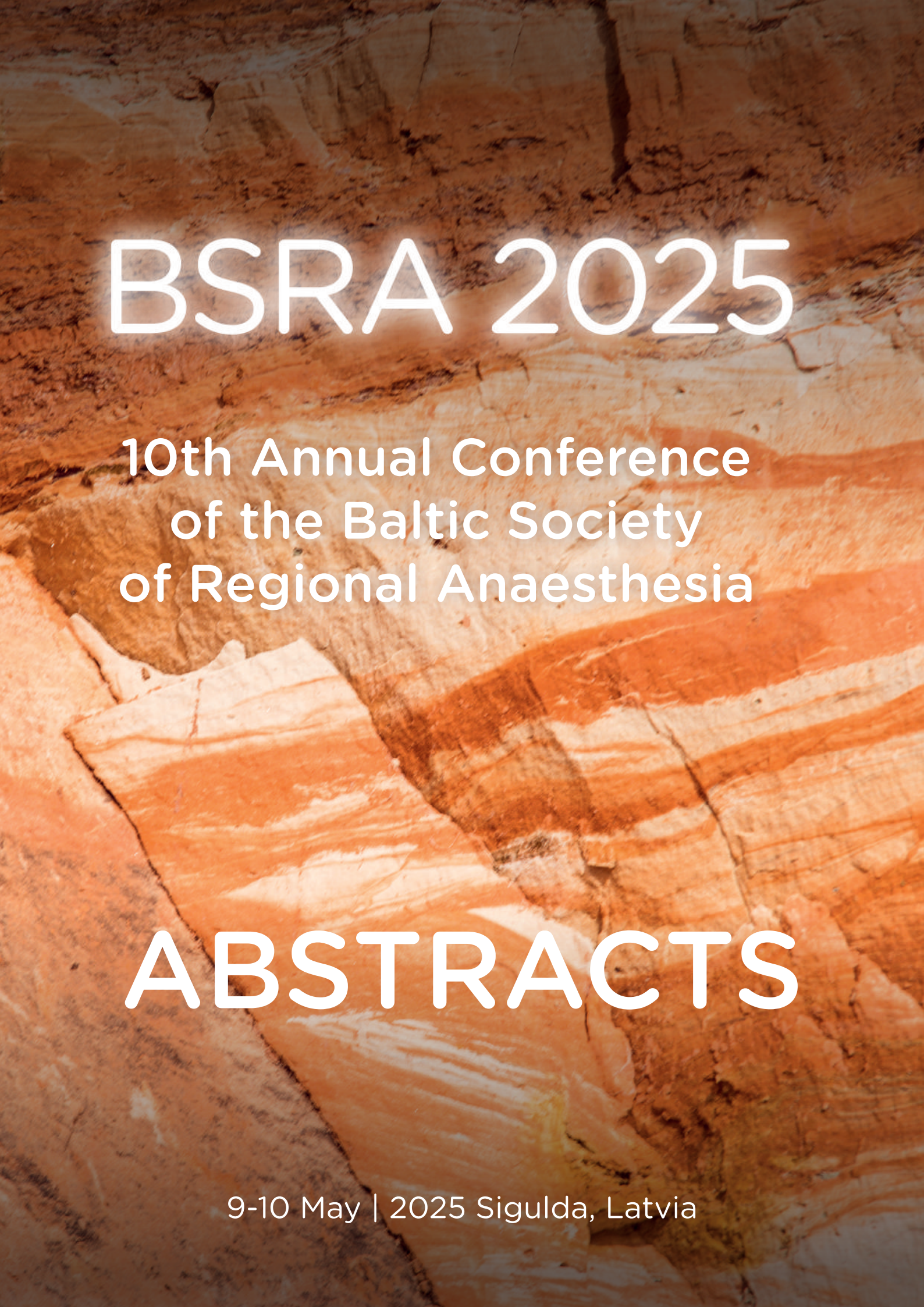

BSRA 2025

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ABSTRACTS

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IMPACT OF ERECTOR SPINAE PLANE BLOCK ON OPIOID USE IN THORACOSCOPIC SURGERY: A PROSPECTIVE OBSERVATIONAL PILOT STUDY

Aleksandrs Novoženovs [1], **Mārtiņš Ansons** [2], **Māra Klibus** [1]

1. Riga Stradins university, **2.**

Objectives

Erector Spinae Plane Block (ESPB) is a relatively new regional anaesthesia technique, described in 2016, involving the injection of local anaesthetic into the fascial plane between the transverse vertebral processes and erector spinae muscles, aiming to provide analgesia by multilevel blockade of dorsal rami with a potential spread to the ventral rami or paravertebral structures. Although ESPB is a safe technique, its effect on perioperative pain management and opioid-sparing potential requires further research. This study aims to evaluate the impact of preoperative ESPB on intraoperative opioid consumption in patients undergoing video-assisted thoracoscopic surgery (VATS).

