

COMPARISON OF THE EFFECTIVENESS OF TAP-BLOCK AND LOCAL INFILTRATION ANESTHESIA IN THE POSTOPERATIVE PERIOD IN PATIENTS WITH ABDOMINAL PATHOLOGY IN PLANNED SURGERY

Nishonov Murodjon Rasuljonovich,
Jalilov Ulugbek Amanbekovich,
Ramazanova Zarina Faritovna
Tashkent Medical Academy

ABSTRACT

A fundamental component of the active surgical treatment strategy for patients, known in the scientific literature as the Fast Track Surgery concept, is effective pain management in the early postoperative period following any surgical operation. The basis of the modern approach to achieving adequate analgesia is the principle of multimodality, which ensures an impact on all components of the nociceptive impulse. This is achieved through the use of a combination of various regional anesthesia methods and/or the administration of narcotic analgesics, COX (cyclooxygenase) inhibitors - NSAIDs (non-steroidal anti-inflammatory drugs), and paracetamol [1].

Transabdominal plane blockade is a method of regional anesthesia used to alleviate postoperative pain in procedures on the abdominal wall, providing somatic analgesia for the anterior and lateral walls of the abdominal cavity.

Keywords: TAP-block, local infiltration anesthesia, Fast Track Surgery, VAS scale, postoperative pain, multimodal analgesia, NSAIDs, narcotic analgesics.

INTRODUCTION

Postoperative pain management is of great importance in perioperative anesthetic care. Transversus abdominis muscle block has been described as an effective method for reducing postoperative pain and morphine consumption after open lower abdominal surgery. Meanwhile, local anesthetic infiltration (LAI) is also widely used as a traditional method. This article will compare between these two pain management methods.

A meta-analysis of all relevant randomized controlled trials (RCTs) was conducted to compare the effectiveness of single TAP block and single LAI for postoperative analgesia in adults. Major medical databases and trial registries were searched for published and unpublished RCTs. Endpoints include postoperative visual analogue scale (VAS) pain scores, morphine requirements, and incidence of postoperative nausea and vomiting (PONV). For continuous data, weighted average differences (WMD) were formulated; Risk ratios (RRs) were calculated for dichotomous data. Results were obtained using a random/fixed effects model with 95% confidence intervals (CI).

Purpose of the study:

To improve the quality of anesthesia during planned operations by introducing multimodal analgesia and compare the effectiveness of using a TAP block and local infiltration anesthesia in the postoperative period.

Clinical materials and research methods:

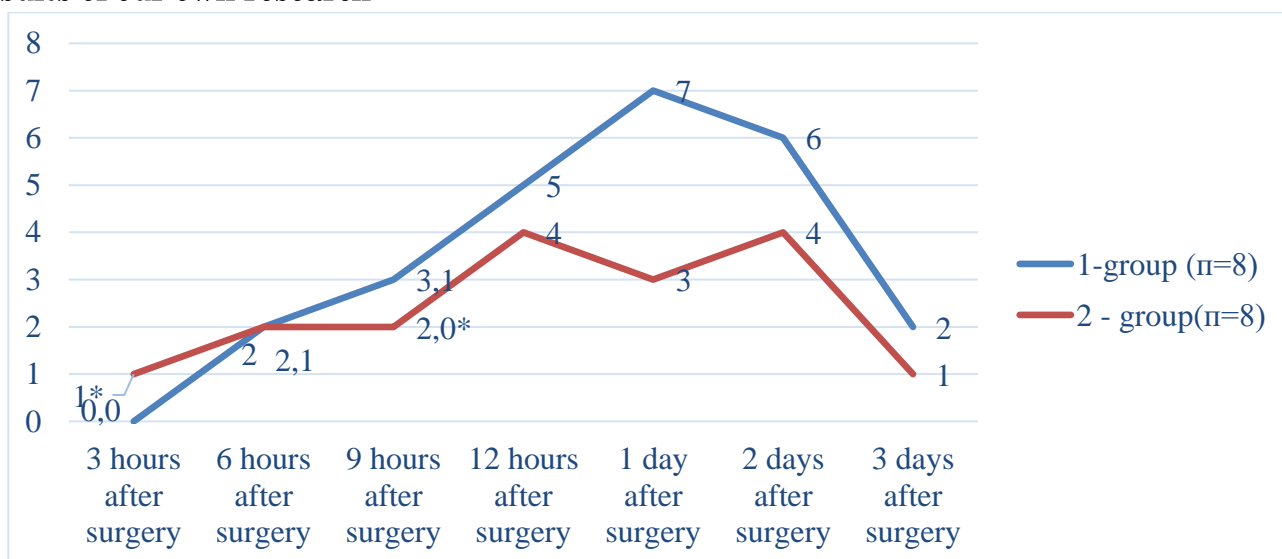
In the surgical intensive care unit No. 1 of the TMA multidisciplinary clinic, we examined 16 patients in the postoperative period (6 men and 10 women), whose average age was 38.4 ± 3.2 years. These patients, diagnosed with postoperative ventral hernia, underwent surgery - alloplasty and abdominoplasty. We divided all the patients into 2 groups: the first group, which included 8 patients who underwent local infiltration anesthesia for the purpose of analgesia in the postoperative period, and the second group, which included the remaining 8 patients who underwent TAP-block in the postoperative period.

