

## Touro Scholar

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Annual SHSP Student Research and  
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7th Annual Student Research and Scholarship  
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### Liposomal Bupivacaine Results in Cost Savings While Managing Post-Operative Pain in Fragility Intertrochanteric Hip Fractures

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**Presenter Information**

Nainisha Chintalapudi, Avinesh Agarwalla MD, Joana Lu PA, Hrayr G. Basmajian MD, Joseph N. Liu MD, and Nirav H. Amin MD

**TITLE: Liposomal Bupivacaine Results in Cost Savings While Managing Post-Operative Pain in Fragility Intertrochanteric Hip Fractures**

**BACKGROUND/OBJECTIVE:** Intertrochanteric hip fractures are amongst the most common and most expensive diagnoses in the Medicare population. Opioids have long been the mainstay of treatment however, with their high risk of adverse events, especially in the elderly, there is an effort to find non-narcotic modalities of pain management. Liposomal bupivacaine (LB) is a novel preparation of a commonly used analgesic agent that when used intra-operatively decreases narcotic requirements, decreases hospital length of stay and increases likelihood of discharge to home. The objective of this study is to determine whether there is an economic benefit to utilizing intraoperative liposomal bupivacaine in patients with fragility intertrochanteric femur fractures in comparison to a group of patients who did not receive liposomal bupivacaine.

**DESIGN/METHODS:** Retrospective observational study at two academic medical centers. Fifty-six patients with intertrochanteric hip fractures treated with cephalomedullary nail implant who received standard hip fracture pain management protocol were compared to a cohort of forty-six patients with intertrochanteric hip fractures who received additional intraoperative injections of liposomal bupivacaine. All other standard of care was identical. Standard of care was set at  $P \leq 0.05$ .

**RESULTS:** Although the length of hospital stay was similar between the two groups (3.2 days vs 3.8 days,  $p = 0.08$ ), patients receiving intraoperative liposomal bupivacaine had lower likelihood of discharge to skilled nursing facility (84.8% vs 96.4%,  $p = 0.002$ ) and a longer operative time (73.4 min vs 67.2 min,  $p = 0.004$ ). A cost benefit analysis indicated that for an investment of \$320 in the administration of LB, there was a relative savings of \$528.90 compared to the control group. The benefit:cost ratio was 1.65, indicating a \$1.65 benefit for each \$1 investing in liposomal bupivacaine.

**CONCLUSIONS:** Despite an increased initial cost, intra-operative use of liposomal bupivacaine was found to be a cost-effective intervention due to a higher likelihood of discharge to home during the postsurgical management of patients with intertrochanteric hip fractures.