Combination of Ketamine with Propofol (Ketofol) for Pediatric Procedural Sedation: A Report from the Pediatric Sedation Research Consortium


Introduction: Little is known about the use, success, and adverse events associated with ketamine combined with propofol (ketofol) for pediatric procedural sedation outside of the emergency department and operating room. We used the Pediatric Sedation Research Consortium (PSRC) database to describe a multicenter experience with ketofol by pediatricians trained to administer sedation and analgesia in all settings.

Methods: Review of PSRC data from 2007 to 2015 to identify pediatric procedural sedation provided by using ketofol. Demographic and clinical data were prospectively collected to describe patient selection and location of performance of ketofol sedation and analgesia. Multivariable logistic regression analysis was performed to identify factors associated with pediatric procedural sedation-related adverse events and complications.

Results: A total of 8,012 pediatric procedural sedations were performed using ketofol in the database. Median age was 72 months (range: < 1 month to 22 years, interquartile range: 36, 144); 81.3% were ASA-PS I or II. The majority of sedation was performed in dedicated sedation or radiology units (76.1%). Procedures were successful in 99.7% of patients. Anticholinergics (glycopyrrolate, atropine) or benzodiazepines (midazolam, lorazepam) were used in 16.1% and 41.1%, respectively. The overall adverse event incidence was 10.80% (95% CI: 10.12% –
11.48%) and included airway obstruction (2.38%), desaturation (3.86%), laryngospasm (0.95%), vomiting (0.34%), and agitation/delirium (0.59%). The incidence of severe adverse events was 3.96% (95% CI: 3.53% - 4.38%). Two patients experienced a cardiac arrest, and there were no deaths. Risk factors associated with an increase in odds of adverse events included: ASA status ≥3, intramuscular route of ketamine administration, location of sedation, a primary diagnosis of having a gastrointestinal illness, and the co-administration of an anticholinergic.

**Discussion:** This is the largest prospectively collected data on pediatric ketofol administration outside of the emergency room.