Canine Tactical Combat Casualty Care

The following C-TCC guidelines are based on human C-TCCC guidelines and the limited data available on combat injuries and field treatment of working dogs. These guideline were developed by a large peer group of veterinarians, veterinary technicians, tactical medics, and canine handlers with years of experience in combat and tactical canine operations. Like any tactical techniques and procedures, and any type of clinical medicine, guidelines for best practices will forever evolve based on lessons learned and analysis of the hard data. Be a part of this process and help us advance tactical canine medicine, canine sports medicine, and tactical medical training in support of these amazing working dogs. Your input, including lessons learned, case data, and personal experiences as a canine handler, medic, or veterinary care provider can ensure that we keep this process driving forward.

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C-TCCC:

Care Under Fire: Actions to be taken while still engaged by the enemy.

1. Return fire/take cover

2. Expect the Multipurpose Canine (MPC) to remain engaged as a combatant, if appropriate.

3. Move MPC casualty to cover.

4. Muzzle the MPC if airway is not compromised.

5. Try to keep the MPC casualty from sustaining additional wounds.

6. Remove from burning buildings or vehicles to relative safety if it does not endanger the force. Do what is necessary to stop the burning process.

7. Airway management is generally best deferred until the Tactical Field Care phase.

8. Stop life threatening external hemorrhage if tactically feasible, using pressure bandages and hemostatic agents.

Tactical Field Care: Actions taken when no longer engaged by the enemy.

1. If not already done, muzzle the MPC casualty if the airway is not compromised.

2. Airway management:

a. Make sure the neck is reasonably straight; try to bring the head in line with the neck.

b. If MPC is unconscious, pull tongue forward to help open the airway. If that is unsuccessful, attempt to intubate the MPC before performing a surgical tracheotomy.

c. If previous measures are unsuccessful, perform needle or surgical tracheotomy (with lidocaine if conscious).

3. Respiration:

a. Consider tension pneumothorax and decompress with needle thorocentesis if casualty has torso trauma and respiratory distress.

b. Sucking chest wounds should be treated by applying a chest seal during expiration and monitoring for the development of a tension pneumothorax.

4. Circulation:

a. Assess for unrecognized hemorrhage and control all sources of bleeding using pressure bandages or hemostatic agents if available.

5. Peripheral intravenous (IV) access:

a. Start an 18-guage IV or saline lock, if indicated, or if evacuation times are extended.

b. If resuscitation is required and IV access is not obtainable, use the intraosseus (IO) route.

6. Fluid resuscitation:

a. If not in shock: no IV fluids necessary.

b. If in shock: colloids (250ml bolus), repeat once after 30 minutes if still in shock. Give no more than a total of 500ml colloids.

c. Continued efforts to resuscitate must be weighed against logistical and tactical considerations and the risk of incurring further casualties.

d. Reassess for continued fluid resuscitation for extended CASEVAC times.

7. Prevention of hypothermia:

a. Minimize casualty's exposure to the elements.

b. Apply/wrap in a rescue or heat blanket, as needed.

c. If mentioned gear is not available, use dry blankets, poncho liners, sleeping bags, body bags, or anything that will retain heat and keep the casualty dry.

8. Monitoring:

a. Pulse oximetry should be available as an adjunct to clinical monitoring.

b. Place on tongue, ear, flank, or other non-pigmented, highly vascular (hairless) area.

c. Readings may be misleading in the settings of shock or marked hypothermia.

d. If dog is intubated, use a handheld capnography device to monitor end tidal CO2.

9. Inspect and dress known wounds.

10. Check for additional wounds.

11. Analgesia, sedation, and patient control as necessary.

a. Morphine sulfate, 30-50mg IM (primary analgesia), monitor for respiratory depression.

Caution: Morphine can cause vomiting. Be prepared to remove muzzle.

12. Splint fractures and recheck pulse of the effected limb.

13. Antibiotics: Recommended for all open combat wounds.

a. If able to take PO: Moxifloxacin (400mg orally qd)

b. If unable to take PO (shock, unconscious): Cefotetan, 1g, IV (slow push over 3-5 minutes) or IM every 8 hours, or Ertapenam, 0.5g IV or IM every 12 hours.

14. Cardiopulmonary resuscitation should not be attempted as it is rarely effective due to:

a. Massive noncompressable thoracic hemorrhage

b. Massive noncompressable abdominal hemorrhage

c. Severe head injury leading to respiratory and cardiac arrest

d. Massive pulmonary contusions leading to respiratory and cardiac arrest

e. Tension penumothorax, which should be treated with needle decompression

15. Document clinical assessments, treatments rendered, and changes in the casualty's status. Forward this information with the MPC casualty to the next level of care.

Tactical Evacuation (TACEVAC) Care: Actions taken when the patient is being evacuated from the point of injury.

1. Airway management:

a. Make sure the neck is reasonably straight; try to bring the head in line with the neck. If the MPC is unconscious, pull tongue forward to help open the airway. If that is unsuccessful, attempt to intubate the MPC before performing a surgical tracheotomy.

b. If measures above are unsuccessful, perform a surgical tracheotomy (with lidocaine if conscious).

2. Respiration:

a. Consider tension peumothorax and decompress with needle thoracentesis if casualty has torso trauma and respiratory distress.

b. Most MPC casualties do not require oxygen, but administration of oxygen may be of benefit.

c. Open, or sucking, chest wounds require that a chest seal is applied during expiration and monitoring for development of a tension pneumothorax.

3. Circulation:

a. Assess for unrecognized hemorrhage and control all sources of bleeding using pressure bandages or hemostatic agents as needed.

4. Peripheral IV access:

a. reassess need for peripheral IV access—if indicated start an 18-guage IV or saline lock; if resuscitation is required and IV access is not obtainable, use IO route.

5. Fluid resuscitation:

a. Reassess for hemorrhagic shock; altered mental status (in the absence of brain injury), and change in pulse character.

b. If not in shock, no IV fluids necessary.

c. If in shock: colloids (250ml IV bolus), repeat once after 30 minutes if still in shock, no more than 500ml colloids.

6. Prevention of hypothermia:

a. Minimize casualty's exposure to the elements.

b. Continue heat or rescue blanket(s), but limit warming of TBI casualties.

c. Utilize portable fluid warmers on all IV sites if possible.

d. Protect casualty from wind if doors must be kept open.

7. Monitoring:

a. Institute electronic monitoring of pulse oximetry and vital signs if indicated.

8. Inspect and dress known wounds if not already done.

9. Check for additional wounds.

10. Analgesia, sedation, and patient control as necessary.

a. Morphine sulfate, 30-50mg IM (primary analgesia). Monitor for respiratory depression.

Caution: Morphine can cause vomiting. Be prepared to remove muzzle.

11. Reassess fractures and recheck pulses of the affected limb(s).

12. Antibiotics: recommended for all open combat wounds.

a. If able to take PO: Moxifloxacin (400mg orally qd).

b. If unable to take PO (shock, unconsciousness): Cefotetan, 1g IV (slow push over 305 minutes) or IM 8 hours, or ertapenem, 0.5gIV or IM q 12 hours.

13. Document clinical assessments, treatments rendered, and changes in casualty's status. Forward this information with the MPC casualty to the next level of care.