

Comparing Analgesic Modalities for Lower Extremity Amputations: A Single Center Retrospective Study

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BACKGROUND

Patients undergoing amputations have high incidence of chronic postsurgical pain (CPSP). While many of the risk factors for developing CPSP cannot be modified, we can work to minimize severe postsurgical pain by innervation from acute pain medicine physicians. Providing adequate analgesia for lower extremity amputations can be difficult due to complex innervation. There is no consensus on the optimal pain control regimen for either above the knee amputation (AKA) or below the knee amputations (BKA)

PURPOSE

Our aim is to evaluate if our new preferred technique of femoral and sciatic peripheral nerve catheters (PNCs) results in significantly less pain and opioid usage than other analgesic regimens.

MATERIALS and METHODS

This is a retrospective, single center study comparing regional anesthesia regimens for AKAs and BKAs during 2021 and 2022. As no identifiable patient data, documents, or specimens are present in the study, the University of Kansas Medical Center IRB granted an exemption per policy. A chart review was performed in our electronic medical record with data analyzed included date of surgery, surgical intervention, age, postoperative pain and analgesic use. Patients were grouped by regional anesthetic regimen, with no regional anesthesia (None), single shot peripheral nerve blocks (SS Only), 1 PNC, or 2 PNCs. The primary outcome was pain score immediately postoperatively, at 12 hours, 24 hours, and 48 hours. Secondary outcome is milligram morphine equivalent (MME) of opioids intraoperatively, at 24 hours, 48 hours, and 72 hours.

