Falls in the older person

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Falls are the most common cause of injury in the Older Person (OP) and become more frequent with advancing age. There is a higher chance that a fall in an OP leads to trauma due to decreased protective reflexes and saving mechanism.

Introduction

It has been estimated that thirty-three per cent of people over 65 years and 50% of women over 85 fall at least once a year. As well as the cost of hospital treatment, the ensuing loss of confidence and decreased functional abilities will make increased demands on long-term health services, both community and institutional. In the over 80s the incidence of death increases within one year of a fall. The number of falls increases in the final year of the Older Person's life. Falls cause 17% of deaths in people over 75.

Who falls?

- Very active Older People fall more often. However, they hardly ever sustain injuries.
- Women fall more than men because they live longer and remain active for a longer period of time. They have more postural sway which renders them unstable in later life.
- Caucasian and Oriental women have a higher falls rate. As these races have a higher prevalence of osteoporosis, these women suffer higher incidences of fractures.

When do they fall?

Tis the season

There are increased numbers of falls in:

- March: because of deconditioning after winter inactivities;
- October: because of decreased light which leads to increased confusion and increased rates of depression.

In Malta we may also have post-summer inactivity deconditioning.

During the day

Most falls occur:

- during the early morning hours, when going to the toilet;
- in mid-mornings, because of increased activity;
- in the evenings, when there is decreasing light and a tendency for increased confusion.

Where do they fall?

Thirty-two to forty per cent of falls occur in hospitals / residential homes. Of these, 45% - 61% occur on visits to the toilet at night owing to disorientation and medication/sleepiness while 22% of falls occur when the OP is getting out of bed. 28% - 45% of falls occur in the home, mainly while rushing to the toilet or tripping both inside and outside the home.

How do they fall?

People under 75 years tend to trip namely because of poor dorsiflexion of the ankles, while those over 75 years tend to fall when turning because of slow reactions. They also tend to fall sideways not backwards. (Bottomley 2004)

Causes of falls

Intrinsic factors include:

- Chemical restraints
- Poor vision
- Muscle weakness of trunk and lower limbs
- Deconditioning: interaction between 'ageing' – disuse – disease
- Inattentiveness/confusion/poor judgement
- Gait abnormality (due to various pathologies and 'ageing' changes)
- Orthostatic hypotension
- Polypharmacy
- Self medication
- Dehydration and malnutrition
- Poor balance control due to somato-sensory dysfunction/ vestibular dysfunction.

In May 2004, Dr Jon Marsden noted that carotid sinus syndrome with drop attacks are often accompanied by syncope, especially when precipitated by certain head and neck movements, namely rotation with lateral flexion. Many Older People have amnesia of the fainting episode and approximately

60% of these falls are unwitnessed. This makes detection of the problem difficult and the condition is frequently undiagnosed and therefore not treated

Extrinsic factors include:

- Physical restraints
- Environmental hazards:
  - Poor light including reflection and glare
  - Poor colour contrast in different floor surfaces
  - Poor visual cues especially for OPs with dementia
  - Loose carpets and small furniture
  - Pets
  - Bad footwear
  - Slippery / uneven floors inside and outside the home
  - Sudden noises
  - Stairs with poor banister support, both in private and public places
  - Inappropriate seating
  - Inappropriate mobility aids

Tracing the cause of a fall is very important. Extrinsic causes should be dealt with immediately together with the OP/carers, while appropriate diagnosis and treatment of intrinsic causes must be a priority in the team's clinical management of the Older Person.

Prevention through physiotherapy

It is said that most falls are unavoidable. Although this may be so, studies have shown that a good percentage of them can be prevented and physiotherapy has a major role in this aspect by:

1. Prescribing exercise programmes to improve balance and muscle power
2. Re-educating gait
3. Prescribing appropriate mobility aids and orthosis
4. Advice on the Older Person's environment to obtain and maintain maximal safety and functional mobility
5. Work on falls programme together with the Older Person and the carers
6. Health promotion

1. Exercise programmes

When prescribing exercise programmes to improve balance and muscle power, the physiotherapist ensures that:

- Most of the exercise programme is composed of extension exercises to emphasis strengthening of the anti-gravity muscles which are the extensor muscles of the trunk and lower limbs. Increased muscle bulk helps to lessen the impact of a fall owing to increased padding.
- If the cause for the fall is a vestibular problem, a progressive exercise programme to precipitate head movements should be started as early as possible.
- Balance exercises must include correction of adjustment of the person's centre of gravity especially in activities like sitting to standing and turning. Better balance not only prevents falls but lessens the Older Person's fear of falls.

2. Gait re-education

This includes correction/improvement of the Older Person's gait techniques. Here the physio must take special care to keep the gait pattern as normal as possible and to maintain two-legged mobility (i.e. without a walking aid) for as long as possible, as normality of gait patterns will confuse an Older Person less and ensure greater compliance.

