

Narcotic usage following shoulder arthroplasty is low using a multimodal approach to pain

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Introduction

Background: There is a paucity of data to guide surgeons on how much pain medication to prescribe after shoulder arthroplasty (SA).

A disturbing 14.6% of SA patients still use opioids beyond 180 postoperative days.¹ Recent reports suggested 40 pills to be prescribed following SA²; however, these are purely anecdotal recommendations.

Purpose: The purpose of this study was to prospectively determine opioid requirement in patients recovering from shoulder arthroplasty to create evidence-based guidelines for opiate prescription.

Methods

100 study participants undergoing either total or reverse SA were recruited across 2 centers. Subjects underwent one of three perioperative anesthesia procedures dependent on the site of surgery.

- An ultrasound-guided interscalene nerve block (ISNB) containing a solution of 10mL liposomal bupivacaine and 15mL of 0.5% bupivacaine with 10mg of IV Decadron (LB),
- A standard, ultrasound-guided ISNB containing 25 mL of 0.5% bupivacaine with 10 mg of IV Decadron (SB),
- A field block with 20ml liposomal bupivacaine solution with 10mg of IV Decadron (FB)

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

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

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

Suggested Multimodal Anesthetic Protocol for Shoulder Arthroplasty	
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 Subjects Undergoing SA, by group

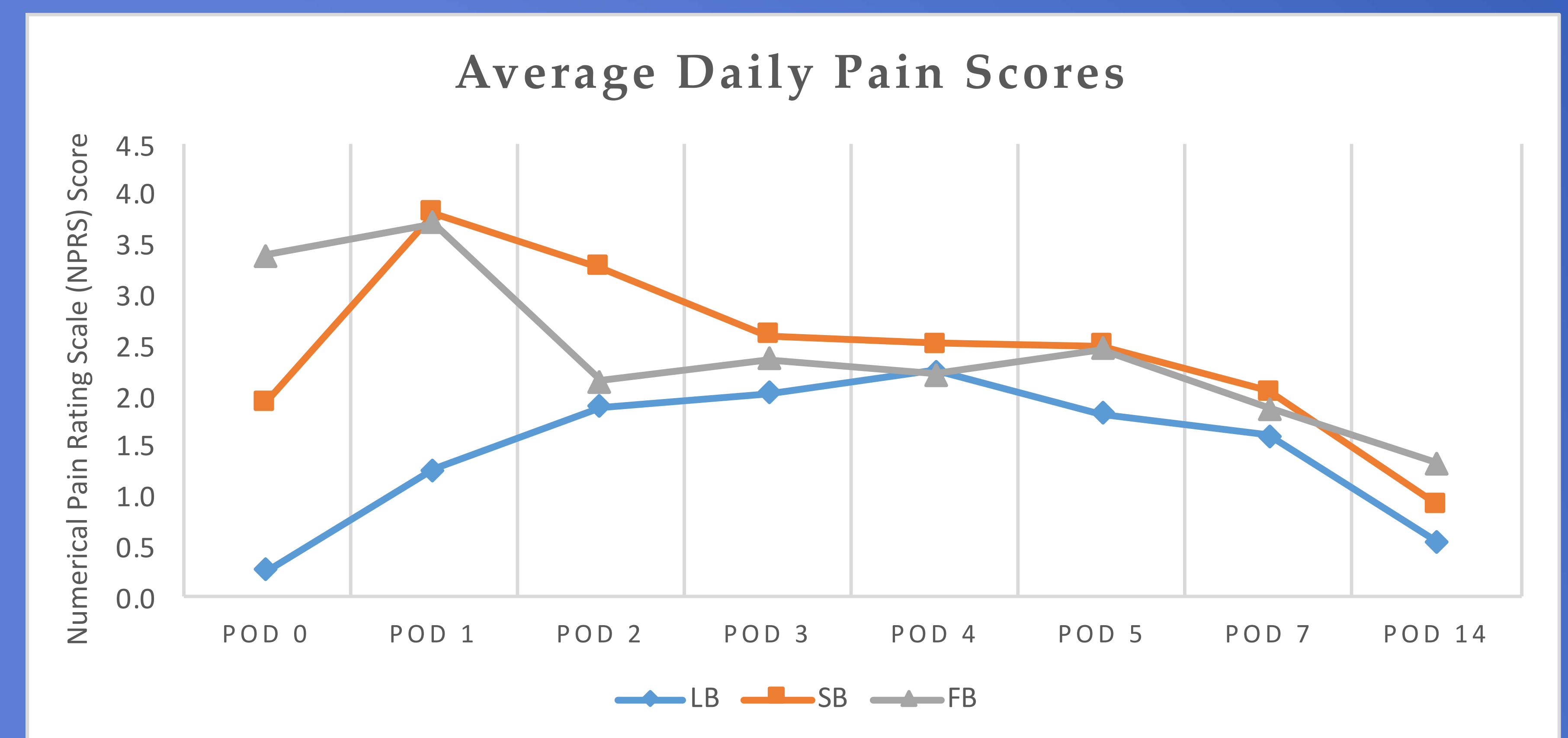


Figure 2. Post-Operative Narcotic Consumption (in Oral Morphine Equivalents) for Subjects Undergoing SA, by group

