

# You Can't Handle the Tooth: Use of Opioids in Dental Cases

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## INTRODUCTION

- Children often require general endotracheal anesthesia (GETA) for dental procedures.
- We hypothesized that intraoperative opioids would decrease postoperative pain scores and medication use without increasing post-anesthesia care unit (PACU) duration.

## METHODS

- IRB approved, single-center, retrospective cohort study of children receiving GETA for dental procedures from November 2018 to March 2022.
- Exclusion was for incomplete data or subjects requiring hospital admission.
- **Primary outcome was peak PACU pain score.**

## RESULTS

- 812 ASA I & II patients were included in the study.
- There was no statistical difference in opioids administration and patient characteristics such as age, gender, weight, race, language spoken, and ethnicity were not statistically significant.
- Peak pain scores were not statistically significant whether the patient received intraoperative opioids or not.
- Peak pain scores were similar whether extractions were performed or not.

|   | No Opioids | Yes Opioids | P Value |
|---|------------|-------------|---------|
| Number                                      | 200        | 612         |         |
| Peak Pain Score (FLACC)                     | 0          | 0           | 0.83    |
| Total Morphine Equivalent (mcg/kg)          | 0          | 14 (9, 46)  | < 0.001 |
| Intraoperative Morphine Equivalent (mcg/kg) | 0          | 13 (9, 36)  | < 0.001 |
| PACU Duration (minutes)                     | 64         | 68          | < 0.05  |
| Number of Extractions                       | 2 (0, 4)   | 2 (1, 4)    | 0.13    |
| Local Anesthesia binary                     | 172 (86%)  | 560 (92%)   | < 0.05  |
| Preoperative Midazolam Given                | 176 (88%)  | 546 (89%)   | 0.63    |
| Intraoperative Ketorolac                    | 113 (57%)  | 249 (41%)   | < 0.001 |
| Intraoperative Acetaminophen                | 173 (87%)  | 492 (80%)   | 0.051   |
| Intraoperative Dexmedetomidine              | 141 (71%)  | 407 (67%)   | 0.30    |
| PACU Opioids                                | 10 (5%)    | 54 (8.8%)   | 0.081   |

Table 1. Patients who received intraoperative opioids versus not.

|   | No Extractions | Extractions | P Value |
|---|----------------|-------------|---------|
| Number                                    | 203            | 609         |         |
| Peak Pain Score (FLACC)                   | 0              | 0           | 0.67    |
| Total Morphine Equivalent mcg/kg          | 0.009          | 11 (5, 39)  | <0.001  |
| Intraoperative Morphine Equivalent mcg/kg | 0.009          | 10 (4, 25)  | < 0.05  |
| Postoperative Morphine Equivalent mcg/kg  | 0              | 0           | 0.16    |
| PACU duration (minutes)                   | 64             | 69          | < 0.001 |
| Local Anesthesia binary                   | 142 (70%)      | 590 (97%)   | < 0.001 |
| Preoperative Midazolam                    | 190 (94%)      | 532 (87%)   | < 0.05  |
| Intraoperative Ketorolac                  | 83 (41%)       | 279 (46%)   | 0.22    |
| Intraoperative Acetaminophen              | 178 (88%)      | 487 (80%)   | < 0.05  |
| Intraoperative Dexmedetomidine            | 136 (67%)      | 412 (68%)   | 0.86    |

Table 2. Patients who had extractions versus not.

### REFERENCES:

1. Chelliah, S., Fell, D. and Brooks, H. (2002), Pain and analgesia requirement after day case exodontia in children. *Pediatric Anesthesia*, 12: 834-834.
2. Scrivani SJ, Keith DA, Kulich RJ, et al. Pain Management for Dental Medicine in 2021: Opioids, Coronavirus and Beyond. *J Pain Res.* 2021;14:1371-1387.

