

## **A Randomized Controlled Trial Assessing the Efficacy of Surgeon-performed, Intraoperative Adductor Canal Blocks in Same-Day Discharge Total Knee Arthroplasty**

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### **INTRODUCTION:**

Total Knee Arthroplasty (TKA) is increasingly performed in the ambulatory setting, necessitating adequate pain management for successful same-day discharge (SDD). While adductor canal blocks (ACB) are effective, anesthesiologist-performed ACBs (aACB) can increase cost and complexity. This study evaluates whether surgeon-performed ACBs (sACB) are non-inferior to aACBs in achieving timely discharge and effective analgesia.

### **METHODS:**

A prospective randomized controlled trial of 160 day surgery TKA patients, excluding 44 patients with Pain Catastrophizing Scale >16. Participants randomized to ultrasound guided aACB or intraoperative anatomic guided sACB. The primary outcome was time from spinal anesthetic reversal to discharge readiness. Secondary outcomes included Numeric Pain Rating Scale (NPRS) at discharge, 24-hour opioid use, SDD failure, 24-hour readmission, and Patient Reported Outcome Measures (PROMs) at baseline and 2 weeks post-op. Power analysis was calculated using a representative sample of SDD TKAs to detect difference of <15% in our primary outcome (Power = 80%, alpha = 0.05).

### **RESULTS:**

The primary outcome, time to discharge, was not statistically different ( $p=0.27$ ); Mean time from spinal anesthetic reversal to discharge was 183.5 minutes (SD 81.2) in the aACB group, and 237.3 minutes (SD 165.7) in the sACB group.

Secondary outcomes also showed no significant difference: NPRS at discharge - 2.2 (aACB) vs 2.9 (sACB),  $p=0.19$  and 24-hour Opioid Consumption - 45.60 MME (aACB) vs 46.22 (sACB),  $p=0.94$ . No 24-hour readmissions occurred. Nine patients failed SDD: 5 (aACB) vs. 4 (sACB),  $p=0.74$ . No significant differences were seen in post-operative OKS - 26.75 (aACB) vs 28.92 (sACB),  $p=0.23$ , PROMIS - 35.79 (aACB) vs 37.19 (sACB),  $p=0.30$ , or Overall health from EQ-5D-5L - 74.22 (aACB) vs 76.27 (sACB),  $p=0.41$ .

### **DISCUSSION AND CONCLUSION:**

Surgeon-performed ACBs are non-inferior to anesthesiologist performed ACBs. sACBs offer a feasible, resource-effective alternative for postoperative pain management in ambulatory TKA, potentially reducing reliance on specialized anesthesiology services without compromising patient outcomes.