Back on Their Feet: Coping With Falls in the Elderly

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Every year, one-third of community-dwelling people over 65 will fall. Approximately one-half of these individuals will fall repeatedly, and one in 10 will have a serious injury. One-third of serious falls result in fractures, while two-thirds result in soft tissue and laceration-type injuries. Aging increases the fall risk; people 85 years and older have three times the likelihood of falling than do 65-year-olds. People living in nursing homes have the highest risk of serious falls because a large proportion of them are frail, suffering from dementia, and may have a polypharmacy problem.

What causes falls in the elderly?

Polypharmacy is all too common in nursing homes, with many residents taking six different drugs per day. Drug interactions increase significantly when older people consume more than four medications per day. The Canadian Health and Aging Study has shown that 70% of Canadian nursing homes are occupied with residents suffering from dementia. Many of our nursing homes, not properly

Mr. Lin's case

Mr. Lin, 85, has chronic obstructive pulmonary disease, congestive heart failure, ischemic heart disease, glaucoma, osteoarthritis, chronic depression, post-traumatic stress disorder, and advanced Alzheimer's dementia. He is bothered by insomnia, constipation, incontinence, and agitation with aggressive outbursts. He is taking a variety of drugs for these ailments (Table 1). He lives in a nursing home.

Mr. Lin had an unwitnessed fall, as evidenced by a large bruise on his left shoulder, and a superficial laceration to his wrist. He was severely agitated, and would sometimes threaten one of the other residents. Such confrontations were averted by the nursing staff, who requested restraints for Mr. Lin until he had recovered his usual composure.

For more on Mr. Lin, go to page 76.

Table 1
Medications taken by Mr. Lin for various ailments

Diagnosis	Associated medication
Ischemic heart disease	Nitroglycerin spray, prn Nitroglycerin patch, 0.2 mg on qam, off qPM
Congestive heart failure	Furosemide, 40 mg po od
Chronic obstructive pulmonary disease	Ipratropium bromide and albuterol sulfate mask qid Budesonide puffer, 2 puffs bid Prednisone, 5 mg po od
Osteoarthritis	Acetaminophen, 650 mg qid
Depression	Mirtazapine, 30 mg po qhs
Glaucoma	Timolol maleate, 2% drops bid
Constipation	Lactulose, 30 mg po od Bisacodyl, 10 mg po/pr prn
Insomnia	Trazodone, 50 mg po od qhs
Agitation	Lorazepam, 0.5 mg po tid Olanzapine, 5 mg po od
Wandering	WanderGuard® bracelet to prevent wandering

prn: As needed
qam: Every morning
qPM: Every evening
po: Orally
od: Once daily
qid: Four times daily
bid: Twice daily
qhs: At bedtime
pr: Per rectum
tid: Three times daily

designed for care of the demented person, will be faced with the ethical dilemma of providing optimum care to residents with dementia in the same environment as those who are cognitively well.

What can be done?

The use of physical restraints in long-term care is very controversial, and there is little supportive evidence for its use. Long-term effects of restraints include post-traumatic stress disorder, increased agitation and aggression, as well as accidental death, often by strangulation. There is a move to have restraint practices banned in the long-term care environment.

It is important to help residents mobilize early after falling, as this will facilitate reconditioning, and improve their strength and balance. Early mobilization may also help alleviate the fear associated with falling. This type of care obviously requires the efforts of nurses, occupational therapists, physical therapists, recreation-

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More on Mr. Lin

On one particular day, it was noted by the nursing home staff that Mr. Lin was more short of breath than usual, and that he had a slight temperature. A physician diagnosed Mr. Lin with pneumonia, and he was given antibiotics. He was also placed in restraints to prevent him from falling again.

After taking the antibiotics for one week, Mr. Lin's pneumonia improved, and he was struggling to get out of his restraint. The nursing home staff was reluctant to remove his restraint, expressing fear of him falling again, and noting how much weaker he seemed to be. However, after his pneumonia is treated, it is important that Mr. Lin's therapy team actively encourage him to walk (fully realizing the increased fall risk), rather than simply leaving the patient in chair restraints. Otherwise, he may become permanently wheelchair-bound.

For more, see followup box.

A followup on Mr. Lin

The physical therapist performed a chest physiometry, and enrolled Mr. Lin in a walking program. His medication profile was reviewed with a pharmacist, who eliminated or decreased some potentially problematic drugs. Furosemide dosage was decreased, as were the dosages for prednisone, oxazepam, and lorazepam; however, olanzapine doses could not be successfully tapered. Acetaminophen doses were increased.

Besides cutting down his medications, Mr. Lin was also fitted with Attends® for his incontinence, and an occupational therapist fitted him with hip protectors. Unfortunately, Mr. Lin couldn't tolerate the hip protectors or the Attends, so the nursing staff placed him on a timed schedule for the bathroom. The occupational therapist assessed his rails, room lighting, and bathroom safety.

Nursing and recreation therapy noted that walking with somebody seemed to be a way to comfort Mr. Lin, especially when he became agitated; thus, this became part of his therapy. Social work encouraged family meetings at times when closer supervision was available. Finally, it was also found that uniformed individuals tended to agitate Mr. Lin, hence, they were avoided.

al therapists, and social workers. Collectively, this team of health-care providers acts to encourage balance- and gait-strengthening exercises to help reduce the risk of subsequent falls. Positive results benefit all nursing home residents, especially those who have already fallen.

How can fall risk be assessed?

The "get up and go" test is an ideal way to assess a person's fall risk. This simple test has individuals get up out of their chairs, walk ten paces, turn back to their chairs, and sit. The observer assesses the vision, posture, gait, balance, joint movement, and proprioception. If an individual takes more than 10 seconds, it suggests slowing; more than 20 seconds suggests more serious problems, usually of a multiple nature, which will increase the person's probability of falling.

Fall risk assessment, coupled with focused management strategies, can reduce falls by one-third. It is important to assess fall environment,

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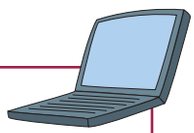

1. Health Canada: Division of Aging and Seniors: *www.hc-sc.gc.ca/seniors-aines*
2. Canadian Geriatrics Society: *www.canadiangeriatrics.ca*

Take-home message

What can the GP do to prevent falls in the elderly?

- Fall risk assessment can be performed using the "get up and go" test.
- Physicians should be assessing an individual's environment, medical profile (check for polypharmacy), vision, gait, and balance, as well as any neurologic problems.
- If a fall occurs, it is important to help the patient mobilize early.
- Rehabilitation for any elderly person who has fallen involves a multidisciplinary approach.

patients' medication profiles, their vision, gait, and balance, as well as any neurologic deficits observed on physical exam. Repeat "fallers" should have a focused, repeat cardiovascular exam in which physicians should be looking specifically for evidence of postural hypotension, syncope, or arrhythmia.

Physician's perspective

Dealing with falls in the nursing home environment requires a team approach. Our institution has dropped its serious fall rate from seven per 1,000 patient days to five per 1,000 patient days by instituting a walking program, and having a pharmacist attend rounds. Falls are a problem in all nursing homes, however, a multidisciplinary approach that is resident-centred most often works. Dx

References available—contact *The Canadian Journal of Diagnosis* at **diagnosis@sta.ca**.