

A Comparison of a Multimodal Pain Control Using Liposomal Bupivacaine in an Orthopaedic Trauma Population

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Purpose: Narcotic abuse and overprescribing are currently a major focus for health-care professionals. In the last decade, there has been an increased interest in the orthopaedic community regarding pain control by targeting multiple areas of the pain pathway at the same time to bring the patient pain relief. This so-called multimodal pain control strategy uses multiple types of oral medication, regional anesthesia, and local injections that affect the pain pathway at different locations. Locally injected liposomal bupivacaine (Exparel) has shown promise in the arthroplasty literature to potentially affect narcotic consumption, patient mobilization, and length of hospital stay. This study was done to investigate if perioperative locally injected Exparel affected postoperative pain and mobility compared to a traditional pain regimen.

Methods: This is a retrospective chart review. Inclusion criteria was all patients age 18-85 years, admitted to an orthopaedic service for operative treatment of a high or low-energy traumatic injury from February 2016 to August 2016, and were treated by any of 4 orthopaedic traumatologists. Patients treated by 1 of the 4 traumatologists made up the intervention group (LA) and received a multimodal pain strategy including local injection of Exparel at the conclusion of their operation. All other patients were treated with a traditional pain regimen (TR). Patients who were not treated by 1 of the 4 traumatologists, had a Glasgow Coma Scale (GCS) of <8, or were not admitted to an orthopaedic service were excluded. Primary outcomes were visual analog scale (VAS) scores and oral morphine milligram equivalent (MME) usage. Secondary outcomes were length of hospital stay and time to mobilize with physical therapy.

Results: 144 total patients met inclusion criteria with 115 and 29 patients in the TR and LA groups, respectively. Mean age was 54.7 years with no differences between groups. There were no statistical differences in VAS or MME at 24 and 48 hours. There were no significant differences between groups in mean hospital length of stay, GCS on presentation, or ISS. TR patients mobilized with physical therapy at 3 days, while those in the LA group mobilized at 1.5 days ($P = 0.059$). Average charges billed were \$67,863 and \$71,722 for TR and LA patients, respectively.

Conclusion: In operative orthopaedic trauma patients, we found no differences in pain or MME usage at 24 and 48 hours. Exparel may have a benefit perioperatively in allowing earlier ambulation with physical therapy; however, additional studies are needed.