We randomized both groups according to gender and age, the nature of the standard examination and surgical treatment.

All patients underwent clinical and biochemical studies, radiography, computed tomography (CT), and during therapy, blood pressure (BP), mean arterial pressure MAP, central venous pressure (CVP), thermometry and venous (jugular) blood saturation were monitored.

The length of stay of patients in Department of anesthesiology and critical care № -1 and in the clinic as a whole was studied.

Results of our own research:



Picture № 1. Assessment of pain in the postoperative period using the VAS scale

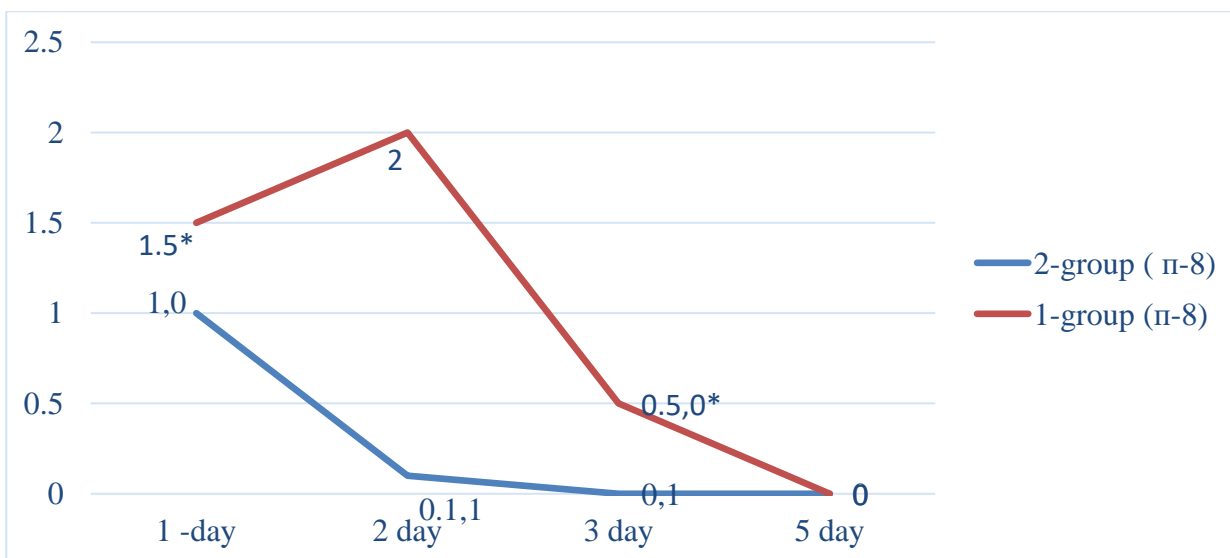
The data presented clearly indicate that the early postoperative period in patients of group 2 on the VAS scale is rated as more painless, so in the first 6 hours after surgery the patient practically does not feel pain, and by the end of the first day, patients in group 2 rated the pain as 3.2 ± 0.3 ($p < 0.05$), which is 4.0 ± 0.5 lower than those values for patients in group 1.

