

Falls among the persons with Dementia and Interventions to reduce falls in a Dementia ward

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Introduction: Falls are common among the elderly persons with dementia (PWD). For the elderly PWD, the risk of serious injurious falls is 3-4 times higher compared to their peers without dementia. In a hospital setting, the elderly with dementia and delirium make up for more than 90% of the hospital falls.

Risk Factors for falls among PWD in the hospital

The older adults with frequent falls often have multiple predisposing factors such as gait and balance disorders, peripheral neuropathy, visual impairment, lower limb weakness, multiple medications, functional dependency, vestibular dysfunction, footwear, environmental features like loose carpets, toys, etc. The seniors are often on a long list of prescription medications for various ailments, culprit medications known to increase fall risks include psychotropic, antihypertensive and antiarrhythmic drugs.

The seniors carry with them the risk factors mentioned above, at admission to hospital. Additional risk factors for falls are added after admission like, the hospital environment. The hospital is built for the staff's convenience, with wide corridors, wheeled furniture, sparsity of furniture, single rooms, grab bars which are interrupted and wide doorways. Most of the staff in a general hospital received no formal training on gerontology or mental health, therefore care for the PWD is suboptimal particularly in the acute setting where staff work under a tight schedule. The hospitalised PWD often have unrecognised delirium due to their new medications, medical or surgical issues, which further increase their fall risk. The confused PWD often exhibit behavioural symptoms like wandering, restlessness and agitation which are challenging for the untrained staff. The behavioural symptoms may lead to usage of physical or chemical restraints which are also associated with falls.

Dementia and Fall Risks

Dementia affects global brain function gradually and a diagnosis of dementia is itself an independent risk factor for falls among the seniors. Dementia may cause gait abnormalities like gait apraxia, slower gait speed, gait abnormalities associated with normal pressure hydrocephalus, Binswanger's syndrome. Dementia also causes poor safety awareness, poor judgement, disorientation and executive dysfunction.

Depression is known to predispose to falls. Depression is recognised as a prodrome and risk factor for AD. Severity of depression correlates positively with slowing in gait speed, and a slower gait speed is a predictor of morbidity and disability. Depression is common among PWD and is closely linked to frailty.

Behavioural symptoms are common among the PWD. Restlessness, agitation, wandering behaviours are all known to predispose to falls. The psychotropic medications used in management of behavioural symptoms are well known to increase fall risk, due to sedation and extrapyramidal side effects. The use of physical restraints to manage

behavioural symptoms is common in institution setting to reduce fall. Physical restraints have not been convincingly shown to reduce falls. Conversely, it has been associated with injurious falls and must always be the last resort when all else failed.

Urinary incontinence is common among PWD and incontinence is a risk factor for falls, due to frequent need to rush to toilet, orthostatic hypotension from prescription of alpha blocker as treatment for benign prostatic hyperplasia.

Assessment and management of PWD with high fall risk

In the author's hospital, a multifactorial approach to fall prevention is adopted. There is a hospital wide training programme to create awareness for delirium, with early recognition, work up and management of delirium. The patients with cognitive issues wear a purple colour wrist tags for easy recognition and they are put on a special care bundle to reduce risk of delirium and provision of better care.

Fall risk assessment is done at least once a day and mental status assessment is done once per shift to pick up delirium early. The high risk fallers are grouped together and they are watched at all time. Restraint use is kept to the minimum among the elderly with cognitive issues.

There is an auto trigger for measurement of postural blood pressure for patients assessed to have high fall risk or previous history of falls. Subsequent trigger to pharmacists to review culprit medications happens where there is significant orthostatic hypotension (OH). Communication between members of the care team is augmented through the electronic medical record system. There are reminders for referrals to physio and occupational therapists for all patients to reduce risk of functional decline, unless the patients are for strict bed rest.

Falls in the Dementia ward

With the above in place, the author monitored the fall rate in the dementia ward, which has 20beds for seniors with cognitive issues and difficult to manage behavioural symptoms. Since the ward opened in 2015, the fall rate was 1.02 per 1000 patient bed days, with 445 fall free days between October 2017-January 2019 after all the initiatives mentioned above were fully in place. Among the fallers, none had serious injuries, 85% of falls occurred at bedside, all the fallers were on >5 medications, with 64% taking multiple antihypertensives, 36% on antipsychotics and mood stabilisers.

Conclusion: Falls are not preventable in the hospitals, despite the best effort. Among the elderly patients, it is important to assess fall risk daily. Most of the fall assessment tools are not robust enough to include assessment for delirium, OH, incontinence and drugs. The elderly PWD have special needs which are often not communicated to the hospital staff and are vulnerable to iatrogenic complications like falls and delirium during their hospital stay. A multifactorial approach which includes heightened awareness of the needs of PWD and individualised care plans are effective to reduce hospital falls.