A Retrospective Review of Complications Related to Interscalene Blocks: A Single Center Study

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INTRODUCTION

Interscalene brachial plexus (ISBP) blocks have commonly been performed to provide post-operative analgesia for patients undergoing shoulder surgery. While effective in minimizing pain there are side effects and complications associated with this block such as diaphragm dysfunction, Horner's syndrome, and nerve injury. The analgesic benefit of using liposome bupivacaine in ISBP blocks was recently published but there is little data on if the use of a long acting local anesthetic increases the complication rate. The objective of this study was to evaluate if there is an increased complication rate associated with liposome bupivacaine compared to either bupivacaine or ropivacaine ISBP blocks.

METHODS

We performed an IRB exempted, retrospective chart review of patients from January 2014 to April 2018. Charts were reviewed for Surgical procedure, block medications used, complications related to block, phone calls for pain, readmissions for pain within 30 days, and emergency room visits for pain or block related complications. All blocks were single shot blocks performed with ultrasound guidance by a member of the regional anesthesia service.

RESULTS

Table 1: Patients with Interscalene blocks post block complications

Medication used	Readmission	ER Visit	Phone Calls
Ropivacaine	3.6%	9.2%	28.6%
Bupivacaine	2.5%	5.0%	37.9%
Liposome Bupivacaine and Bupivacaine	0%	4.1%	23.1%

Table 2 Reasons for Phone Calls

	Ropivacaine	Bupivacaine	Liposome Bupivacaine and Bupivacaine
Pain Med Refills	49 patients	24 patients	18 patients
Pain Med Switch	5 patients	5 patients	3 patients
Persistent Numbness	3 patients	2 patients	0 patients
Uncontrolled Pain	21 patients	8 patients	1 patient
Opioid Adverse Effects	2 patients	3 patients	1 patient
PONV	4 patients	2 patients	2 patients
Other	19 patients	16 patients	3 patients

RESULTS

There were 638 patients analyzed with 984 still yet to be fully analyzed. 158 that had a bupivacaine interscalene block, 121 that had a liposome bupivacaine and bupivacaine interscalene block, and 359 that had a ropivacaine nerve block. 33 in the ropivacaine group, 8 in the bupivacaine group, and 5 in the liposome bupivacaine group had an ER visit within 30 days of the interscalene block. 13 ropivacaine patients, 4 bupivacaine, and 0 liposome bupivacaine patients had a readmission within 30 days. 60 patients in the bupivacaine interscalene group, 28 in the liposome bupivacaine group, and 103 in the ropivacaine group made a phone call to the surgeon within 30 days of the block. There was one patient in the liposome bupivacaine group and one in the ropivacaine group with postoperative respiratory complications.

DISCUSSION

This retrospective study suggests that patients with liposome bupivacaine and bupivacaine interscalene blocks have similar rates of readmissions, ER visits, persistent numbness and phone calls to surgeons compared to either a ropivacaine or bupivacaine single shot block. Prospective studies are needed however.

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