Using the Score for Trauma Triage for Geriatric and Middle-Aged (STTGMA) to Cluster High-Risk Hip Fracture Patients for Hospice Discharge

Benjamin Hammond, Danielle M Olson, Abhishek Ganta, Kenneth A Egol, Sanjit R Konda

INTRODUCTION:

Hip fracture patients can be considered candidates for hospice care if their life expectancy is less than 6 months. This study evaluates the STTGMAHIP FX tool's ability to accurately cluster high-risk hip fracture patients for hospice discharge directly from their index emergency room evaluation, enabling personalized end-of-life post-acute care planning.

METHODS:

A retrospective review of a hip fracture database from a multicenter urban academic institution from 2014 – 2024 was performed. Inclusion criteria were age >55yo, low-energy mechanism, OTA 31A-B hip fractures and 32A3.1, 32B3.1, and 32C1.1 subtrochanteric hip fractures, and minimum follow-up of 6 months. Patients were stratified into STTGMAHIP FX risk groups: minimal risk (50%), low risk (30%), moderate risk (17.5%), and high-risk (2.5%). Baseline demographics, injury characteristics, and treatment types were recorded. Hospital quality measures and 6-month mortality were recorded. Patients with inpatient mortality >48 hours after surgery and <6 months after surgery or were discharged to hospice were categorized as 'Hospice Discharge Candidates' (HDC). American Anesthesia Society (ASA) score was calculated for all patients and compared to STTGMAHIP FX for the ability to cluster HDCs using area under receiver operating characteristic (AUROC) curve analysis and the DeLong test. Additionally, high risk groups for STTGMAHIP FX and ASA were compared to evaluate which measure was more useful to identify HDCs using a Two-Proportion Z-test. Statistical significance was set at $p < 0.05$.

RESULTS:

There were 2,777 hip fracture patients who met inclusion criteria. The cohort had a mean age of 81.18 ± 9.80 years, and 71.0% were female. HDC increased significantly with STTGMAHIP FX risk level: 2.9% (minimal risk), 5.9% (low risk), 14.2% (moderate risk), and 29.6% (high risk) ($p < 0.05$). Only 17.0% of patients classified as ASA 4 were HDCs. Additionally, STTGMAHIP FX demonstrated a slightly better ability to discriminate HDCs compared to ASA, although not statistically significant (0.719 vs 0.683; $p = 0.138$). However, the STTGMAHIP FX high risk stratification was much more useful in identifying HDCs than ASA (25.7% vs 15.9%; $p = 0.013$).

DISCUSSION AND CONCLUSION:

STTGMAHIP FX effectively identifies HDCs and captures a higher proportion of hospice candidates within its high-risk category than ASA. High-risk hip fracture patients classified by STTGMAHIP FX demonstrate a high probability of mortality within 6 months of surgery and should be prioritized for hospice discharge upon admission.