კვლევა

AGITATION–SEDATION ASSESSMENT DURING MULTIMODAL AND OPIOID ANESTHESIA IN BARIATRIC SURGERY AND ABDOMINOPLASTY

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Resiume Management of pain, agitation, and sedation are key factors in the intensive care unit. The purpose of the study is to evaluate the postoperative state of the patient according to the Richmond scale, during the use of opioids and during multimodal anesthesia. As our study showed, in the 1st phase of intensive care after surgery, according to the Richmond scale, the average value of agitation-sedation in the first group was -0.06±0.29, in the second -0.78±1.42 points, (p<0.0001); With multimodal anesthesia, compared with opioid anesthesia, the probability of a Richmond agitation score of 0 (alert and calm) is significantly increased: RR=5.96 (95% CI: 3.00-11.86).

Conclusion: the use of multimodal anesthesia during the operation, compared to anesthesia with opioids, improves the characteristics of consciousness in the postoperative period.

Key points: multimodal anesthesia, assessment of consciousness, Richmond scale

Optimal pain relief requires a balance between adequate analgesia and the risk of side effects [1].

In recent decades, opioids have been the second most commonly used drug; Opioids are highly effective in controlling the ANS response to nociception and have traditionally played an important role in postoperative pain control.

The opioid abuse epidemic has given some impetus to the shift from opioids to other adjuncts for general anesthesia. There is evidence that perioperative opioid use may contribute to postoperative opioid abuse, a multimodal approach would certainly reduce the dose-dependent side effects of opioids in the perioperative period and may have some effect on postoperative opioid abuse [2].

Non-opioid anesthesia (OPA) is the withdrawal of opioids for pre-, intra- and post-operative pain management to reduce opioid-related complications without compromising patient comfort. Another important advantage of this type of anesthesia is the prevention of opioid-induced hyperalgesia, which leads to increased pain and therefore requires the use of higher doses of opioids for adequate analgesia [3].

The use of multimodal general anesthesia expands the well-established concept of “balanced anesthesia” to include more drugs acting on different neuroanatomical circuits and multiple neurophysiological mechanisms. The pharmacological basis of the concept is based on the well-established observation that when anesthetic agents with different modes of action are used simultaneously, they provide a synergistic effect [4]. In theory, such synergy has certain advantages, including faster recovery. A small decrease in the concentration of the drug leads to a greater decrease in its effect [5].

Overweight patients have a particularly high risk of delayed awakening after surgery under general anesthesia [6].

Abdominoplasty is one of the most common surgeries performed by plastic surgeons worldwide, with the number of cases increasing significantly due to the large number of overweight patients undergoing bariatric surgery, so it is important to understand its complications and pain management options for this type [7].

The aim of our study is to evaluate the indicators of awakening during multimodal anesthesia.

MATERIAL AND METHODS

127 patients aged 20-70, including 93 women, who underwent bariatric surgery and abdominoplasty. Were under our observation; 113 (55.67%) of them are women and 90 (44.33%) are men.

Standard anesthesia with opioids was administered to 49 patients (including 40 women and 9 man) – group I, multimodal anesthesia without opioids – 78 (including 53 women and 25 man) – group II.

Anesthesia was performed according to the following scheme:

1 group

- Propofol – potentiator of GABA A receptors, Fentanyl – opioid (narcotic analgesic), Sevoflurane – inhalation drug;
- Morphine – opioid (narcotic analgesic), Promedol – opioid (narcotic analgesic)

2 group

- Propofol – potentiator of GABA A receptors, Sevoflurane – inhalation drug, Dexmedotomidine is a selective

agonist of alpha 2 receptors, Locoregional analgesia (lidocaine, naropin, bupi-vacaine - sodium channel blockers).

Various medications and techniques were used in each group.

The patient's postoperative condition was compared according to the Richmond agitation-sedation scale (table 1) [8].

STATISTICAL ANALYSIS

Categorical variables as expressed frequencies and %Correlation analysis between categorical variables was performed by Spearman correlation analysis. P<0.05 was considered statistically significant.

