

**JOINT ADVISORY OPINION ISSUED BY THE SOUTH CAROLINA
STATE BOARDS OF MEDICAL EXAMINERS, NURSING AND PHARMACY
REGARDING THE ADMINISTRATION OF LOW DOSE KETAMINE INFUSIONS IN
HOSPITAL SETTINGS, INCLUDING ACUTE-CARE, BY NURSES**

Formulated: April 12, 2019

Revised: December 6, 2019; July 10, 2020¹

Reviewed:

Question: Is it within the role and scope of a registered nurse (RN) to administer low dose ketamine infusions and intravenous push for pain control in a hospital (acute care) setting?

The South Carolina State Board of Medical Examiners, the South Carolina State Board of Pharmacy, and the South Carolina State Board of Nursing acknowledge that:

It is within the scope of practice for an RN to administer/monitor low dose Ketamine via continuous infusion and intravenous push (in ED and PACU ONLY) with physician orders for specific cases of acute pain management in patients with opioid-tolerance, intractable post-operative pain, poorly controlled chronic pain, palliative care, or in patients suffering from extreme opioid side effects in an acute care setting.

THIS ADVISORY OPINION DOES NOT APPLY TO THE ADMINISTRATION OF AGENTS FOR THE PURPOSE OF SEDATION OR ANESTHESIA.

Ketamine infusions are contraindicated for the following patients: those with increased intracranial pressure, conditions with uncontrolled seizures, concurrent or recent use of MAO-Is, or delirium, known or suspected cardio vascular disease including angina, heart failure, or hypertension; CNS masses, abnormalities or hydrocephalus; glaucoma or acute globe injury; porphyria; uncontrolled thyroid disorders; and known or suspected schizophrenia even if controlled with medications.

- (1) General provisions.
 - a) Orders and infusion rate adjustments MUST originate from an approved and credentialed attending physician. Advanced practice practitioners or physician delegates (upper level residents and fellows with permanent South Carolina licenses) operating under the supervision of the approved attending physician (as designated by facility policy) may adjust, but not initiate, low dose ketamine infusions. Interns are unable to order low dose ketamine infusions. It is recommended that Anesthesia and Critical Care Credentialed providers be included in the decision making process to determine which physicians/providers are approved to order low dose ketamine infusions for pain management.
 - b) Facility policy will direct required nursing education and competency.
 - c) Facility policy will address specific patient populations, required monitoring, and bed placement with an approved unit within the facility for administration of low dose ketamine infusions for pain management.

¹ The Healthcare Collaborative Committee met and made revisions on July 10, 2020. The revisions were adopted by the Board of Nursing on September 24, 2020; the Board of Medical Examiners on November 4, 2020; and the Board of Pharmacy on November 17, 2020.

(2) Each patient must be evaluated for contraindications, including:

- (a) Hypersensitivity to Ketamine;
- (b) Known or suspected schizophrenia, even if controlled with medications; or
- (c) In patients with conditions associated with increased intracranial pressure, uncontrolled seizures, concurrent or recent use of MAO-Is, or delirium.

(3) Precautions must be taken, including:

- a) Fall precautions and ambulation assistance required; and
- b) Hourly rounding is suggested for this patient population.

(4) Monitoring: Facility policy should include the following parameters:

- a) Vital sign assessment frequency and parameters assessed. Recommend inclusion at the minimum pulse oximetry and sedation scale;
- b) Parameters for provider notification;
- c) Management of common side effects; and
- d) Turn off infusion if the following significant side effects are suspected and notify appropriate ordering service: Respiratory Depression; Unresponsiveness; Hallucinations; Nystagmus

(5) Clinical Practice Points:

- a) The recommended duration of therapy for continuous ketamine infusion should be defined by facility policy;
- b) As ketamine is a controlled substance, follow state and facility policy on management;
- c) A locked rate controlled infusion pump will be used for all ketamine infusions using appropriate guardrail settings;
- d) Low dose ketamine should be infused through its own dedicated IV line (when possible) or via the most proximal port of a carrier solution;
- e) Low-dose ketamine should be infused through portless IV tubing to avoid inadvertent blousing;
- f) Ketamine dosing should be based on the patient's ideal body weight;
- g) The occurrence of ketamine-related psycho-cognitive effects (e.g. altered mental status, restlessness, disorientation, and vivid dreams) appears to be dose-related and minimal at infusion rates less than 4 micrograms/kg/min;

- h) A defined stop infusion period of either forty-eight (48) or seventy-two (72) hours should be utilized. If the patient requires an extended period, the approved provider is to write an order to continue infusion for another set period. The maximum rate of infusion for pain management will not exceed (5mcg/kg/min) or twenty-four (24) mg/hr maximum infusion rate; and
- i) No specific monitoring is required for IV push dosing of low dose ketamine for pain management if following the 10 mg per dose (30 mg maximum total) beyond watching for side effects and routine vital signs.