RESULTS

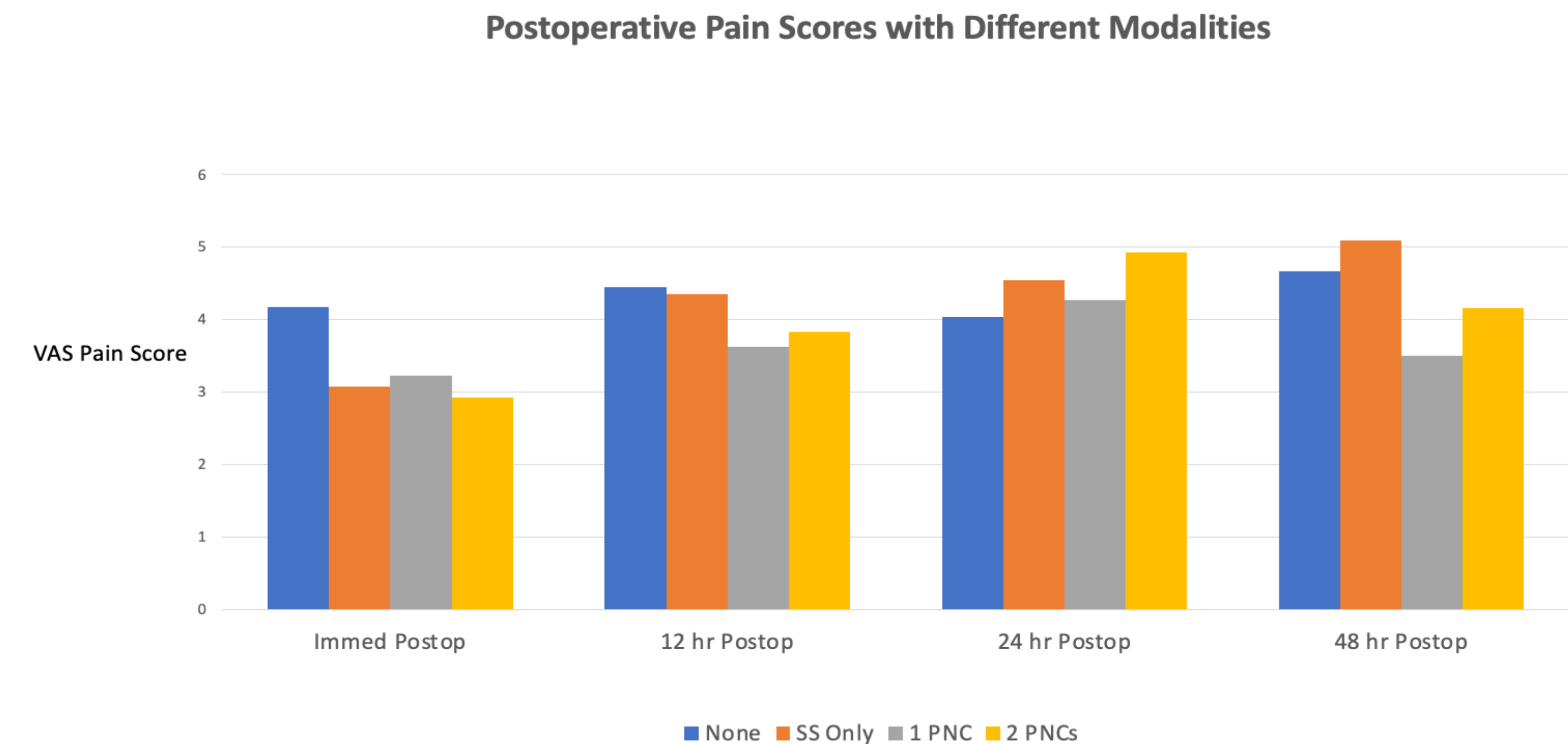


Table 1. VAS pain scores at time intervals in the postoperative period

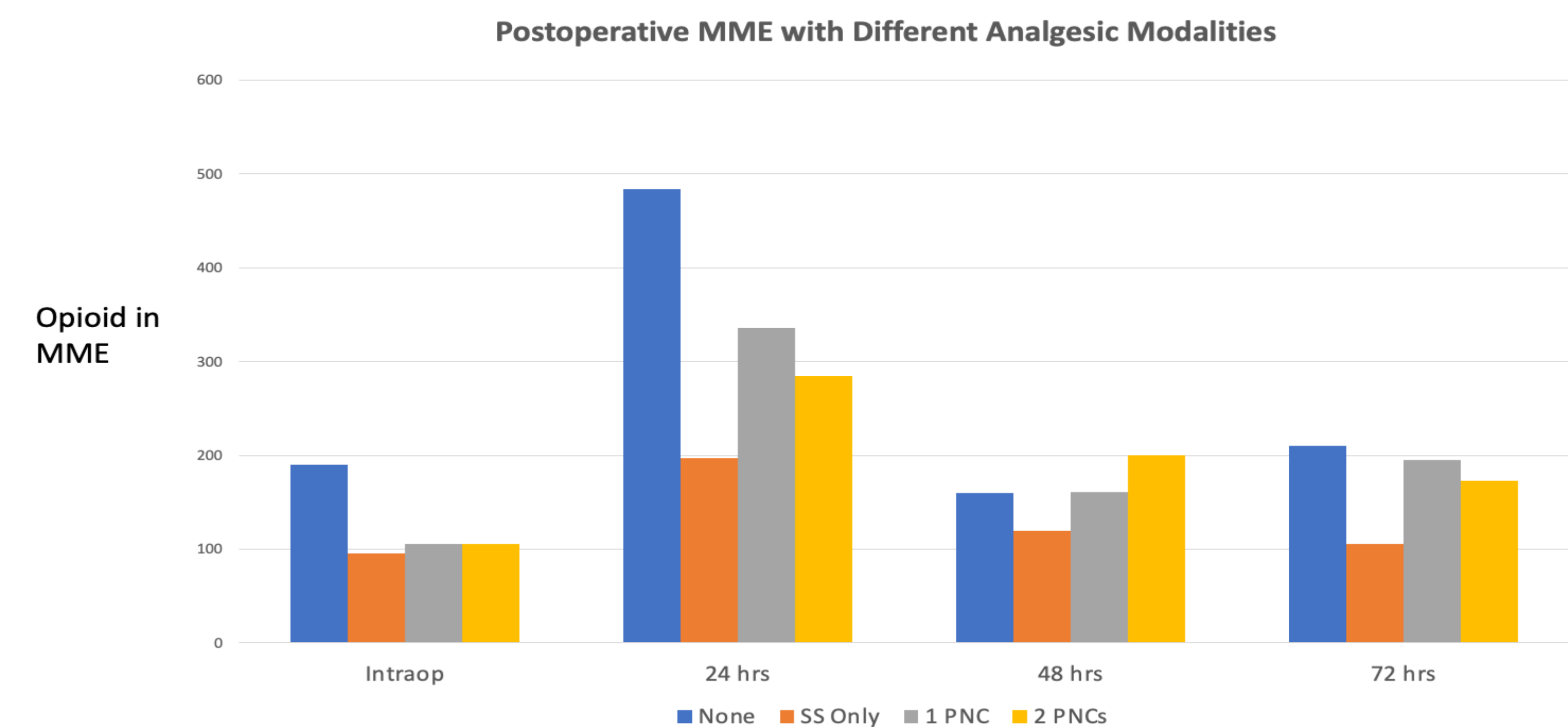


Table 2. Opioid usage in MME at time intervals in the postoperative period

RESULTS

Patients in the 2 PNCs group had average pain scores of 2.93, 3.83, 4.93, and 4.18 at immediately postoperatively, at 24 hours, 48 hours, and 72 hours, respectively. This was compared with pain at similar intervals (Table 1) for 1PNC (3.23, 3.62, 4.27, 3.5), SS Only (3.08, 4.35, 4.55, 5.09), and no regional anesthesia (4.18, 4.45, 4.003, 4.67).

For opioid ingestion in the postoperative period, the 2 PNCs group had average MME intake of 105, 285, 200, and 172.5 in the intraoperative period, 24 hours postoperatively, 48 hours postoperatively, and 72 hours, postoperatively. These numbers were compared with opioid intake at similar intervals (Table 2) for 1 PNC (105, 336, 161, and 195), SS Only (95,197, 120, 105), and no regional anesthesia (190, 484, 160, 210).

DISCUSSION

There is no significant difference in pain over 72 hours between the groups or opioid usage between our preferred analgesic method and other analgesic methods. The only statistically significant result was decrease in opioids at 24 hours in the 1 PNC population vs patients that did not receive regional anesthesia.

CONCLUSION

We propose the formulation of a perioperative multimodal analgesic protocol for the amputation population that includes PNCs placed preoperatively and continued in the postoperative period as well as well reasoned multimodal analgesic plan tailored to the patient's reported quality of pain.

REFERENCES

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2. Bosanquet DC, Glasbey JC, et al. Systemic review and meta-analysis of the efficacy of perineural local anaesthetic catheters after major lower limb amputation. Eur J Vasc Surg. 2015;50(2)241-49.