

Outcomes Following Surgical Fixation of Ankle Fractures in Patients with Moderate-to-Severe Chronic Kidney Disease

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INTRODUCTION:

There is a high prevalence of Chronic Kidney Disease (CKD) in orthopaedic trauma patients. The purpose of this study was to assess mortality and postoperative complications amongst patients with moderate-to-severe CKD including end stage renal disease (ESRD) following surgical fixation of ankle fractures. We hypothesized that there would not be a significant difference in outcomes in patients with moderate-to-severe CKD.

METHODS:

Patients at an academic Level 1 trauma center between 2008-2019 who underwent operative fixation of an ankle fracture and had a diagnosis of CKD were retrospectively identified. All patients with moderate-to-severe CKD (stages III-V) prior to injury were included. A randomly selected group of patients with mild CKD (stages I/II) served as a control group. Demographics, age adjusted Charlson Comorbidity Index (CCI), fracture type, complications (including deep infection, hardware failure, non-union/malunion, amputation), and mortality within 2 years from surgery were collected. Results were compared using ANOVA and Fisher's exact tests, and mortality was adjusted for age, race, CCI, and BMI using logistic regression.

RESULTS:

A total of 42 patients with mild CKD and 47 with moderate-to-severe CKD were included. The overall complication rates were not significantly different between the groups (26% vs 32%, $p=0.64$), Return to the OR (10% vs 17%, $p=0.36$) and amputation (0% vs 2%, $p=1.0$) were not significantly different between the groups. There were higher rates of deep infection, but this was not statistically significant One-year and two-year mortality rates were near equivalent between groups (7% vs 9%, $p=1.0$ and 10% vs 13%, $p=0.74$).

DISCUSSION AND CONCLUSION:

Following surgical fixation of an ankle fracture, patients with moderate-to-severe CKD do not appear to have increased rates of mortality or overall complications than patients with mild CKD. This data can be useful to counsel patients with ankle fractures and moderate-to-severe CKD and ESRD.