

Liposomal Bupivacaine Reduces Opiate Consumption After Rotator Cuff Repair

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Introduction

Background: Arthroscopic rotator cuff repair (ARCR) provides excellent clinical outcomes but is often associated with significant postoperative pain. As rotator cuff repair procedures become increasingly more common, these procedures and the narcotic prescriptions which accompany them may contribute to the rising opioid epidemic. The use of intraoperative local and regional anesthesia or field blocks, in conjunction with multimodal pharmacological strategies, is a widely accepted approach for managing surgical pain and reducing opiate use.

Purpose: This study was performed to determine whether using a field block of liposomal bupivacaine (LB) in addition to an interscalene block (ISB) would provide greater pain relief and reduction in opiate consumption when compared to ISB alone.

Methods

Study participants were recruited into either the liposomal bupivacaine (LB) or control (C) groups using simple randomization methods.

- The C group received an ISB (ultrasound guided with 20 mL of 0.5% bupivacaine with 4 mg of dexamethasone).
- The LB group received the same ISB and additional intraoperative injections of LB into the surgical site.



Figure 1

In the LB group:

- 20mL of LB diluted with 40mL saline was injected into a triangular field block using a 22-gauge spinal needle
- Injection performed after surgical preparation and prior to the first incision.
- A 10 mL bolus injection was given in the suprascapular notch
- 3.0 mL injections were given into the muscle (injecting as needle was withdrawn) spaced 1.5 cm apart along the perimeter of the triangle (Figure 1)

Results

Figure 2. Post-Operative Pain Measured by Visual Analog Scale for Patients Undergoing ARCR

Average daily Visual Analog Scale (VAS) pain scores recorded by patients undergoing ARCR surgery with (Experimental) and without (Control) liposomal bupivacaine

