44485 - GABAPENTIN & MULTIMODAL ANALGESIA POST HIP ARTHROPLASTY UNDER SPINAL

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INTRODUCTION: Total hip arthroplasty is associated with significant pain and decreased mobility in the immediate postoperative period. Gabapentin has been shown to be effective for reducing postoperative pain, opioid consumption and accelerating functional recovery in other types of surgery¹. We collected pilot data to determine: 1) Does gabapentin administration, as a component of a comprehensive multimodal analgesic regimen, reduce pain and opioid use after total hip arthroplasty under spinal anesthesia? 2) Is preoperative administration of gabapentin more effective than postoperative administration?

METHODS: After obtaining REB approval and informed consent, 30 patients were enrolled in our open label pilot study. All patients received acetaminophen 1000 mg po, celecoxib 400 mg po, and dexamethasone 8 mg iv, 1-2 hours preoperatively. Patients were randomly assigned to one of three treatment arms (Placebo/Preoperative /Postoperative). Patients randomized to the preoperative group received gabapentin 600 mg po 2 hours prior to surgery; the other groups received an identically looking placebo capsule. All patients had spinal anesthesia with 15 mg of 5 mg/mL bupivacaine and 10 µg of fentanyl. In the PACU, the postoperative group received gabapentin 600 mg po; the other groups received an identically looking placebo capsule. On the ward, patients received acetaminophen 1000 mg po q6h, celecoxib 200 mg po q12h, and a morphine PCA device for 48 hrs with instructions to maintain their pain scores < 4 /10.

RESULTS: 27 patients (Placebo (n=10), Preoperative (n=9), Postoperative (n=8)) completed the pilot study. Cumulative morphine consumption at 36 hours was significantly reduced in the preoperative gabapentin group (42 ± 15.7 mg) compared to the other groups, (60 ± 20.8 mg) $p < 0.05$ for the postoperative group. Visual analogue pain scores at rest were low with the multimodal regimen and similar among all groups (placebo (17 mm), preoperative (21 mm) and postoperative (17 mm)) on POD 2. A trend towards decreased pain with ambulation (placebo (37 mm) vs preoperative (23 mm), postoperative (22 mm)) was evident on POD 2. 50% of the placebo group experienced sedation compared to 11% in the preoperative and 37% in the postoperative groups. The placebo group also reported more nausea, 40%, compared to 22% and 25%.

CONCLUSIONS: We conclude that preoperative gabapentin administration has opioid sparing effects in the acute postoperative period after total hip arthroplasty performed under spinal anesthesia. This was demonstrated even within a comprehensive multimodal analgesia regimen. A larger, prospective, randomized, double blinded, placebo-controlled trial with long term

follow-up, is underway to verify the results of our pilot work, and examine the incidence of persistent postoperative pain as it relates to perioperative pain interventions.

REFERENCES: Anesth Analg 2005;100:1394-9