

## **Liposomal Bupivacaine in Implant-Based Breast Reconstruction: Patient Outcomes and Economics**

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**Purpose:** The purpose of this study is to evaluate the role of liposomal bupivacaine in postoperative pain control following implant-based breast reconstruction, the effect of liposomal bupivacaine on postoperative opioid consumption and opioid related adverse events, and the effect of liposomal bupivacaine on length of hospital stay.

**Methods:** A prospective, randomized, blinded trial of liposomal bupivacaine for postoperative pain management following implant based breast reconstruction was performed. This study consisted of two arms of patients undergoing immediate or delayed implant based breast reconstruction. Patients in the control arm were treated intra-operatively with injections with 0.25% bupivacaine and epinephrine, with 20 mL delivered to each breast pocket. Patients in the experimental arm were treated with one 20 mL, 266 mg vial of 1.3% liposomal bupivacaine, with 10 mL delivered to each breast pocket. Pain scores were recorded over the course of the patients' hospital stay. Pain medications were converted to morphine equivalents to calculate total opioid usage. Length of stay and other direct cost data was collected over the post operative period.

**Results:** Twenty patients have been enrolled prior to this interim analysis. Ten women were randomized to each arm of the study. Average age was 56.1 years for patients in the control arm and 46.9 years for patients in the experimental arm. Average post-operative pain scores were 3.54 for patients in the control arm and 3.52 for patients in the experimental arm. Opioid consumption, in morphine equivalents, was 167.25 mg for patients in the control arm and 135.12 mg for patients in the experimental arm. Diazepam consumption was 17.22 mg for patients in the control arm and 5.5 mg for patients in the experimental arm. Average length of hospital stay was 43.86 hrs for patients enrolled in the control arm and 32.36 hrs for patients enrolled in the experimental arm. Average ondansetron requirements were 6.4 mg in the control arm and 6 mg in the experimental arm. There were three episodes of nausea and vomiting in the control arm and two episodes in the experimental arm.

**Conclusion:** Early interim analysis suggests that liposomal bupivacaine has the potential to reduce opioid consumption, length of stay, and direct costs. These trends have yet to reach statistical significance, however patient recruitment and data collection is ongoing.