

## Sedation

- An 8 year old patient must have a fracture reduction on the right arm. Which of the following is going to provide an appropriate sedation and analgesia during the procedure:
  - a) Midazolam
  - b) Chloral hydrate
  - c) Ketamine
  - d) Fentanyl

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## Sedation

- From the mentioned agents, Ketamine is the only one providing both analgesia and sedation with amnesia at moderate doses.
- Midazolam provides sedation, amnesia and anxiolytic effect without analgesia.
- Chloral hydrate is only a sedative agent. Safe in younger than 3 years. Unpredictable onset and duration.
- Fentanyl is a potent opioid analgesic. Not anxiolytic, but may be combined with midazolam. May produce chest wall stiffness.

## Procedural Sedation

You are taking care of a patient that needs laceration repair. You have decided to provide sedation using Ketamine.

Which of the following is an absolute contraindication to use it:

- a) Porphyria
- b) Minor oral pharyngeal procedures
- c) Head trauma
- d) Schizophrenia
- e) Asthma

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## Ketamine

- Potent analgesia, sedation and amnesia maintaining cardiovascular stability and preserving spontaneous respirations and protective airway reflexes.
- Initially patient experiences a trance, eyes opened but unresponsive, normal or slight enhanced muscle tone, total amnesia and substantial or total analgesia, mild increase of heart rate and blood pressure; nystagmus common.

## Ketamine

- Once threshold reached; additional doses do not enhance or deepen sedation.
- IV: 1.5 – 2.0 mg/kg over 30 – 60 seconds to avoid respiratory depression

Clinical onset 1 minute

Typical duration 5 – 10 minutes

Typical time from dose to discharge 50 – 110 minutes

May repeat 0.5 - 1.0 mg/kg if initial sedation inadequate or longer procedure

## Ketamine

- IM: 4 – 5 mg/kg.

Clinical onset 5 minutes

Typical duration 20 – 30 minutes

Typical time from dose to discharge 60 –  
140 minutes

May repeat full or half dose if inadequate  
sedation after 5 – 10 min



## Ketamine

Adverse effects: Emesis 8%

Recovery agitation mild 6%

Transient apnea or resp depression 0.8%

Transient laryngospasm 0.3%

- Absolute Contraindications:
  - Younger than 3 month of age.
  - Schizophrenia.

# Ketamine

- Relative Contraindications:
  - Major oral procedures (Endoscopy)
  - Airway instability, tracheal surgery or tracheal stenosis
  - Active pulmonary disease, including Asthma or URI
  - Suspected cardiovascular disease (Increased sympathomimetic properties)
  - CNS abnormalities or hydrocephalus (Increased ICP)
  - Glaucoma or acute ocular injury
  - Porphyria, thyroid disease or medication

## References

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- Conscious sedation: Reality or myth? Koh JL, Palermo T. Pediatr Rev. 2007 Jul;28(7):243-8.