

Pediatric Procedural Sedation Grand Rounds Summary Sheet

Sedative Agents and Adverse Events:

- Pediatric procedural sedation is safe, and the incidence of serious adverse events is low¹.
- Sedation with Ketamine monotherapy carries the lowest risk of serious adverse events (0.4%) compared to Propofol alone (3.7%), or the combinations of Ketamine and Propofol (2.1%), or Ketamine and Fentanyl (3.2%)¹.
- BMI as well as current or recent upper respiratory infection should be taken into consideration in the pre-procedural risk assessment, and although both contribute to increased risk of airway adverse events, neither is a contraindication to pediatric procedural sedation in the ED^{2,3}.
- Consider Ondansetron prophylaxis with Ketamine administration to reduce the incidence of emesis (NNT=8), the most common side effect⁴.

Ketamine Dosing:

- Initial IV ketamine dose of 1mg/kg is a significant predictor for need of redosing⁵.
- Higher doses of 1.5mg/kg or 2mg/kg do not increase the risk of adverse events or prolonged sedation, and result in greater physician satisfaction⁵.
- No benefit of higher dosing (2mg/kg) over 1.5mg/kg⁵.
- Children < 6 years of age may require higher total doses of ketamine, and more frequent redosing, due to higher levels of the enzyme responsible for ketamine metabolism⁶.

Pre-treatment: Optimizing Analgesia:

- Early and aggressive treatment of pain is recommended in kids, particularly for infants and younger children whose underdeveloped nervous systems may contribute to hyperalgesia, an enhancement of the pain response⁷.
- Intranasal medications are quick onset, have higher bioavailability than oral medications, and are practical for fast analgesia before IV cannulation⁷.

Fasting Before Procedural Sedation:

- There is no association between duration of pre-procedural fasting and the risk of emesis or aspiration⁸.
- Newest guidelines from ACEP support avoiding delaying procedures based on fasting time.

References:

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