Compass SHARP

Low-Dose Ketamine for Analgesia

PURPOSE

To provide guidance on the safe administration of low-dose ketamine for the purpose of pain relief in the Emergency Department and hospital.

Low-dose ketamine (LDK) used for analgesia is not to be confused with higher doses being given as an anesthetic agent for moderate to deep procedural sedation. IV ketamine in high doses for the purpose of sedation must only be administered by an authorized provider or trained anesthesia provider.

SCOPE

RNs in the Emergency Department and hospital that have completed proper training and annual competency evaluation in the use of ketamine may administer low-dose (sub-dissociative dose) ketamine. An Emergency Department or hospital provider must provide an order.

POLICY

Low-dose ketamine (LDK) may be given by RNs in the Emergency Department and hospital under the following circumstances:

1. The RN has successfully completed education and training in the pharmacology, administration, side effects, and complications of ketamine; including contraindications and signs and symptoms of untoward effects.
2. The RN has successfully completed and has current training in basic airway management (Basic Life Support for Health-care Providers). Verification of the date of training must be on file.
3. Competency evaluation must be completed annually.
4. There must be a patient specific order from an authorized provider for the administration of this drug.

DEFINITIONS

Low-dose ketamine (LDK) is a non-opioid medication used as an effective treatment of pain. LDK can be used in the treatment of acute pain secondary to many diverse conditions and reduces the significant and dangerous side effects of opioids in those patients who are opioid tolerant. LDK does not produce many of the potentially adverse respiratory or hemodynamic effects of opioid analgesics. There is no reversal agent for ketamine.

Indications for Use (including but not limited to):

- Musculoskeletal trauma

- Acute non-traumatic pain
- Sickle cell vaso-occlusive crisis
- Burns
- Neuropathic pain
- Opioid tolerance or dependence
- Physician discretion

Absolute Contraindications:

- Known hypersensitivity to ketamine
- Conditions where increased blood pressure would pose a serious risk (active chest pain or acute heart failure)

Relative Contraindications:

- Pregnancy
- AMS
- Active psychosis or hallucinogenic state
- Severe hepatic dysfunction (advanced liver disease or cirrhosis)
- Elevated intracranial pressure
- Elevated intraocular pressure
- Prolonged or repeated exposure during rapid brain development (up to 3 years age)

Cautions:

- Breastfeeding mother
- Severe Hypertension (>180/110)
- Patients > 75 years of age
- Patients < 12 years of age
- Acute alcohol intoxication

Low-Dose Ketamine dosing:

- Intermittent infusion*:
    - *preferred method of administration
    - Up to 0.3 mg/kg (maximum of 30 mg) in 100 mL NS IV over 15 minutes
    - Usual maximum dose of 90 mg/24 hours
- Continuous infusion**:
    - **when prolonged pain is expected
    - Mix as a 1:1 concentration
    - Administer a bolus dose using intermittent infusion dosing prior to starting the continuous infusion.
    - After administering the bolus dose, start the continuous infusion at a rate of up to 0.2 mg/kg/hr.
    - The infusion should be titrated by 0.1 mg/kg/hr increments every 15 min to a pain goal and based on patient tolerability and hemodynamic stability.

- Maximum rate of infusion is 0.5 mg/kg/hr. and should not exceed 30 mg/hr. (720 mg/day). Recommended maximum duration of infusion is 72 hours.

RESPONSIBILITIES

1. Baseline vitals must be obtained within 10 minutes of the medication administration
2. Patient should be placed on the cardiac monitor
3. Vital signs should be checked 5 minutes after administration or dose titration, and again 15 minutes later. If stable, hourly vital signs should be monitored.
4. SpO2 should be monitored and documented with each set of vital signs
5. Pain scores should be documented with each set of vital signs
6. Notify the provider if the HR < 60 or >110; SBP < 90 or >180; RR <10; patient develops hallucinations, acute agitation or combativeness
7. Notify the provider if the patient has a reaction. Benzodiazepine administration may be considered.
8. Keep a calm and quiet environment with dimmed lights if possible
9. The patient must have a driver if discharged. A wait time of 4-6 hours after administration is necessary before the patient may drive from the ED and patient must be clinically stable, not demonstrating adverse effects from ketamine (no psychiatric symptoms or hemodynamic instability)
10. For continuous infusions, the provider must re-evaluate the dosing requirements every 24 hours.

PROCEDURE

1. Advise the patient of possible side effects including dizziness, drowsiness, confusion, and unusual thoughts or behavior.
2. Medication is administered as per the provider order by a trained RN.
3. Monitoring and documenting of vital signs and SpO2 should be done per policy by the trained RN.

References/Citations

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