COMBINED ENDOTRACHEAL-REGIONAL ANESTHESIA WITH BUPIVACAIN IN NEWBORN WITH ANORECTAL ANOMALIES

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Relevance. Working with children and especially with newborns with various life-threatening developmental anomalies is difficult and takes a lot of effort. But despite this, the doctor must fulfill his duty to the patient. A feature of the work of a pediatric anesthesiologist is from preoperative preparation and anesthesia to numerous duties in the postoperative period. In order to provide adequate anesthesia and postoperative pain relief, he must choose the safest and most alternative method of analgesia, using all his knowledge and skills. Despite numerous literature data, the choice of an adequate method of anesthesia and postoperative anesthesia of newborns remains one of the priority areas of pediatric anesthesiology.

Purpose of the study. The aim of the study was a comparative assessment of the safety of the use of combined spinal anesthesia in newborns with anorectal developmental anomalies.

Materials and methods. We examined 44 children with various forms of anus atresia admitted to the department of neonatal surgery in 2020-2022. Newborns were transferred from regional maternity hospitals by standard transport in the first 8-10 hours after birth. One-stage proctological plastics were performed in 26 (59%) patients, in 18 patients a two-stage method was performed for the imposition of a sigma stoma. The patients were divided into 2 groups. Group 1 children underwent combined endotracheal -regional anesthesia with fentanyl at a dose of 2.0 μg/kg and regional spinal block with bupivacaine at a dose of 2.5 mg/kg. Group 2 of children underwent endotracheal anesthesia with traditional drugs (fentanyl at a dose of 5-10mcg/kg) in combination with sevoflurane . Investigated patients in 5 stages; 1st stage before surgery, 2nd stage during induction, 3rd stage during the maintenance of anesthesia, 4th stage in the first 4 hours after the operation, 5th stage in the first 16 hours after the operation. Hemodynamic parameters were determined (A/D sys . A/D dias . A/D cf., EchoCG), oxygen status (Sat 02, acid-base balance, capnography), serum cortisol levels were determined. We used the DAN scale (Douleur Aiguedu Nouveau) to assess postoperative pain relief. All newborns were full-term, homogeneous according to diagnostic and anthropometric data.

Results and discussion. In the course of the study, it was revealed that during anesthesia in children of the 2nd group, there was a decrease in mean A / D by 31.3 ± 8.4%, cardiac output by 19.8 ± 3.2%, which indicates a cardio depressive effect of high doses of fentanyl . When using the combined endotracheal -regional method of anesthesia, such side effects were not observed. In the postoperative period, children of the 2nd group underwent narcotic analgesia with fentanyl at a dose of 2.0 μg/kg/h, which required prolonged mechanical ventilation at all stages of the study. The duration of postoperative mechanical ventilation in children of the 1st group was 84.2±12.5 minutes, which indicates an early recovery of consciousness and spontaneous breathing. Cortisol levels in both groups were almost the same, which was 253±114 μmol/l in group 1 and 268±132 μmol/l in group 2. DAN scores showed effective analgesia in both groups over the course of the study. In children of the 1st group, according to the DAN pain scale, physiological and laboratory data, an increase in the pain threshold began after 5.32±0.44 hours.

Conclusions. Based on the above data, we can conclude that a comprehensive study of the status of pain showed that the use of the endotracheal -spinal method creates effective and safe anesthesia, shortens the recovery time for spontaneous breathing and consciousness. This method reduces the risk of unnecessary consumption of anesthetics, reduces the incidence of side effects and provides pain relief for almost 6 hours after surgery.

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