



Post-operative pain management medications for patients undergoing oral rehabilitation

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Aims

To compare the efficacy of three oral analgesic regimens in reducing postoperative pain and discomfort in pediatric patients undergoing oral rehabilitation under general anesthesia (ORGA).

Introduction

Early childhood caries (ECC) is one of the most common chronic childhood diseases, defined as ≥ 1 decayed, missing, or filled primary tooth surface in children under six years.¹ Management may require GA for pre-cooperative patients, those with special healthcare needs, or children requiring extensive treatment.²

Postoperative pain is common following ORGA and is influenced by treatment extent.³ Standard care includes acetaminophen and/or ibuprofen, with evidence supporting ibuprofen over acetaminophen alone and improved analgesia with combination therapy.⁴

However, no clear consensus exists on the optimal regimen. This study compares three approaches: ibuprofen alone, combined ibuprofen and acetaminophen every 6 hours, and alternating the two medications every 3 hours.

Methods

Seventy-five children aged 4–7 years (ASA I–II) requiring ORGA are being enrolled and randomized to a single postoperative analgesic regimens for 24 hours: (1) alternating acetaminophen (15 mg/kg) and ibuprofen (10 mg/kg) every 3 hours, (2) combined acetaminophen and ibuprofen every 6 hours, or (3) ibuprofen alone every 6 hours. Caregivers complete a preoperative questionnaire to ensure eligibility (Appendix A).

Immediate postoperative pain is assessed in the PACU using the FLACC scale (Appendix B). Postoperative pain and discomfort are evaluated using a modified DDQ-8 via structured telephone follow-ups on the day of surgery and postoperative days 1, 2, and 14 (Appendix C). Additional variables include intraoperative procedures, intraoperative medications, and regimen adherence.

Results

Table 1: General Demographics and Restorative Procedures

Demographics	Values
Total sample size (n)	28
Mean age (years)	5.2
Sex (% male / female)	39% / 61%
Mean # of Procedures	9.8
Mean FLACC Score	1.67
Patients with composite restorations (%)	64.3%
Patients with stainless steel crowns (%)	92.9%
Patients with pulp therapy (%)	25.0%
Patients with extractions (%)	82.1%

