

TITLE: Additive effect of Continuous Adductor Canal Block and Periarticular Injection in Total Knee Arthroplasty

AUTHOR(S): Blinded Copy -- Leave Blank

AFFILIATION(S): Blinded Copy -- Leave Blank

---

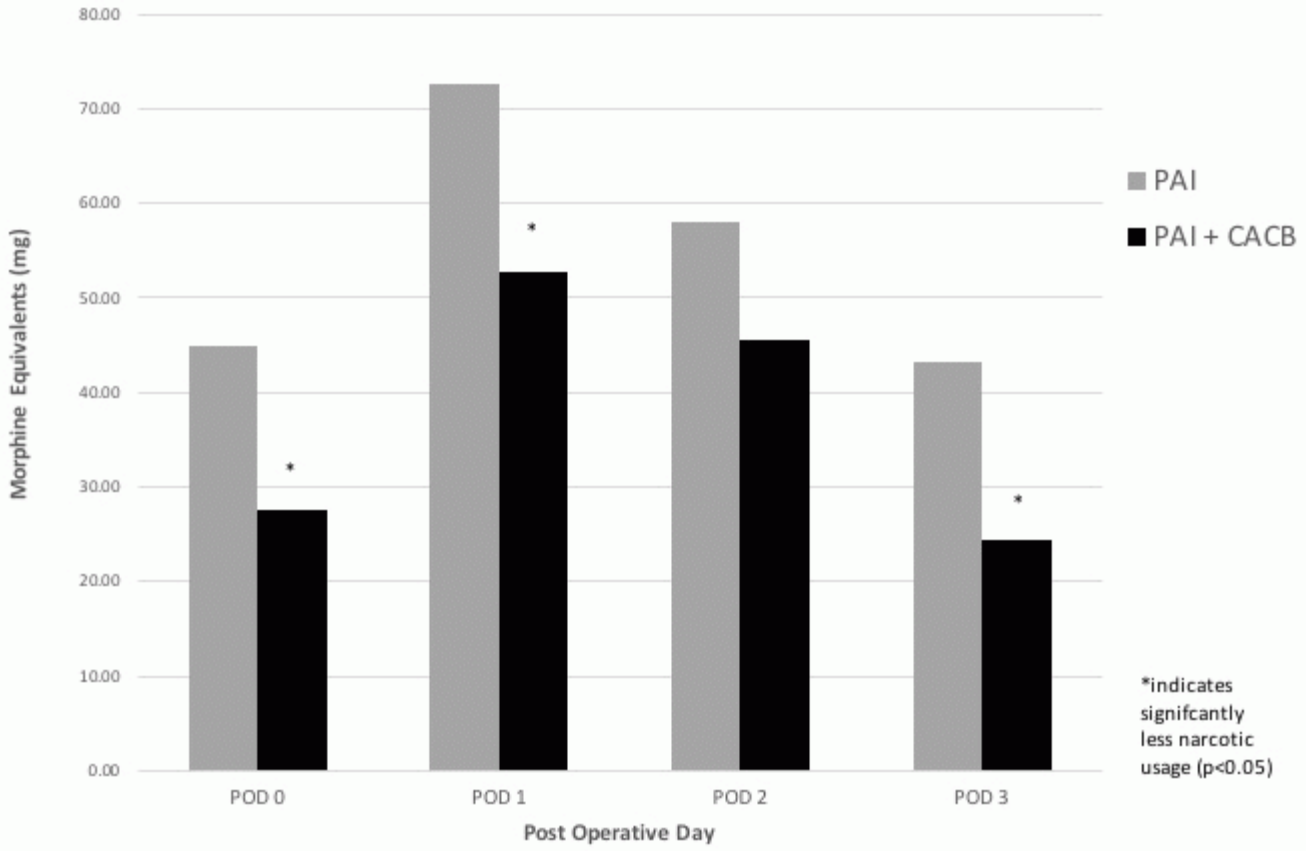
**Background:** We looked to evaluate the effect of periarticular injection (PAI) alone versus in conjunction with continuous adductor canal block (CACB) in patients undergoing total knee arthroplasty (TKA). The differences in outcomes of these two groups were compared as they relate to morphine equivalent administration, pain with activity and at rest, distance walked with physical therapy, and total length of hospital stay.

**Methods:** A retrospective review of patients that underwent unilateral TKA at one institution and performed by one surgeon was undertaken. The study population (n=91) was divided into two groups; those that received PAI alone (n=54) and those that received PAI and CACB (n=37). Patient outcomes recorded for statistical analysis included analgesia administration (converted to dose equivalents of morphine), visual analog pain scale (VAS) both with activity and at rest, distance walked with physical therapy, and total length of hospital stay. Data was recorded on postoperative day (POD) zero through three. A student t-test was used for statistical analysis and  $p < 0.05$  was determined to be significant.

**Results:** The difference in length of stay between the PAI only versus the PAI and CACB group was 4.43 and 3.81 days respectively, which was found to be statistically significant ( $p = .047$ ). There was a statistically significant reduction in morphine equivalents administered for the PAI and CACB group compared to PAI alone ( $p = 0.009$ ). Reduction in daily morphine equivalents for the PAI and CACB group compared to the PAI only group on POD0, POD1 and POD3 was statistically significant at  $p = 0.005$ ,  $p = 0.045$ ,  $0.014$ , respectively. Patients in the PAI and CACB group walked more steps than the PAI alone group on POD 1, POD 2, and POD 3, which was found to be statistically significant ( $p = 0.041$ ,  $0.046$ ,  $0.015$ , respectively). In regard to VAS, on POD 0 there was a statistically significant reduction in pain at both rest and with activity in the PAI and CACB group versus the PAI group alone ( $p = 0.009$  and  $0.02$ , respectively).

**Conclusion:** In this study we identified an additive effect when utilizing both PAI and CACB for postoperative TKA analgesia. Our findings demonstrated a statistically significant reduction in total morphine equivalents administered and an increase in walking distance with physical therapy. These results support the use of CACB in addition to PAI to improve functional outcomes and reduce morphine administration during the postoperative inpatient setting after TKA.

# Morphine Equivalent Administration per Post Operative Day with PAI vs PAI + CACB



### Total Daily Feet Walked with Physical Therapy in Patients with Periarticular Injection Alone vs. Periarticular Injection and Continuous Adductor Canal Block

