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Comparison of Balanced Anesthesia Protocols in Gastric Sleeve Surgery in Terms of Postoperative Opioid Consumption

Postoperative Opioid Consumption in Gastric Sleeve Surgery

POCiGSS

Obesity, General anesthesia, Ketamine

Ethics Committee Decision no: 2025/215

In the study, a total of 205 sleeve gastrectomy surgery files performed between June 2024 and March 2025 were scanned through the hospital data management system.

Data obtained from age, gender, body mass index (BMI), additional diseases, anesthesia follow-up forms, and postoperative follow-up forms were collected.

Inclusion criteria were ASA II-III scores, use of fentanyl and/or ketamine within the standard anesthesia protocol, and administration of opioids using patient-controlled analgesia. Exclusion criteria were incomplete data collection, deviation from the standard anesthesia protocol, and those who did not receive patient controlled analgesia management in postoperative pain management. The control group consisted of patients who underwent surgery using standard balanced anesthesia and fentanyl. The ketamine group consisted of patients who received ketamine infusion during surgery.

Our clinic's standard anesthesia protocol for all sleeve gastrectomy surgeries is as follows: intravenous lidocaine (1.5 mg/kg ideal body weight), propofol (2.5 mg/kg lean body weight), fentanyl (1.0 µg/kg total body weight), and rocuronium (1 mg/kg ideal body weight) for rapid sequence endotracheal intubation. In cases where ketamine is administered after induction at the anesthesiologist's discretion, ketamine infusion (10 mg/mL diluted in a 50 cc syringe, 500 mg vial) is administered at a rate of 0.2 mg/kg/hour based on lean body weight until 10 minutes before the end of the surgery. Opioid medications are administered as needed.

Neuromuscular blockade monitoring is performed, maintaining the point-of-four (TOF) ratio between 0 and 1. General anesthesia is maintained with sevoflurane in a low-flow oxygen and air mixture, guided by a bispectral index score between 40 and 60. Mechanical ventilation is administered to maintain normocapnia (end-tidal CO2: 35–40 mmHg). All patients receive 8 mg of IV dexamethasone according to surgical clinic protocol. Sugammadex (2 mg/kg) is administered for reversal of muscle relaxation. All patients are monitored postoperatively in the postanesthesia care unit and ward. Sedation is assessed using the Observer's Assessment of Alertness/Sedation Scale (OASS). Patients are instructed preoperatively on the use and values of the Numerical Rating Scale (NRS). Opioids are administered IV using a patientcontrolled analgesia device. Postoperative pain is assessed intermittently using the NRS. All patients receive 1 g of IV paracetamol every 8 hours and 50 mg of IV dexketoprofen every 12 hours for 24 hours from the start of surgery. The primary outcome measured in the study was 24-hour opioid consumption via a patientcontrolled analgesia device, while secondary outcomes were systolic blood pressure (SBP), diastolic blood pressure (DBP), mean blood pressure (MBP), heart rate (HR), peripheral oxygen saturation (SpO2) values measured during surgery and in the recovery room, as well as OASS and NRS values.

Statistical analyses were performed using the NCSS (Number Cruncher Statistical System) 2007 Statistical Software (Utah, USA) package program. In the sample size analysis, a power value of 0.8 was used, and the minimum sample size for each group was found to be 47 patients. In the analysis of data, descriptive statistical methods (mean, standard deviation, median, interquartile range) were used, as well as the Shapiro–Wilk normality test to examine the distribution of variables. The independent t-test was used for pairwise comparisons of normally distributed variables, the Mann-Whitney U test for pairwise comparisons of nonnormally distributed variables, and the chi-square test for comparisons of qualitative data.

Significance was assessed at $p<0.05$.