Trends and Outcomes in Pediatric Procedural Sedation from 2012-2017
A Report from the Pediatric Sedation Research Consortium

Affiliation

Introduction:
Since the first published report from the Pediatric Sedation Research Consortium (PSRC) in 2006, pediatric procedural sedation (PPS) outside the operating room has expanded in scope and volume. Our objective is to report the trends and outcomes in PPS from 2012 through 2017.

Methods:
Analysis of prospectively collected data from 45 institutions on pediatric sedation/anesthesia outside the operating room to delineate demographics, adverse events, and trends in PPS

Results:
A total of 273,794 sedation/anesthesia encounters were reported with an overall procedure success rate of 99.8%. Of the 273,794 encounters, 10% were in children ≤1 year of age, and 81% were ASA-PS ≤ II. While pediatric intensivists accounted for 57.3% of all sedation encounters followed by pediatric emergency medicine 17.5%, pediatric anesthesiologist 9.7% and the pediatric hospitalist 8.7%, there was an increasing trend in PPS provision by the pediatric anesthesiologists. Most commonly used medications used include propofol 82.6%, opioids 20.6%, and midazolam 19%. Since 2014 there has been an increase in the use of dexmedetomidine accounting for 6.8% of all encounters and a steady decline in chloral hydrate 0.4%. Serious adverse event (SAE) rate was 0.5%. There were no deaths or cardiac arrest. Risk factors for SAE included ASA-PS ≥ III, sedation for dental procedures, sedation in the cardiac catheterization laboratory, a primary diagnosis of gastrointestinal illness, liver disease, upper or lower respiratory illnesses or co-administration of anticholinergic agents. A trend in increased end-tidal monitoring was noted.

Discussion:
A dedicated and highly motivated group of sedationists can provide PPS outside of the operating room with a high success rate and a low incidence of SAE. Sedation programs should have systems in place such as patient prescreening, timely rescue interventions, and training, and credentialing of sedationists for the promotion of safe, high-quality sedation.