

Does paracetamol in adjunct to NSAIDs reduce analgesia demand in children undergoing surgery

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INTRODUCTION

Opioid medications are very often an important component of pediatric postoperative pain treatment but have been associated with variety of perioperative complications. Extensive efforts have been made toward reducing postoperative opioid use in children. Multimodal postoperative analgesia is widely used but lacks evidence of benefit.

METHODS

The type of this study is a systematic review of the literature that was conducted based on PRISMA guidelines. Search and analysis of scientific publications were performed using the PubMed. Double-blind randomized clinical trials, published 2002 - 2022 years were included in the analysis. Study participants – patients aged 1-18 years, study groups: 1) patients receiving NSAIDs and placebo or NSAID alone, 2) patients receiving NSAIDs + paracetamol (no dose restriction), types of operations – general/orthopedic surgery, oral, maxillofacial surgery.

CONCLUSIONS

The majority of included double-blind randomized clinical trials do not report the evidence for the significant benefits in reduced need for opioid based rescue analgesia in the immediate postoperative period, when rectal or intravenous paracetamol was given in adjunct to NSAIDs after general/orthopedic, oral or maxillofacial surgery in 1-18 year old children. Due to the small number of articles included, these results should be treated with caution.

AIM

To perform a systematic review and find out if a single dose of paracetamol (enteral or intravenous) given in addition to NSAIDs results in a reduced need for opioid based rescue analgesia compared to NSAID alone in children within 1–4 h after general/orthopedic, oral and maxillofacial surgery.

RESULTS

We identified 121 records. After exclusion of not suitable articles, a total of 8 articles, 606 patients of whom 301 received NSAIDs + paracetamol, were included in this systematic review of the literature. Assessing the need of rescue analgesia, that was opioid based (morphine/hydromorphone/tramadol/meperidine) within 1-4 hours after surgery in children treated with NSAIDs: ibuprofen, diclofenac, ketorolac, or ketoprofen with additional doses of paracetamol rectally (4 studies 40-60 mg/kg) or intravenously (4 studies 10 mg/kg-48 mg/kg/d, max 2,4 g). The reduced need of rescue analgesia was observed in 3 out of 8 articles. The longer time to the first dose of opioid was also reported in 2 studies where the time to the first dose was evaluated.