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Evaluation of Patients Aged 65 and Over After Fall

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Abstract

Objective: Patients aged 65 and older are less likely to be injured than youngers and older patients are more likely to have a fatal out come from their injuries. Physical reserves of the elderly patients were changing by the age. Injuries due to these changes adversely affect the outcome and prognosis of the geriatric patients. The main causes of injury in the geriatric population are falling, non-vehicle traffic accidents and burns. The most common causes of emergency services admitting are falls.

Method: Our study is a retrospective descriptive study. We investigate the 65 and over 65 years patients who were admitted to our emergency department with the complaint of fall from their own high on 01.12.2017 to 31.01.2018.

Result: Years of 65 and over of 98 patient were included to study. Patients were classified seven different injury areas as following: head, spinal (cervical-thoracal-lomber), thorax, abdomen, pelvic, upper extremity (shoulder, humerus, elbow, radius, ulna, hand) and lower extremity (femur, knee, tibia, fibula, foot). The most affected area of these groups as following in orderly: upper extremity (42), head (31), lower extremity (28), thorax (23), pelvis (20) and cervical spine (17).

Conclusion: Falls are the cause of %40 patients death in this age group. Minor mechanisms of injury can produce potentially lethal injury and complications. As with all trauma cases, the physical examination of the patients should be performed carefully in the geriatric group. In extremity traumas signs and complaints of geriatric patients should be the guide of lession.

Key words: Fall, geriatric trauma, upper extremity injury

Objective

According to the world health organization used for 65 years and older definition middle-aged and elderly. Due to data from the Turkey Statistics Institute (TUIK), 8.5% of people Turkish community constitutes over 65 years of age. This rate increases with the increasing quality of life and quality of service provided in the field of health every year, dissemination of methods used in screening of chronic and malignant diseases. The expansion of the elderly population in the community requires the improvement of specific preventive and therapeutic methods.

Due to human physiology, some changes occur with age progresses. The senses of hear, taste, smell weaken. Visual acuity decreases. Management of movement and reflexes worsens by joint degeneration, decreased tissue and body elasticity, deterioration of depth perception. These changes may be a cause of injury, as well as avoiding injury.

Chronic diseases and the drugs used for these are another important factors affecting elderly physiology. Antidiabetic drugs, blood thinners, antihypertensives and medications that slow down the heart rate may worsen the patient's prognoses and outcome[1]. They may delay or failed the compensation mechanisms due to trauma. They can mask the formation of tachycardia in hypovolemic shock which is one of the signs of seriousness of injuries and may cause major effects in minor traumas with their effects on bleeding diathesis[2-3].

The major causes of injury to the geriatric group are falling, non-vehicle traffic accidents and burns. The most common causes of emergency services admittion are falls[3-4]. The cause of trauma deaths in geriatric patients is 40% falls. Therefore, in our study, falls over 65 years were examined.

In the region we live, the months between December and January are the hardest times for the elderly patients by the physical conditions. Erzurum is on the east side of Türkiye. The coldest winter days and nights living between December to January months. Because of this situation we aimed to investigate the fall geriatric patients in this period and define their affected areas and seriousness.

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Method

In this retrospective descriptive study, patients aged 65 years or older who were admitted to University of Health Science, Erzurum Training and Research Hospital Emergency Department due to fall were searched. Between 01.12.2017 and 31.01.2018, 101 patients who were admitted to our clinic were investigated. Three of these patients were excluded from the study because of the unindication of the affected area after the fall. Electronic files of 98 patients included in the study were scanned one by one. Anamnesis forms, x-ray radiographs, computed tomography and magnetic resonance images of the patients were examined and the affected areas were recorded.

Results

Years of 65 and over of 98 patient were included to study. Because of missing data three patient were excluded. Patients were classified seven different injury areas as following: head, spinal (cervical-thoracal-lomber), thorax, abdomen, pelvic, upper extremity (shoulder, humerus, elbow, radius, ulna, hand) and lower extremity (femur, knee, tibia, fibula, foot). The most affected area of these groups as following in orderly: upper extremity (42 patient), head (31 patient), lower extremity (28 patient), thorax (23 patient), pelvis (20 patient) and cervical spine (17 patient)(Table 1). 1/3 of upper extremity trauma and ¼ of lower extremity and pelvis traumas were resulted with fracture. There was not any mortal injury showed with C-spine, T-spine, knee and wirst traumas. Because of the using upper extremity with falling position and protecting reflex on trauma movement bone of radius and ulna were the most injured areas.