3. Appropriate mobility aids

When and if a walking-aid is needed, it must be professionally prescribed and not bought off the shelf as a birthday or (more recently) a Christmas present. Some points on mobility aids viz walking-aids include:

- Use of mobility aids radically changes the person's centre of gravity, weight transference, balance, gait pattern and speed. The Older Person must learn to adjust to these changes.
- High walking aids DO NOT correct posture but increase strain on the shoulder joints and throw the centre of gravity backwards, thus precipitating the risk of falls.
- Many homes and public establishments do not have access to certain walking aids, and lack of manoeuvrable space can cause falls. Importance is usually given to wheelchair access but in fact only 1 in 40 disabled Older People use them. The greater majority use walking aids.
- Many Older People prefer to 'furniture walk' in their home than use a walking aid, especially if there is limited space.
- Quite a few Older People inherit a walking aid from a neighbour, relative, etc. and are not keen to change to a more appropriate one.
- In Malta we also have a phenomenon where people especially women are embarrassed to use these aids in public.

The physiotherapist must take all these points into consideration before prescribing an aid. It is very important to see that the person can and will use the aid functionally.

4. Environmental advice

Proper advice on the OP's environment cannot be given from a clinic. The assessment of the actual home, both inside and outside is very important. The individual's manoeuvrability must be seen within his environment. The physio, usually together with the occupational therapist (OT), visit the Older Person's home and together with him/her and the carers work on any safety issues required.

Here it is very important for the clinicians NOT to institutionalise the people's homes. We must listen to the Older Person and keep our advice within his perspectives of needs and priorities. As clinicians we must make people aware of risks and hazards but we must not put them off activities.

5. Falls programme

Generally speaking, few Older People will be willing to change attitudes to prevent falls. It is therefore wiser to make them the prime movers in this area. One good way of doing this is to actually make the individual identify hazards for falls himself and suggest methods of prevention.

Another method is to have a Falls Diary where he notes any fall he may sustain. This will help him and his carers to identify the reasons, times and frequency of his falls.

The health professional must also break down the barrier of fear of the Older Person being on the floor. S/he must be able to teach him/her/the carer to get up from the floor. This is especially important in cases with a history of frequent falls and/or if the OP lives alone.

6. Health promotion

Health promotion on falls prevention and management should mainly be targeted to three different groups:

1. To people within the 40-60yr (pre-retirement) cohort who should have promotion for healthy ageing. This is especially important for women who would benefit from an exercise programme that stimulates vestibular input and maintain bone mineral density.
2. To well-elderly who would benefit from participation in Falls Prevention and Management Programmes.
3. To the carers of Older People with a history, or are at risk, of falls.

The real picture

In Malta, services in the community are still lagging far behind. The established government physiotherapy services for Older Persons available are those in institutional systems in acute, rehabilitation and long-term care. However institutionalisation of people suffering from falls is not the solution. It actually increases their number of falls.

The only physiotherapy services for Older Persons living at home are:

1. Health Promotion Programmes held at government Day Centres (and occasionally parish centres);
2. A miniscule Domiciliary Service targeting OPs who cannot leave their home owing to frailty or severe architectural problems.

Health professionals must be pro-active in establishing Falls Prevention and Management Programmes outside institutional settings. Progressive therapy practice advocates the need of making the OP's home 'a tailored ecological niche for the individual' (Rowe 2004)

GPs must have quick and easy access to rehabilitation therapists to help their case management within the home environment. This should not only lead to a higher primary level of care provision but decrease hospitalisations and institutionalisation of the Older People. It is appreciated that GPs have limited direct access to Physiotherapy Services. However the Physiotherapy Department at St Vincent De Paule Residence is always available to give advice and can be contacted on 22912219 from Monday to Friday, from 7.30 a.m. to 3.30 p.m.

References

Bottomley, J. M. (2004) *Safety and Fall Prevention and Management in the Elderly Population*. Paper presented at the conference entitled 'Advances in Balance and Falls Management in the Older Person', organised by the International Association of Physical Therapists working with Older Persons (IPTOP) in association with the Irish Association of Physiotherapists in Neurology and Gerontology (Ireland), May 6th - 8th at the Trinity Centre for Health Sciences, St James Hospital, Dublin, Ireland.

Rowe, J. (2004) *Falls Prevention – Recent advances in Therapeutic Ignorance*. Paper presented at the conference entitled 'Advances in Balance and Falls Management in the Older Person', organised by the International Association of Physical Therapists working with Older Persons (IPTOP) in association with the Irish Association of Physiotherapists in Neurology and Gerontology (Ireland), May 6th - 8th at the Trinity Centre for Health Sciences, St James Hospital, Dublin, Ireland.

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