

Increase in BMI Within 6 Months of Geriatric Hip Fracture Is Protective Against 1-Year Mortality

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Purpose: We sought to evaluate the effect of change in body mass index (BMI) within the first 6 months of geriatric hip fracture on 1-year mortality.

Methods: A retrospective review of a prospectively collected hip fracture registry was performed at an academic medical center between September 2015 and January 2023. 850 patients met inclusion criteria of: (1) AO/OTA 31A and 31B hip fracture, (2) age >65 years old, (3) minimum 6-month follow-up or until time of death (minimum 3-month follow-up), and (4) BMI recorded at 6 months postoperatively (or at time of death). Data collected included demographic, injury, and surgical characteristics including index BMI, and 6-month BMI, and survival status at 1 year. Patients were grouped into 2 cohorts for comparison: decrease/no change in BMI at 6 months versus Increase in BMI at 6 months. Univariable comparative analysis was performed using Fisher's exact test and t-test of means. Multivariable analyses were conducted using a binary regression to evaluate the association of continuous BMI with mortality when controlling for confounding covariates.

Results: The mean age of all patients was 81.97. Univariable analysis revealed that patients who experienced an increase in BMI post-injury had a lower index BMI on average than those who maintained BMI or experienced a decrease in BMI (23.09 vs 25.02, $P < 0.001$). There were no differences in Charlson Comorbidity Index, mechanism of injury, type of treatment, or age between BMI change cohorts. The mean change in BMI for all patients was -0.67 and the mean increase for patients in the increase cohort was 0.84 . Multivariable analysis controlling for confounding covariates revealed that an increase in BMI within the first 6 months post-injury was associated with lower rates of mortality at 1-year post-injury compared to a decrease or no change in BMI within 6 months post-injury (2.3% vs 6.8%, $P = 0.028$).

Conclusion: The results of this study suggest that an increase in BMI within 6 months following geriatric hip fracture predicts greater 1-year survival.