



Stanford
Anesthesiology,
Perioperative
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Impact of Dexamethasone on Postoperative Outcomes in Regional Anesthesia for Orthopedic Procedures: A Retrospective Cohort Study

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Introduction

Intravenous (IV) dexamethasone has been shown as a useful adjuvant to prolong the analgesic duration of peripheral nerve blocks (PNB)s. Independently, IV dexamethasone is routinely used for PONV prophylaxis. Given the routine use of IV dexamethasone; we wished to studies patients undergoing upper and lower extremity orthopedic procedures requiring single-shot PNB to elucidate if administration of IV dexamethasone impacted postoperative outcomes as it relates to PNBS.

Materials and Methods

- De-identified EHR data from 2015-2025 at Stanford Health Care was used to examine adult patients undergoing upper and lower extremity orthopedic surgeries.
- All revision surgeries were excluded.
- All patients studied received single-shot PNB.
- Postoperative outcomes comparing those who received dexamethasone (n=370) to those who did not (n=138) included: opioid requirements, antiemetic use, length of stay, pain-related readmission rates at 30 and 60 day, and incidence of chronic pain within 60 days post-surgery

Figure 1: Demographics

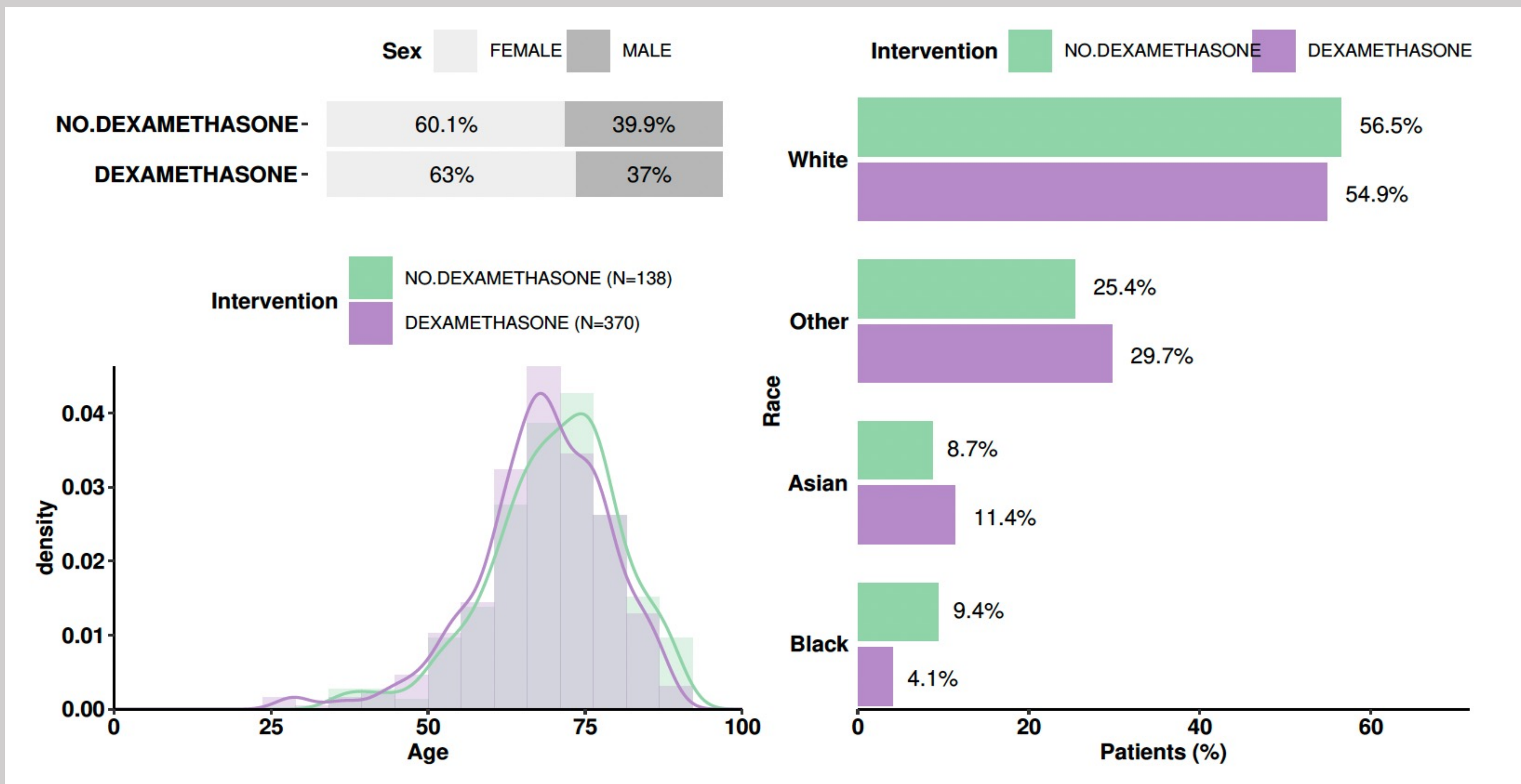


Figure 2: Cohort Propensity Score

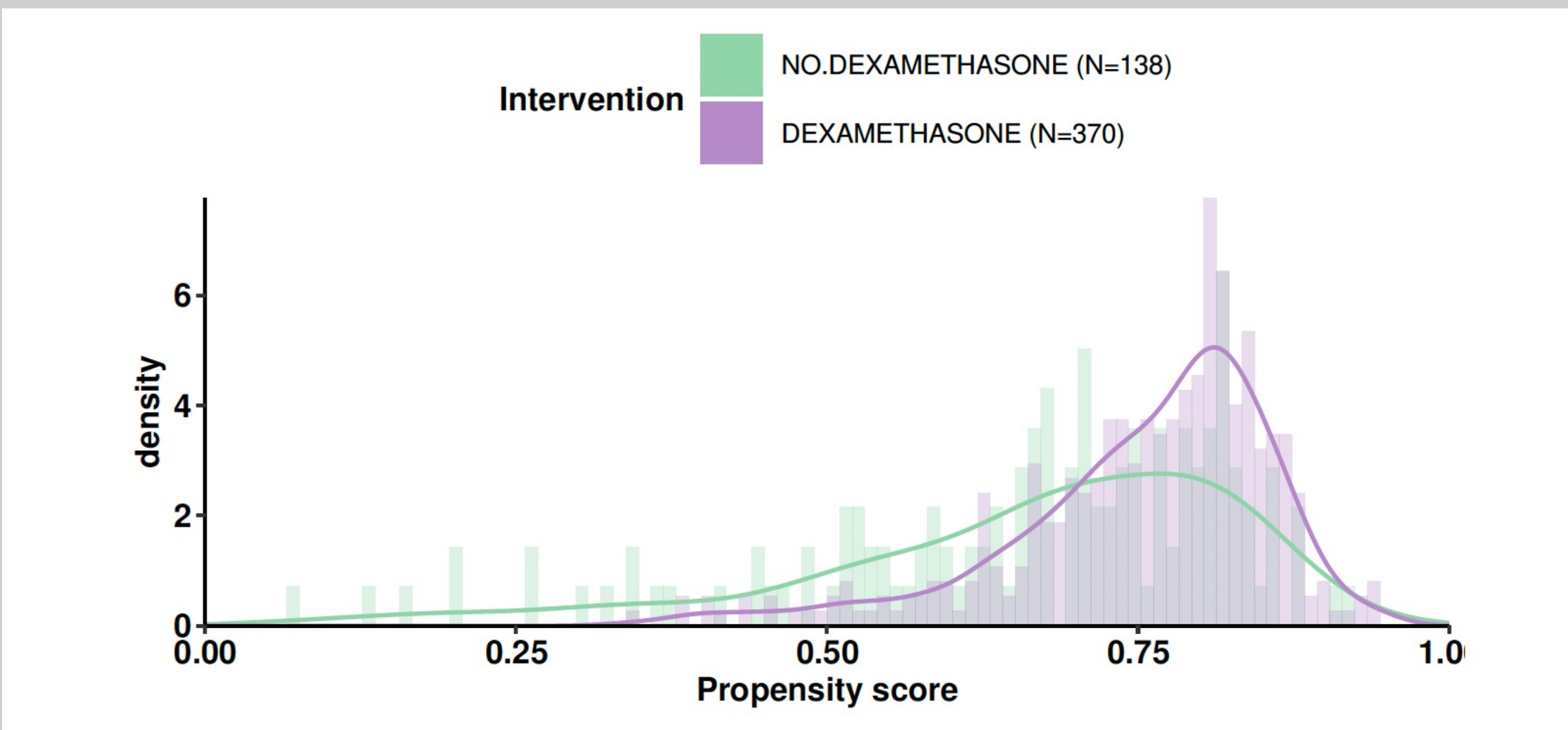
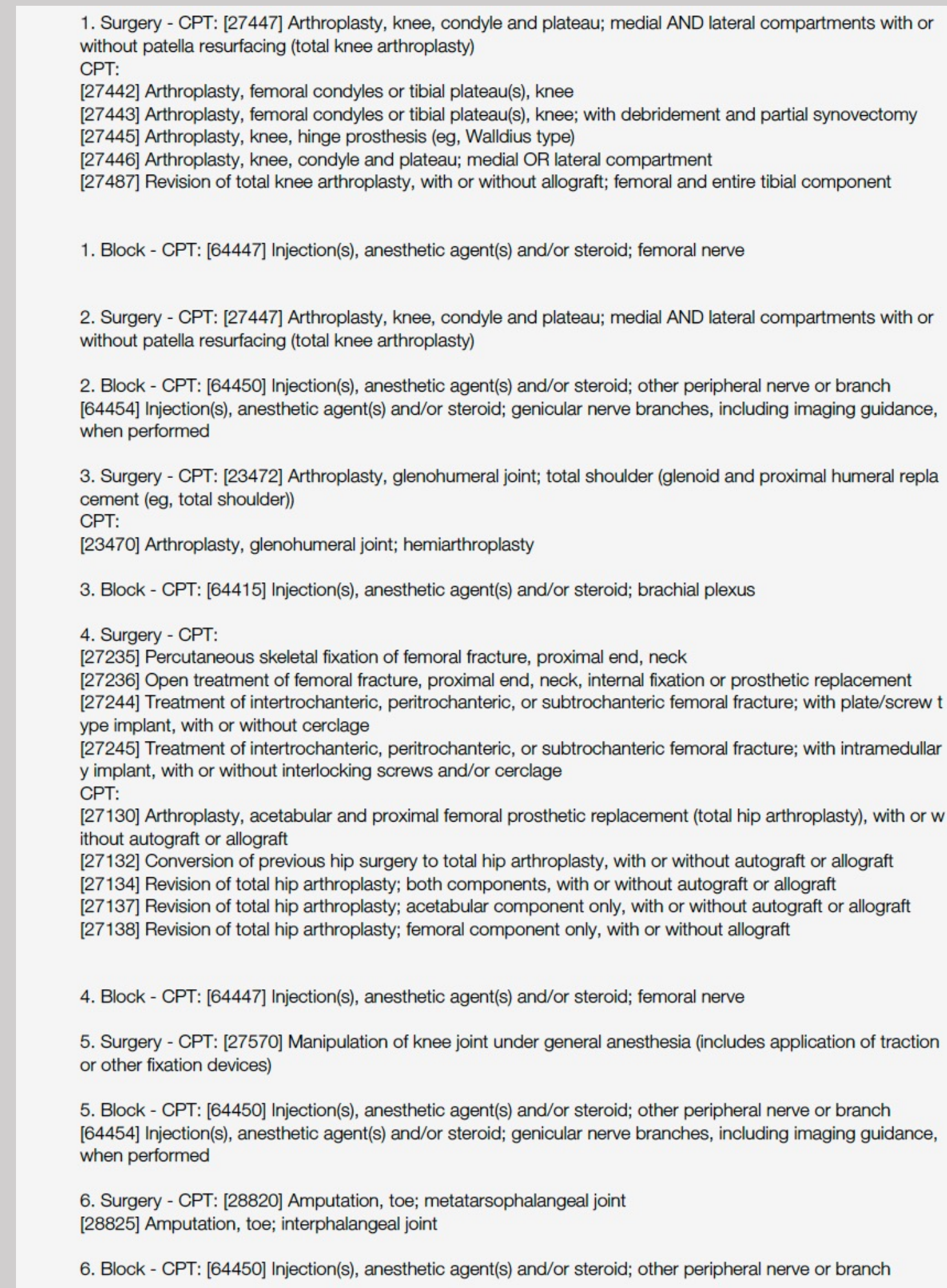


Figure 3: Surgery Block Pairings



Results

- The control group had a higher percentage of patients with diabetes with complications (21.0% vs 7.8%), renal disease (29.0% vs 15.4%), and peptic ulcer disease (5.8% vs 1.6%).
- The study found no significant difference in post-operative opioid requirements, antiemetic use, length of stay, pain-related readmission rates at 30 and 60 days, and incidence of chronic pain within 60 days post-surgery.

Discussion

- This retrospective cohort study evaluated IV dexamethasone on postoperative outcomes in patients undergoing upper or lower extremity orthopedic surgery with single-shot PNB.
- No significant differences were observed between the dexamethasone and control group in opioid requirements, antiemetic use, length of stay, pain-related readmission rates at 30 and 60 days, and incidence of chronic pain within 60 days post-surgery.
- Future research regarding pain relief should assess chronic opioid use of patients, which was not evaluated in this study.
- While IV dexamethasone maintains a role in PONV prophylaxis, this study does not support IV dexamethasone to augment PNBS

References

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