

MINIMAL SEDATION AGENTS FOR PEDIATRIC FACIAL LACERATION REPAIR

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Background: Minimal sedation agents are often utilized as adjuncts to local topical and/or injectable analgesia for pediatric laceration repairs to provide anxiolysis, analgesia, and/or amnesia while offering a less invasive alternative to moderate sedation. Despite widespread use of these agents, direct comparisons for pediatric laceration repair in the emergency department (ED) are limited.

Materials/Methods: A retrospective cross-sectional study was conducted over a 36-month period in the pediatric EDs of three free-standing children's hospitals with a cumulative annual ED volume of 150,000. Children 1 to 8 years of age were included if they presented to the ED with a facial laceration requiring sutured repair and received a minimal sedation agent: oral (PO) or intranasal (IN) midazolam, IN dexmedetomidine, or PO hydrocodone-acetaminophen. Categorical data were analyzed using the Pearson Chi-Square test or Fisher's Exact. Continuous skewed data was evaluated using Kruskal-Wallis. Post hoc analyses of paired comparisons were adjusted using the Bonferroni correction for multiple tests. Any variable with an adjusted p-value <0.20 was included in subsequent regression models. Binary logistic regression was utilized for outcomes of procedural completion and any AE, and linear regression was utilized for continuous time outcomes. The primary outcome was procedure completion rate by agent, with secondary outcomes of adverse events (AE).

Results: 1309 patients were included. Procedural success was over 90%. Receipt of hydrocodone-acetaminophen was associated with higher odds for procedure completion than the other three medications after adjustment for age, weight, ED location, topical lidocaine use, advanced acetaminophen administration, length of laceration, proceduralist type, and child life presence. (aOR = 8.04 (95% CI 2.37 – 27.26)). IN dexmedetomidine reduced the odds for a procedural completion (aOR = 0.45 (95% CI 0.24 – 0.84)). There were no significant differences between medication type and AE, which were documented in 21 patients (1.6%). IN midazolam on average reduced the time from first sedative medication administration to disposition by approximately 20 minutes.

Conclusions: Minimal sedation agents allow for successful facial laceration repair in children and rarely cause AE. IN midazolam had a high success rate and decreased ED LOS.

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