The Effect of Non-Steroidal Anti-Inflammatory Drugs on Union Rates following Operative Repair of Distal Radius Fractures

Michael Chang, Juliet Chung, Alexis Kasper¹, Sina Ramtin, Margaret V Pennington, Asif M Ilyas ¹Rothman Orthopaedic Institute

INTRODUCTION: Multi-modal pain regimens for controlling postoperative pain after surgery for fractures often include nonsteroidal anti-inflammatory drugs (NSAIDs). However, some surgeons remain reluctant towards prescribing NSAIDs due to concerns of compromised bone healing. The study hypothesis was that a short-term prescription of NSAIDs for postoperative pain after distal radius fracture repair would not result in a significant difference in union rates.

METHODS: Consecutive patients who underwent surgical repair of a distal radius fracture with a volar locking plate from a single academic institution with five hand surgery fellowship-trained orthopaedic surgeons was retrospectively reviewed. The cohort was divided into those prescribed +NSAIDs and those who were not (-NSAIDs) postoperatively. Preoperative patient characteristics and postoperative pain regimens were recorded. Comparisons between the two groups were made based on the primary outcome being union rate and other secondary outcomes including, time to union and number of opioid tablets prescribed.

RESULTS: Four hundred and ninety-four patients were included in the final analysis of which 115 were prescribed +NSAIDs and 379 were not (-NSAIDs). Preoperative demographics and comorbidities were balanced between groups. A similar proportion of patients were prescribed some type of opioid (89% versus 85%, p=0.27). However, the +NSAIDs group was prescribed a fewer number of opioid tablets (5.7 ± 3.3 versus 11.6 \pm 7.9, p<0.001). The overall nonunion rate was 1.2%. Of these cases, 2 were in the +NSAIDs and 4 were in the -NSAIDs group. There was no difference in union rate between the two groups (1.7% vs. 1.1%, p=0.34).

DISCUSSION AND CONCLUSION:

The prescribing of NSAIDs after volar locking plate fixation of distal radius fractures was not associated with an increased nonunion rate in this study. This study may alleviate concerns that NSAIDs might jeopardize fracture healing when used postoperatively as part of a multimodal pain regimen following distal radius fracture repair.