There was a fracture 20% of pelvic trauma group.

Table 1. Affected areas from the injury

Effected Area	Injury	Fracture (Compression-Spinal)	Dislocation (Hemoragy-Head, Contusion-Torax, transvers proces fracture-Spinal)
Head	31	1	1
Spinal-C	17	0	0
Spinal-T	9	0	1
Spinal-L	7	1	0
Torax	23	5	2
Abdomen	4	0	0
Pelvic	20	4	0
Shoulder	8	2	1
Humerus	4	2	0
Whirist	3	0	0
Radius	17	7	0
Ulna	17	3	1
Hand	8	0	0
Femur	12	4	0
Knee	11	0	0
Tibia	3	1	0
Fibula	3	1	0
Foot	2	1	0
Upper Extremity	42	15	2
Lower Extremity	28	7	0

Conclusion

Falls are the cause of %40 patients death in this middle-aged and elderly age group.

Visual, hearing, and memory impairments cause falls in older adults. In addition drugs, alcohol use, changes in the central nervous and musculoskeletal systems (degeneration of joints) effects them. Because of their physical changes like brain atrophy, decrease of respiratory vital capasity and cardiac stroke volume and rate with anticoagulant drug use the results of fall will be more mortal[5]. Minor mechanisms of injury can produce potentially lethal injury and complications.

In head traumas, patients' consciousness should not be depend on only elderly adult's demans and daily behaviours. Just one movement as partial seizure, speech or somnolence should be the sign of circulatory failure or hemorrhage . Even if there is no symptoms with the history of anticoagulant use, the possibility of intracranial hemorrhage to be seen in 7-14% should be kept in mind in these population[6]. In our study, the rate of bleeding after head trauma was lower than the literature data with the ratio of 3.2%.

Pelvic fractures are related with greater morbidity, including major hemorrhage and mortality[7-8]. Every elderly patient with a pelvic fracture should be investigated for the evidence of hemorrhage (eg, elevated heart rate, ongoing transfusion requirements, pelvic hematoma on standard CT). Especially in pelvic traumas retroperitoneal hemorrhage should be keep in mind. 20% of our pelvic trauma patients had pelvic fractures. One of these patient who had pelvic fracture had been in hypovolemic shock.

In extremity traumas signs and complaints should be the guide of lession. Musculoskeletal injuries are the most common type of injury in these fall patients. Many of these injuries are associated with increased mortality. If the patient has a long bone fracture, it should not be forgotten that hypovolemic shock may occur due to bleeding. In our population with upper and/or lower extremity trauma after fall had 81,8% long bone fracture.

As with all trauma cases, the physical examination of the patients should be performed top to toe carefully in all age group. Close follow-up is required for these groups of pa-

tients who have a history of many chronic medications and whose compensation mechanisms will slow down because of these medications. In this specific populations patients who were admitted to emergency services should examine carefully, vital signs were follow closely and watch their conscious continuously. Risks should be considered individually and preventive maneuver should be taken when evaluating all systems. They can be life-saving for them if they say, show or find anything they carry after fall.

References

1. Jacobs DG. Special considerations in geriatric injury. Curr Opin Crit Care 2003; 9:535
2. Sterling DA, O'Connor JA, Bonadies J. Geriatric falls: injury severity is high and disproportionate to mechanism. J Trauma 2001; 50:116
3. Bergeron E, Clement J, Lavoie A, et al. A simple fall in the elderly: not so simple. J Trauma 2006; 60:268
4. Labib N, Nouh T, Winocour S, et al. Severely injured geriatric population: morbidity, mortality, and risk factors. J Trauma 2011; 71:1908
5. Kirkpatrick JB, Pearson J. Fatal cerebral injury in the elderly. J Am Geriatr Soc 1978; 26:489
6. Goldstein JN, Thomas SH, Frontiero V, et al. Timing of fresh frozen plasma administration and rapid correction of coagulopathy in warfarin-related intracerebral hemorrhage. Stroke 2006; 37:151
7. Callaway DW, Wolfe R. Geriatric trauma. Emerg Med Clin North Am 2007; 25:837
8. Henry SM, Pollak AN, Jones AL, et al. Pelvic fracture in geriatric patients: a distinct clinical entity. J Trauma 2002; 53:15