

Chest Wall Injury Society

Title of Presentation

Factors associated with mortality in 1054 geriatric rib fracture patients.

Background

Geriatric patients often have several comorbidities that contribute to their frailty after injury. There are a few reports published on the impact of surgical stabilization of rib fractures (SSRF) on the geriatric population. We sought to evaluate the effects of SSRF, age, comorbidities, RibScore, and rib fracture frailty index (RFF) on mortality in geriatric patients.

Methods

A retrospective review of patients age >64 years with rib fractures admitted to the hospital. Patient characteristics, injury severity score (ISS), comorbidities, in-hospital complications, mortality, discharge location, RibScore values, and RFF were assessed. The variables were assessed with respect to mortality. Normally distributed data is presented as mean \pm standard deviation and non-normally data is presented as median (interquartile range). Analysis was performed utilizing SPSS v.30.

Results

One-Thousand Fifty-Four patients were evaluated with an average age of 77 \pm 8.8 years, 57% were male, comorbidities 3(2-4), ISS 13(9-17), complications 0(0-1), RibScore 1(0-1). Mortality was 9%. Frailty index score predictions were: pneumonia 47% \pm 10, need for mechanical ventilation 0.7%(0.6-1.2), discharge home 23% \pm 10, hospitalized >5 days 47% \pm 11, mortality 7.4% \pm 3.7, and overall RFF Score 13.8(5.9-25.9). Patients who underwent SSRF were associated with decreased mortality (4.4% vs 10.2%, $p = 0.022$). Of the components of the RibScore, rib fractures > 6, flail chest, bilateral fractures, and displaced fractures > 3 were significantly associated with mortality whereas first rib fracture and fractures in each anatomic region were not statistically significant. All components of the RFF assessment were significantly associated with mortality. Regression analysis is outlined in Table 1.

Conclusion

Increased RFF score is associated with increased risk of mortality in geriatric patients with rib fractures. Not all components of RibScore are associated with mortality in geriatric patients. SSRF decreases mortality from this injury.

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