

## **Oral Ketamine for Intractable Pain Protocol**

**Purpose:** Oral ketamine will be used for analgesia in terminally ill adult patients with pain refractory to standard opioids and other adjunct therapies. This protocol is not intended for use in patients in the intensive care units or emergency care areas requiring sedation or acute pain relief.

- **Relative Contraindications:** Ketamine will not be used in patients with increased intracranial pressure, active seizures, uncontrolled hypertension or severe cardiovascular disease, a history of psychosis, or while on monoamine oxidase inhibitors.
- **Adverse effects** to ketamine are dose-related and may include CNS effects (confusion, dysphoria, vivid dreams, delirium, increased intraocular pressure, increased intracranial pressure, memory impairment, dizziness), gastrointestinal effects (nausea and vomiting, hepatic damage with long term use), cardiovascular effects (HTN, tachycardia) or miscellaneous effects [fatigue, lacrimation, salivation, ulcerative cystitis (long-term use)]. Addition of haloperidol or lorazepam may be helpful in the management of hallucinations and/or dysphoria.

### **Orders**

- Orders for ketamine for intractable pain control must be prescribed by a Palliative Care physician.
- Patient must have a “Do Not Resuscitate” (DNR) order
- All ketamine orders should include clear goals for pain scores as well as additional parameters for contacting the provider as necessary.
- Patient must be on 5-West, PCU units at OLOLRMC
- Only for patients 18 years of age or greater

### **Oral Dosing for Intractable Pain**

Starting dose: 10 mg PO every 6-8 hours  
Dose titration: Increase 10 mg per dose every 2-3 days  
Max oral dose: 50 mg PO every 6 hours

### **Pharmacy Preparation**

- Oral ketamine 10mg/ml – 1 ml syringes will be drawn up in the main pharmacy (narcotic area)
- Ketamine 200mg/20 ml (10 mg/ml) vials will be used to draw up the syringes
- Each syringe will be given a 14 day expiration once drawn up
- 20 oral syringes (10 mg each) will be drawn up at a time
  - One syringe will be dispensed immediately (delivered to the nurse), the other 19 syringes will be loaded into the pyxis on the unit that the patient is located (5W, RCU or SPCU) and all subsequent doses will be pulled by a nurse
- The oral syringes will have a barcode for the nurse to scan
- Once the patient is discharged, the ketamine oral syringes will be UNLOADED from the pyxis and placed in the main pharmacy narcotic safe

## **Administration**

- Restricted to adults on 5-West or PCU
- Initial syringe delivered to nurse, other doses available in pyxis
- Oral syringe will have a barcode for the nurse to scan
- Dose may be diluted at time of administration with orange juice or cola to mitigate bitter taste

## **Monitoring**

- Onset of action: 30 minutes
- Duration of action: 4-12 hours
- For first dose or dose adjustment: monitor at baseline, every 20 minutes for the first hour, then Q2 hours X 2, then Q4 hours: BP, HR, RR, sedation, pain levels
- Contact Palliative Care for:
  - Increase in BP greater than 20 mmHg above baseline
  - Increase in HR greater than 20 BPM above baseline or HR greater than 100 BPM
  - RR less than 8 respirations/minute
  - Unimproved pain score or ineffective symptom relief
  - Persistent nausea or vomiting
  - Seizures, agitation or restlessness
  - Unexpected change in vital signs or condition
  - Profound sedation

## **Helpful Tools for Assessing Ketamine Orders**

- Physician should consider reduction of total daily opioid dose by 30% when starting ketamine and continue breakthrough opioid at previously prescribed dose
- If patient on benzodiazepines, physician to consider decreasing dose if sedation occurs
- Oral ketamine is more potent than IV ketamine due to first pass metabolism producing higher concentration of the active metabolite norketamine after oral administration
- Plasma half-life: 3 hours (ketamine), 12 hours (norketamine)
- Metabolism: extensive first pass metabolism produces higher concentration of norketamine (active)

## **References**

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