Frailty & Outcomes in Cervical Spine Injury

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1. Background

Over 65's with acute c-spine fractures have a 28% 1-year mortality. C-spine fractures are increasing in prevelance[2]. Early geriatrician reviews have been shown to reduce length of stay (LOS) and mortality in surgical patients[3]. Clinical Frailty Score (CFS) is a strong predictor of mortality[4].

2. Aim

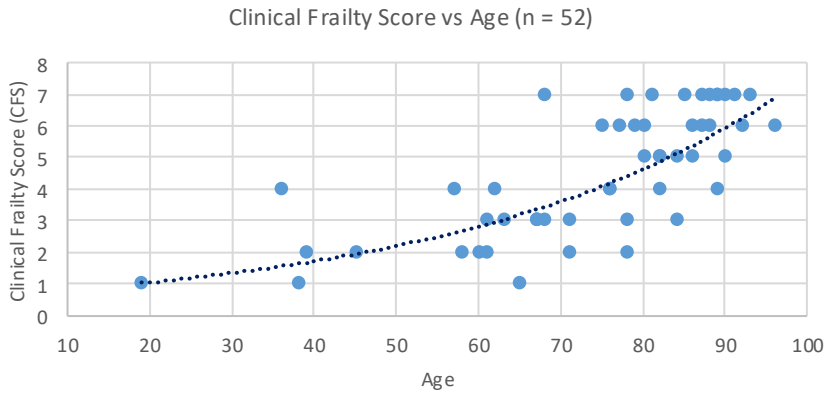
Examine the associations between clinical frailty, age, length of stay & mortality following c-spine injury.

3. Demographics

This study included any patient admitted to the Royal Alexandra Hospital from January to August 2025 with an acute C-spine fracture. N = 52, mean age 74 years [19-96], 60% female, mean CFS 4.5 [1-7], mean LOS 16 days [1-65], died: 6.

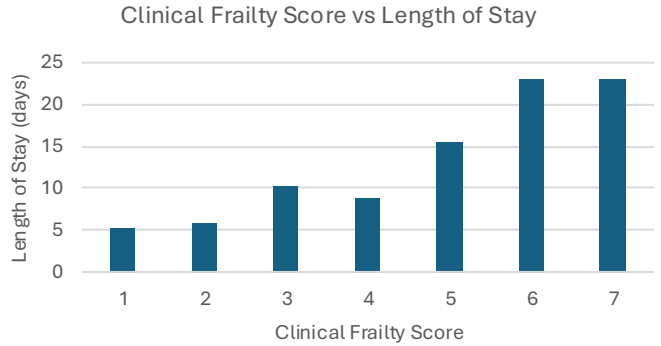
4. The significance of frailty

Frailty increases non-linearly with age, rising faster as people get older. Unlike age alone, it also captures variation between individuals:



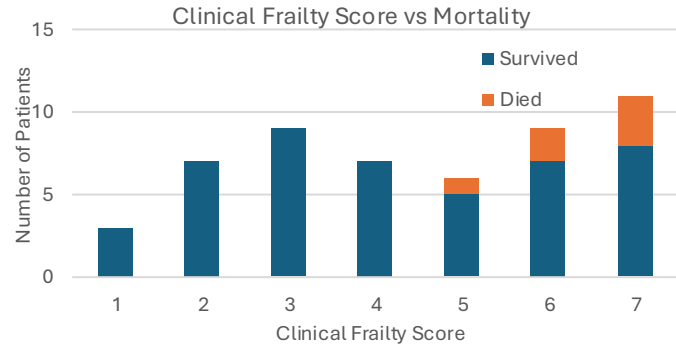
5. CFS & LOS

Higher CFS was significantly associated with increased LOS (p=0.01). Older Age was also significantly associated with increased LOS (p = 0.02):



6. CFS & Mortality

Higher CFS was significant association with mortality (p = 0.03). Older Age was not significantly associated with mortality (p = 0.2):



7. Conclusions

1. Frailty is a stronger predictor of outcomes, particularly mortality, than age.
2. This supports implementing frailty-informed pathways.
3. STAG target: Clinical geriatrician review within 3 days of admission for frail trauma patients.

8. Future work

This work has resulted in a change in clinical practice, with all patients admitted getting a CFS and, if clinically frail, an ortho geriatrician review within 3 days. This cohort will be re-audited.