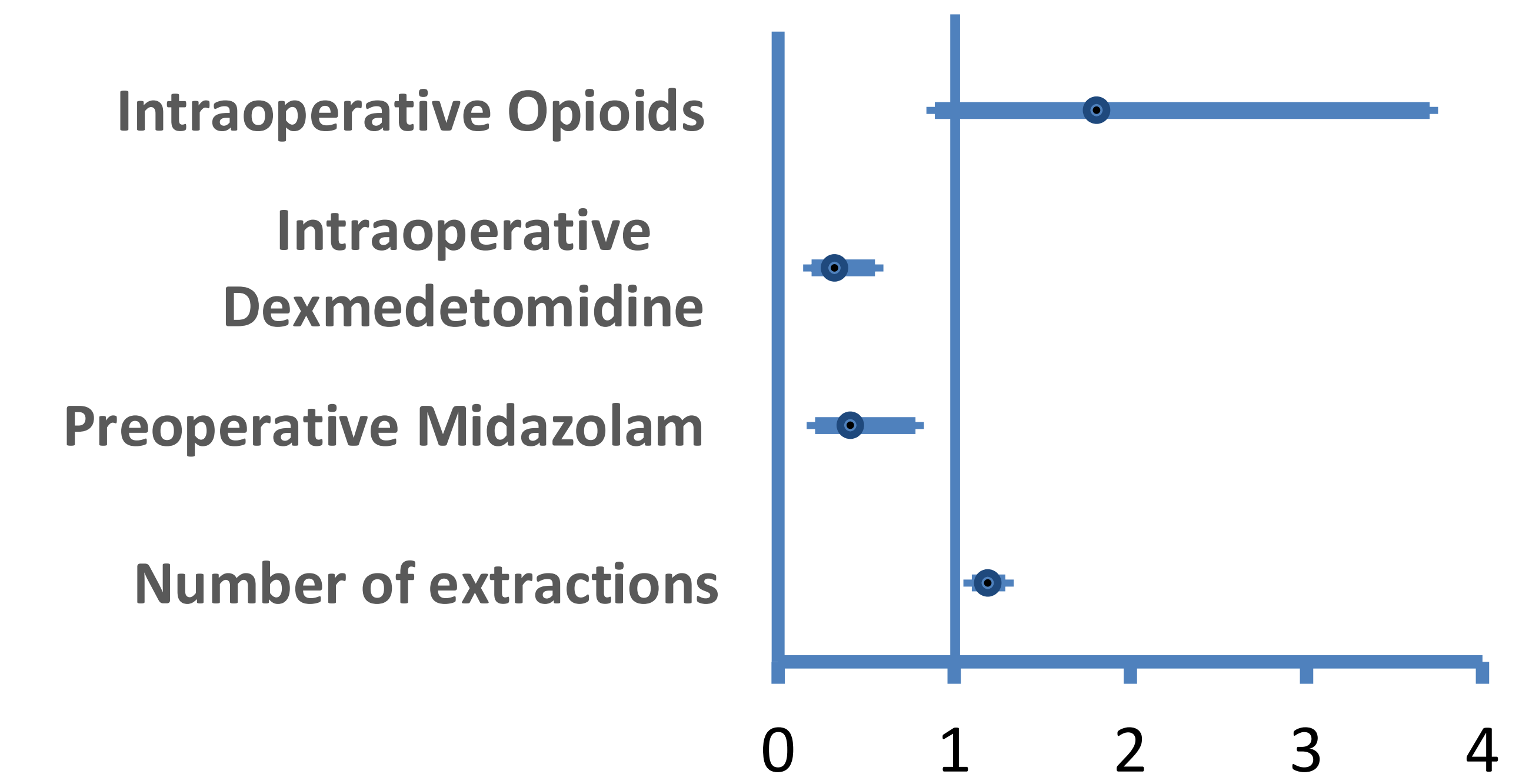


Figure 1. Plot of the multivariable regression model.

## DISCUSSION

- Most children had low pain scores and did not require postoperative opioids; therefore, opioids may not be needed for children undergoing dental restoration or extraction.
- Patients who required postoperative opioids had an increased number of extractions and did not receive preoperative midazolam or dexmedetomidine.
- Most patients received local anesthetics when extractions were performed.

## CONCLUSION

- Multimodal analgesia should be used for all patients and opioids should be reserved for patients that have a higher number of extractions.
- Future analysis is needed to determine what factors contribute to a small subset of children who do require opioids.