Unplanned readmissions in frail individuals

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Frailty is a critical issue in modern medical practice due to its association with adverse health events, poor patient outcomes and an increased burden on our healthcare system. Frailty is most commonly found in the elderly, and this population is increasing disproportionately worldwide. In New Zealand it is expected to double from 700,000 in 2016 to around 1.4 million by 2040. In 2012 in the US, despite only accounting for 12% of the total population, elderly patients accounted for 35% of all hospital admissions. This cohort also had a significantly longer average hospital stay and an increased average cost per stay.

Frailty can be thought of as a state of increased vulnerability across multiple organ systems, resulting in poor physiologic reserve, and thus inability to respond to stressors. This concept is increasingly recognised as a separate entity from ageing and comorbidity; and when appropriately measured is an independent risk factor for adverse patient outcomes. Multiple large prospective cohort studies have shown frailty is associated with an increased risk of worsening disability, hospitalisation, discharge to a care facility, morbidity and mortality. Fried et al in the Cardiovascular Health Study showed severe frailty was associated with a significantly increased risk of falls (HR =1.23), worsening disability (HR =1.79), hospitalisation (HR =1.27) and death (HR =1.63) over seven years.

Frailty is a dynamic process; however, without intervention frailty appears to be a progressive process with progression to greater degrees of frailty over time. The development of frailty often leads to a spiral of decline with increasing frailty, worsening disability, multiple hospital admissions and subsequent death. Multiple interventions to modify frailty have been examined, however, few have been shown to be associated with improved patient outcomes. Transitional care has the potential to attenuate or possibly reverse this process of frailty leading to improved patient outcomes, including a reduction in unplanned patient readmissions.

Readmission rate is one of the quality indicators of patient care utilised worldwide as it reflects both the impact of hospital care on a patient's illness and the coordination of care in the transition period after index discharge. Unplanned readmissions are associated with poor patient outcomes such as mortality and are deemed preventable to a degree. As outlined above, readmission to hospital is often part of a precipitous decline in this population. The preventable nature of unplanned readmission makes this a potential target for improvement.

Heppenstall et al, in their cohort of elderly frail patients undergoing a transitional care intervention, show a high readmission rate of 42% at three months despite intervention. In addition, the majority of these readmissions were comprised of new acute medical or surgical problems and exacerbations of chronic medical conditions, thus highlighting the vulnerable nature of this frail population. Without a control group, it is unclear as to whether transitional care input has modified this readmission risk.

Nonetheless, this significant finding highlights two important considerations with regards to the use of readmission rate as a quality indicator of hospital care. Firstly, the ability to predict patients at high risk of unplanned readmission would facilitate the targeted use of individualised transition care interventions, and potentially improved patient outcomes if successful. The utility of current research in predictive model development is limited by significant heterogeneity in the literature. One of the sources of heterogeneity is the lack of standardisation in the definition of readmission itself. Readmission time intervals used in the literature range from two weeks...
to one year after discharge. This varying
definition is a threat to the external validity
to this quality indicator of inpatient care,
and limits comparison between studies.11
Previous research has recommended the
use of a 30-day time frame after index
discharge as a satisfactory balance between
capturing readmissions reflective of the
index inpatient care and minimising unre-
related readmissions, often due to underlying
disease progression despite optimal care.12
In this study, it is difficult to delineate
whether the readmissions from new acute
medical problems were due to progression
of longstanding illness or were related to
circumstances of the index admission. They
note a peak in readmissions at 30 days
post-discharge. A comparison between
30-day readmissions and 90-day readmis-
sions in the context of readmission diagnosis
classification could clarify this further.

Secondly, the reasons for readmission in
this cohort were in keeping with interna-
tional research on readmissions in medical
patients. While the proportion of surgical
patients comprising the study sample is
not specified, research has shown clear
differences in readmission risk between
medical and surgical patients. This is
reflected by the lower readmission rates
and reasons for unplanned readmission of
the latter. Majority of unplanned surgical
readmissions are due to postoperative
complications rather than exacerbation of
underlying comorbidity.13 This represents
a fundamental difference between the two
cohorts and should be considered further.

In conclusion, frailty is an important
emerging concept in medical practice
encompassing a group of vulnerable indi-
viduals with reduced physiological reserves
who are at high risk of adverse clinical
outcomes, including unplanned read-
misions. This study by Heppenstall et al
emphasises the ever-increasing impact
of frailty on patients, their families and
the healthcare system as shown by the
high “unavoidable” readmission rate.
Further research into methods to modify
or attenuate frailty and into the aetio-
logical factors of unplanned readmission
in this cohort may help identify high-risk
patients and allow targeted transitional care
interventions.

Competing interests:
Nil.

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