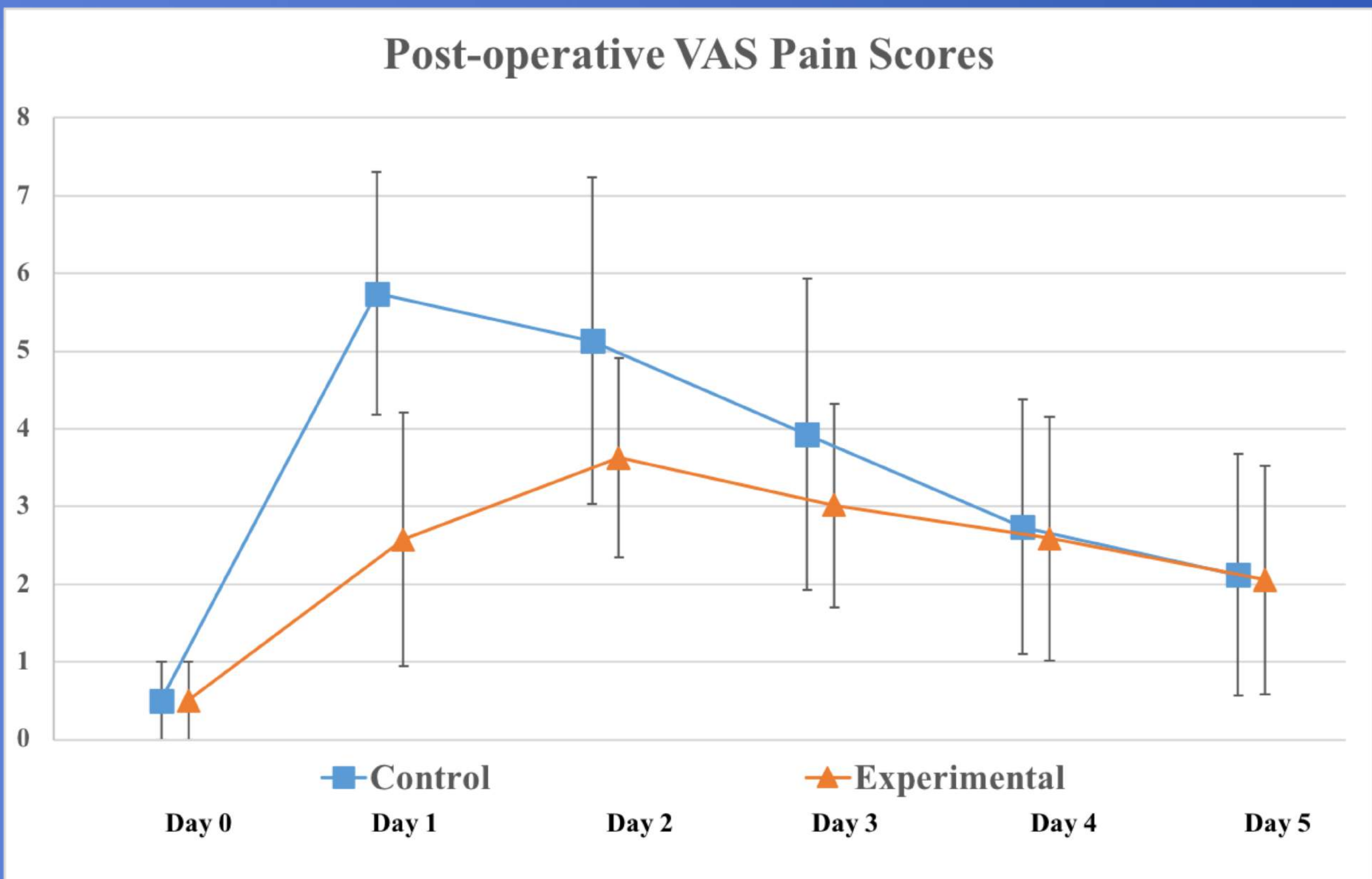
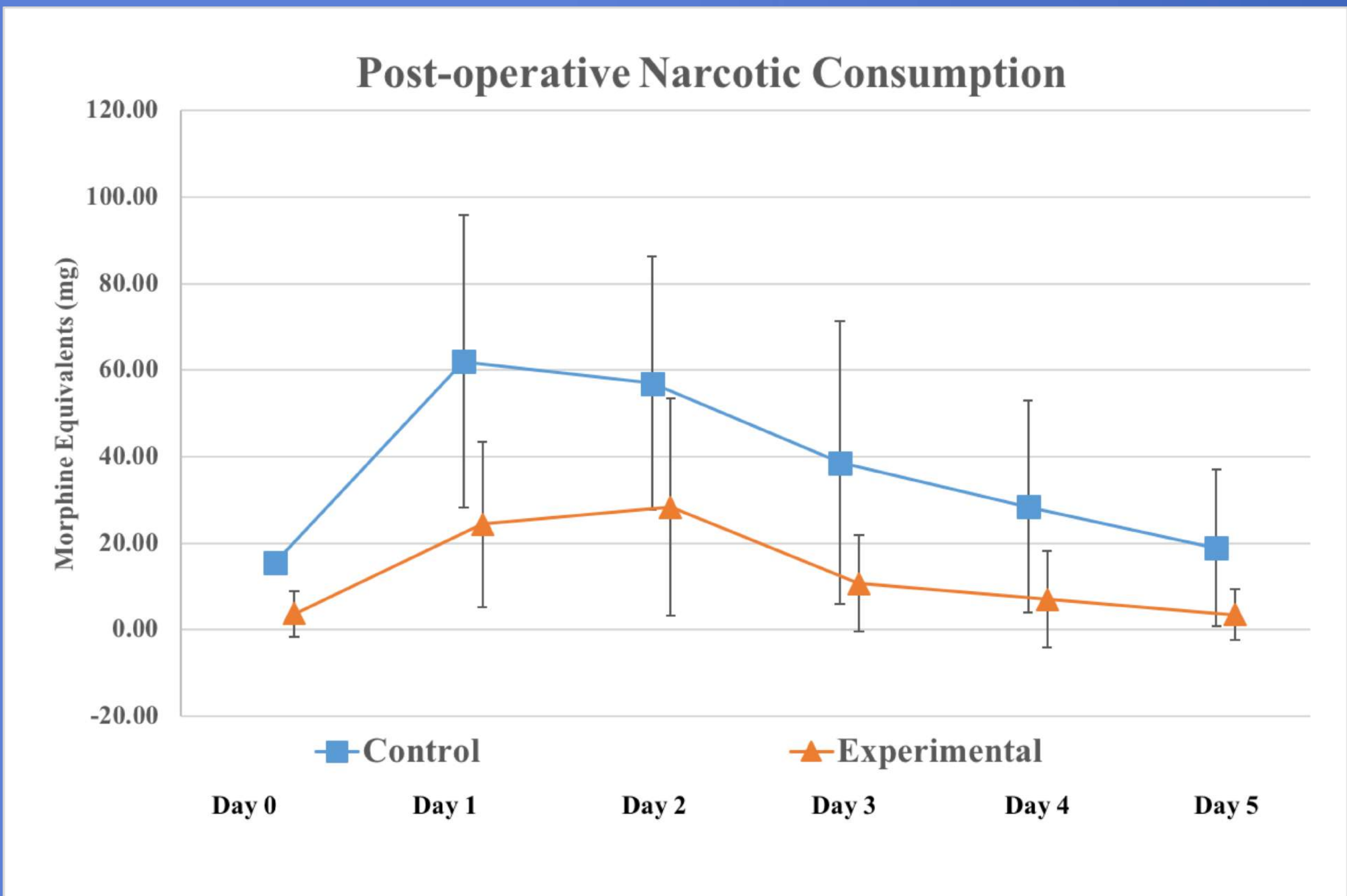


Figure 3. Post-Operative Narcotic Consumption of Patients Undergoing ARCR

Average daily narcotic consumption recorded by patients undergoing ARCR surgery with (Experimental) and without (Control) liposomal bupivacaine



Conclusions

- LB use resulted in a statistically and clinically significant reduction of perioperative pain
- The use of liposomal bupivacaine (LB) led to a 64% reduction in overall narcotic consumption
- No patients treated with LB requested prescription refills, compared to 28% of the control group
- Based on this data, we recommend ARCR patients treated with both liposomal bupivacaine field block and interscalene nerve block to receive 25 oxycodone 5 mg pills for pain management
- This significantly contrasts the current average of 61.7 ± 26.3 oxycodone 5 mg pills for ARCR patients.¹