A random effects model was used and there was no significant difference in mean VAS pain score at 2 hours postoperatively between patients who received LAI and those who received TAP block.

A random effects model was used, and at 24 hours postoperatively, there was a significant reduction in mean VAS pain scores in patients who received the TAP block compared with those who had LAI.

A fixed-effects model was used, and at 24 hours postoperatively, there was a significant reduction in mean VAS pain scores in patients who received TAP block compared with those who had LAI.

But by the end of the third day, patients in both groups rated their pain as mild.

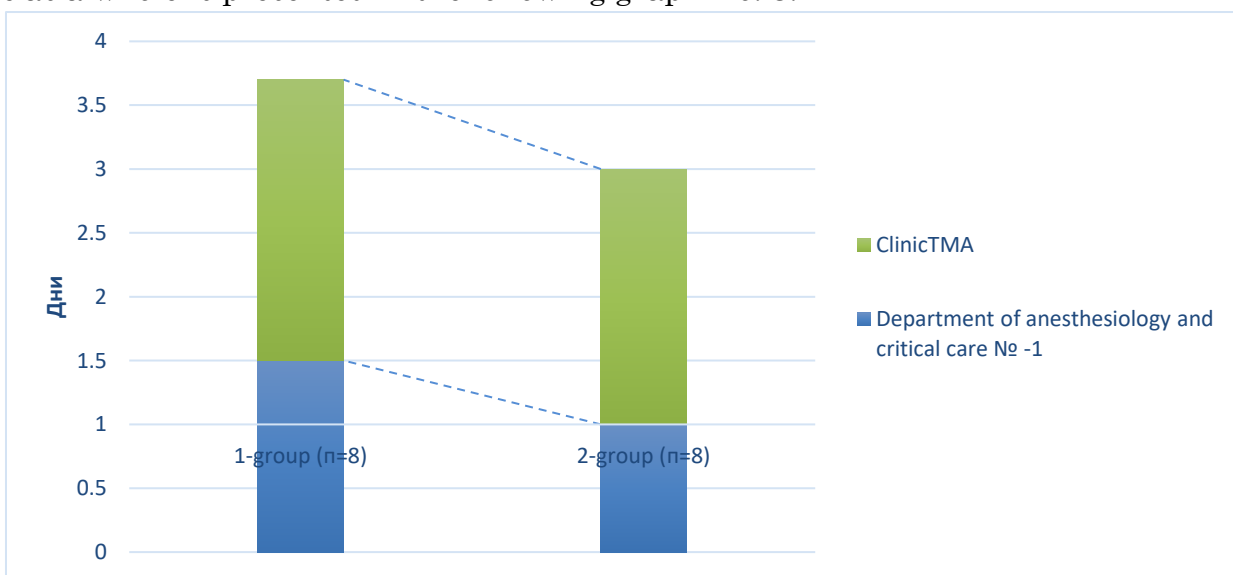


Picture № 2. Number of analgesics used

Reliability: p*- <0.05; p**- <0.05;

The presented graph demonstrates a relatively lower need for narcotic analgesics in patients of group 2 compared to group 1.

The time spent by patients in Department of anesthesiology and critical care № -1 and in the clinic as a whole is presented in the following graph No. 3.



Picture № 3. Time spent by patients in Department of anesthesiology and critical care № -1 and in the clinic.

Reliability: p*- <0.05;

The presented data clearly indicate an earlier period of activation of patients in the postoperative period and discharge of patients from the hospital.

CONCLUSIONS

TAP block and LAI provide comparable short-term postoperative analgesia, but TAP block has a longer lasting effect. But it should be noted that the choice of pain relief technique is individual for each patient and depends on the clinical situation.

