



EMS System for Metropolitan Oklahoma City and Tulsa 2026 Medical Control Board Treatment Protocols



Approved 9/17/25, Effective 1/15/26, New Protocol

16RR-KETAMINE

PARAMEDIC

Class: General Anesthetic

Actions/Pharmacodynamics: Produces a cataleptic-like state in which the patient is dissociated from the surrounding environment by direct action on the cortex and limbic system. Ketamine is a noncompetitive NDMA receptor antagonist that blocks glutamate. Low (subanesthetic) doses produce analgesia, and modulate central sensitization, hyperalgesia and opioid tolerance. Reduces polysynaptic spinal reflexes.

Indications:

Pain management

Status epilepticus refractory to benzodiazepines (OMD Consult Required)

Agitated delirium refractory to versed and Haldol (OMD Consult Required)

Medication facilitated intubation

Contraindications: Hypersensitivity to ketamine or any component of the formulation; conditions in which an increase in blood pressure would be hazardous.

Side Effects: CNS depression, increased intracranial pressure, increased intraocular pressure, liver injury (with recurrent use), porphyria, caution in patients receiving thyroid medications.

Dosage:

Medication facilitated intubation (2G):

Adult - 1.5 mg/kg slow IVP/IOP to a MAX of 200 mg

Status epilepticus (6D): OMD Consult Required

Adult - 1mg/kg to a MAX of 100 mg in 100 mL NS drip in over 5 to 10 minutes, if seizure continues consult OMD for additional orders.

Pediatric - 1mg/kg to a MAX of 100 mg in 100 mL NS drip in over 5 to 10 minutes, if seizure continues consult OMD for additional orders.

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PROTOCOL 16RR: Ketamine - Adult & Pediatric, cont,

Chemical Restraint (7C): CONSULT OMD FOR KETAMINE IF AGITATION IS REFRACTORY TO HALOPERIDOL AND MIDAZOLAM.

Adult/Pediatric – 3 mg/kg IM to a MAX of 300 mg

Pain management (9D)

Intravenous/intraosseous:

0.3 mg/kg up to a maximum dose of 30 mg diluted in a 100 ml bag of normal saline as an infusion over 10 minutes. Ketamine may be repeated at 0.15 mg/kg up to a maximum dose of 15 mg diluted in 100 ml bag of normal saline infused over 15 minutes if pain is still greater than a 5 after 20 minutes. OLMC required for any additional doses.

Nebulized:

ketamine may be administered by the Eclipse II breath actuated nebulizer with a T piece to patients who can participate in a nebulized medication treatment. To nebulize ketamine, add 0.5 mg/kg of ketamine (max 50 mg) to the medication well of the breath actuated nebulizer, connect to oxygen source, and turn oxygen up to 6-8 LPM. Have the patient inhale and exhale through the nebulizer. The dose may be repeated one time if needed.

If the nebulizer still has ketamine left in the well upon arrival at the ED and the ED isn't going to continue the nebulized ketamine, pull whatever ketamine is remaining up into a syringe to measure the wastage volume and then waste according to policy. Ketamine can only be nebulized with a breath actuated nebulizer.

Head/Neck/Spine Injury (10A),

Chest/Abdomen/Pelvis Injury (10D),

Extremity/Amputation Injury (10G),

Compartment Syndrome (10J),

Crush Injury Syndrome (10K),

Burns (10L),

Blast Injury (10P),

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Intravenous/intraosseous:

Adult - 0.3 mg/kg UP TO A MAX OF 30 mg in 100 mL NS INFUSED OVER 10 MINUTES.

Adult - 50 mg IN BREATH ACTUATED NEBULIZER (ADD NS TO MAKE TOTAL VOLUME 5 mL), OXYGEN ON 6-8 LPM

How Supplied:

50 mg/5 ml

500 mg/5 ml

Other: Notes:

1. Rapid administration can result in laryngospasm.
2. In the rare instance that a patient experiences hallucinations or agitated behavior after ketamine administration, consider the administration of 2.5 mg midazolam in adult patients and 0.1 mg/kg to a max dose of 1.25 mg in pediatric patients.
3. *****For all infusions, the IV bag must be labeled with a completed medication added sticker. Labeling is not an optional step and should be done prior to beginning any infusion. This is required for patient safety.**
 - a. Administer over 10 minutes using macro tubing with 10 drops/ml, the drip rate should be 100 drops per minute.

******* All patients who receive ketamine are required have vital signs taken every 5 minutes and to be on cardiac monitor, pulse oximetry and end tidal CO₂, they must be positioned in a manner that allows continuous monitoring of vital signs and must be transported supine on the stretcher.