



Title Association between frailty, long-term mortality and functional outcomes for older adults undergoing emergency

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BACKGROUND

An increasing number of older patients are undergoing emergency laparotomy (EL). Frailty is thought to contribute to adverse outcomes in this group. The best method to assess frailty and impacts on long-term mortality and other important functional outcomes for older EL patients have not been fully explored

METHODS

A prospective multicenter study of older EL patients was conducted across four hospital sites in New Zealand from August 2017 to September 2022. The Clinical Frailty Scale (CFS) was used to measure frailty—defined as a CFS of ≥ 5 . Primary outcomes were 30-day and one-year mortality. Secondary outcomes were postoperative morbidity, admission for rehabilitation, and increased care level on discharge. A multivariate logistic regression analysis was conducted, adjusting for age, sex, and ethnicity.

RESULTS

A total of 629 participants were included. Frailty prevalence was 14.6%. Frail participants demonstrated higher 30-day and 1-year mortality — 20.7% and 39.1%. Following adjustment, frailty was directly associated with a significantly increased risk of short- and long-term mortality (30-day aRR 2.6, 95% CI 1.5, 4.3, $p = < 0.001$). Frailty was correlated with a 2-fold increased risk of admission for rehabilitation and propensity of being discharged to an increased level of care, complications, and readmission within 30 days.

CONCLUSION

Frailty was associated with increased risk of postoperative mortality up to 1-year and other functional outcomes for older patients undergoing EL. Identification of frailty in older EL patients aids in patient-centered decision-making, which may lead to improvement in outcomes.

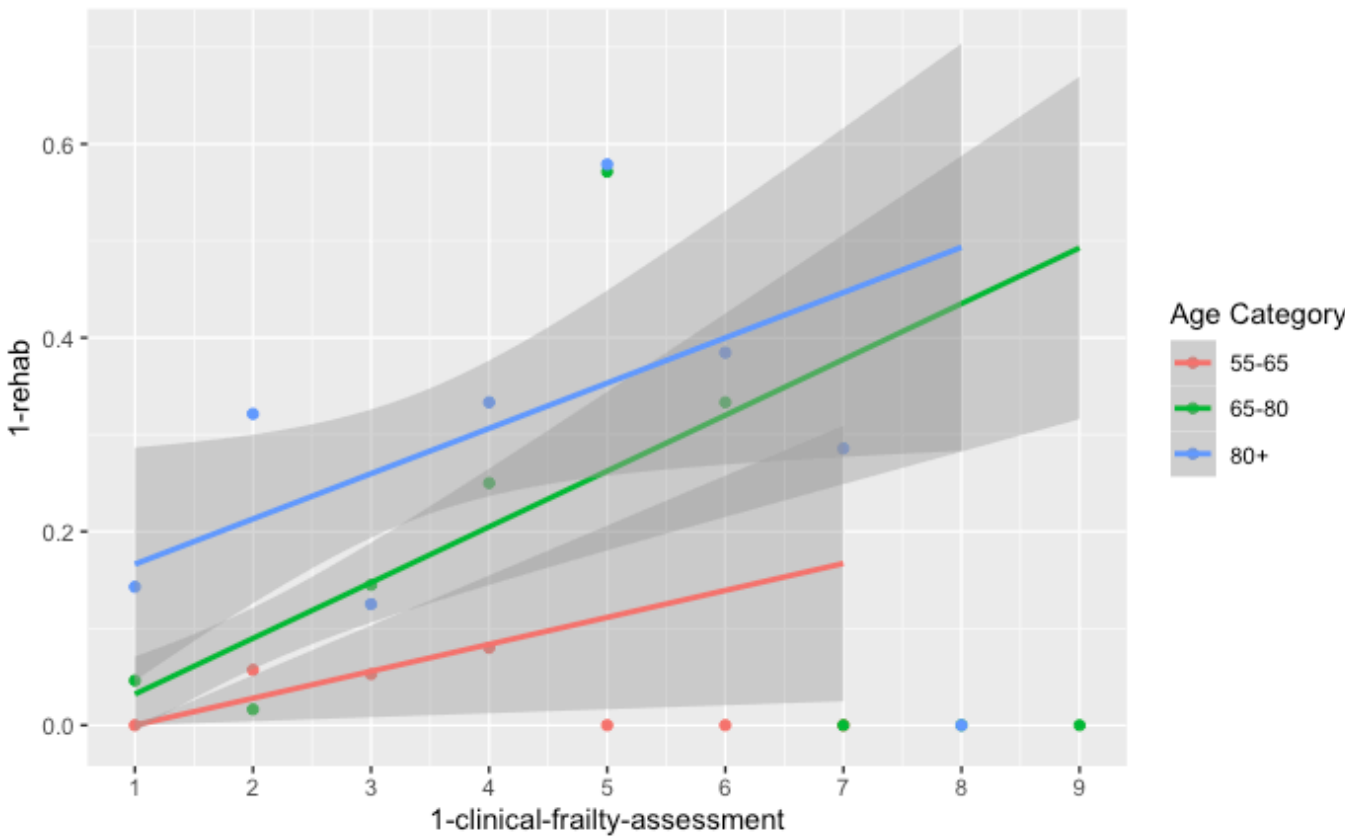


Fig 1. At lower CFS individual values, older age translated to increased risk of admission to post-operative rehabilitation. However, with increasing CFS point values, a steeper vertical slope representing the '65-80' year age group indicated that frailty may be more significant than age regarding risk of rehabilitation.

Fig 2.A & B. Increasing risks of 30-day mortality reflected associations with both increasing age and individual CFS values. However, by 1-year, an overlap of the '65-80' and '80+' age category slopes indicated that frailty became the predominant risk factor for long-term mortality.

