

Anticholinergic use in pediatric procedural sedation: a report from the Pediatric Sedation Research Consortium.

Author(s): JP Boriosi, GA Hollman

Affiliation: University of Wisconsin, Madison, WI

Introduction: Anticholinergic agents are commonly used in pediatric sedation/ anesthesia to reduce the risk of laryngospasm and other adverse airway events. However, their efficacy to prevent adverse events is unproven. The objective is to describe anticholinergic use in pediatric sedation outside the operating room. Second, to compare the frequency of sedation related adverse events (AEs) and airway interventions in patients receiving anticholinergics to those not receiving. We hypothesized that anticholinergic use would be greater in higher risk patients and result in less AEs and airway interventions compared to patients not receiving anticholinergics.

Methods: Retrospective study using prospectively obtained information collected in the Pediatric Sedation Research Consortium's database of children 21 years old and younger, from November 2011 to October 2017.

Results: Anticholinergics were used in 7% (n=18707) of all sedations (n=263883). Anticholinergic use was associated with ASA status ≥3, recent/concurrent URI, history of asthma or smoking exposure; bone musculoskeletal, gastrointestinal, dental, or painful procedures; coadministration of propofol, ketamine, fentanyl, or midazolam ($p<0.01$). Anticholinergic use was associated with higher AEs rate (11.7%, 95% CI 11.3-12.2 vs 8.2%, 95% CI 8.1-8.3), serious AEs rate (3.6%, 95% CI 3.4-3.9 vs 2.0%, 95% CI 1.9-2.0) and airway interventions (93.8%, 95% CI 93.5-94.2 vs 69.5, 95% CI 69.3-69.7) $p<0.01$. In the multivariate analysis, anticholinergic use was associated with a higher likelihood of AEs (Odds ratio 1.60, 95% CI 1.51-1.69), serious AEs (Odds ratio 1.80, 95% CI 1.62-2.00) and airway interventions (Odds ratio 5.84, 95% CI 5.39-6.31).

Conclusions:

Use of anticholinergics is common in pediatric sedation particularly in higher risk patients. Anticholinergics are associated with an increase in the odds of AEs, serious AEs, and airway interventions. Further study is need to determine the relationship of anticholinergics to sedation related adverse events.