CPC Pika handling and anesthesia protocols
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Justification

• Restricted range of known safe drugs for lagomorphs compared with carnivores and rodents.
• Pikas susceptible to heat stress, idiosyncratic drug reactions?
• Federal and state listing status
• Urgent need for data requiring hands-on work with pikas, e.g. some genetics studies, disease, et al. May require collar placement, blood sampling, skin snips, etc.
Considerations

- Safety
- Efficacy: analgesia (relief from pain), sedation, immobilization, anesthesia for handling and minimizing stress, pain, and suffering
- “Easy” to deliver
- Non-controlled substances (DEA)
- Expense
Isoflurane

- Rapid acting inhalant “ether”-class anesthetic with some analgesia, already used in pikas
- Generally requires administration via calibrated vaporizer (but in a jar with a cotton wick in the field)
- Typically used with premed sedative
- No swallow reflexes, profound respiratory depressant, EASILY overdosed, rare malignant hyperthermia
- Very rapid induction & recovery, inexpensive/not controlled
Figure 1 Components of the anesthetic inhaler. The liquid injection port is also used to fill the rebreathing bag with oxygen prior to anesthesia.
Dexmedetomidine

- Alpha-2 agonist sedative (not anesthetic) unless additional drugs are used, analgesic
- Can be reversed with atipamezole
- No respiratory depression, peripheral vasoconstriction reduces risk of hyperthermia
- Given as injection, not-controlled, relatively expensive
Ketamine

- Dissociative anesthetic, binds to opioid receptors (hallucinogenic in people)
- Optimally used with sedative (xylazine or valium), quite safe, delivered by injection
- Relatively prolonged (rocky) recovery, controlled substance (drug of abuse in humans), inexpensive
Xylazine

- alpha 2 agonist sedative or anesthetic, analgesic
- Can cause vomiting and heart rate depression (reduced blood pressure)
- Delivered by injection, inexpensive, not controlled
Plans

• Goal: Develop optimal anesthesia protocols for members of CPC & Western pika working group.

• Randomly assign pikas as available over the summer in collaborative studies to 3 different anesthetic regimens (isoflurane, dexmedotomidine, dexmedo with low-dose ketamine)

• Anesthetize, evaluate anesthesia, perform mildly noxious stimuli (exam, bleeding, ear tag, collar), recover & monitor
Feedback

• Value and need for hands-on pika work, costs vs. benefits
• Importance of: safety, cost, non-controlled, route, need for other equipment
• Input into experimental design?
• What are goals for handling – what sampling do we want to achieve?