REFERENCES

1. Mai CL, Young MJ, Quraishi SA. Clinical implications of the transversus abdominis plane block in pediatric anesthesia. *Paediatr Anaesth.* 2012;22(9):831–40.
2. Bryskin RB, Londergan B, Wheatley R, Heng R, Lewis M, Barraza M, et al. Transversus abdominis plane block versus caudal epidural for lower abdominal surgery in children: a double-blinded randomized controlled trial. *Anesth Analg.* 2015;121(2):471–8.
3. Tran TM, Ivanusic JJ, Hebbard P, Barrington MJ. Determination of spread of injectate after ultrasound-guided transversus abdominis plane block: a cadaveric study. *Br J Anaesth.* 2009;102(1):123–7.
4. Tsai HC, Yoshida T, Chuang TY, Yang SF, Chang CC, Yao HY, et al. Transversus abdominis plane block: an updated review of anatomy and techniques. *Biomed Res Int.* 2017;2017:8284363.
5. Heydinger G, Tobias J, Veneziano G. Fundamentals and innovations in regional anaesthesia for infants and children. *Anaesth.* 2021;76(Suppl 1):74–88.
6. Al-Sadek WM, Rizk SN, Selim MA. Ultrasound guided transversus abdominis plane block in pediatric patients undergoing laparoscopic surgery. *Egypt J Anaesth.* 2014;30(3):273–8.
7. Fouad AZ, Abdel-Aal IRM, Gadelrab MRMA, Mohammed HME-HS. Ultrasound-guided transversalis fascia plane block versus transmuscular quadratus lumborum block for postoperative analgesia in inguinal hernia repair. *Korean. J Pain.* 2021;34(2):201–9.
8. Sahin L, Sahin M, Gul R, Saricicek V, Isikay N. Ultrasound-guided transversus abdominis plane block in children: a randomised comparison with wound infiltration. *Eur J Anaesthesiol.* 2013;30(7):409–14.
9. Seyedhejazi M, Motarabbesoun S, Eslampoor Y, Taghizadieh N, Hazhir N. Appendectomy pain control by transversus abdominis plane (TAP) block in children. *Anesth Pain Med.* 2019;9(1):e83975.
10. Tran DQ, Bravo D, Leurcharusmee P, Neal JM. Transversus abdominis plane block: a narrative review. *Anesthesiol.* 2019;131(5):1166–90.
11. Lissauer J, Mancuso K, Merritt C, Prabhakar A, Kaye AD, Urman RD. Evolution of the transversus abdominis plane block and its role in postoperative analgesia. *Best Pract Res Clin Anaesthesiol.* 2014;28(2):117–26.
12. Аваков В.Е., Ибрагимов Н.К., Рамазанова З.Ф., & Муралимова Р.С. (2022). АНАЛГЕЗИЯ В ПОСЛЕОПЕРАЦИОННОМ ПЕРИОДЕ У БОЛЬНЫХ С АБДОМИНАЛЬНОЙ ПАТОЛОГИЕЙ . *PEDAGOGS Jurnal*, 23(2), 135–137. Retrieved from <https://pedagoglar.uz/index.php/ped/article/view/2316>
13. Ибрагимов Н.К., Рамазанова З.Ф., Муралимова Р.С., & Нишнонов М.Р. (2023). ПРИМЕНЕНИЕ РЕГИОНАЛЬНОЙ АНЕСТЕЗИИ В ПЛАНОВОЙ ЛАПАРОСКОПИЧЕСКОЙ ХИРУРГИИ У БОЛЬНЫХ С АБДОМИНАЛЬНОЙ

- ПАТОЛОГИЕЙ . PEDAGOGS Jurnal, 36(1), 41–47. Retrieved from <https://www.pedaglar.uz/index.php/ped/article/view/5561>
14. Ibragimov N. K., Ramazanova Z. F., Muralimova R.S., & Nishonov M. R. (2023). THE USE OF REGIONAL ANESTHESIA IN ELECTIVE LAPAROSCOPIC SURGERY IN PATIENTS WITH ABDOMINAL PATHOLOGY. Galaxy International Interdisciplinary Research Journal, 11(6), 324–329. Retrieved from <https://www.giirj.com/index.php/giirj/article/view/5391>.