

**KETAMINE**

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**Description**

Ketamine is a non-competitive NMDA receptor antagonist and dissociative, amnestic, analgesic anesthetic agent. Ketamine acts at many receptors causing a wide range of effects. It excites opioid receptors producing analgesia. It causes sympathetic stimulation, releasing catecholamines and leads to increased: heart rate, contractility, MAP, and cerebral blood flow. Ketamine decreases vasodilatory effect, preserves respiratory drive and has a quick onset of action. Ketamine is the most hemodynamically stable of all available sedative induction agents.

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**Indications**

- Hyperactive Delirium with Severe Agitation
  - Induction
  - Pain control
  - Anesthetic sedation
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**Contraindications**

- Known allergy to Ketamine
  - Relatively contraindicated in penetrating eye trauma
  - Relatively contraindicated in patients with known cardiovascular disease or HTN (Ketamine may cause tachycardia and elevate BP)
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**Side Effects**

- Laryngospasm: this very rare adverse reaction presents with stridor and respiratory distress. After every administration of ketamine:
    - a. Prepare to provide respiratory support including BVM ventilation and suction which are generally sufficient in rare cases of laryngospasm.
    - b. Institute cardiac monitoring, pulse oximetry and continuous waveform capnography.
    - c. Establish IV or IO access, check blood glucose.
    - d. Establish and maintain physical restraint (if warranted)
  - Emergence reaction: presents as anxiety, agitation, apparent hallucinations or nightmares as ketamine is wearing off. For severe reactions, consider benzodiazepine administration.
  - Nausea and vomiting: always have suction available after ketamine administration. Give antiemetic as needed.
  - Hypersalivation: Suction usually sufficient. If profound hypersalivation causing airway difficulty, administer atropine 0.5 mg IV.
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**KETAMINE (continued)**

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**Dosage and Administration****Adults:**

Hyperactive Delirium - 5 mg/kg IM or .5 – 2 mg/kg slow IV push (SIVP)  
(Max Dose: 500 mg)

Pain Control – 0.1 -0.5 mg/kg

Induction - 1.5 – 2 mg/kg SIVP

Contact base for additional doses

**Pediatric:** 0.1 – 0.5 mg/kg  
(Max Dose: 2 mg/kg)

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**Onset and Duration**

- Onset: 1-5 minutes after IM administration
  - Duration: 10-20 minutes
  - ½ Life: 1 hour
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**Protocol**

- Agitated/Combative Patient Protocol
  - Psychiatric/Behavioral Protocol
  - Restraints
  - Benzodiazepine
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**Special Considerations**

- Hyperactive delirium is a medical emergency. Expedite rapid and safe transport.
  - Ketamine is the least cardio-depressant induction agent available.
  - Consider doses as low as 0.25 – 0.5 mg/kg IV for induction in shock patients.
  - Rapid administration of ketamine may render a patient apneic.
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