



Anaesthesiology

COMPARATIVE STUDY BETWEEN EPIDURAL ROPIVACAINE AND TRAMADOL VS EPIDURAL ROPIVACAINE AND BUTORPHANOL FOR POSTOPERATIVE PAIN RELIEF IN MAJOR ABDOMINAL SURGERIES

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ABSTRACT

BACKGROUND AND OBJECTIVE: Postoperative analgesia can be achieved by various different modalities. Epidural analgesia offers a reliable and effective pain relief. Addition of opioids enhances the onset of analgesia and prolongs the duration. This study aims in comparative evaluation of 0.2% ropivacaine versus 0.2% ropivacaine plus tramadol for postoperative analgesia. **METHODS:** 80 patients of age 18-65 years with ASA grade I & II, undergoing elective lower limb surgeries under epidural anaesthesia were randomly taken into each of the 2 groups. For post operative pain management 0.2% ropivacaine 8ml + inj tramadol 75mg (1.5ml) + sterile water for injection 0.5 ml in group T and 0.2% ropivacaine 8ml+ butorphanol 1.5 ml (1.5mg) + sterile water for injection 0.5ml total of 10ml in group B. Patients were monitored for onset, duration and quality of analgesia, hemodynamic stability and for any side effects. **RESULTS:** The groups were similar with respect to age, sex, ASA, HR, SBP, DBP and Spo2. VAS after top up significantly lower in the group B ($p < 0.05$). Anti-emetic therapy use was significantly higher in the group T ($p < 0.05$). Rescue analgesic use was significantly lower in the group B ($p < 0.05$). Mean time interval between top ups was significantly higher in group T ($p < 0.05$). Duration of analgesia is significantly higher in Group B ($p < 0.05$). **CONCLUSION:** The present study can be concluded that use of ropivacaine with Butorphanol showed better results than that of ropivacaine with tramadol.

KEYWORDS : Ropivacaine, Butorphanol, Epidural analgesia, Tramadol

INTRODUCTION

Pain is a predominant complaint among patients referred to hospitals, constituting nearly 80% of reasons for visits to emergency departments.¹ According to the International Association for the Study of Pain (IASP), pain is defined as "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage".² Effective pain management in emergency departments serves as a critical quality-of-care indicator, reflective of the care provided.¹ Analgesia, a fundamental component of anesthesia, is now widely employed for managing postoperative, chronic, and cancer-related pain. Administration of analgesics via different routes, including spinal analgesia, plays a crucial role in intraoperative and postoperative periods. Effective postoperative pain control not only reduces morbidity but also facilitates early ambulation and faster recovery, thereby potentially reducing cardiovascular and thromboembolic events.⁴

Spinal blocks are a straightforward method requiring minimal local anesthetic to rapidly establish a potent and reliable block. In contrast, epidural block with a catheter technique (EDA) is more technically challenging but offers the advantage of extending the block intraoperatively and providing sustained pain relief postoperatively with local anesthetics and/or opioids.⁵

Epidural analgesia is highly effective for managing intraoperative and postoperative pain following major surgeries involving the upper abdomen, thorax, or orthopedic procedures. However, potential side effects or complications associated with the procedure or the drugs used include dural perforation, epidural hematoma, infection, urinary retention, hypotension, pruritus, and respiratory depression.⁶

Combining opioids, which reduce painful impulses at the dorsal horn neuron, with local anesthetics, which decrease neuronal excitability, produces a synergistic effect. This synergism not only enhances pain relief but also spares motor function, making it beneficial for postoperative analgesia.⁷

In conclusion, effective pain management strategies, including the use of local anesthetics and opioids, are crucial for improving patient outcomes, reducing complications, and enhancing overall recovery following surgery.

CASE STUDY

This study aims to compare the efficacy of 0.2% ropivacaine plus tramadol versus 0.2% ropivacaine plus butorphanol for major abdominal surgeries as well as the complications with both the drugs.

The study will be conducted in 80 patients aged 18-65 years undergoing various major abdominal surgeries in Bapuji Hospital, Chigateri District Hospital attached to J.J.M Medical college, Davangere.

STUDY DESIGN: Prospective randomized controlled study

STUDY PERIOD: August 2022 to August 2024.

SAMPLE SIZE: 80 - Two groups included in the study

Group T: 0.2% ropivacaine 8ml + 75 mg tramadol (1.5ml) + 0.5ml sterile water for injection

Group B: 0.2% ropivacaine 8ml + 1.5 mg butorphanol (1.5ml) + 0.5ml sterile water for injection

PRE-ANAESTHETIC EVALUATION: On the day before the surgery, patients were visited and a comprehensive medical history was collected, and a systemic examination was performed.

CONCLUSIONS

The following conclusions are drawn from the present study,

1. There is no statistically significant difference in age, ASA status, height, weight among 2 groups
2. There is no statistically significant difference in HR, SBP, DBP, SPO2 among 2 groups
3. There is significant difference in VAS scores. Lower VAS scores are seen in Group B
4. There is significant difference in rescue analgesia, group B showed less patients with demand of rescue analgesia
5. There is no significant difference in hypotension in both groups
6. There is significant difference in vomiting, Group T had more frequency of vomiting
7. There is significant difference in the sedation score, group B showed higher sedation than group T.

Therefore, the present study can be concluded that use of ropivacaine with Butorphanol showed better results than that of ropivacaine with tramadol

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