

This document is for **reference only**. Please refer to SWO's for specific indications, dosages, and applications

RX

DRUG NAME: Ketamine Hydrochloride
TRADE NAME: Ketamine, Ketanest, Ketaset, Ketalar
REVISED: May 01, 2022

Class:

- Dissociative anesthetic
- NMDA receptor antagonist

Mechanism of Action: Exact mechanism unknown.

Ketamine acts on cortex and limbic receptors, producing dissociative analgesia and sedation. Higher doses act on the Mu opioid receptor.

Indications:

- For use in medication assisted intubation in conjunction with a paralytic
- Analgesia

Relative Contraindications:

- Most contraindications are related to the release of catecholamines increasing hypertension and tachycardia **or** sedation/apnea when administered either inappropriately or with sedative medications, drugs or alcohol.
 - Hypertensive Crisis
 - Under the influence of methamphetamine or stimulant drug
 - Recent ingestion or administration of opiates, benzodiazepines or alcohol
- Acute globe injury or glaucoma
 - Increased intraocular pressure
- When significant elevations in BP might prove harmful:
 - Aortic dissection
 - Acute Myocardial Infarction, angina
 - Intracranial hemorrhage
- Schizophrenia
 - Increases psychosis

Onset:

- 45-60 seconds

Duration:

- 5-20 minutes IV

Side Effects:

- | | | |
|----------------------|--------------------------|--------------------------|
| • Vivid Dreams | • Dysphoria | • Arrhythmias |
| • Hallucinations | • Hypersalivation | • CNS Depression |
| • Delirium | • N/V | • Respiratory Depression |
| • Recovery Agitation | • Anaphylaxis | |
| • Tachycardia | • Reemergence phenomenon | |
| • Hypertension | | |

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Interactions:**Additive/Potential Effects:**

- Any medication that stimulates catecholamine release will result in hypertension, tachycardia and arrhythmias
- Ketamine/benzodiazepine/narcotic medications increase respiratory and CNS depression. The administration of ketamine in combination with a benzodiazepine or narcotic (or alcohol) may result in excessive sedation and/or respiratory depression or apnea.

Dosage:**RSI/MAI****Adults/Peds:**

- 2mg/kg slow IV/IO push one minute prior to paralytic administration

Analgesia**Adults:**

- IV/IO 0.2 mg/kg (Max single Dose 30 mg)
 - Dilute to at least 10 ml and give slowly over 2 minutes
 - May repeat every 20 minutes as needed

Or

- IM: 0.5 mg/kg
 - repeated every 30 minutes PRN
 - Max single dose 50 mg

- **PEDS** (do not use in patients under 1 year of age)

- IV/IO: 0.2 mg/kg (Max single Dose 25 mg)
 - Dilute to at least 10 ml and give slowly over 2 minutes
 - May repeat every 20 minutes as needed.

Or

- IM: 0.5 mg / kg
 - repeated every 30 minutes PRN
 - Max single dose 50 mg

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Physician PEARLS:

- As with most sedatives/analgesics, IV/IO route is the preferred route of administration if possible due to ability to administer slowly and titrate dosage.
- Despite earlier research, Ketamine has proven safe to use in closed head injury patients.
- Because of the dissociative state many patients sedated with ketamine do not close their eyes
- Ketamine is the only anesthetic producing analgesia, hypnosis and amnesic effects
- In usual doses, protective airway reflexes, spontaneous respirations and cardiopulmonary functions are maintained, however *rapid administration of Ketamine may cause apnea or laryngospasm*
- Ketamine lacks the progressive dose-response relationship
- Ketamine produces a dose-related increase of heart rate and blood pressure which makes Ketamine the preferred induction agent for hypotensive patients
- Ketamine has demonstrated beta-adrenergic and vagolytic properties, which includes beta-2 stimulation making Ketamine the ideal induction agent for people with reactive airway disease/asthma.
- Ketamine increases salivary and bronchial mucous gland secretion through stimulation of cholinergic receptors, however it does not require Atropine for pretreatment
- Reemergence phenomenon is a known entity. *Consider benzodiazepines for continued sedation but be aware of cumulative CNS depression.*
- Try to provide a calm, quiet atmosphere post administration to reduce anxiety and mitigate reemergence phenomena.
- A single dose of Ketamine should last 5-30 minutes
- Pregnancy Category has not been established

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