The authors of this study have no financial information to disclose

Liposomal Bupivacaine Nerve Block Reduces Opioid Consumption After Rotator Cuff Repair

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Introduction

Background: Arthroscopic rotator cuff repair (ARCR) remains associated with significant postoperative pain despite continual improvements in surgical techniques throughout the past decade. Effective pain management is critical to enhance patient outcomes.

Purpose: The purpose of this study was to determine opioid requirements and associated pain scores to create evidence-based prescription guidelines for arthroscopic rotator cuff repair.

Methods

100 study participants were recruited across 3 centers and randomized into one of two groups.

- The control group received an ultrasound-guided interscalene nerve block (ISNB) with 25 mL of 0.5% bupivacaine and 10 mg of IV Decadron
- The experimental group received an ultrasound-guided ISNB containing a solution of 10mL liposomal bupivacaine and 15mL 0f 0.5% bupivacaine, with 10mg of IV Decadron

Over the 14 postoperative days, subjects self-reported daily:

- Numerical pain rating scale (NPRS) scores
- Opioid pill consumption

All subjects followed the same perioperative analgesic protocol (Table 1)

Suggested Multimodal Anesthetic Protocol for Rotator Cuff Repair	
Preoperatively:	gabapentin 600mg
	celebrex 400mg
	acetaminophen 1000mg PO
	25cc interscalene nerve block with IV decadron 10mg
Postoperatively:	acetaminophen 1000mg Q8 x 72hrs, then PRN
	gabapentin 300mg PO QHS x 5 nights
	ibuprofen 600mg Q8 x 72hrs
	15-25 oxycodone 5mg PRN

Table 1. *Suggested perioperative anesthetic protocol*

Results

Figure 1. *Post-Operative Pain Measured by Numerical Pain Rating Scale for Patients Undergoing ARCR*

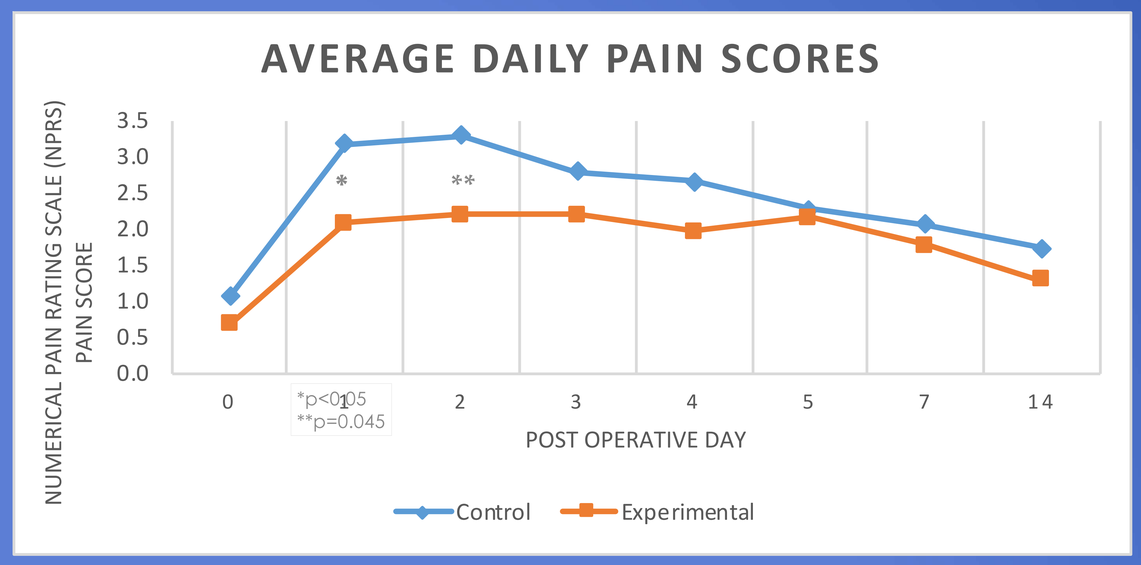

Figure 2. *Post-Operative Narcotic Consumption (in Oral Morphine Equivalents) for Patients Undergoing ARCR*

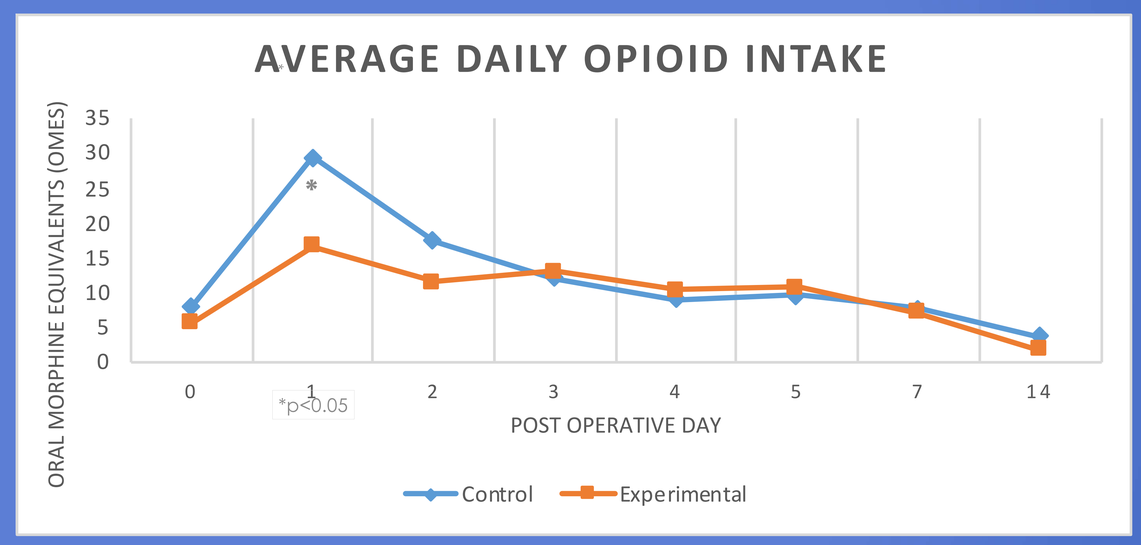

Table 2. *Summary Statistics for Opioid Consumption (in number of pills) for patients undergoing ARCR*

	Mean	Median	SD
Control	13.5	9.0	13.6
Experimental	10.7	4.5	14.9

Conclusions

1. Patients receiving an LB ISNB demonstrated lower average pain scores on postoperative days 1 ($p < 0.05$) and 2 ($p = 0.04$)
2. Patients receiving an LB ISNB consumed fewer opioids on POD 1 ($p < 0.05$)
   - A greater percentage of patients in the LB group were opioid free throughout the study period (p=0.03)
3. From this data (Table 2), we recommend no more than 15 pills to be prescribed for ARCR

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