

**Class**

Sedative, Analgesic Dissociative Anesthetic

**Pharmacologic Properties**

Ketamine is a non-competitive NMDA receptor antagonist and dissociative, amnestic, a rapid-acting analgesic anesthetic agent. Blocks the pain receptors and minimizes spinal cord activity, affecting the association pathways of the brain between the thalamus and limbic system.

**Indications**

- Adult patient with signs of excited delirium or violent behavior where the safety of patient and/or providers is of substantial concern [Protocol 39](#).
- Induction agent for pharmacologically assisted intubations [Protocol 7](#), [Protocol 7P](#).

**Contraindications**

- Known hypersensitivity
- Hypertension, severe or poorly controlled
- Suspected ACS
- Relatively contraindicated in penetrating eye trauma.
- Relative contraindication in patients with known cardiovascular disease. (Ketamine causes tachycardia)

**Onset & Duration**

- IV within 30 seconds, duration 10-15 min.; IM within 3-4 min, duration 12-25 min

**Side Effects/Adverse Reactions**

- Laryngospasm: this very rare adverse reaction presents with stridor and respiratory distress. After every administration of ketamine:
  - a) Prepare to provide respiratory support including bag-valve-mask 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.
- 1. Emergence reaction: presents as anxiety, agitation, apparent hallucinations or nightmares as ketamine is wearing off. For severe reactions, consider benzodiazepine.
- 2. Nausea and Vomiting: always have suction available after ketamine administration. Give antiemetic as needed.
- 3. Hyper-salivation: Suction usually sufficient. If profound hyper-salivation causing airway difficulty, administer Atropine 0.5 mg IV.



## Dosage and Administration

### Adult

- 2 mg/kg slow IVP or IM (MAX 200 mg)
  - For IM administration, a second dose can be administered in a different IM injection site (Maximum total dose 400 mg).

### Pediatric

- 12 years of age or older: 2 mg/kg slow IVP or IM (Max single dose of 200 mg)