

# Anterior Quadratus Lumborum Block Provides Non-inferior Analgesia Compared to Thoracic Epidural After Laparoscopic Hemicolectomy

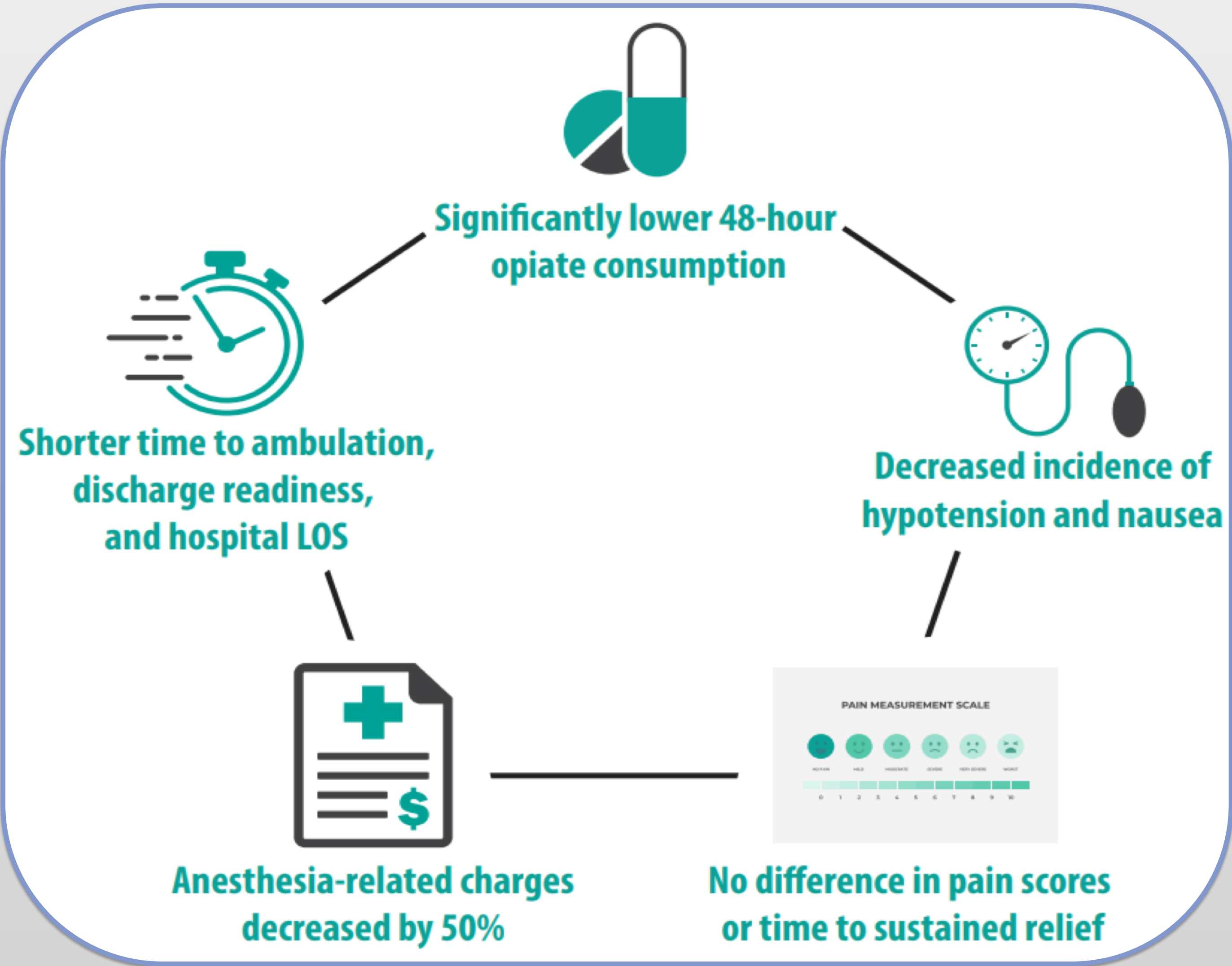
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## Introduction

- Thoracic epidurals are an effective analgesic modality but are associated with several significant adverse effects<sup>1</sup>.
- Truncal blocks are an alternative analgesic option for abdominal surgery though studies have yielded heterogenous results.
- The anterior quadratus lumborum block (QLB) may provide analgesia in the T7-L1 distribution, including visceral analgesia via communication with the thoracolumbar fascia<sup>2</sup>.
- This is the first study to date to compare the clinical effectiveness of anterior QLB to thoracic epidural for laparoscopic or robotic-assisted hemicolectomy.

