

Effect of Preoperative and Postoperative Doses of Acetaminophen on Pain Management in Patients Undergoing Rotator Cuff Repair: A Prospective Randomized Study

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INTRODUCTION:

Limiting opioid use in perioperative pain management is currently an important focus in orthopaedic surgery. The ability of acetaminophen to reduce postoperative opioid consumption while providing acceptable pain management has not been thoroughly investigated in patients undergoing rotator cuff repair (RCR).

METHODS:

Patients undergoing primary arthroscopic RCR were prospectively randomized to one of three groups. Group 1 (control) patients were able to take oxycodone 5mg every 6 hours as needed and acetaminophen 1000mg every 6 hours as needed following surgery. Group 2 patients were able to take oxycodone 5mg every 6 hours as needed without any additional acetaminophen following surgery. Group 3 patients received 1,000 mg of acetaminophen every 6 hours for 1 day prior to and following surgery. During postoperative days 2-5, these patients received 1000 mg acetaminophen every 8 hours. Group 3 patients were also allowed to take oxycodone 5mg every 6 hours as needed following surgery. All patients received interscalene blocks with liposomal bupivacaine. Opioid use, pain scores using a 0-100 scale, potential side effects, and overall satisfaction with the pain management regimen were recorded daily following surgery for the first week. Chi-squared tests were used to calculate p values for categorical data and ANOVAs were used for continuous data.

RESULTS: Fifty-seven patients (mean age, 57.8 ±9.55 years) who completed the protocol were evaluated. Baseline demographics including age, gender, and body mass index (BMI) were similar between the groups (P > .05). Patients in group 3 took significantly fewer 5mg oxycodone pills overall (P= .017) (Table I). Furthermore, group 3 took significantly fewer narcotic pills each day on average compared to group 2 (Figure 1). Additionally, group 3 also reported significantly better overall pain control compared to the other groups (P= .040). There was no significant difference in overall satisfaction between the groups (P > .05). Additionally, there was no significant difference between groups regarding postoperative medication associated side-effects (P > .05).

DISCUSSION AND CONCLUSION:

Perioperative acetaminophen significantly decreased opioid consumption and resulted in improved overall pain control following primary rotator cuff repair. Further study in a larger cohort of patients is needed to fully evaluate the efficacy of acetaminophen in this role. Acetaminophen appears to be an important component of multimodal analgesia in appropriately selected patients undergoing shoulder surgery.

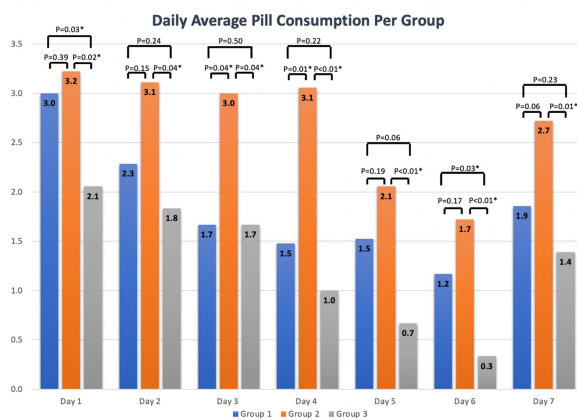


Figure 1
Effect of Acetaminophen on Pain Management Following Rotator Cuff Repair

Study Group Parameter	1 (N=21)	2 (N=18)	3 (N=18)	P Value
Age at Surgery	56.67 (11.45)	57.11 (8.51)	59.72 (8.23)	0.580
Sex	11F 10M	3F 15M	7F 11M	0.069
BMI	30.29 (5.06)	32.36 (5.97)	29.01 (4.31)	0.153
Laterality	13R 8L	5R 13L	13R 5L	0.019
Pills Taken	12.97 (10.95)	18.88 (10.85)	8.94 (8.06)	0.017
Pain 0-100	46.37 (23.63)	59.93 (22.32)	41.49 (19.63)	0.040
Satisfaction	2.14 (0.83)	2.42 (0.62)	1.87 (0.67)	0.083

One pill = 5mg oxycodone. Patient satisfaction with pain control regimen, from 1-5, 1 is best. Satisfaction and pain averaged out for post-operative days 1 through 7. Pain scale measured from 0-100.