



Medication-related readmission to hospital – in older adults

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Conclusions

Factors increasing the risk of medication-related readmission within 30 days include:

- emergency admission at initial admission
- comorbidity
- using 10 medications or more
- living in own home, alone
- having dosages adjusted at initial discharge

Introduction

Previous studies show that approximately 20% of hospital readmissions are medication-related and that 70% of these are possible to prevent. This retrospective medical records study aimed to identify risk factors associated with medication-related hospital readmissions in older adults (≥65 years).

Method

Readmissions within 30 days of discharge ($n=360$) were assessed as either possibly or unlikely medication-related. Selected variables were used to individually compare the two groups to a comparison group ($n=360$), using either a Student's t-test, χ^2 -test or Fishers' exact test. Multiple logistic regression analysis was used to identify variables associated with possibly medication-related readmission.

Results

Of the 360 readmissions, 143 (40%) were assessed as possibly medication-related. Emergency admission (OR 5.13, 95%CI 1.70-15.43), Charlson Comorbidity Index (OR 1.15, 95%CI 1.05-1.25), excessive polypharmacy (OR 1.74, 95%CI 1.07-2.81), adjusted dosages at discharge (OR 1.63, 95%CI 1.03-2.58) and living in your own home, alone, were variables identified as risk factors of such readmissions (Table 1). Living in your own home, alone, increased the odds of a possibly medication-related readmission 1.69 times compared to living in your own home with someone (p-value 0.025) and 2.22 times compared to living in a nursing home (p-value 0.037).

Table 1

Variables associated with possibly medication-related readmission within 30 days of discharge^a

Variable	OR	95%CI	p-value
Gender	0.88	0.57-1.36	0.568
Emergency admission	5.13	1.70-15.43	0.004
Charlson Comorbidity Index	1.15	1.05-1.25	0.002
Number of admissions, 12 months	1.33	1.10-1.61	0.003
Excessive polypharmacy ^b	1.74	1.07-2.81	0.024
New medications started	0.54	0.33-0.88	0.014
Dosages adjusted	1.63	1.03-2.58	0.038
Living arrangements (Own home, alone)			0.025
Own home, with spouse/other	0.59	0.37-0.94	0.025
In nursing home	0.45	0.21-0.95	0.037

Abbreviations: OR – Odds Ratio, CI – Confidence Interval. ^aAdjusted for gender, type of admission and Charlson Comorbidity Index (age adjusted within the Charlson Comorbidity Index) ^bDefined as a regular intake of 10 medications or more. Hosmer Lemeshow goodness of fit test p-value: 0.565. Cox & Snell R²: 0.142. Nagelkerke R²: 0.204. Significant p-values are indicated in bold.

Implications

Important activities to reduce medication-related readmission within 30 days of discharge, in patients with increased risk, could include:

- care planning before discharge
- provision of help with, for example, managing medications after discharge, especially for those living alone

Further research is needed to support these hypotheses.



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