

Effect of Regional Anesthesia on Diabetic Patients Undergoing Toe Amputations

Abhinav V. Raju^{1,2}; Ethan Mosley, DO²; John-Paul J. Pozek, MD²

¹Kansas City University College of Osteopathic Medicine, Kansas City, Missouri

²Department of Anesthesiology, University of Kansas Medical Center, Kansas City, Kansas

BACKGROUND

- Amputations are associated with chronic postsurgical pain (CPSP) [1].
- There is a lack of literature about the incidence of CPSP after toe amputations unlike more proximal amputation procedures [2].
- There is little study into pain for diabetic patients after toe amputation.
- There is literature that contends diabetics have less phantom limb pain [3].
- There have been studies that show similar rates of phantom pain between diabetics and non-diabetics [4].

PURPOSE/AIMS/HYPOTHESIS

- Retrospective, single-institution study that evaluates the effect of regional anesthesia (RA) on pain and opioid use in diabetic toe amputations.
- Hypothesis: Regional anesthesia is associated with decreased pain and opioid usage over 72 hours.

METHODS

- Chart review in EPIC on all patients who had undergone toe amputation surgery at the University of Kansas Health System between 7/1/24 and 12/31/24.
- Inclusion criteria include adult patients 18 years or older and diabetic patients.
- Out of 60 patients, 22 patients received RA, involving a lateral popliteal sciatic nerve block, and 38 did not and formed the control group.
- Multiple local anesthetic concentrations used
- The primary outcome is **pain** in the immediate postoperative period up to 72 hours after surgery.
- The secondary outcome is **milligram morphine equivalent (MME)** of opioids from the intraoperative period up to 72 hours after surgery.

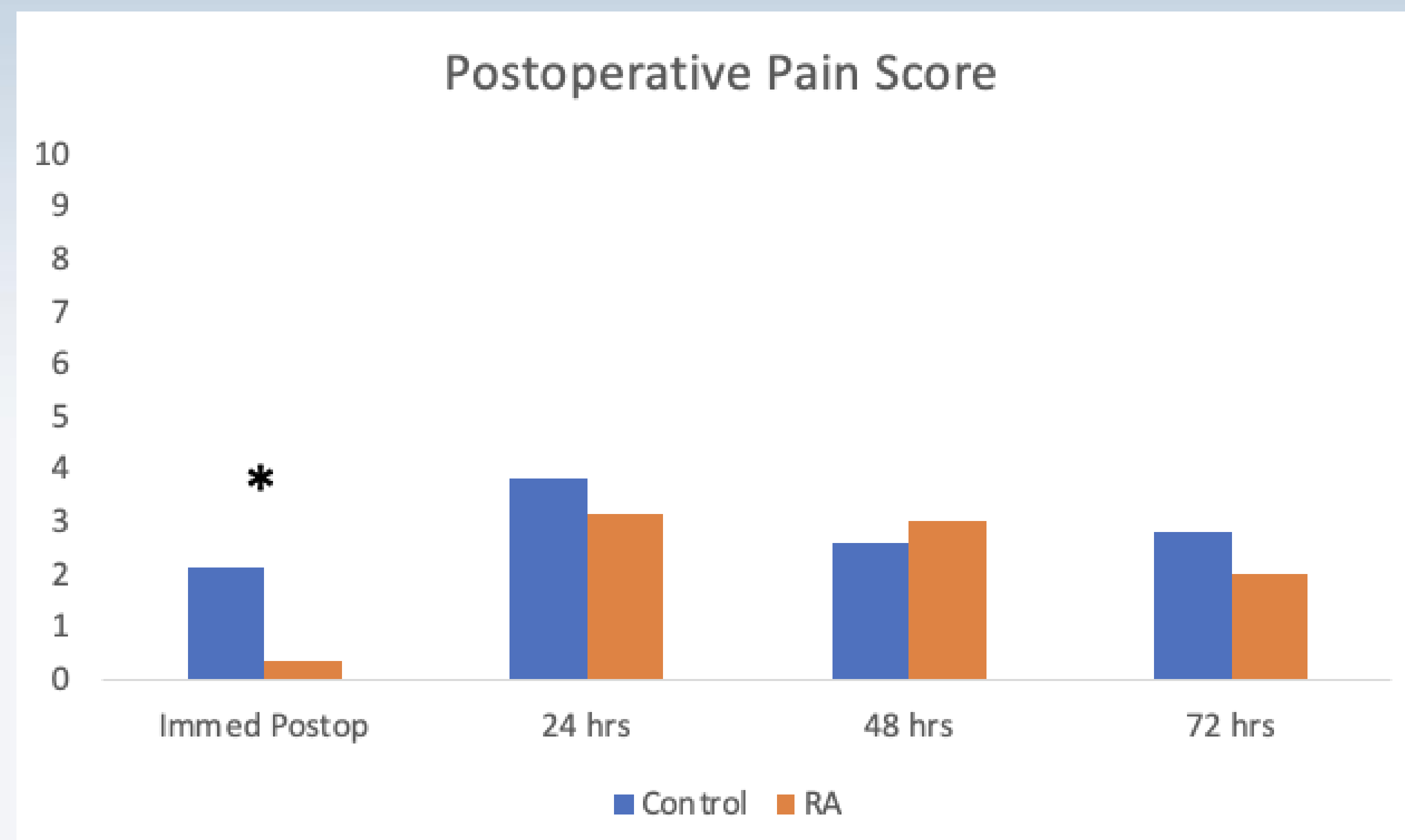


Figure 1 Comparing pain scores in the immediate postoperative period through 72 hours postoperatively.