Materials and Methods

The prospective observational pilot study included 16 patients who underwent elective video-assisted thoracoscopic surgery under general anaesthesia. Patients were divided into two groups: general anaesthesia (GA) group and general anaesthesia with erector spinae plane block (GA + ESPB) group. In the GA + ESPB group, patients received ultrasonography-guided preoperative ESPB with Sol. Ropivacaini 0.375% 30ml. Data on total intraoperative strong analgesic consumption was collected for both groups and calculated as the mean fentanyl infusion rate normalized per minute of surgery (µg/min) for both groups.

Results

Our study results show that intraoperative opioid consumption was higher in the GA group (GA + ESPB: 0.0089 µg/min vs. GA: 0.0125 µg/min of fentanyl).

Conclusions

In this pilot study, patients who received preoperative ESPB required less intraoperative opioids compared to patients who underwent VATS under general anaesthesia alone. Reduction in intraoperative opioid consumption suggests that ESPB may serve as a reliable method for intraoperative analgesia, with a potential applicability in opioid-sparing strategies for thoracoscopic surgery. However, further studies with randomization and a broader patient sample are needed to confirm these findings.

SKIN TEMPERATURE CHANGES AS A PREDICTOR OF SCIATIC NERVE BLOCK SUCCESS: A COMPARATIVE ANALYSIS OF LOCAL ANESTHETICS

Valentīna Sļepiha [1], **Andrejs Ernests Zirnis** [2], **Aleksejs Miščuks** [3], **Iveta Golubovska** [3], **Everita Binde** [1], **Valērija Kopanceva** [4]

1. Riga Stradins University, **2.** , **3.** University of Latvia, Hospital of Traumatology and Orthopaedics, **4.** University of Latvia

Objectives

Sciatic nerve block is increasingly preferred for lower limb surgeries due to its effectiveness and safety. An increase in skin temperature (Ts) occurs early during neuraxial blocks. This occurs as a result of the blockade not only of somatosensory and motor nerve fibers but also of sympathetic fibers. As a consequence, vasoconstrictor tonic activity is inhibited and vasodilation leads to an increase in skin blood flow and temperature. However, the reliability of Ts as a predictor of successful peripheral block is unclear.

The study aimed to test the Ts response to the administration of Ropivacaine 0.375%, Lidocaine 1%, and Bupivacaine 0.25% and compare their effectiveness during a sciatic nerve block.

Materials and Methods

The randomised prospective study includes 60 patients undergoing orthopedic surgery of the lower limb, with 34 patients collected so far. Preoperatively, sciatic nerve blockade was performed using ultrasound. Patients were divided into three groups: the group B received Bupivacaine 20 ml 0.25%; the group R: Ropivacaine 20 ml 0.375%; group L: Lidocaine 20 ml 1%. A temperature probe was positioned on the metatarsal region, and Ts was registered at 2-minute intervals thereafter, within 46 minutes. At 3-minute intervals, patients were assessed to determine the quality of sciatic nerve block and loss of sensation using a cold sensory test. Statistical significance was determined by Kruskal-Wallis test ($p<0.05$).

Results

A total of 34 patients were included: 29.4% in group B (n = 10), 35.3% in group R (n = 12), 35.3% in group L (n = 12). Group L median Ts change was 6.00 oC (IQR 2.6-7.9), group B 3.70 oC (IQR 0.9-7.4), group R 2.00 oC (IQR 1.15-4.5), statistically significant changes were observed between groups L and R ($p = 0.015$). Linear regression analysis was conducted on temperature measurements obtained over a 46-minute period. The group L exhibited the greatest rate of temperature increase (slope coefficient (S) = 0.144, coefficient of determination (R^2) = 0.972), followed by the group B (S = 0.104, R^2 = 0.949) and the group R (S = 0.062, R^2 = 0.979). Loss of sensation occurred at a median time of 9 minutes in group L, 16 minutes in group B, 12 minutes in group R, statistically significant differences were observed ($p = 0.01$).

Conclusions

Based on the data collected so far, group L demonstrated a significantly greater change in skin temperature and a faster loss of sensation compared to groups R and B. These findings suggest a more rapid and pronounced sensory effect with regional anesthesia using Lidocaine. Skin temperature measurement is a useful, non-invasive tool for monitoring the onset and effectiveness of sciatic nerve block. These findings support the use of skin temperature measurement as a reliable, non-invasive indicator of block success, particularly when standard sensory testing is limited.

