Hip Fracture Surgery Performed <24 Hours vs >24 Hours (Next Calendar Day) After Emergency Department Presentation Yields Equivalent Outcomes

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INTRODUCTION:

The purpose of this study was to compare the outcomes of patients who underwent Next Day Surgery (NDS) versus those who undergo Less than 24 Hour Surgery (<24S).

METHODS:

A retrospective review of a hip fracture database in a single institution from 2014 – 2024 was performed. Inclusion criteria were age >65 years old, OTA 31A-B hip fracture fractures, surgical treatment, and follow-up for one year. Demographic, injury, hospital quality measures, and post-operative mortality were recorded up to one year. The study cohort was divided into two groups based on time from emergency department (ED) arrival to surgery start time: <24-hour surgery (<24S) and next calendar day surgery >24 hours from arrival (NDS). Univariate analysis was performed to compare outcomes. Multivariate linear and logistic regression analyses were performed to adjust for procedure type and risk-profile (STTGMA score). Significance was set to $p<0.05$.

RESULTS:

There were 1,694 patients included in the study analysis of which 964 (56.91%) were <24S and 730 (43.09%) were NDS. The mean age of the overall cohort was 79.70 ± 11.62 years. Univariate analysis revealed no differences between <24S and NDS cohorts for average in-hospital complications (0.53 vs 0.53, $p = 0.972$), inpatient mortality (0.5% vs 1.0%, $p = 0.285$), 30- and 90-day readmission (5.6% vs 6.2%, $p = 0.625$; 8.2% vs 11.0%, $p = 0.053$), and 30-day and 1-year mortality (2.4% vs 2.3%, $p = 0.939$; 4.8% vs 6.2%, $p = 0.208$). Length of stay (5.15 ± 3.15) vs. 5.58 ± 3.31, $p = 0.006$) and discharge location (36.4% home discharge vs. 31.0%, $p = 0.019$) were both noted to favor the <24S cohort. After adjusting for baseline health with STTGMA and procedure type, only longer length of stay was found to be associated with the NDS cohort ($B = 0.407$, $p = 0.010$).

DISCUSSION AND CONCLUSION:

There are no significant differences in meaningful patient outcomes studied for elderly patients undergoing hip fracture surgery <24 hours from ER arrival versus those who undergo 'Next Day Surgery' > 24 hours after arrival. This study suggests that 'Next Day Surgery' can be performed safely without increased risk to the patient.