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Falls among the elderly

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Summary

Falls are a significant problem among the elderly. Every third person falls at least once a year. Falls lead to injuries, limiting the mobility of the elderly. As a result of falls, serious fractures occur, which cause hospitalization and are the main cause of death due to accidents. The causes of falls are complex and most often arise from several overlapping factors. Efforts should be made to eliminate external factors in order to minimize the risk of falling among people over 60 years of age. Daily physical activity, individual assessment of risk factors and optimal adaptation of the environment play an important role in preventing falls. The aim of the study was to discuss the problem of falls in the population of geriatric patients.

Key words: falls, the elderly, prevention, causes of falls

Definition and epidemiology

According to the WHO definition, a fall is a sudden event that causes an unintended change in body position, resulting in a person on the ground, floor or other lower level. According to the WHO definition, falls do not include self-injury, falls into water, from animals, from burning buildings, vehicles and machines [1,2]. Falls may occur at any age, but those occurring in the elderly, due to the increased risk of injury, contribute to limiting mobility, which in turn increases the risk of premature death [3]. Falls due to trauma in this population are the main cause of hospitalization [4].

The frequency of falls increases with age. According to a WHO report, about 30% of older people fall at least once a year. In 20-30% of those who fall, trauma is diagnosed, and in consequence reduced mobility [5]. Every fifth fall causes serious injuries, including hip fractures or head trauma [6]. Falls in the world rank second, after road accidents, among the causes of death caused by accidental injuries [7]. Other studies among older people living in a home environment have found an even higher percentage of people who fall within a year, reaching 30-40%. Significantly higher frequency of falls is found in people staying in hospitals and care institutions, where it reaches 60%, despite commonly used preventive measures. The high percentage of people who fall in institutions is probably due to lower efficiency, but also higher reporting [8]. In the POLSENIOR study, falls accounted for from 12% in people aged 65-69 to 35.9% in people over 89 years of age. [3].

Causes of falls

The falls are most often not caused by a single cause, but are the result of an individual tendency to falls and the influence of external factors. Although it is usually not one factor that leads to a fall, it is common to divide the causes of falls into internal, related to the health of an elderly person and external, related to the living environment [4].
Internal causes of falls result from the deterioration of health caused by acute and chronic diseases and / or physiological involutional changes taking place in the aging organism [8, 10].

Physiological involution changes include changes in the nervous system that lead to a lengthened reaction time, a change in the gait pattern, a decrease in muscle mass and strength, a decrease in bone density, and visual impairment. The health problems that increase the risk of falling include: osteoarthritis, osteoporosis, balance disorders, dizziness, which often coexist with degenerative changes in the cervical spine, disorders of the baso-vertebral

circulation, orthostatic hypotension, water and electrolyte disturbances, previous stroke, disease Parkinson's. The risk of falls is also increased by drugs taken by the elderly, including benzodiazepines and antihypertensive drugs [2, 8, 9]. The increased risk of falls is influenced by physiological factors: insomnia, urinary incontinence, urge to urinate, diarrhea [11].

The risk of falls increases also as a result of external factors. External factors include: inadequate lighting, protruding thresholds and electric cables, uneven or slippery floor, a mess on the floor, moving rugs, inappropriate footwear, weather conditions such as an icy surface. Falls occur during everyday activities: replacing a light bulb, hanging a curtain or other small household chores [8, 9, 12].

Consequences of falls

Falls in the elderly have undesirable consequences that often necessitate hospitalization. Contusions and wounds (90%) and fractures (25%) occur most frequently [3, 13]. Fractures of the femoral neck are a significant problem of falls, 90% of which arise as a result of falls [8]. As a result of hip fracture, half of the patients lose the ability to walk [8], and only one in four returns to functional independence [14]. Immobilization is associated with the possibility of deep vein thrombosis and pneumonia, leading to increased mortality. Another consequence of falls, significant but marginalized, is post-fall syndrome. The first fall causes fear of the next one, and the elderly person begins to limit their activity for fear of another fall. As a result of reducing daily activity, physical fitness worsens and the risk of another fall increases [8, 15].

Fall prevention

Fall risk assessment is an important part of preventing further falls and the consequences of falls. The risk factors for falls in a geriatric patient should be identified as early as possible [11].

Proper physical activity in the patient's condition plays a significant role in preventing falls. Physical exercises increase gait efficiency and improve muscle strength [8]. A meta-analysis by Sherrington et al. showed that focusing on postural control is one of the key exercises to prevent falls. The base of body support should be narrowed by bringing the feet together or by standing on one leg [16]. Similar recommendations regarding body posture were presented by Clemenson et al. In the LiFE project they developed, under which they encourage seniors to include exercises in their daily activities, for example, they suggest learning to stand on one leg while brushing their teeth [17].

In preventing falls, educating patients about the positive effects of physical activity in reducing the risk of falls is essential. It is also important to assess the living environment and eliminate external factors that increase the risk of a fall and are responsible for a significant proportion of falls. Elderly people should be alerted to proper lighting in the apartment, removing unnecessary things from the floor, and fixing rugs. The environment can also be adapted by purchasing appropriate amenities adapted to the condition and needs of an elderly person [8, 18]. Appropriate adaptation of the apartment will significantly reduce the number of falls.

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