

Determinants of length of hospital stay and non-elective readmission in hospitalised older patients

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Aims

To determine clinical risk factors responsible for increased length of stay and risk of non-elective readmission in hospitalised older patients.

Methods

445 patients who took part in a randomised, double-blind, placebo-controlled trial of nutritional supplementation had their clinical and nutritional status assessed within 72 hours of admission and at 6 months. Outcome measures including length of stay, non-elective readmission, morbidity and mortality were recorded. C-reactive protein (CRP) concentration, a marker of acute phase response (tissue inflammation), was also measured. A Cox proportional hazards model was used to determine clinical and nutritional factors responsible for non-elective readmission including age, disability, chronic illness, drugs, smoking, body mass index, muscle mass, haemoglobin, serum albumin and tissue inflammation.

Results

The length of hospital stay (LOS) was significantly longer in the patients with acute phase response [CRP ≤ 10 mg/L] compared with patients without acute phase response [CRP > 10 mg/L], ($p < 0.001$). The table shows the mean LOS of study population stratified by CRP quartiles. Over 6 months, 154 (35%) patients out of 445 were readmitted to the hospital. Cox regression analysis showed that the risk of non-elective readmission in the 6 months follow-up period was significantly lower in patients without acute phase response compared with those with acute phase response after adjustment for other clinical risk indicators, with a hazard ratio of 0.80 (95% confidence interval (CI): 0.66–0.99), $p = 0.009$.

Conclusions

Community free-living older people with acute phase response stay longer in hospital and have increased risk of non-elective readmission following admission to hospital. These patients may benefit from targeted screening, follow-up and intervention.

Table 1. LOS and acute phase response.

CRP quartiles (mg/L)	Mean LOS (95% CI) (days)
1–5	7.9 (6.9–8.9)
5.1–19	9.8 (8.4–11.3)
19.1–63	10.7 (9.1–12.3)
64–599	11.2 (9.5–13.0)

Conflict of interest statement

None. ■

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