

The Benefits of Preemptive Acetaminophen for Post-anesthesia Pain in Pediatric Ophthalmology Surgery: A Quality Improvement Project

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Introduction: Pediatric pain following ophthalmology surgery often causes distress for children emerging from anesthesia in the post-anesthesia care unit (PACU). Likewise, managing this surgical pain is a significant factor in timely recovery. Selection of acetaminophen is commonly prescribed as pre-emptive analgesia before otolaryngological surgeries in children because it is both safe and effective.

Identification of the Problem: Ophthalmology surgery centers do not routinely administer preoperative analgesics to pediatric patients. PACU nursing staff reported pediatric patients were very distressed and crying inconsolable during emergence from anesthesia and recovery.

QI Question/Purpose of the Study: What were PACU nurses' observations on the benefits of administering acetaminophen preoperatively on a child's pain during anesthesia emergence and recovery length of stay (RLOS)?

Methods: Quality Improvement Project used the Plan Do Study Act model. There were 42 pre-intervention/46 post-intervention children aged seven months to 13 years. Anesthesia providers ordered acetaminophen preoperatively after weight was documented in the Post-Group. The team collected pre-intervention (baseline) and post-intervention RLOS data and nursing observational pain data for three-month periods, respectively. PACU nursing assessments were completed using the FLACC observational Likert pain assessment survey.

Outcomes/Results: Pre-emptive acetaminophen effectively reduced PACU RLOS in the post-intervention group, where no IV opioids were administered. Nursing observational pain scores on the FLACC Likert survey demonstrated significant difference post-group with a decrease in pain, increase in comfort, and reduction in RLOS.

Discussion: Administering acetaminophen preoperatively eliminated the need for opioids in PACU. One limitation related to the type of acetaminophen to be administered, such as oral or rectal. This difference may potentially impact the outcomes due to bioavailability or bioequivalence. Furthermore, the timing of acetaminophen administration was labeled as "pre-incision" rather than a specific period, which may have influenced the onset of its maximum effect. Finally, the PACU nursing staff's pain observation assessment may be subjective.

Conclusion: Perianesthesia nurses reported that the preoperative administration of acetaminophen demonstrated that children's PACU pain decreased, they were less likely to experience distress, and they decreased PACU RLOS.

Implications for perianesthesia nurses and future research: Future research should explore the comparison between the effects of acetaminophen and ibuprofen for pre-emptive analgesia in children having strabismus surgery.