

A collaborative orthogeriatric model in outpatient multidisciplinary rehabilitation of geriatric hip fracture

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Background

Hip fracture is a common injury in elderly and results in disability, dependency and death. Coordinated multidisciplinary in-patient post operation rehabilitation programs with involvement of medical and rehabilitation personnel have already been implemented in some local hospitals. However, the provision of post discharge outpatient rehabilitation program varies greatly among different clusters. Further collaboration and communication between orthopaedic and geriatric/rehabilitation personnel are lacking in outpatient setting.

Objective

To describe a collaborative orthogeriatric model in outpatient multidisciplinary rehabilitation of elderly patients suffering from hip fractures in a local rehabilitation day hospital.

Methods and design

A retrospective review of elderly hip fracture patients between 7/2009 and 6/2010 was performed. Hip fracture patients with operation done in PYNEH, were transferred to TWEH for further in-patient rehabilitation. On discharge from TWEH, patients were referred to Rehabilitation Day Hospital(RDH) to continue outpatient rehabilitation. A coordinated multidisciplinary team, with collaboration between orthopaedic surgeons and geriatricians, nurses, physiotherapists and occupational therapists was to offer organized out-patient hip fracture rehabilitation program. Program components include multidisciplinary evaluation and specific targeted programs e.g. balance training and fall prevention training. After completing the program, selected patients were referred to community rehabilitation programs run by NGO for maintenance training.

Specific and distinctive components of outpatient hip fracture program include::

- 1.seamless bridging with in-patient phase: RDH multidisciplinary assessment was done *before* discharge from orthopaedic wards to close the gap between inpatient and outpatient phase, as well as to minimize the waiting time for outpatient rehabilitation after discharge.
2. Weekly multidisciplinary case conference involving both orthopaedic surgeon and geriatricians as well as other team members for setting treatment goals and decision making.
3. Specific targeted training programs like balance training, fall prevention training and education and ADL training were reinforced in order to improve mobility and balance to prevent further fracture.
4. Individualized review and assessment of the suitability of patients for osteoporosis drug treatment for secondary prevention of osteoporotic fractures.
5. Willing patients would be referred to community day centers run by NGO for community rehabilitation program and maintenance training.

Results

A total of 94 patients finished the rehabilitation program in the one-year period. The mean age is 81.6 +/- 6.6 years, signified we were dealing with advanced old age patients. Female to male ratio was 3:1. 70% of patients had received medications for chronic medical diseases like diabetes and hypertension. 50% of the fracture were situated at the neck of femur while the remaining half were at trochanteric region. The mean in-patient length of stay post fracture was 29.1 days. After RDH outpatient training, there were significant improvement in Berg balance scale (23.8 vs 35.4, + 49%, p<0.001) and ADL measurement Barthel index (74.8 vs 86.2, +15%, p<0.001). Only 2 patients(1.9%) were still chairbound after training.(11% unaided, 50% use stick, 18% use quadripod, 19% use frame for walking).The mean waiting time to enter the outpatient program after discharge was 8.1 days. The mean number of rehabilitation sessions was 20.8 +/- 8.2. Percentage of patients returned home after the program was 76%, while the remaining 24% were institutionalized. 34% of patients were referred to community rehabilitation service for maintenance training. 35% of patients received oral alendronate for secondary prevention, 15% received other self-financed items and >80% received calcium plus vitamin D supplements. 7.4% of patients had further fall incidents noted 6 to 9 months post training but none of them resulted in a second hip fracture (2.5% subjects experienced a second hip fracture within one year from other studies). There were 38 unplanned admissions in 9 months after fracture(0.54 admission per patient per year)

Conclusions

The collaborative orthogeriatric model for outpatient rehabilitation of geriatric hip fracture is effective in improving the balance and daily activities of geriatric hip fracture patients. The program also successfully prevented second hip fracture in our patient cohort and minimized unplanned readmissions.

