Cluster-Randomized Trial of Opiate-Sparing Analgesia after Discharge from Elective Hip Surgery

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Introduction

Orthopedic surgeons have traditionally relied heavily on opiates after total hip replacement (THR) despite no clear evidence of benefit and a rapidly growing abuse epidemic. Multimodal analgesia may reduce or even obviate the need for opiates after elective surgery. The goal of this study was to assess the efficacy of multimodal analgesia with a minimal opiate supply compared with traditional opiate regimens after discharge from elective hip surgery.

Materials and methods

This study was a prospective, three-arm, parallel-group, cluster-randomized, crossover trial conducted at four surgical sites with Institutional Review Board and Medical Executive Committee approval. Chronic opiate users and patients with contraindications to protocol medications were excluded. From June 2017 to January 2018, 235 patients undergoing THR were randomized in clusters to receive multimodal analgesia with minimal opiates (Group A- 10 tablets), multimodal analgesia with a full opiate supply (Group B- 60 tablets), or a traditional opiate regimen without multimodal analgesia (Group C- 60 tablets). Clusters were determined by surgeon, with each cluster alternating between interventions in 4-week intervals. The multimodal regimen comprised scheduled-dose acetaminophen and gabapentin for four weeks and meloxicam for two weeks postoperatively. Primary outcomes were daily pain and opiate utilization for the first 30-days. Secondary outcomes included assessments of satisfaction, sleep-quality, opiate-related symptoms, hip function, and adverse events.

Results/Case report

There was no difference in baseline characteristics between groups, except that patients in Group B had a lower BMI (p=0.03). Daily pain was significantly lower in both multimodal groups, Group A (Coeff -0.81, p=0.003) and Group B (Coeff -0.61, p=0.021) compared to Group C. While daily opiate use was lower for both Group A (Coeff -0.77, p<0.001) and Group B (Coeff -0.30, p=0.04) compared to Group C, opiate use was also lower for Group A relative to Group B (Coeff -0.46, p=0.002). Mean time to discontinuation of opiate medications was significantly shorter for Group A (1.1 weeks) and Group B (1.4 weeks) compared with Group C (2.6 weeks) (p<0.001 and p=0.001, respectively), and opiate refills were required for 10.5% of patients in Group A, 6.5% of patients in Group B, and 15.6% of patients in Group C. There were significantly fewer adverse opiate-related symptoms in Group A compared to Group C (p=0.005), in particular fatigue, but Group B and C didn’t differ (p=0.13). Additionally, both multimodal regimens improved satisfaction and sleep, and there was no difference in hip function or adverse events.

Discussion

A multimodal analgesic regimen with minimal opiates improved pain control while significantly decreasing opiate utilization and opiate-related adverse effects. It’s now time to rethink traditional opiate prescription after elective surgery. (ClinicalTrials.gov number, NCT03358888.)

References


Tables/images

- Mean 30-day postoperative daily VAS pain scores

- Mean 30-day postoperative daily morphine equivalent utilization

Disclosures

I declare that there are no conflicts of interest or support that may cause bias in my presentation.