The Management of Perioperative Immunosuppressant Medications for Rheumatoid Arthritis During Elective Hand Surgery

Kevin M. Klifto, PharmD; Brian H. Cho, MD; Scott D. Lefchik MD
Department of Plastic and Reconstructive Surgery, The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA; 21224

ABSTRACT

Purpose: Rheumatoid arthritis (RA) is a destructive inflammatory disease that commonly involves joints of the hand and wrist. Different recommendations exist for continuing or discontinuing immunosuppressant medications during the perioperative time period. The purpose of our study was to determine if continuing non-biologic, non-biologic DMARDs, and/or biologic DMARDs were associated with an increased risk of postoperative complications.

Methods: We performed a single-centered, retrospective review of a consecutive cohort of RA patients who had elective hand surgery by a single surgeon. Patients were included if they had a documented diagnosis of seropositive RA by a rheumatologist, and had elective hand surgery and/or disease-modifying antirheumatic drug (DMARD) or biologic therapy withheld at the time of surgery. We collected data on demographics, perioperative medications, complications, and comorbidities. The STROBE checklist was followed throughout our review.

RESULTS

Eighty-eight consecutive patients had elective hand and/or upper extremity surgery for RA. Mean patient age at the time of surgery (±SD) was 55.8 (±13) years (range: 24 to 74 years). Of these 88 patients, eight (9%) overall complications occurred. Complications were wound healing failures, (n=5, 6%), tendon rupture, (n=1, 1%), hematoma, (n=1, 1%), and surgical site infection, (n=1, 1%). Perioperative medications included steroids (n=31), non-biologic DMARDs (n=69), and biologic DMARDs (n=5). There were no significant findings between patients on perioperative corticosteroids, non-biologic DMARDs, and/or biologic DMARDs and the incidence of complications. Mean follow-up was 69.6±5.8 weeks (range: 8 to 296 weeks).

CONCLUSIONS: Patients with RA who continued corticosteroids, non-biologic DMARDs, and/or biologic DMARDs within one dosing interval of their usual dose were not associated with any increase in perioperative complications compared to patients discontinuing these medications perioperatively, following elective hand surgery.

INTRODUCTION

Rheumatoid arthritis (RA) is the most common chronic destructive inflammatory disease that commonly involves the hand and wrist and affects 7% of patients with RA. As untreated, RA progresses to joint destruction and pain, and decreases quality of life, and a decreased lifespan. First-line medication management with immunosuppressant-modifying anti-rheumatic drugs (DMARDs) has proven to improve survival and disease outcomes for patients with RA. However, these medications prevent disease progression, and do not treat already damaged joints.

As the disease progresses, surgery may be required to decrease pain, correct deformities, and improve range of motion. Prior to any surgical procedure, many surgeons discontinue immunosuppressant medications to prevent the complications associated with wound healing and surgical infections. As with all medical conditions, patients require a combination of medications with different pharmacologic mechanisms and varying immunosuppressant activities that may be discontinued with rheumatoid arthritis to prevent disease progression. Continuing steroids and non-biologic DMARDs, but holding biologic DMARDs weekly prior to having a hip or knee surgery is currently recommended by the American College of Rheumatology and American Association of Hip and Knee Surgeons and the literature. This 2010 American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) classification criteria.

We stratified patients into different groups for comparison by classes of chronic medications for managing rheumatoid arthritis taken during the perioperative period. These classes included corticosteroids, non-biologic DMARDs, biologic DMARDs, and/or no medications. Biologic DMARDs were continued were adalimumab (n=2), etanercept (n=2), and tocilizumab (n=2) within one week of surgery. Procedures were performed on 42 right upper extremities and 46 left upper extremities. Fingers were involved in 40 surgical cases, digits in four cases, and the elbow in 10 surgical cases. Combinations included fingers and wrists, 2 fingers and wrists, and 2 wrists, 1 wrist and forearm, and 3 fingers and elbows. Perioperative medications included steroids (n=31), non-biologic DMARDs (n=69), and biologic DMARDs (n=5). There were no significant differences in postoperative complications within two weeks of surgery, abstain (n=1) within four weeks of surgery, and tocilizumab (n=2) within one week of surgery. Mean follow-up was 69.6±5.8 weeks (range: 8 to 296 weeks).

Wound healing failure
Eight patients developed complications. Five of the eight (63%) complications were wound healing failures (Table 2). Of these five, one case occurred in a patient taking steroids and non-biologics, one case occurred in a patient taking only biologics, but the true causative agent could not be determined. There were no significant increased risks of wound healing failure in patients taking only biologics, only non-biologics, or non-biologics and biologic agents during the perioperative period (p=NS). Following bimodal logistic regression, there were no significant positive predictors for wound healing failure among our study demographic variables (p=NS).

Tendon rupture
One of the eight (13%) complications was tendon rupture (Table 2). The surgery performed was a synovectomy of the left 4th, 5th, and 6th extensor compartments, extension of left distal ulna, and suspension of the ulna using a distally based extensor carpi ulnaris tendon. Three months following the procedure, the magnetic resonance imaging (MRI) confirmed rupture of the left extensor tendons of fingers 3, 4, and 5. This one case occurred in a patient taking no medications. The patient stated the rupture occurred after a low-impact sporting event. There were no significant increased risks of tendon rupture in patients not taking medications, steroids, non-biologic DMARDs, and/or biologic DMARDs during the perioperative period (p=NS). Following bimodal logistic regression, there were no significant positive predictors for tendon rupture among our study demographic variables (p=NS).

REFERENCE