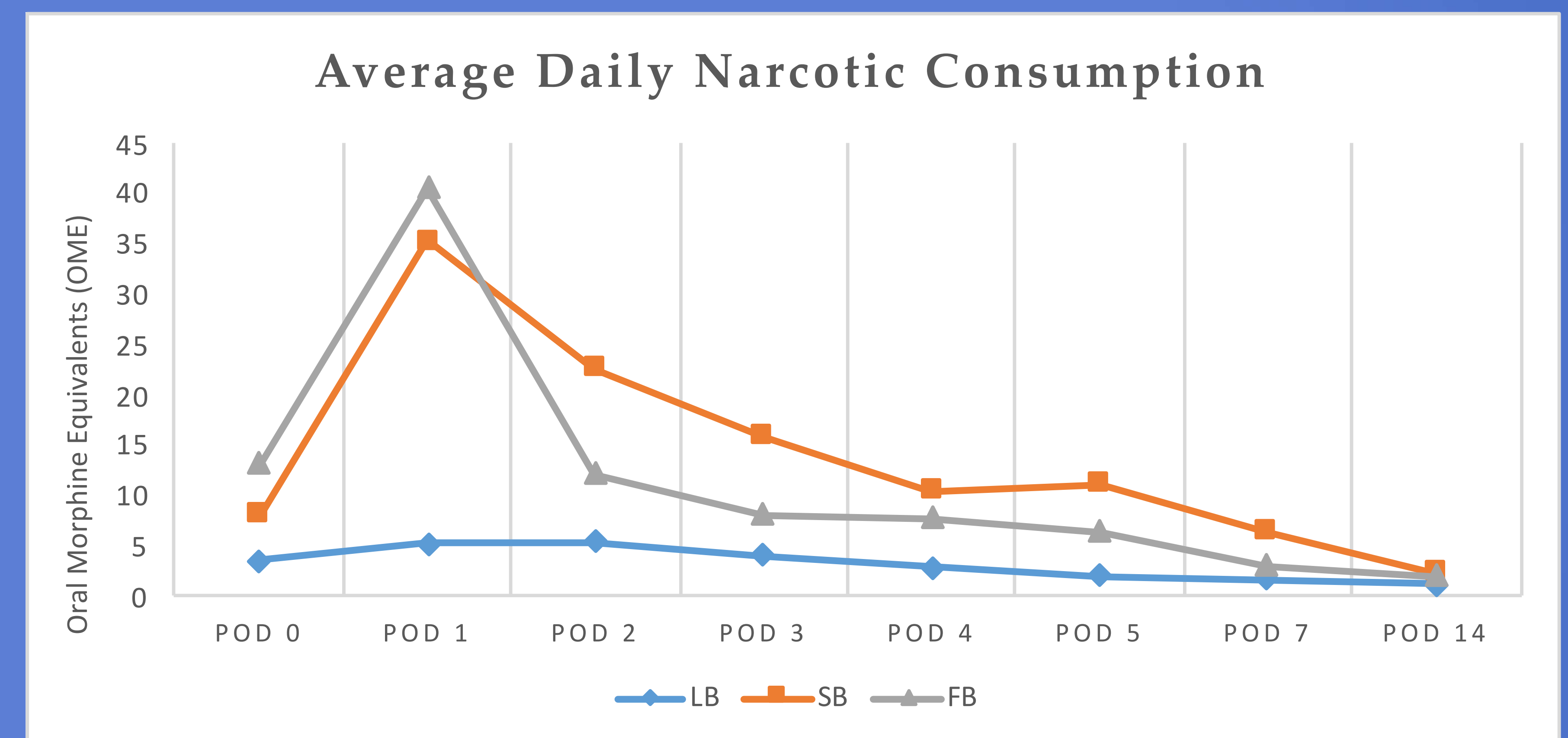


Table 2. Summary Statistics for Opioid Consumption (in number of oxycodone 5mg pills) for subjects undergoing SA, by group

Group	Mean Total Opioid Use (pills)	Median Opioid Use (pills)
LB	4.8	3.0
SB	14.8	12.0
FB	13.7	12.0
Total Avg.	10.7	9.0

Conclusions

1. With a comprehensive multimodal treatment protocol, shoulder arthroplasty is well tolerated, with NPRS pain scores never exceeding 4 and a low requirement for postoperative opiate medication.
2. Subjects consumed a mean of 10.7 opiate pills after surgery
 - LB consumed a median of 3 pills
 - FB and SB conditions each required 12 pills
3. 73.2% of subjects consumed fewer than 15 pills
 - 20.7% required zero postoperative opiate medication
4. We recommend no more than 15 oxycodone 5mg pills to be prescribed after shoulder arthroplasty
 - This is the first prospective multicentered data describing opiate prescription guidelines after shoulder arthroplasty