



INTRODUCTION

- **Motor-sparing nerve blocks in TKA** as essential components of multimodal analgesic regimens
- **Adductor canal block (ACB)** has gained popularity as an alternative to the femoral nerve block
- The **duration** of single-shot blocks is **limited**

This study aims to evaluate whether extending the duration of the ACB using **peripheral nerve catheters** reduces opioid consumption during the first **24 to 48-hour postoperative** period following TKA.

METHODS

Triple-blinded randomized controlled trial

94 patients undergoing primary unilateral TKA

Group 1: Single-shot ACB with 0.25% bupivacaine and 4 mg perineural dexamethasone

Group 2: ACB via a catheter with continuous infusion of 0.2% ropivacaine for 50 hours.

Both groups: Standardized multimodal analgesic regimen - IPACK block, periarticular infiltration (PAI), oral pain medications (opioids, NSAIDs, acetaminophen, muscle relaxants).

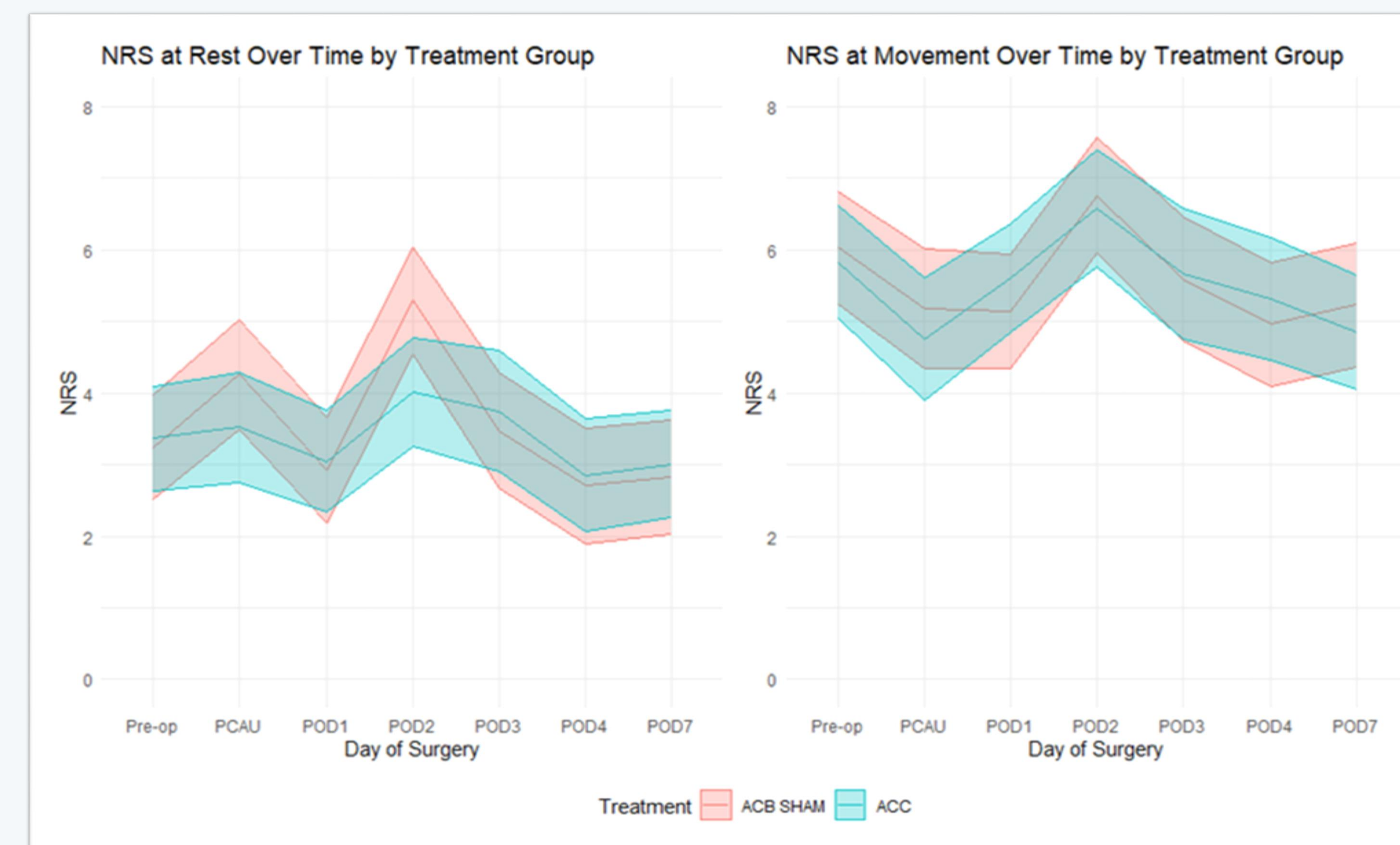
Primary outcome: Opioid consumption - 24 to 48-hour postoperative period

Secondary outcomes: Total opioid consumption, numeric rating scale (NRS) pain scores, patient satisfaction, opioid-related side effects, block complications, length of hospital stay, and functional recovery.

Figure 1. Postoperative opioid use over time by treatment group



Figure 2. NRS pain scores over time by treatment group



RESULTS

- **No significant difference in opioid consumption** between catheter and single-shot (24 to 48-hour period)
- **NRS pain scores at rest on POD 2 were significantly lower** in the catheter group

Catheter group: Reduced use of rescue intravenous opioids (42.6% vs. 66%,) and fewer opioid-related side effects on POD 2

There were **no significant differences** between groups in terms of patient satisfaction, block complications, length of hospital stay, or functional recovery.

DISCUSSION

Prolonging the duration of the ACB using peripheral nerve catheters did not result in reduced opioid consumption within the framework of a comprehensive multimodal analgesic regimen that included perineural dexamethasone, IPACK block, PAI, and continuous telemedicine-based pain consultation throughout the postoperative period.

