Drug Formulary

KETAMINE

Class

Anesthetic Induction

Description

Ketamine is a controlled substance medication that is a rapid-acting general anesthetic producing an anesthetic state characterized by profound analgesia, normal pharyngeal-laryngeal reflexes, normal or slightly enhanced skeletal muscle tone, cardiovascular and respiratory stimulation, and occasionally a transient and minimal respiratory depression.

Onset & Duration

Onset: Rapid – IV within 30 seconds half life 10-15 min.; IM within 3-4 minutes
Duration: IV 2 mg/kg lasts 5-10 minutes; IM 9 to 13 mg/kg lasts 12-25 minutes

Indications

1. Ketamine is indicated as the sole anesthetic induction agent for management of trauma patients in extreme pain requiring proper immobilization and/or extrication.

Contraindications

1. Ketamine is contraindicated in those in whom a significant elevation of blood pressure would constitute a serious hazard and in those who have shown hypersensitivity to the drug.

Adverse Reactions

1. Cardiovascular - blood pressure and pulse rate are frequently elevated following administration of Ketamine alone. However, hypotension and bradycardia have been observed. Arrhythmia has also occurred.
2. Respiration - Although respiration is frequently stimulated, severe depression of respiration or apnea may occur following rapid intravenous administration of high doses of Ketamine.

Laryngospasms and other forms of airway obstruction have occurred during Ketamine anesthesia.

3. Eye - Diplopia and nystagmus have been noted following Ketamine administration. It also may cause a slight elevation in intraocular pressure measurement.
4. Neurological - In some patients, enhanced skeletal muscle tone may be manifested by tonic and clonic movements sometimes resembling seizures.
5. Gastrointestinal - Anorexia, nausea and vomiting have been observed; however, this is not usually severe and allows the great majority of patients to take liquids by mouth shortly after regaining consciousness.
6. General: Anaphylaxis, local pain and exanthema at the injection site have infrequently been reported. Transient erythema and/or morbilliform rash have also been reported.

Ketamine continued...

Drug Interactions

Prolonged recovery time may occur if barbiturates and/or narcotics are used concurrently with Ketamine.

How Supplied

Injection: IM or IV 15 mg (15 mg/mL) and 30 mg (30 mg/mL)

Ketamine Hydrochloride Injection, USP is supplied as the hydrochloride in concentrations equivalent to Ketamine base.

Container	Concentration	Fill	Quantity
Fliptop Vial	100 mg/mL	5 mL	Box of 10
Fliptop Vial	50 mg/mL	10 mL	Box of 10

Color of solution may vary from colorless to very slightly yellowish and may darken upon prolonged exposure to light. This darkening does not affect potency. Do not use if a precipitate appears.

Store at 20 to 25°C (68 to 77°F).

Protect from light.

Dosing

Adult IV	1-4.5 mg/kg IV over 1 min.
Adult IM	6.5-13 mg/kg IM one dose

Pediatric IV	>3 months 1.5 mg/kg IV over 1 min.
Pediatric IM	>3 months 4-5 mg/kg one dose

Protocol

MA XX	Adult Pain Management
MA XX	Pediatric Pain Management

Special Considerations

1. Elevation of blood pressure begins shortly after injection, reaches a maximum within a few minutes and usually returns to preanesthetic values within 15 minutes after injection.
2. Because pharyngeal and laryngeal reflexes are usually active, Ketamine can not be used alone for advanced airway management such as intubation. Mechanical stimulation of the pharynx should be avoided, whenever possible, if Ketamine is used alone.
3. The incidence of emergence reactions may be reduced if verbal and tactile stimulation of the patient is minimized during the recovery period. This does not preclude the monitoring of vital signs.
4. The intravenous dose should be administered over a period of 60 seconds. More rapid administration may result in respiratory depression or apnea and enhanced pressor response.
5. Use with caution in the chronic alcoholic and the acutely alcohol-intoxicated patient.
6. This medication is a Class III controlled substance medication approved for prehospital use by the SEMAC and the Department.