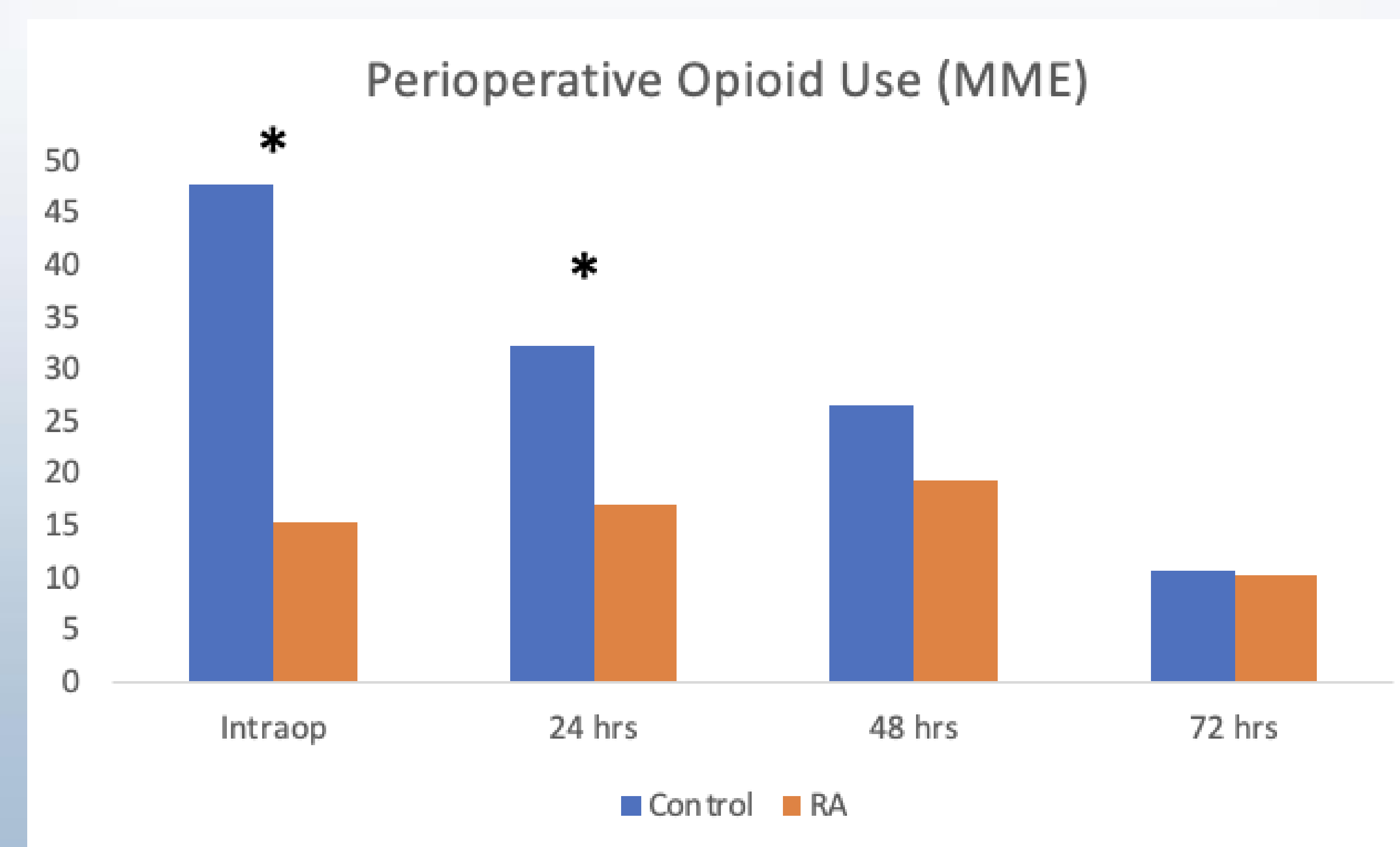


Figure 2 Comparing opioid use intraoperatively through 72 hours postoperatively in MME.

RESULTS

- There was a statistically significant decrease in pain in the immediate postoperative period (2.1 vs 0.36, $p = 0.01$) in the RA group but not at other time periods (Figure 1).
- While there was a statistically significant decrease in opioid usage intraoperatively (47.6 vs 15.3, $p = 0.01$) and through 24 hours (32.3 vs 17.1, $p = 0.04$), this was not sustained to 72 hours (Figure 2).

DISCUSSION

- The results indicate that RA for diabetic patients undergoing toe amputation leads to reduced pain in the immediate postoperative period.
- The results also show that RA was associated with reduced opioid usage in the intraoperative and 24 hours post-procedure periods.
- Pain control and opioid use were similar after these time periods up to 72 hours
- Unable to account for pre-existing pain or long-term opioid use
- Limited by small sample size and suboptimal RA plan

CONCLUSION

- Reduced pain and opioid usage only in certain time periods intra- and post-operatively and not over the complete 72 hours.
- Prospective, randomized controlled trials comparing appropriate peripheral nerve catheters with standard therapy are needed.

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