

Ketamine (Ketalar)

28:04 – General Anesthetic, Miscellaneous

28:16.04.92 – Antidepressant, Miscellaneous

Alternative Classification: N-Methyl-d-aspartate Receptor Antagonist – analgesic and antidepressant properties.



PHARMACY PREPARATION:

- 10-mg/mL concentration - 5 mL prefilled syringes
- 10-mg/mL concentration - 20 mL vials
- 50-mg/mL concentration - 10 mL vials
- 100-mg/mL concentration - 5 mL vials
- IVPB can be prepared by diluting ketamine in D5W or NS to final concentration less than 2 mg/ml

STABILITY:

- Protect from light.
- Ketamine hydrochloride injection varies from colorless to very slightly yellow. The drug may darken upon prolonged exposure to light; however, this darkening does not affect potency.
- Do NOT administer solution if a precipitate is visible.
- Do NOT administer if container is damaged. Discard unused portion.

ADMINISTRATION:

- The 10-mg/mL concentration should not be diluted.
- The 100-mg/mL vial is a concentrate and must be diluted prior to intravenous use. **Each dose** should be diluted with an equal volume of sterile water for injection, dextrose 5%, or sodium chloride 0.9%.
- Clinicians who are overseeing the administration of ketamine for procedural sedation must be credentialed per the GHS policy on moderate sedation care.
- Diazepam and barbiturates must be administered separately from ketamine hydrochloride and must not be mixed in the same container.
- Monitoring for pain indications
 - Continuous infusion
 - Heart rate, blood pressure, respiratory rate, and sedation score at baseline, 30, and 60 minutes after administration
 - Continuous pulsox monitoring for 24 hours and as needed
 - Call provider for:
 - O₂ saturation < 92%
 - Respiratory rate < 12 breaths per min
 - SBP or DBP increase more than 20 mmHg
 - Heart rate increases more than 20 beats per min
 - IV push or IVPB
 - Heart rate, blood pressure, respiratory rate, and sedation score at baseline, 30, and 60 minutes after administration
 - Continuous pulsox monitoring for 1 hour and as needed
 - Call provider for:
 - O₂ saturation < 92%
 - Respiratory rate < 12 breaths per min
 - SBP or DBP increase more than 20 mmHg

- Heart rate increases more than 20 beats per min
- Monitoring parameters for procedural sedation per Moderate Sedation Care policy.

Indication	Route	Adult	Pediatrics *Contraindicated for age < 3 months*
Acute pain ED, OR, or PACU only	IV	0.1 – 0.35 mg/kg IVPB over 5 minutes May repeat dose every 15 min as needed not to exceed 1 mg/kg/hr	0.5 – 1 mg/kg IVPB over 5 min
	anesthesiologist may administer IV push over 1 min		
	Intranasal (IN)	0.5 – 1 mg/kg followed by 0.25 – 0.5 mg/kg every 10 – 15 min (max dose 1 mg/kg in 1 hour)	1.5 mg/kg IN one time
Perioperative pain OR, PACU, ICU, or PCU only	IV	0.2 – 0.35 mg/kg bolus followed by 0.1 – 1 mg/kg/hr continuous infusion (Max dosing weight 100 kg)	0.25 mg/kg bolus followed by 0.12 – 0.6 mg/kg/hr continuous infusion
	IM	2 – 4 mg/kg IM one time followed by continuous IV infusion as needed	-
Migraine headache ED only	IN	0.75 mg/kg as a single dose	-
Procedural sedation (see Moderate Sedation Care policy)	IV	1 mg/kg IV push over 1 min followed by 0.5 mg/kg every 10 – 15 min as needed	1.5 – 2 mg/kg IV push over 1 min followed by 0.5 – 1 mg/kg every 5 – 15 min as needed (Max dose 5 mg/kg)
	IM	IV preferred 4 – 5 mg/kg one time	4 – 5 mg/kg IM followed by 2 – 4 mg 10 minutes after initial dose if needed (Max dose 9 mg/kg)
	IN	-	5 mg/kg IN one time (consider administration prior to IV cannulation)

References:

1. Schwenk E et al. Consensus Guidelines on the Use of Intravenous Ketamine Infusions for Acute Pain Management From the American Society of Regional Anesthesia and Pain Medicine, the American Academy of Pain Medicine, and the American Society of Anesthesiologists. *Reg Anesth Pain Med.* 2018;43: 456-466.
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3. Iowa Nursing Board [655]. Chapter 6: NURSING PRACTICE FOR REGISTERED NURSES/LICENSED PRACTICAL NURSES. 2011. Accessed 12/1/19.
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5. Dahmani S, et al. *Paediatr Anaesth* 2011;21(6):636-52.
6. Adult Nursing IV Medication Administration Guidelines: Ketamine. University of Iowa Hospitals and Clinics. Accessed March 2020.
7. Green, et al. Clinical Practice Guideline for Emergency Department Ketamin Dissociative Sedation: 2011 update. *Ann Emerg Med* 2011;