

The Use of Intranasal Dexmedetomidine for Pediatric Sedation: A Report from The Pediatric Sedation Research Consortium

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Background

Dexmedetomidine is a potent and highly selective alpha-2 receptor agonist. It is well established to have both sedative and analgesic effects in children. There are extensive reports in the literature of the efficacy of intravenous dexmedetomidine for procedural sedation in children, particularly for non-invasive imaging.^{1,2,3} The use of dexmedetomidine delivered intranasally (IN) has been reported in multiple settings and in a broad dose range.^{4,5,6} This report describes the use IN dexmedetomidine in a prospective collection of patients from the Pediatric Sedation Research Consortium (PSRC).

Methods

The Pediatric Sedation Research Consortium is an organization of hospitals and universities dedicated to understanding and improving the process of pediatric sedation and sedation outcomes for all children. The consortium is composed of 40 pediatric institutions across the United States that submit data prospectively on sedation encounters. We searched the 2007 version of the PSRC database for instances in which dexmedetomidine was delivered intranasally as the sedation agent. There were no exclusion criteria. In this report we describe patient demographics, dosage administered, procedures performed, practitioners involved, adjunctive medications used, as well as complications noted and interventions performed.

Results

A total of 776 sedations encounters met our inclusion criteria. 56% were male. Median age was 18 months. ASA class was designated 1 or 2 in 77% of cases. Dosages ranged from 0.3 to 8.2 mcg/kg (mean: 2.8). The most frequent study performed was CT (n=385), followed by MRI (n=259), and then BART (n=102). There were 4 instances in which sedation was suboptimal. Most sedations (89%) required no interventions. Of those interventions performed, blow by oxygen (8.5%), repositioning (4.0%), and suction (2.45%) were the most frequently performed. Five patients required oropharyngeal airway placement (0.6%) and 2 required nasopharyngeal airway placement (0.3%). Adjunctive midazolam was used in 93% of cases. Registered Nurses were the monitoring provider in 97% of cases.

Conclusions

To date this is the first large scale prospective report of sedation encounters with IN dexmedetomidine. Based on this data, it would appear that it is effective to accomplish a wide range of procedures with a low failure rate. The complication rate was low for this group of patients.

References

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