LOW-DOSE SPINAL ANESTHESIA IN OUTPATIENT SETTINGS: A PROSPECTIVE COHORT STUDY

Arturs Avstreihs [1], **Jānis Urtāns** [2], **Edgars Krivmanis** [3], **Irina Evansa** [1]

1. Riga 1st Hospital, **2.** , **3.** Riga 1st hospital

Objectives

This study evaluates the effect of low-dose, short-acting spinal anesthetics on the duration of motor and sensory blockade, patient mobilization, and time to spontaneous urination while assessing potential adverse events.

Materials and Methods

In this prospective cohort study, 75 patients (39 males, 36 females) undergoing outpatient surgery received low-dose spinal anesthesia. The majority of procedures were minor proctological and urological surgeries lasting up to 90 minutes. Patients received either 40 mg (2mL) of hyperbaric Prilocaine or 20 mg (2 mL) of isobaric 2-Chloroprocaine. Motor blockade was assessed using the Bromage scale, while sensory block duration was evaluated via the ice test across different dermatomes. Mobilization was attempted once sensory block reached the S1 dermatome or lower and was deemed successful if the patient could walk unassisted. Adverse events, including block failure, conversion to general anesthesia, urinary retention requiring catheterization, hypotension, and bradycardia, were recorded. Statistical analysis was performed using Microsoft Excel and IBM SPSS v26.

Results

Among 75 patients, 33 received Prilocaine 40 mg (2 mL), while 42 received 2-Chloroprocaine 20 mg (2 mL). One patient in the 2-Chloroprocaine group required conversion to general anesthesia due to pain during a procedure lasting over 75 minutes. Motor Blockade: The median motor block duration was significantly longer in the Prilocaine group (60 min, IQR=55) compared to the 2-Chloroprocaine group (0 min, IQR=46, $p<0.001$). Notably, 61.9% of patients in the 2-Chloroprocaine group exhibited no motor block (Bromage score of 4). Sensory Blockade: Sensory block lasted longer in the Prilocaine group (165 min, IQR=68, $p<0.001$) than in the 2-Chloroprocaine group (130 min, IQR=50, $p<0.001$). Sensory block height was also greater with Prilocaine, with 36.3% of patients reaching T10 or higher, compared to 2.4% in the 2-Chloroprocaine group ($p<0.001$). Mobilization & Urination: Mobilization time was significantly shorter in the 2-Chloroprocaine group (107 min, IQR=48, $p<0.001$) compared to the Prilocaine group (165 min, IQR=75, $p<0.001$). Time to spontaneous urination was also faster in the 2-Chloroprocaine group (152 min, IQR=75 vs. 215 min, IQR=25, $p=0.02$). Adverse Events: No patients experienced urinary retention requiring catheterization. Two patients in the Prilocaine group and one in the 2-Chloroprocaine group developed vasovagal syncope before spinal anesthesia administration, requiring administration of atropine sulfate. No significant bradycardia or hypotension of other causes was recorded.

Conclusions

Both low-dose Prilocaine and ultra-low-dose 2-Chloroprocaine were effective for spinal anesthesia. However, 20 mg (2 mL) of 2-Chloroprocaine resulted in significantly shorter motor and sensory blockade, allowing for faster mobilization and shorter time to spontaneous urination.

Acute and chronic pain

EVALUATION OF MINIMALLY INVASIVE TREATMENT FOR CHRONIC LOWER BACK PAIN USING A TERMOGRAPH

Ineta Krūmiņa [1], **Aleksejs Miščuks** [2], **Iveta Golubovska** [3], **Uldis Rubīns** [4]

1. University of Latvia, **2.** , **3.** University of Latvia, Hospital of traumatology and orthopaedics, **4.** University of Latvia, Institute of Atomphysics and Spectroscopy

Objectives

Sacroiliac joint disorders are a relatively frequent source of lower back pain. Minimally invasive treatments, such as radiofrequency (RF) ablation or injections of local anesthetics (LA) combined with glucocorticoids (GC), can be used for pain management. Thermography serves as a useful tool for assessing the effectiveness of these treatments by detecting temperature variations and inflammatory changes in the affected area. The study aimed to quantitatively compare the effectiveness of minimally invasive treatments for chronic sacroiliac joint pain, specifically radiofrequency (RF) ablation and local anesthetic (LA) with glucocorticoid (GC) blockade, using thermography as an assessment tool.

Materials and Methods

The study involved patients diagnosed with chronic sacroiliac joint pain, with 4 patients receiving RF ablation and 7 patients receiving LA and GC blockade for their sacroiliac joints. Prior to treatment, each patient underwent Hikmicro SP60 thermography. Follow-up thermography of the sacroiliac joint area was conducted immediately after treatment and again 20 minutes later

Results

The study included 11 patients, divided into two treatment groups. In the RF ablation group (n=4), local temperature initially increased from 28.8°C to 30.5°C immediately post-procedure but returned to baseline (28.8°C) after 20 minutes. Regional temperatures gradually rose from 28.2°C to 29.8°C over the same period. However, local temperature changes varied widely among patients (range: 0.2–5.7°C), and regional changes at 20 minutes were inconsistent (range: -2.6–5.3°C).

