

# Ketamine (Ketalar)

McHenry Western Lake County  
EMS



# Objectives

- During this session we will discuss:
- Class
- Actions
- Indications
- Contraindications
- Dosing/Routes
- How supplied
- Precautions
- Side effects



# Class:

- N-methyl-D-aspartate (NMDA) receptor antagonist
- Commonly referred to as a dissociative anesthetic



# Actions:

- Produces a unique combination of hypnotic, analgesic and amnestic effects based on dose.
- Sedative-hypnotic *with* analgesic effects
- DEA Schedule III controlled substance; nonbarbiturate, sedative hypnotic



# Indications:

- Sedative prior to advanced airway in responsive patients
- Sedation for violent behavior; excited delirium or severe agitation
- Non-narcotic analgesic, especially for those who are opioid tolerant or dependent or have known allergy to fentanyl
- After giving: minimize the stimulation (verbal/auditory/tactile/visual)



# Dosing/Routes:

- Advanced airway: 2 mg/kg slow IVP (over 1 min) or 4 mg/kg IN/IM
- Alternative for pain: 0.3 mg/kg slow IVP (over 1 min) IM/IN. May repeat after 20 min.
- Excited delirium: 2 mg/kg IVP (over 1 min) or 4 mg/kg IN/IM. May repeat  $\frac{1}{2}$  IVP dose after 10 min to max 4 mg/kg (500 mg).

# How supplied:

- 50 mg or 100 mg per ml
- Should dilute w = volume of NS



# Contraindications:

- Withhold if increased B/P hazard
- Hypertensive crisis
- Use of methamphetamine or similar drug
- Acute MI, angina, HF
- Intracranial hemorrhage or suspected increased ICP
- Acute ocular globe injury or glaucoma
- Hyperthyroidism
- Aortic dissection
- Adrenal tumor
- Severe liver disease



# Side effects/adverse reactions:

- CV: Transient increase in hR and HTN (SBP increased by 10-50%) returns to pre med levels w/in 15 min.
  - CNS: Psychosis (5-30%) with increase in ICP, dysphoria
  - MSK: Rigidity, dystonic reaction, depressed reflexes
  - Resp: Beta-adrenergic and vagolytic properties produce bronchodilation; increased secretions
  - Psych: Emergence reactions: disorientation, auditory and visual hallucinations, delirium, irrational behavior 2-24 hours
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- Ref: MWLCEMS Protocol



# Case Study

You are about to intubate your patient that weights 85 kg. The dose of Ketamine for advanced airway placement is?



# Answer

- 170 mg IVP slow over 1 min or 340 mg IN/IM

# Question?

- Another option for Ketamine is to control pain. What is the dose that can be given for pain control?



# Answer

- 0.3 mg/kg slow IVP (over 1 min) IM/IN  
May repeat after 20 min.