Table 2: Mean DDQ-8 Scores across Postoperative Days 0, 1, 2, and 14

Timepoint	Mean DDQ-8 Score
Day 0	4.6
Day 1	3.7
Day 2	0.7
Day 14	0.0

Figure 1. Mean DDQ-8 Scores on Day 0 and Day 1

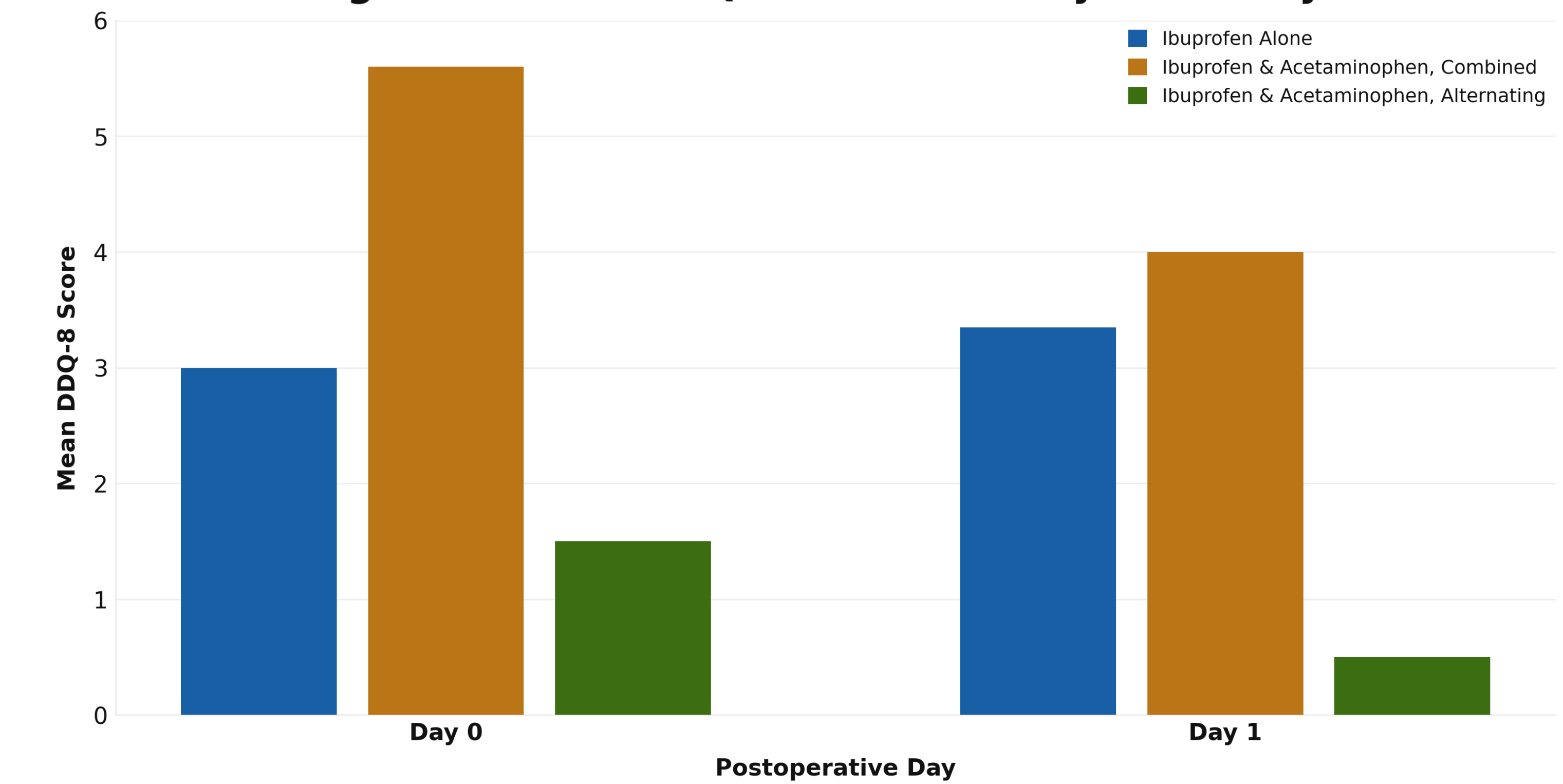
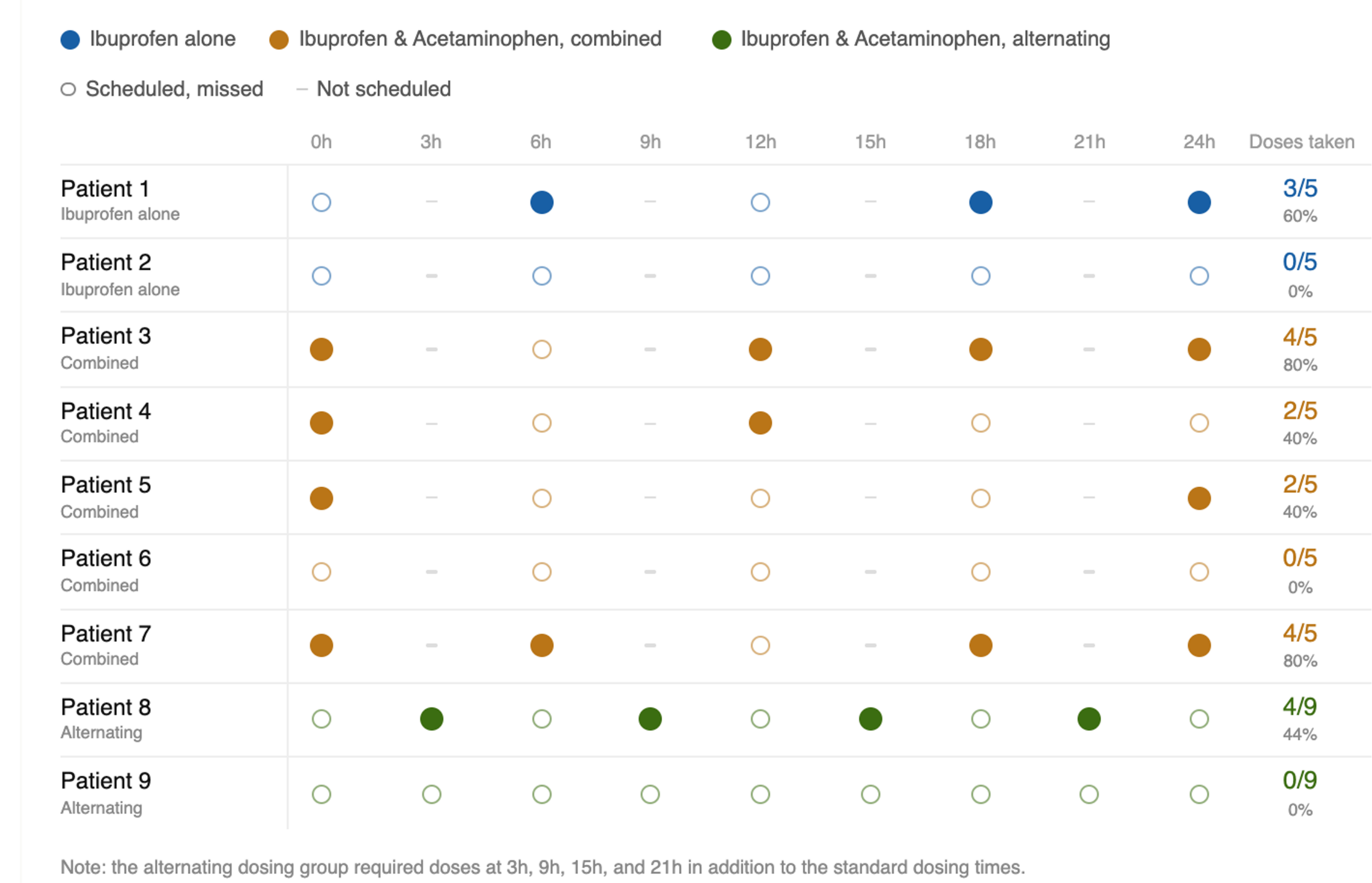


Figure 2. Dosing regimen adherence by patient



Conclusions

- Postoperative pain peaked on the day of surgery and postoperative day 1, with a rapid decline by day 2 and resolution by day 14. This indicates the first 24-48 hours as the key period for pain management after ORGA.
- No clear differences in pain outcomes were observed between analgesic regimens, though results are limited by small, uneven sample sizes. Aside from “ibuprofen alone”, remaining groups demonstrated a decrease in DDQ-8 scores after 1 day.
- A substantial proportion of doses were not administered, most commonly because they were “not needed”, suggesting that routinely scheduled regimens may exceed actual analgesic requirements.
- These results should be interpreted with caution. Limitations include small sample size, unequal group distribution, and incomplete follow up. Future work will focus on increasing enrollment to allow for statistical comparison and evaluating impact of intraoperative procedures on postoperative pain.

References & Appendix

