Trauma-Specific Frailty Index

The Trauma-Specific Frailty Index (TSFI) is a tool used in medical research to assess the overall health status of older adults, particularly those who have experienced trauma. It measures multiple aspects of frailty, including physical, cognitive, and functional decline. The TSFI is calculated by summing the presence of various health conditions or markers of frailty, with a higher score indicating a higher degree of frailty. The purpose of the TSFI is to identify individuals who are at risk for adverse outcomes following a traumatic injury, such as poor recovery or death, and to guide interventions aimed at improving their health outcomes.

Post-discharge readmission rates using modified Trauma-Specific Frailty Index (mTSFI) compared to the Emergency Severity Index (ESI) are unknown. In a pilot study, Saberian et al. demonstrated that mTSFI usage more accurately triages older trauma patients. They hypothesized that adult trauma patients triaged using mTSFI would have lower readmission rates at the 30-day interval post discharge.

Methods: Retrospective review of readmission rates for 96 trauma patients ≥ 50 years old was performed. The two study groups were categorized as mTSFI-concordant and ESI-concordant. Fisher's exact test was performed.

Results: Mean ages for ESI and mTSFI groups were 63.8 (SD 10.6) and 65.2 (SD 10.8) years. The 30-day readmission rate was 0% (0/32) in the mTSFI group vs 11% (7/64) in the ESI group (p = 0.104).

Conclusions: Utilization of mTSFI for adult trauma patients may lead to lower 30-day readmission rates compared to using ESI, despite our sample sizes being too small to demonstrate a statistically significant difference [1].

The Frailty Index has been shown to predict discharge disposition in geriatric patients. The aim of this study was to validate the modified 15-variable Trauma-Specific Frailty Index (TSFI) to predict discharge disposition in geriatric trauma patients. We hypothesized that TSFI can predict discharge disposition in geriatric trauma patients.

Study design: We performed a 2-year (2011-2013) prospective analysis of all geriatric trauma patients presenting to our Level I trauma center. Patient discharge disposition was dichotomized into unfavorable (discharge to skilled nursing facility or death) and favorable (discharge to home or rehabilitation center) discharge disposition. Patients were evaluated using the developed 15-variable TSFI. Multivariate logistic regression was performed to identify factors that predict unfavorable discharge disposition.

Results: A total of 200 patients were enrolled for validation of TSFI. Mean age was 77 ± 12.1 years, median Injury Severity Score was 15 (interquartile range [IQR] 9 to 20), median Glasgow Coma Scale score was 14 (IQR 13 to 15), and median Frailty Index score was 0.20 (IQR 0.17 to 0.28); 29.5% (n = 59) patients had unfavorable discharge. After adjusting for age, sex, Injury Severity Score, Head Abbreviated Injury Scale, and vitals on admission, Frailty Index (odds ratio = 1.5; 95% CI, 1.1-2.5) was the only significant predictor for unfavorable discharge disposition. Age (odds ratio = 1.2; 95% CI, 0.9-3.1; p = 0.2) was not predictive of unfavorable discharge disposition.

Conclusions: The 15-variable TSFI is an independent predictor of unfavorable discharge disposition in geriatric trauma patients. The Trauma-Specific Frailty Index is an effective tool that can aid clinicians in planning discharge disposition of geriatric trauma patients [2)]

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Saberian S, Mustroph C, Xiang L, Udobi K, Childs EW, Danner OK, Sola R Jr. Decreased readmission rates following use of modified trauma-specific frailty index in older trauma patients: A follow-up study. Injury. 2023 Jan 26:S0020-1383(23)00083-9. doi: 10.1016/j.injury.2023.01.043. Epub ahead of print. PMID: 36740474.

2)

Joseph B, Pandit V, Zangbar B, Kulvatunyou N, Tang A, O'Keeffe T, Green DJ, Vercruysse G, Fain MJ, Friese RS, Rhee P. Validating trauma-specific frailty index for geriatric trauma patients: a prospective analysis. J Am Coll Surg. 2014 Jul;219(1):10-17.e1. doi: 10.1016/j.jamcollsurg.2014.03.020. Epub 2014 Mar 19. Erratum in: J Am Coll Surg. 2016 Mar;222(3):336. PMID: 24952434.