



# Research Week 2020

## Extreme diabetic neglect is no worse than poor diabetic control in lower extremity fracture patients

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### Keywords

Orthopedic Surgery, Diabetes, Hemoglobin A1C, Fracture

### Abstract

#### Purpose

Patients with poor diabetic control who sustain lower extremity fractures present a challenge due to a high risk of complications; we believe but do not know whether worse control accentuates the consequences. We aimed to study post-operative risk profile as a function of diabetes control in patients with lower extremity fractures and predicted that as diabetic control proceeded towards extreme neglect, we would see a commensurate rise in major complications.

#### Methods

All patients presenting to our Level 1 academic trauma facility (2013-18) with Hgb A1C values  $>7$  & operatively treated lower extremity fractures were reviewed, yielding 121 unique patients. Reviewed data include: age, BMI, comorbidities, injury details, surgical fixation, A1C & major complications. We accepted maximum A1C values for the entire year before the traumatic event to best reflect the degree of diabetic neglect. Major complications included loss of reduction, nonunion, infection, and need for salvage procedure.

#### Results

94 patients had sufficient data for analysis; 63% had A1C values  $>8$  & 24% exceeded 10. 30% sustained a major complication. A1C distribution did not differ between patients with & without complications (Mann-Whitney U test,  $p = 0.53$ ). A receiver operating characteristic curve was calculated with cutpoints at A1C integers of 6-17+ (Figure 1). The area under the curve was 0.53 (95% CI: 0.40-0.66), indicating that higher A1C values are no better than chance at identifying patients with major complications.

#### Conclusion

Extreme diabetic neglect did not predict higher major complication rates after lower extremity fracture fixation. This suggests that surgical options should not be withheld for patients with high A1C, and that open surgery should not be automatically eliminated as an option in patients with disaster level diabetes.