## Methods

- Single-center observational cohort study in ASA 2-3 patients undergoing laparoscopic or robotic hemicolectomy.
- Assessment of non-inferior 48-hour cumulative opiate consumption for patients receiving bilateral QLB with liposomal bupivacaine versus thoracic epidural analgesia.
- 30 patients were allocated to each cohort, and compared to an institution-specific historical matched cohort who received epidural analgesia.
- All patients received a standardized multimodal regimen per our ERAS protocol.



## Results

- Cumulative opiate consumption at 48 hours was significantly lower in the QLB cohort (33 vs 61), p-value 0.004.
- No difference in pain scores or time to achieve sustained pain relief.

## References

1. Rawal N. Epidural technique for postoperative pain: gold standard no more? Reg Anesth Pain Med. 2012;37(3):310-7.  
2. Tamura T, Kitamura K, Yokota S, Ito S, Shibata Y, Nishiwaki K. Spread of Quadratus Lumborum Block to the Paravertebral Space Via Intramuscular Injection: A Volunteer Study. Reg Anesth Pain Med. 2018;43(4):372-7.

**Table 1. Clinical Outcomes**

| Outcome                                                      | QL Block<br>(n = 30) | Epidural<br>(n = 30) | P      |
|--------------------------------------------------------------|----------------------|----------------------|--------|
| Cumulative opioid consumption 0-48 hours (MME), median (IQR) | 33 (8, 76)           | 61 (40, 85)          | 0.004  |
| NRS-11 pain score, median (IQR) [n]                          |                      |                      |        |
| 24 hours                                                     | 3 (2, 4)             | 2 (0, 4)             | 0.07   |
| 48 hours                                                     | 4 (2, 5)             | 3 (0, 7)             | 0.38   |
| 72 hours                                                     | 2 (1, 5)             | 3 (0, 6)             | 0.74   |
| 96 hours                                                     | 2 (0, 5)             | 5 (3, 6)             | 0.06   |
| Time to sustained pain relief (hours), median (IQR)          | 8 (0.5, 8)           | 4.3 (0.5, 8)         | 0.60   |
| Block failure, n (%)                                         | 7 (23)               | 1 (3)                | 0.05   |
| Intervention-related AEs, n (%)                              |                      |                      |        |
| Hypotension                                                  | 0 (0)                | 8 (27)               | 0.005  |
| Pruritis                                                     | 1 (3)                | 6 (20)               | 0.10   |
| Urinary retention                                            | 1 (3)                | 4 (13)               | 0.35   |
| Hip flexor weakness                                          | 4 (13)               | 3 (10)               | 1.00   |
| Opioid-related AEs, n (%)                                    |                      |                      |        |
| Nausea                                                       | 10 (33)              | 19 (63)              | 0.02   |
| Vomiting                                                     | 3 (10)               | 8 (27)               | 0.18   |
| Ileus                                                        | 1 (3)                | 4 (13)               | 0.35   |
| Time to first ambulation (hours), median (IQR)               | 15 (8, 19)           | 31 (27, 49)          | <0.001 |
| Hospital LOS (hours), median (IQR)                           | 27 (24, 46)          | 55 (52, 97)          | <0.001 |
| Time to discharge readiness* (hours), median (IQR)           | 24 (19, 46)          | 53 (36, 83)          | <0.001 |

## Discussion

- Patients who received bilateral anterior QLB had lower cumulative 48-hour opiate consumption compared to patients who received thoracic epidural analgesia.
- Other benefits observed in the QLB cohort include lower incidence of post-operative hypotension and nausea.
- The QLB cohort had a significantly shorter time to ambulation, time to discharge readiness, and decreased hospital LOS.
- The QLB cohort experienced very few sleep-related complaints.
- Anesthesia-related charges decreased by over 50% in those who received the QLB as compared to thoracic epidural.

