



Paper #2

Does Extended-release Liposomal Bupivacaine Better Control Postoperative Knee Pain than Bupivacaine?

William C. Schroer, MD, Paul Diesfeld, PA-C, Angela LeMarr, RN,
Diane J. Morton, MS, Mary Reedy, RN

Introduction: Purpose: Multimodal pain management for total knee arthroplasty (TKA) modulates pain in the peripheral and central nervous systems. A new liposomal bupivacaine injectable offers sustained release of bupivacaine, [1-4] and has been compared with peripheral nerve blocks, IV narcotics, or limited multimodal management prescription. In this study, liposomal bupivacaine was incorporated into a robust multimodal pain management protocol and randomized against bupivacaine alone.

Methods: 111 primary TKAs were randomized to receive liposomal bupivacaine or bupivacaine. Acetaminophen, celecoxib, oxycontin, and topical scopolamine were administered before surgery. Zofran, dexamethasone, and tranexamic acid were given during surgery. Before implantation, the periarticular soft tissues were infiltrated with either 20 mg liposomal bupivacaine mixed with 30cc 0.25% bupivacaine or 60cc 0.25% bupivacaine using a 22 gauge spinal needle. After surgery, celecoxib was given and patients were provided prn narcotics. Visual analog scale pain scores were obtained twice daily. Morphine equivalents were determined for the hospital duration and the first two weeks at home.

Results: 58 patients received liposomal bupivacaine, 53 received bupivacaine. No difference was seen between study and control patients for Day 1 pain scores: 4.5 vs. 4.6 ($p=0.73$); Day 2: 4.4 vs 4.8 ($p=0.26$); or Day 3: 3.5 vs 3.7 ($p=0.58$). Narcotic use was similar during hospitalization, 51.8 vs. 54.2 ($p=0.34$), but was higher in study drug patients at home, 107.0 vs 87.7 ($p=0.045$).

Conclusion: No improvement in pain scores or narcotic use occurred with use of liposomal bupivacaine. Narcotic use actually increased in study patients after discharge, which may represent a rebound phenomenon. The study medication costs \$285, the control \$2.80. This study does not justify the routine use and cost of liposomal bupivacaine as part of a multimodal pain management program. References: 1. Bagsby DT, Ireland PH, Meneghini RM. Liposomal bupivacaine versus traditional periarticular injection for pain control after total knee arthroplasty. *J Arthroplasty* 2014;29:1687. 2. Bramlett K, Onel E, Viscusi ER, Jones K. A randomized, double-blind, dose-ranging study comparing wound infiltration of DepoFoam bupivacaine, an extended-release liposomal bupivacaine, to bupivacaine HCl for postsurgical analgesia in total knee arthroplasty. *Knee* 2012;19(5):530. 3. Lambrechts M, et al. Liposomal extended release bupivacaine for postsurgical analgesia. *Patient Prefer Adherence* 2013;6(7):886. 4. Lonner J. Role of liposomal bupivacaine in pain management after total joint arthroplasty. *J Surg Orthop Adv* 2014;23(1):37.