

Morbidity and Mortality Following Operative Management of Octogenarian Tibial Shaft Fractures

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Purpose: As the geriatric population continues to rise, the incidence of geriatric tibial shaft fractures is projected to increase. There is significant variation in the functional and physiological status within this population. The purpose of this study was to compare the complications following operative treatment of tibial shaft fractures for patients who are aged 65 to 79 years compared to patients who are aged 80 to 89 years. We hypothesize that octogenarians experience an increased rate of postoperative complications.

Methods: In this retrospective cohort study, data were collected through the National Surgical Quality Improvement Program database for the years 2006 to 2018. Current Procedural Terminology codes 27758 and 27759 and various International Classification of Diseases, Ninth and Tenth revision codes were used to identify all tibial shaft fractures (AO/OTA 42A, 42B, 42C) that were treated with open reduction and internal fixation (ORIF) or intramedullary nailing (IMN). Patients were divided into a 65 to 79-year-old group and an 80 to 89-year-old group. The primary outcome studied was 30-day mortality. Secondary outcomes included surgical site infections, wound breakdown, pneumonia, unplanned intubation, pulmonary embolism, acute renal failure, urinary tract infection, blood transfusion, myocardial infarction, deep vein thrombosis, sepsis, stroke, extended length of stay, readmission, and reoperation. Univariate and multivariate analyses were performed with a significance set at $P < 0.05$.

Results: 434 patients with tibial shaft fractures were included in the study. Of these, 333 were aged 65 to 79 years and 101 were aged 80 to 89 years. On multivariate analysis, 80 to 89-year-old patients did not have higher rates of 30-day mortality or any other postoperative complications than patients 65 to 79 years of age.

Conclusion: After controlling for demographics and comorbidities, age is not independently associated with 30-day mortality or postoperative complications following operative treatment of tibial shaft fractures. In appropriately selected octogenarian patients, operative management of tibial shaft fractures represents a relatively safe treatment modality that may promote early rehabilitation.