KETAMINE CONTINUOUS INFUSION, SUB-DISSOCIATIVE DOSE (ANALGESIA), PROGRESSIVE CARE UNIT

PURPOSE:

To outline the nursing management of patients receiving sub-dissociative Ketamine infusions in the PCU.

SUPPORTIVE DATA:

Ketamine is a general anesthetic with sedative and analgesic properties. Lower doses, sometimes referred to as sub-dissociative doses, have been used to treat pain and acute depression. Low dose ketamine infusion has been shown to augment pain relief and decrease narcotic requirements.

It has demonstrated efficacy across various types of pain including sickle cell vaso-occlusive crisis, cancer related pain, neuropathic, acute and post-op pain, especially in patients already receiving opioid agonist therapy or with opiate use disorder.
Drips are usually continued for 24-72 hours once pain is well controlled and narcotic requirements are decreasing.

Contraindications include:

- Hypersensitivity reaction to ketamine (even low dose)
- Hypertensive encephalopathy and severe psychosis
- Schizophrenia not on treatment with active positive symptoms (e.g.,hallucinations, auditory disturbances)
- Patients who demonstrate improvement with standard therapies
- History of, or current myocardial ischemia or arrhythmias
- Copious pulmonary secretions
- Concurrent closed head injury
- Intracranial mass
- History of, or current glaucoma

Use care/caution with the following patients:

- Untreated hypertension- including aortic dissection, uncontrolled hypertension, myocardial infarction, or aneurysms
- History of schizophrenia
- Known or presumed coronary artery disease (CAD)

SCREENING:

Not recommended for use during obstetrics, pregnancy, or breastfeeding (Ketamine passes into breast milk).

Only authorized providers may initiate and medically manage sub-dissociative Ketamine infusions.

- Must be on continuous cardiac monitoring
- No bolus or loading doses to be given by nursing

DOSAGE:

Sub-dissociative Ketamine dosing is generally defined as between 0.5-3mcg/kg/min

ASSESSMENT:

1. Assess the following within 30 minutes prior to initial administration, with each dose change and then every 30 minutes times two, then every 2 hours.
    - Heart Rate
    - Blood Pressure
    - Respiratory Rate
    - Oxygen saturation per pulse oximetry
    - Pain

2. Assess for the following adverse effects a minimum of every 4 hours:
    - Tachycardia/ Bradycardia
    - Hypertension/ Hypotension
    - Change in mental status
    - Tonic-clonic movements and tremors
    - Increased pulmonary secretions, hypersalivation
    - Signs of increased ICP (e.g. unequal pupils, change in level of conscious)

3. Notify provider for:
    - Baseline heart rate is greater than 120 or less than 50
    - Systolic blood pressure is greater than 180 mmHg or less 90mmHg
    - Diastolic blood pressure is greater than 110 mmHg or less than 60mmHg

ADMINISTRATION:

4. Ensure Ketamine bag/syringe is housed in a secure lock box while in patient's room:
    - Utilize port free IV tubing
    - Administer via infusion pump with guardrails
    - Label tubing as ketamine infusion
    - Maintain line patency (e.g.10mL/NS to keep vein open)

SAFETY:

5. Verify provider order and pump settings with second RN prior to Administration, with any change in syringe/concentration/dosage/setting with the following steps:
    - Medication name and concentration
    - Correct dosage normal range (0.5mcg/kg/min-3mcg/kg/min)

6. Notify the provider for:
    - Nausea, vomiting, diarrhea
    - Hypertension
    - Presence of potential ketamine side effects
    - Anxiety, alteration in mood
    - Vivid dreams, nightmares,
    - Visual hallucinations, delirium
    - Increased salivation

COLLABORATION:

7. Collaborate with Providers, Anesthesiology, Pharmacy Services, Addiction Medicine, Palliative Medicine and Pain Management Services as needed.

PATIENT/ CAREGIVER EDUCATION:

8. Instruct on the following:
    - Medication – Purpose, function, possible side effects
    - Notify nurse immediately for the following:
    - Respiratory distress
    - Seizure activity
    - Persistent pain
    - Anxiety
    - Allergic reactions
    - Vivid Dreams or Nightmares

REPORTABLE CONDITIONS:

9. Discontinue infusion and notify provider for:
    - Seizure activity
    - Shallow respirations
    - Respiratory distress
    - Allergic reaction/anaphylaxis other than itching (e.g. edema, stridor)
    - Deterioration in VS, oxygen saturation
    - Excessive sedation
    - Nausea & vomiting for greater than 1 hour (not responsive to ordered medications)

10. Notify provider for the following:
    - Inadequate pain relief after IV line has been checked for patency
    - Urine retention
    - Vivid Dreams/Nightmares
    - De-realization
    - Dysphoria
    - Anxiety
      *Note: May need to treat agitation with Lorazepam per MD order

ADDITIONAL STANDARDS:

11. Implement the following:
    - Falls/Injury Prevention
    - Intravenous Therapy
    - Pain Management

DOCUMENTATION:

12. Document in accordance with “documentation standards”.
    - Computerized medication administration record

REFERENCES:

Policy #920; Management of controlled substances
Policy #910; High Alert Medications

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