

**Ketamine Hydrochloride (Ketalar®)**

<b>Classification:</b>	Nonopioid Analgesic (sub-dissociative doses)
<b>Actions:</b>	In sub-dissociative doses, provides analgesia by non-competitively blocking NMDA receptors to reduce glutamate release and by binding to sigma-opioid receptors.
<b>Indications:</b>	<b>Moderate to Severe pain due to:</b> <ol style="list-style-type: none"><li>1. Multisystem trauma with head, thoracic, or abdominal injuries.</li><li>2. Significant extremity trauma, dislocations, or burns.</li><li>3. Acute pain management for medical patients.</li><li>4. Pain management substitute for patients with an opioid tolerance.</li></ol>
<b>Contraindications:</b>	<ol style="list-style-type: none"><li>1. Conditions in which an increase in blood pressure would be hazardous (see notes)</li><li>2. Hypersensitivity</li><li>3. Known history of schizophrenia</li><li>4. Acute Coronary Syndrome</li><li>5. Pregnancy</li></ol>
<b>Precautions:</b>	<ol style="list-style-type: none"><li>1. History of severe Coronary Artery Disease</li></ol>
<b>Adverse Effects:</b>	<p><b>&gt;10%</b></p> <p><b>Cardiovascular:</b> Tachycardia, hypertension, increase in cardiac output</p> <p><b>Neurological:</b> Dizziness, Tonic-Clonic Movement (non-seizure)</p> <p><b>1-10%</b></p> <p><b>Cardiovascular:</b> Bradycardia, hypotension</p> <p><b>Neurological:</b> Dysphoria, partial dissociation, nystagmus</p> <p><b>&lt;1%</b></p> <p><b>Anaphylaxis,</b> arrhythmia, hypersalivation, hypertonia, laryngospasm*, respiratory depression/apnea, dysuria</p>
<b>Administration:</b>	<p><b><u>ADULT DOSE</u></b></p> <p><b><u>Pain Management</u></b></p> <ol style="list-style-type: none"><li>1. 0.3 mg/kg (max of 30mg) in 100mL Normal Saline, administer IV/IO over 10 minutes one time dose.</li><li>2. 0.5mg/kg (max of 40mg) IM</li></ol>

When mixing Ketamine into 100mL bag, **label the bag** with "Ketamine/mg amount".

**PEDIATRIC DOSE****\*\*\*Ketamine usage is not allowed for pediatric patients\*\*\***

**Onset:** IV onset 30-60 seconds, peak in less than 5 minutes.

**Duration:** Distribution half-life: 15 minutes  
Duration of analgesia: 20-45 minutes

**Notes:**

- Risk of adverse neurological events is decreased with sub-dissociative doses and slow rate of administration.
- Mix adult dose of ketamine in 100mL bags of normal saline.
- Ketamine may cause a slight increase in blood pressure and shall be avoided in hypertensive emergencies, dissecting aneurysms, hypertensive heart failure, and acute coronary syndrome.
- Ketamine should be considered as first line analgesic agent when fentanyl is contraindicated due to hypotension, pathology or injury inhibiting respiration, evidence of hypovolemic/hemorrhagic shock, or multisystem trauma with high potential for internal hemorrhage.
- Ketamine may be considered as preferable to fentanyl for patients that may have opioid tolerance due to habituation or addiction, and in patients where fentanyl use has other significant precautions.
- Ketamine is a potent anesthetic and dissociative agent in higher doses and is associated with higher incidents of significant adverse effects. This is **NOT** an approved use for prehospital care in the County of San Luis Obispo.