Efficacy of Intraoperative Acetaminophen for Pediatric Post-Tonsillectomy Pain Relief

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INTRODUCTION

The surgical procedure tonsillectomy is one of the most prevalent pediatric surgical procedures performed in an ambulatory surgery center. Postoperative pain control following tonsillectomy can be challenging in the pediatric population. Intravenous Acetaminophen has been recommended to improve postop pain relief and reduce requirements (and possibly side effects) of perioperative opioids. The purpose of this study was to assess the efficacy of IV Acetaminophen for the management of post-tonsillectomy pain among children. The ultimate goal was to improve pain relief and reduce opioids in the pediatric surgical patients.

METHODS

A randomized, prospective, nurse/parent-blinded, clinical trial compared intraoperative IV Acetaminophen (15 mg/kg) with saline for the relief of post-tonsillectomy/adenoidectomy pain. Following IRB approval, patients were randomized to receive either acetaminophen (Group A) or saline (Group B), in addition to intraoperative fentanyl (2 mcg/kg), for the management of postop pain.

METHODS CONT’D

All patients received the identical dose of intraoperative antiemetics, Zofran (0.1mg/kg) and Decadron (0.3 mg/kg). Postoperative PACU nurses, blinded to patient group, recorded pain scores (FACES scale, 0-10) on PACU arrival, and in phase II of recovery. Parents also reported pain scores for their child in both phases of recovery. Fentanyl doses were recorded for intraoperative use, and all phases of recovery. After the data was obtained, different combination of variables were extracted and statistically analyzed to compare the efficacy of IV acetaminophen.

RESULTS

Table 1: Pediatric patient population enrolled in study

Table 2: Statistical Analysis

• Mean fentanyl dosing for Group A and Group B was the same intraoperatively and in PACU phase I with no significant statistical (p<0.05) differences.
• Mean blinded nursing evaluation of pain scores on PACU arrival and in Phase II PACU were similar (P = NS)
• The blinded parents evaluation of pain score in phase I PACU was similar (P=NS) to the blinded nursing evaluation.
• Use of antiemetics postop was minimal (N=3) with no difference between treatment groups.

CONCLUSION

1) Prior to home discharge, both patient groups had good pain relief in phase II recovery.
2) Pain scores, and additional rescue fentanyl dosing, in Phase I recovery were the same in both groups, suggesting that intraoperative acetaminophen had no measurable effect on post-tonsillectomy pain relief.
3) Parent evaluation of postop pain scores (similar to nursing evaluation) can be used as an additional measure of postop pain relief among children.
4) Intraoperative use alone of antiemetics and steroids controlled most postop nausea symptoms, without the need for additional therapy.

DISCUSSION: Certain limitations to this study must be acknowledged:
- It was difficult objectifying pain given the very subjective nature of the pain scale.
- Children cannot fully comprehend the nature of the pain scale and what it is trying to achieve.
- In the study, it was also difficult to ask the parents to rate their child’s pain without certain emotional fears and concerns guiding their answers to our survey questions.
- The study was limited to the surgery center stay and therefore pain evaluation at home was not assessed.

REFERENCES


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