

Evaluation of a 30-day-mortality risk calculator for patients undergoing surgical fixation of fragility hip fractures

Background: Hip fractures often occur in medically complex patients and can be associated with high perioperative mortality. Mortality risk assessment tools that are specific to hip fracture patients have not been extensively studied. The objective of this study is to evaluate a recently published 30-day mortality risk calculator (Hip Fracture Estimator of Mortality Amsterdam [HEMA]) in a group of patients treated at a university health system.

Methods: 625 patients treated surgically for hip fractures between 2015 and 2020 at our institution were retrospectively reviewed. Patients younger than age 65, periprosthetic fractures, revision procedures, and fractures treated non-operatively were excluded. The primary outcome measurement was 30-day mortality after surgery. Additional patient-specific risk factors not included in the original risk calculator were also evaluated.

Results: The observed 30-day mortality was 5.6%. HEMA score was significantly associated with 30-mortality, though our cohort had significantly lower mortality rates in high-risk patients than expected based on the HEMA tool. In analyzing patient characteristics not included in HEMA score, presence of Do Not Resuscitate (DNR) order, history of dementia, and elevated cardiac marker were significantly associated with 30-day mortality was found.

Conclusions: The HEMA score reliably stratifies risk for 30-day mortality after hip fracture, though overestimates mortality in high-risk patients treated at a tertiary care center with a multidisciplinary team. The HEMA score may be enhanced by considering additional variables, including DNR status and history of dementia.