

Perioperative Technology “Fast-Track Anesthesia End Analgezia” in Children of Abdominal Profile

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ABSTRACT

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Introduction

To date, the ultra-fashionable “Fast-Track” tactics have also reached us as pediatric anesthesiologists and resuscitators. It's time to change old stereotypes, schemes, methods and approaches. The new concept of “Fast-Track” in surgery was proposed by H Kehlet (1993). Fast-Track surgery (early accelerated rehabilitation after surgery) is the search and implementation of effective methods of treating surgical patients with minimal risk. The selection of anesthesia methods, minimally invasive methods of surgical treatment, optimal pain control and active postoperative recovery in Fast-Track surgery reduces stress reactions and organ dysfunction, significantly reducing the time required for a patient to fully recover.

Purpose of the Study

Implementation of the concept of “Fast-Track” in the perioperative stage of treatment of children with abdominal pathology.

Material and Research Methods

A prospective-retrospective study with informed consent of the parents (legal representatives of the child) for the period 2014-2019). The experience of using the Fast-Track technique began with abdominal patients. The main group (N = 42) - combined epidural anesthesia. Comparison group (N = 50) retrospective analysis of case histories - standard therapy of the perioperative period without the use of Fast-Track (endotracheal anesthesia, TBA). The

average age is 11 ± 2.1 years (from 1 to 15 years). Boys - 73, girls - 17. The average duration of the operation is 85 ± 9.7 minutes. The study groups are homogeneous according to the main criteria (age, sex, duration of the disease, comorbidity.) The Fast-Track anesthetic protocol was introduced at the stages of the perioperative period.

Preoperative Period

- Patient choice (individual: age, physical status ASA I – III without severe concomitant pathology, body mass index)
- Teaching the patient (his parents or legal representatives) by nursing staff included in the Fast-Track program: early mobilization, hospital stay (up to 2 days), the volume and nature of surgical and anesthetic manipulations, possible postoperative complications, their prevention and therapy
- Refusal of a cleansing enema.
- Last meal (clear liquids) at least 2-4 hours before surgery.

Intraoperative Period

- Intraoperative infusion. On average 5 ml / kg / h. Balanced isoosmolar crystalloid solutions (lactate Ringer's solution).
- Operative technique: invasive surgery.

Epidural Anesthesia

- Bupivacaine 0.5% 0.3-0.4 mg / kg
- Bupivacaine 0.5% + Fentanyl 0.2-1 μ g / kg

Postoperative Period

1. 1 day after surgery - Paracetamol 15 mg / kg 2 times a day / in (at the request of the patient).
2. Switching to oral analgesics from day 2 (if necessary).
3. Multimodal analgesic therapy (on demand):
 - a) Paracetamol 250-500 mg orally 4 times / day
 - b) Ketorolac tromethamine 1 mg / kg
4. Ondansetron 2 mg IV every 8 hours for 24 hours in the presence of nausea
5. Balanced crystalloids 60 ml / hour on the first day. Individual correction of IT, depending on possible losses in the immediate postoperative period.

Results and Discussion

Analysis of both groups revealed the following: colloidal preparations were used more often in the comparison group with a comparable volume of infusion. It was revealed that in the main group, in comparison with the comparison group, patients recovered spontaneous breathing faster, tracheal extubation was performed at 21 ± 10 minutes versus 34 ± 11 minutes after the end of the operation, respectively, $p < 0.05$. The patients of

the main group developed 3 times less postoperative pulmonary complications (3 versus 9, $p < 0.05$), and there were more patients who felt pain below 4 points on the digital rating scale ($p < 0.05$) and did not need additional anesthesia with narcotic analgesics. In group 1 - in 83% of children, awakening with persisting analgesia was noted, the painless period lasted on average up to 6 hours, which had a beneficial effect on the psych emotional state of the operated children.

Findings

- A. Combined epidural anesthesia is an effective method of pain relief for urological interventions with long-term postoperative analgesia.
- B. Improving the quality of analgesia made it possible to carry out early activation, shorten the period of postoperative recovery, reduce the negative psych emotional reactions of children, which corresponded to modern Fast-Track technology.
- C. The implementation of the Fast-Track program was accompanied by a reduction in the hospitalization period for urological patients to an average of 2 days.

Conflict of Interests

None.

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