In the LA+GC group (n=7), local temperature showed only a slight immediate increase (31.0°C to 31.1°C) before declining to 30.4°C at 20 minutes. Regional temperatures remained stable (30.5–30.8°C), with relatively modest variations in individual temperature changes (local: -3.1–4.2°C; regional: -3.0–2.4°C).

Both groups exhibited a positive correlation between immediate post-procedural temperature and pain scores, which reversed at 20 minutes, where higher temperatures were linked to lower pain scores. Pain reduction was significant in both groups over time (RF: $p=0.02$; LA+GC: $p=0.001$). In the RF group, the most significant pain relief occurred between baseline and 20 minutes post-procedure ($p=0.025$). In contrast, the LA+GC group showed significant pain reduction both immediately ($p=0.002$) and at 20 minutes ($p=0.008$), highlighting its rapid and sustained efficacy.

Conclusions

The average pain level immediately after the blockade is lower in the LA+GC blockade group, but 20 minutes after the procedure, the pain is less observed in the RF ablation group, and the higher temperature correlates with lower pain scale scores. Tracking regional temperature changes could improve the real-time evaluation of treatment effectiveness in regional anesthesia.

EARLY RECOVERY AFTER HIP JOINT ENDOPROSTHESIS SURGERY: A PILOT STUDY.

Letīcija Aelita Ločmele [1], **Iveta Golubovska** [2], **Antons Suškovs** [3], **Viktorija Panova** [3], **Rūdolfs Vētra** [3], **Ilze Vindele- Strode** [3], **Matīss Zolmanis** [3]

1. Riga Stradins university, **2.** , **3.** Hospital of Traumatology and Orthopedics, Riga

Objectives

The primary aim of this pilot study is to improve patient care with an enhanced recovery and reduced length of stay at the Hospital of Traumatology and Orthopedics after elective hip joint endoprosthesis surgery using the early rehabilitation after surgery (ERAS) protocol. With the support of our multidisciplinary team, the patient is guided toward achieving independence more quickly. It is relevant to highlight that multimodal analgesia approach is a fundamental component of ERAS. This research seems to evaluate whether ERAS ensures adequate pain management, facilitating a faster discharge following surgery.

Materials and Methods

ERAS program forms the basis of this study and our team implements this protocol to improve rehabilitation speed for patients undergoing endoprosthesis surgery. ERAS protocol includes preoperative patient education on walking with a walking frame or crutches that will be used after the surgery. Spinal anesthesia is used for surgery. For optimal nutrition participants receive a carbohydrate-rich dietary drink the day before and on the day of surgery. During the surgery participants are warmed with a warm air blanket. After the surgery patients are being monitored for 2 hours in the post-anesthesia recovery room where they are instructed to move from side to side. After the 2 hours have passed, the participant is transported to a general recovery room where they receive a nutritionally balanced meal. The patient then is being helped to stand up for the first time with the help of physiotherapist. Patient is discharged as soon as physiotherapist accepts they can climb the stairs with assistive walking devices. The optimal discharge time is targeted at 24 hours post-surgery. Multi-modal analgesia is one of the key aspects for this study. Surgeon infiltrates the joint tissues locally with analgesic medication to help with postoperative pain. Numeric rating scale (NRS) from 0 to 10 is used for pain evaluation at rest and in motion before surgery and upon discharge. In the hospital patients receive subcutaneous morphine after surgery if they rate their pain level >6 on the NRS. Participants are given 4 tablets of Paracetamolum and Etoricoxibum and a prescription for opioid group analgesia medication for adequate pain management at home.

Results

This prospective study started in January of 2025 and as of the present time 6 female and 3 male participants have received faster rehabilitation course with ERAS. The patient's age ranges from 42 to 62 years. The average rating for pain at rest before the surgery was 3.66 out of 10. The average rating for pain at rest upon discharge was 1.66 out of 10. 6 out of 9 patients received morphine postoperatively.

Conclusions

These results suggest that the average rating for pain decreases after surgery with adequate pain control. The participants' pain rating does not warrant further hospitalization due to pain management concerns. Patients with an average pain rating, as mentioned above, are able to manage their pain at home with the provided analgesic medication. If necessary, they may also get the prescribed opioid tablets. Most of the patients feel ready to be discharged home the next day after surgery. Patient education is a relevant aspect for a patient to feel safe and stable for discharge. The ERAS protocol is beneficial for patient and hospital. It allows faster patient mobility and less complications. The nurses and other hospital staff has a lower workload and an open hospital bed to others in need.

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