

# 10<sup>TH</sup> GLOBAL ORTHOPEDICIANS ANNUAL MEETING

July 03-04, 2017 Kuala Lumpur, Malaysia

## A randomized clinical trial comparing adductor canal block vs. periarticular bupivacaine injection in total knee arthroplasty

William Macaulay, Matthew J Grosso, Taylor Murtaugh, Akshay Lakra, Anthony Brown, Robert Maniker Roshan P Shah and Jeffrey A Geller  
Columbia University Medical Center, USA

**Statement of the Problem:** The aim of this study is to compare the efficacy of Adductor Canal Blocks (ACB) vs. Periarticular Bupivacaine Injections (PAI) for pain management in Total Knee Arthroplasty (TKA).

**Methodology & Theoretical Orientation:** This randomized clinical trial compared outcomes between ACB (15 cc's of 0.5% bupivacaine), and standardized PAI (50 cc's of 0.25% bupivacaine) in 40 patients undergoing TKA at one academic institution for 3 surgeons. Patients undergoing unilateral primary total knee arthroplasty with the use of spinal anesthesia were randomized to 1 of 3 groups; Group A: ACB alone, Group B: PAI alone, and Group C: ACB + PAI. The primary outcome in this study was VAS pain scores in the immediate post-operative period. Secondary outcomes included activity level with physical therapy (PT), post-operative narcotic use, and length of hospital stay. This was an interim analysis of the first 40 patients, with an eventual full sample goal of 150 patients.

**Findings:** Total opioid consumption through POD3 was significantly higher for Group A (162 morphine equivalents) compared to Group B (101 morphine equivalents,  $p=0.02$ ) and Group C (96 morphine equivalents,  $p=0.01$ ). There was no significant difference in: VAS scores through POD3 (Group A: VAS 3.1, Group B: VAS 2.6, Group C: VAS 2.6); opioid consumption for POD0, POD1, POD2, or POD3; PT activity level for POD0, POD1, POD2, or POD3; total steps taken with PT through POD3 (Group A: 534 steps, Group B: 671 steps, Group C: 634 steps); nor length of hospital stay (Group A: 3.0 day, Group B: 2.4 days, Group C: 2.9 days).

**Conclusion & Significance:** In this interim analysis, there was significantly higher opioid consumption when patients received an ACB without a PAI. Periarticular bupivacaine injections are recommended for perioperative pain control in all patients who undergo a total knee replacement.

### Biography

William Macaulay, MD is an internationally renowned Surgeon and Clinical Researcher focused on adult joint reconstructive problems. He is an active Faculty Member in Medical students, Residents and fellow education. He is the author of over 100 peer-reviewed journal articles and book chapters and a member of all 4 US and European Knee and Hip Societies. His work focuses on issues related to knee & hip arthroplasty and hip fracture repair.

[william.macaulay@nyumc.org](mailto:william.macaulay@nyumc.org)

### Notes: