcg/kg Dex, 2.5 mg/kg K, and 0.25 mg/kg T

**Notes on dosing**
ALWAYS double check dosing when transcribing from lectures! I have had some weird dosing strategies reported back to me. Plumbs and North American Companion Animal Formulary are great sources.