Fighting the Opioid Epidemic: A Prospective Randomized Controlled Double-Blinded Trial Comparing Acetaminophen, Ibuprofen, and Oxycodone after Hand Surgery

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INTRODUCTION:

Adequate postoperative pain control in hand surgery is a multifactorial and practical issue that affects patient satisfaction, outcomes, and safety. However, prescription opioid abuse is becoming an increasingly prevalent problem in the Unites States broadly referred to as the "Opioid Epidemic," and subsequently there is increasing interest to use non-opioid analgesics as an alternative to opioid analgesics after surgery. The purpose of this study was to evaluate the efficacy of three separate common oral analgesics: oxycodone (OXY), ibuprofen (IBU), and acetaminophen (ACE), in the management of postoperative pain following carpal tunnel release (CTR) or trigger finger release (TFR) performed exclusively under local anesthesia without sedation. Our hypothesis is that there would be no difference in postoperative pain experience, pain control, adverse events, and pill consumption between the various analgesics.

METHODS:

Patients scheduled for primary unilateral CTR or TFR under local anesthesia alone were randomized to receive ten de-identified opaque capsules of either oxycodone 5mg (OXY), ibuprofen 600mg (IBU), or acetaminophen 500mg (ACE) after their hand surgery. Both patients and the surgeon was blinded to the analgesic pills distributed postoperatively. Patients subsequently reported their daily pain experience, number of pills consumed daily, adverse effects, and the request for additional or different oral analgesics postoperatively from days 0 to day 5. Patients' demographic information and satisfaction responses were also recorded. ANOVA and Chi-square tests were performed between the groups.

RESULTS:

Thirty patients have enrolled in the study to date. Analgesic pill type distribution was: 10 patients received OXY, 12 patients received IBU, and 8 patients received ACE. Surgeries included: 23 CTR and 7 TFR cases. The average total pills consumed for POD 0-5 for OXY, IBU and ACE were 0.6, 0.9, and 0.5 pills, respectively ($p>0.8$). The average VAS scores (from 0-10) for the worst pain experienced postoperatively for all days for the OXY, IBU, and ACE groups were 1.6, 1.5, and 1.4, respectively ($p>0.15$). There was also no difference in adverse events or request for different or stronger medications in either group too.

DISCUSSION AND CONCLUSION:

The study to date identified no difference in pain experience, pill consumption, or adverse events whether they received an opioid (OXY) or non-opioids (IBU and ACE) after CTR and TFR surgery. The study findings imply that there is a role and validity to use non-opioids instead of opioids after hand surgery. The use of non-opioids can aid in combatting opioid abuse and the "Opioid Epidemic" at large.