Certain characteristics predicted an early fall for elderly patients in a hospital rehabilitation ward

Q **In elderly patients, do patient characteristics predict the risk of falling within 1 week of admission to a rehabilitation ward?**

METHODS

Design: prospective cohort study with blinded outcome assessment.

Setting: 3 general rehabilitation wards in a non-acute geriatric hospital.

Patients: 1025 elderly patients (mean age 82 y, 64% women) who were consecutively admitted to a rehabilitation ward from acute medical, orthopaedic, and surgical wards after treatment for an acute illness.

Assessment of risk factors: patient characteristics including age, sex, past history of falls, impaired vision, hearing loss, lower limb abnormalities, confusion (Hodkinson Abbreviated Mental Test score <7 out of 10), gait disturbance ("get up and go" test), admission diagnosis, source of referral, fractures, and the Downton Fall Risk score.

Outcomes: time to first fall after admission to rehabilitation ward. A fall was defined as an involuntary change of posture whereby a patient ended up lying on the floor. An early fall was defined as a fall occurring within 1 week of admission to the rehabilitation ward and a late fall was defined as a fall occurring after 1 week of admission to the rehabilitation ward.

MAIN RESULTS

824 patients did not fall. Of the 201 patients who fell, 77 (38%) had an early fall, and 124 (62%) had a late fall. Several patient characteristics predicted the occurrence of an early fall (table). Patients who had an early fall were more likely to have a past history of falls and less likely to have had a lower limb fracture than patients who had a late fall.

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CONCLUSION

In elderly patients, certain patient characteristics including past history of falls and absence of lower limb fracture predicted a fall within 1 week of admission to a rehabilitation ward.

Commentary

The study by Vassallo *et al* examined a much researched area, but is particularly useful to nurses and allied healthcare professionals who care for older adults in institutional rehabilitation settings. It adds to what is known by examining factors that can be used to identify patients who are likely to fall soon after transfer.

The study has certain strengths. It is prospective, and falls were assessed by someone unaware of the risk factors. The tools used to assess patients' risk of falling are well recognised and used in many clinical areas. Their use enabled a large number of known fall risk factors to be considered. However, postural hypotension, which was probably a risk factor for some patients in this study, was not considered. The number of patients who had early fall was relatively low, which reduced the power of the study to identify risk factors.

The authors found little to distinguish between the characteristics of patients who had early and late falls except a past history of falls (which increased the risk of an early fall) and lower limb fracture (which decreased the risk). Previous falls are a known risk factor among patients in hospital,[1] and this finding emphasises the particular vulnerability of this group after transfer to a rehabilitation facility. The psychological effect of "a fear of falling"[2] may have contributed to the reduced risk of falls among those with lower limb fractures as these patients may have had serious injuries in previous falls.

It would have been useful to know the time of day the falls occurred because this would have implications for appropriate staffing. However, the study stresses the importance of individualised and early multi-disciplinary fall risk assessment for all older adults on transfer to a rehabilitation ward, as well as continued regular reassessment.

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1 Oliver D, Britton M, Seed P, *et al*. Development and evaluation of evidence based risk assessment tool (STRATIFY) to predict which elderly inpatients will fall: case-control and cohort studies. *BMJ* 1997;**315**:1049–53.
2 Bhala RP, O'Donnell J, Thoppil E. Ptophobia: phobic fear of falling and its clinical management. *Phys Ther* 1982;**62**:187–90.

Odds ratios for various patient characteristics in patients having an early fall*

Comparison groups	Patient characteristics	Odds ratios (95% CI)
Patients having an early fall *v* other patients	Past history of falls	2.91 (1.55 to 5.46)
	Confusion	2.99 (1.84 to 4.87)
	Unsafe gait	2.86 (1.48 to 5.49)
	Lower limb fracture	0.26 (0.08 to 0.85)
	High risk for falls by Downton score	4.36 (1.57 to 12.1)
Patients having an early fall *v* patients having a late fall†	Past history of falls	2.22 (1.07 to 4.59)
	Lower limb fracture	0.16 (0.04 to 0.55)

*Early fall = a fall occurring within 1 week of admission to a rehabilitation ward.
†Late fall = a fall occurring after 1 week of admission to a rehabilitation ward.

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