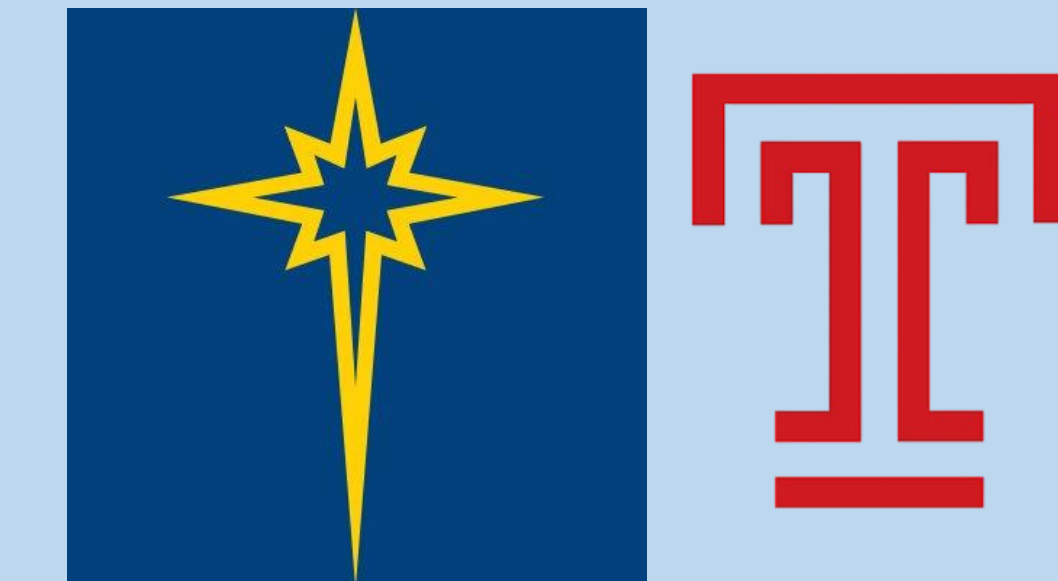




Liposomal Bupivacaine In Immediate Tissue Expander-Based Breast Reconstruction - Is It Worth The Cost?

Olivia K. Hoy MD¹; Vanessa Reese MD²; Leonard J. Auger BS¹; Nathan S. Berger BA¹; Isabelle C. Salvador BS¹; Christopher M. Sanders MD²; Anna Ng Pellegrino MD²

¹Lewis Katz School of Medicine at Temple University; Bethlehem, PA. ²St. Luke's University Health Network; Bethlehem, PA.

Purpose

- Liposomal bupivacaine is a costly and hotly debated means of delivering local anesthesia across a variety of surgical specialties and procedures.
- As it gains popularity in breast reconstruction, some health networks have refused to provide liposomal bupivacaine for administration due to rising costs and questions of its efficacy.
- Our study seeks to evaluate whether its use provides effective pain control in these patients.

Methods

- We performed a cross-sectional study assessing the effects of intraoperative liposomal bupivacaine on postoperative opioid use, length of stay, and subjective pain scores in patients undergoing immediate tissue expander-based breast reconstruction within a suburban health network from August 2021 - August 2023.

Table 1: Summary of all outcome variables of interest by experimental status.

Factor	Total	Liposomal bupivacaine		p-value
		No	Yes	
N	97	42	55	
Average Pain Scores, median (IQR)	5.50 (3.76, 7)	5 (3.60, 6.70)	6 (4, 7.20)	0.350
PACU OME, median (IQR)	20 (0, 30)	20 (0, 30)	22.50 (7.50, 30)	0.480
Postop OME, median (IQR)	30 (12, 60)	20 (10, 45)	33 (15, 75)	0.073
Total OME, median (IQR)	48 (22.50, 90)	42.50 (17.50, 70)	52.50 (30, 108)	0.100
LOS (Hr), median (IQR)	29.23 (27.13, 32.27)	29.04 (26.92, 31.58)	29.55 (27.15, 32.48)	0.230
Total OME/LOS, median (IQR)	1.73 (0.80, 2.76)	1.45 (0.67, 2.46)	1.75 (1.14, 2.81)	0.170

Note: A Wilcoxon Rank sum test was used for comparison of outcomes across experimental status.

OME = Oral Morphine Equivalents

LOS = Length of Stay

Results

- Of 97 patients who underwent pectoralis block, 50 received liposomal bupivacaine, while 43 did not.
- The groups were found to be similar with respect to age, BMI, and ethnicity, though anxiety (16% vs. 2%; $p = 0.04$) and comorbid disorders (27% vs. 7%; $p = 0.016$) were more prevalent in the experimental group.
- There was no difference in median pain scores or Oral Morphine Equivalent (OME) consumption per hour between the two groups.
- Multivariate regression found no significant impact of liposomal bupivacaine on pain or length of stay; however, its use was incidentally linked to higher OME consumption (coefficient = 0.61; 95% CI 0.07 - 1.14; $p = 0.026$).

Conclusion: Liposomal bupivacaine did not reduce postoperative opioid use, length of stay, or pain scores in patients undergoing tissue expander-based breast reconstruction.