The researchers used relative risk (RR) to compare different indicators between the groups, calculating how many times the risk factor exists in the presence of the result compared to when the risk factor is absent. They also used a 95% confidence interval (95% CI) to assess the projection of RR values on the general population. Statistical analysis was performed using non-parametric methods with IBM SPSS Statistics v.23.

TABLE 1. RICHMOND AGITATION–SEDATION SCALE

Score	Term	Description
+4	Combative	Overtly combative or violent; immediate danger to staff
+3	Very agitation	Pulls on or removes tube(s) or catheter(s) or has aggressive behavior toward staff
+2	Agitated	Frequent nonpurposeful movement or patient–ventilator dyssynchrony
+1	Restless	Anxious or apprehensive but movements not aggressive or vigorous
0	Alert and calm	
–1	Drowsy	Not fully alert, but has sustained (more than 10 seconds) awakening, with eye contact, to voice
–2	Light sedation	Briefly (less than 10 seconds) awakens with eye contact to voice
–3	Moderate sedation	Any movement (but no eye contact) to voice
–4	Deep sedation	No response to voice, but any movement to physical stimulation
–5	Unarousable	No response to voice or physical stimulation

RESULTS

The mean value of the Richmond scale scores in group 1 was -0.06±0.29 points, in the second -0.78±1.42 points, (p<0.0001).

Distribution of patients according to agitation-sedation scores is given in Table 2.

As can be seen from the table, during multimodal anesthesia, compared to anesthesia with opioids, the value of Richmond agitation scale 0 and close to it is significantly higher.

DISCUSSION

In multimodal analgesia, the use of non-opioid analgesics is a key component of accelerated recovery after surgery[9].

Our study showed a significantly higher incidence of awake and calm patients after multimodal anesthesia than after opioid anesthesia, with no scores of -4 and +4 on the Richmond scale observed in either group.

TABLE 2. DISTRIBUTION OF PATIENTS ACCORDING TO AGITATION-SEDATION SCORES

Score	I Group, N=49 n(%)	II Group, N=78 n(%)	Total, N=127 n(%)
-3	4(8.2%)	0(0.0%)	4(3.1%)
-2	15(30.6%)	0(0.0%)	15(11.8%)
-1	10(20.4%)	6(7.7%)	16(12.6%)
0	9(18.4%)	71(91.0%)	80(63.0%)
1	9(18.4%)	1(1.3%)	10(7.9%)
2	1(2.0%)	0(0.0%)	1(0.8%)
3	1(2.0%)	0(0.0%)	1(0.8%)
X=273.67, df=6, P<0.0001			

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აჟიტაცია-სედაციის შეფასება მულტიმოდალური და ოპიოიდებით ანესთეზიის დროს

ქეთევან არაბიძე

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რეზიუმე

ტკივილის, აჟიტაციის და სედაციის მართვა მთავარი ფაქტორებია ინტენსიური თერაპიის განყოფილებაში.
კვლევის მიზანი: რიჩმონდის შკალის მიხედვით, პაციენტის ოპერაციის შემდგომი მდგომარეობის შეფასება, ოპიოიდების გამოყენებისას და მულტიმოდალური ანესთეზიის დროს.
შედეგები: როგორც ჩვენმა კვლევამ აჩვენა, ოპერაციის შემდგომ, ინტენსიური მოვლის 1 ფაზაში, რიჩმონდის შკალის მიხედვით, აჟიტაცია-სედაციის საშუალო მნიშვნელობა პირველ ჯგუფში იყო -0.06±0.29, მეორეში -0.78±1.42 ქულა, (p<0.0001); მულტიმოდალური ანესთეზიის დროს, ოპიოიდებით ანესთეზიასთან შედარებით რიჩმონდის აჟიტაციის შკალის მიხედვით ქულა 0-ის (ფხიზელი და მშვიდი) ალბათობა სარწმუნოდ იზრდება: RR=5,96(95% CI: 3,00-11,86).
დასკვნა: ოპერაციის დროს მულტიმოდალური ანესთეზიის გამოყენება, ოპიოიდებით ანესთეზიასთან შედარებით, აუმჯობესებს პოსტოპერაციული პერიოდის ცნობიერების მახასიათებლებს.

საკვანძო სიტყვები: მულტიმოდალური ანესთეზია, ცნობიერების შეფასება, რიჩმონდის შკალა