JOINT TRAUMA SYSTEM K9 CLINICAL PRACTICE GUIDELINE

Euthanasia (K9 CPG:21)

This CPG provides guidance on humane euthanasia in Military Working Dogs (MWDs) to prevent undue suffering.

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TABLE OF CONTENTS

SUMMARY OF CHANGES

- Addition of non-emergent euthanasia guidelines.
- Removal of gunshot method of euthanasia.

BACKGROUND

Military Working Dogs (MWDs) may present with illnesses or injuries so severe that the only humane option is euthanasia. MWDs may require emergent euthanasia in cases of catastrophic wounding with poor prognosis for recovery and to relieve the MWD from undue suffering.

Examples include catastrophic traumatic brain injury (TBI) or decompensatory refractory shock non-responsive to resuscitative efforts, major abdominal evisceration injury with failure to respond to resuscitation, or rapid clinical deterioration with poor prognosis for recovery.

Some circumstances in an operational environment may warrant non-emergent euthanasia, such as prevention or spread of contagious disease, incurable terminal disease, or severe behavioral disorders affecting quality of life that are not responsive to appropriate therapy as prescribed by a veterinarian.

ASSESSMENT

If an MWD is experiencing undue suffering (a medical condition constituting an immediate threat to life with no response to treatment), the attending provider (either human healthcare provider or veterinarian) has decision-making authority to perform an emergent euthanasia. A human healthcare provider should only perform euthanasia in a combat environment. Prior consultation with the MWD Accountable Unit Commander (AUC) and the senior command veterinarian, or their designated representatives, is not required in these cases. Attempts should be made to receive verbal approval from them when possible.

For non-emergent euthanasia, the attending provider must consult with the senior command veterinarian or their designated representative (AOC 64F Veterinary Clinical Medicine Officer). The MWD AUC has decision making authority for final disposition and will provide their decision in writing to the senior veterinarian following consultation.[1,2]

EUTHANASIA PROCEDURES

All euthanasia procedures will be performed humanely in accordance with recent American Veterinary Medical Association Guidelines for the Euthanasia of Animals.[3] Neuromuscular blocking agents are NOT acceptable as euthanasia agents, even when combined with other drugs due to potentially inducing distressful paralysis in the MWD prior to the onset of unconsciousness. Death by asphyxiation or cranial blunt force trauma, among others, are unacceptable methods of euthanasia.

When possible, perimortem blood and urine samples should be collected for analysis IAW TB MED 283.[4] The provider should collect one red top or serum tube of blood and one purple top or ethylenediaminetetraacetic acid tube of blood. Urine should be collected in a specimen cup or capped syringe.

MWD handlers should be permitted to be present for euthanasia if possible and deemed appropriate. The bond between handler and MWD cannot be overemphasized, and many handlers will want to be present. The MWD handler and the provider may require behavioral health care or grief counseling.

COMMERCIAL VETERINARY EUTHANASIA SOLUTION

1. Several veterinary euthanasia products are available including a barbituric acid derivative (usually sodium pentobarbital and sodium phenytoin at approximately 400 mg/mL), often given after sedation or general anesthesia; it may also be administered as a sole agent. Controlled substances management regulations apply.

2. These products should be given by the intravenous (IV) route, or intraosseous (IO) route if IV access is unable to be achieved. If IV or IO access is not possible, general anesthesia followed by intra-organ injection (intracardiac, intrahepatic, intrarenal) may be used. Intraperitoneal (IP) route is not practical for medium or large dogs due to the volume of the agent used and prolonged time to death.
3. The standard dose of these products is 1 mL per 10 pounds of body weight.[5]

POTASSIUM CHLORIDE (KCL)

1. Injection of a supersaturated potassium chloride solution is an acceptable method to produce cardiac arrest and death. Using this route, the MWD must be unconscious or under general anesthesia before administration of the KCl solution. It is unethical and therefore unacceptable to use KCl in conscious animals.
2. Anesthetize the MWD. (See the K9 Analgesia and Anesthesia CPG.)
3. Once anesthetized, rapid IV or intracardiac administration of 1-2 mEq K+/kg of body weight (75 to 150 mg/kg; 34 to 68 mg/lb) will cause cardiac arrest.[3]
4. A typical dose for an average sized MWD would be 30-40 mL of 2 mEq/mL KCl.

CONFIRMATION OF DEATH

It is critical to ensure complete cessation of physiologic activity after administering euthanasia agents. Confirm absence of a heartbeat and pulse, absence of voluntary respirations, and absence of electrical activity on an ECG tracing (if available) for a least 5 minutes after presumed death. Agonal respiratory efforts and/or a terminal excitatory phase may occur and should cease before death is declared. MWD handlers and participating personnel should be made aware of these terminal events prior to euthanasia.

POSTMORTEM PROCEDURES

A postmortem exam is required to be completed and documented IAW TB MED 283 as soon as possible after death.[4] Utilize photo documentation and postmortem advanced imaging (if available) with all interventions in place to document injury patterns to improve MWD trauma readiness and outcomes. The body should be kept refrigerated (not frozen) until the postmortem exam can be performed.

Collect representative samples of major organs and tissues that are obviously abnormal or traumatized and preserve with 10% buffered formalin if the postmortem exam is delayed. In austere environments where formalin may not be readily available, highly concentrated ethanol solutions will provide a suitable, field expedient preservative.[4]

REFERENCES

1. Department of the U.S. Army, Army Regulation 40-905, Veterinary Health Services (Government Printing Office, Aug 2006).
2. Department of the U.S. Army, Army Regulation 700-81, DoD MWD Program (Government Printing Office, Jan 2019).
3. American Veterinary Medical Association. AVMA guidelines for the euthanasia of animals: 2020 edition. Available at: https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf Accessed 31 July 2024.
4. Department of the Army, Army Technical Bulletin Medical 283, Veterinary Necropsy Protocol for Military Working Dogs and Pathology Specimen Submission Guidelines (Washington, DC: Government Printing Office, May 2001).
5. Euthasol® (Euthanasia Solution) [package insert]. Fort Worth, TX: Virbac Animal Health, Inc.; 2017.

APPENDIX A: CLASS VIII MEDICAL MATERIEL

Itemized list of medical materiel based on the JTS Euthanasia of the Military Working Dog CPG.

Euthanasia Solution

Commercial veterinary euthanasia solution (veterinary euthanasia solution containing sodium pentobarbital and/or sodium phenytoin) or potassium chloride (KCl).

Anesthetic Medications

Prerequisite: General anesthesia of the MWD is mandatory before KCl administration (unless patient is unconscious).

Anesthetic Agents

- Isoflurane or sevoflurane
- Propofol
- Other suitable anesthetics as per K9 CPG:16.

Additional Supplies

- IV catheter or intraosseous (IO) catheter, +/- administration set
- Saline (for flushing)
- Tape
- Syringes and needles
- Gloves
- Electrocardiogram (ECG) monitor to confirm cessation of cardiac activity
- Controlled substances log for documentation

Additional Required Materials

Sample Collection Supplies

- Red-top/serum tube and purple-top (EDTA) tubes for blood collection.
- Urine specimen containers.
- 10% buffered formalin for tissue preservation.
- Additional supplies needed for postmortem exam can be found in the TB MED 283.

Documentation

- K9 Tactical Combat Casualty Care (K9TCCC) Card.
- Access to TB MED 283 for necropsy protocols (with additional recommended supplies).

For additional information including National Stock Number (NSN), please contact dha.ncr.med-log.list.lpr-cps@health.mil

DISCLAIMER: *This is not an exhaustive list. These are items identified to be important for the care of combat casualties.*