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ORIGINAL ARTICLE

CAUSES OF TRAUMA IN ELDERLY PATIENTS TREATED IN EMERGENCY UNIT CAUSAS DE TRAUMAS EM PACIENTES IDOSOS ATENDIDOS EM UNIDADE DE EMERGÊNCIA CAUSAS DEL TRAUMA EN PACIENTES ANCIANOS, TRATADOS EN LA UNIDAD DE EMERGENCIA

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ABSTRACT

Objective: to identify the major trauma in the elderly met at the ready to drive emergency care. **Method:** descriptive, exploratory and retrospective study, with data collected through electronic records of elderly (over 60 years), with diagnosis of trauma, met at the ready availability of the emergency unit of the Hospital de Base (HB) in the municipality of São José do Rio Preto/SP/Brazil, in the year 2011. For the statistical analysis of the data was applied the Association Chi-square test. The Research Ethics Committee, under the Protocol, 01216012.6.0000.5415 has approved the research project. **Results:** 51.47% of the causes of injuries were falls; 59.65% had fracture of femur in the female and 58.53% of traumatic brain injury in evils; 94.64% had fracture of femur and were liberated. **Conclusion:** most of the elderly was female, victims of the fall with femoral fracture in the home, underwent surgery and were discharged, with an average age of 73 years. **Descriptors:** Emergency; The Elderly; Traumas; Hospital Assistance.

RESUMO

Objetivo: identificar os principais traumas em idosos atendidos no pronto atendimento de uma unidade de emergência. **Método:** estudo exploratório e descritivo, retrospectivo, com dados coletados por meio de prontuários eletrônicos de pacientes idosos (acima de 60 anos), com diagnóstico de trauma, atendidos no pronto atendimento da unidade de emergência do Hospital de Base (HB) no Município de São José do Rio Preto/SP/Brasil, no ano de 2011. Para a análise estatística dos dados foi aplicado o teste de associação Qui-quadrado. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, sob o protocolo nº 01216012.6.0000.5415. **Resultados:** 51,47% das causas dos traumas foram quedas; 59,65% tiveram fratura de fêmur no sexo feminino e 58,53% de trauma cranioencefálico no sexo masculino; 94,64% tiveram fratura de fêmur e receberam alta. **Conclusão:** a maioria dos idosos era do sexo feminino, vítimas de queda com fratura de fêmur no lar, foram submetidos à cirurgia e tiveram alta, com média de idade de 73 anos. **Descritores:** Emergência; Idosos; Traumas; Assistência Hospitalar.

RESUMEN

Objetivo: identificar el trauma mayor en los ancianos reunió en ristre una atención de emergencia en coche. **Método:** estudio descriptivo, exploratorio y retrospectivo, con datos recogidos a través de registros electrónicos de personas mayores (más de 60 años), con diagnóstico de trauma, se reunieron en la disponibilidad inmediata de la unidad de emergencia del Hospital de Base (HB) en el municipio de São José do Rio Preto/SP/Brasil, en el año 2011. Para el análisis estadístico de los datos se aplicó la prueba de Chi cuadrado de la asociación. El proyecto de investigación ha sido aprobado por el Comité de ética de investigación, bajo el protocolo 01216012.6.0000.5415. **Resultados:** 51.47% de las causas de las lesiones fueron caídas; 59.65% tenía fractura de fémur en la mujer y 58.53% de traumatismo craneoencefálico en varones; 94.64% tuvo fractura de fémur y recibió alta. **Conclusión** la mayoría de los ancianos eran mujeres, víctimas de la caída con fractura de fémur en el hogar, intervenidos y fueron dados de alta, con una edad media de 73 años. **Descriptores:** Emergencia; Los Ancianos; Traumas; Asistencia del Hospital.

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INTRODUCTION

The aging population is a reality throughout the world. The World Health Organization (who) defines elderly person as that of 60 years of age or older, for developing countries, and 65 years or older, for developed countries.¹

The health care to the elderly has become a priority, in view of the increase in life expectancy, being one of the factors that contribute to the growth of the elderly population.² The aging process describes the passage of time, not the disease, and a physiological process where the psychological, emotional and environmental experiences of elderly, make it unique.³

With the increase of population aging, the fall is the occurrence that most affects the elderly over 65 years of age, resulting in injuries, contributing to reduced independence and worse quality of life.⁴ There are several factors that contribute to the occurrence of trauma in the elderly, as the road kill because of a lack of suitable sites for the practice of physical activity, physiological decline in the aging process, the coexistence of Comorbidities associated with the use of various drugs.⁵

The majority of traffic accidents has as consequences, fractures (45%), located in lower limbs (29.2%), with emphasis on the femur (19.3%), followed by the head injuries (14.4%), the invoices of upper limbs (12.1%) and other (11.9%).⁵ In the year 1990 world estimates were of 1.7 million femur fractures per year and it is believed that this number can reach 6.3 million by the year 2050.⁶ In the United States there are predictions by the year 2040 about 500 thousand annual fractures and treatment of these patients is expected to reach 16 billion dollars a year.⁷

In Brazil, a study that aimed to describe the osteoporotic fractures of femur in the period of 2006-2008 it was found that the hospitalization of elderly inpatients in the unified health system (SUS) with fracture of femur reached 1% and expenditures were approximately 2% of the expenses of the SUS with people 60 years or older.⁸ Between traumatic occurrences met in emergency, the fracture of femur in the elderly, stands out as a public health problem worldwide.⁸ In addition to the high incidence of mortality, these patients require intensive treatment and functional rehabilitation for a long time.⁹⁻¹³

Most of these fractures treatment is surgical, the conservative treatment is

reserved to some incomplete or fractures without deviation.^{10,12} The surgical procedure aims at reduction and fixation of fracture, using the various methods of osteosynthesis or specific femoral neck fracture with bypass, the replacement by prosthesis.¹² Elders met in emergency units, with diagnosis of fracture of the femur in most cases treatment is the surgical correction, which aims at stable internal fixation and early patient ambulation.¹³ Surgical treatment decreases the incidence of morbidity and mortality caused by this type of fracture, in unstable fractures can be necessary to use partial or total hip arthroplasty.¹⁴

The important thing for the elderly attacked by some type of trauma is the return of independence, encouraging them in the activities of daily living, the return of self-esteem, thus providing better quality of life.¹⁵

OBJECTIVES

- Identify the major trauma in the elderly met at the ready availability
- Characterize the elderly met in emergency
- Set the destination of these patients (high, hospitalization, or death).

METHOD

Exploratory and descriptive, retrospective study, with data collected through electronic records of elderly (over 60 years), with diagnosis of trauma, met at the ready availability of the emergency unit of the Hospital de Base (HB) in the municipality of São José do Rio Preto/SP, in the year 2011.

The following variables were analyzed through an instrument previously elaborated: age, gender, cause of trauma, following hospitalization, surgery, high and death of patients. For analysis of the data has been used percentage values with statistical Association test approach as the Chi-square for the qualitative variables and univariate comparison tests for age, all at a significance level of 0.05.

The present study has been previously submitted and approved by the Committee of ethics in research involving humans (CEP/FAMERP), with the CAAE No. 01216012.6.0000.5415.

RESULTS

We analyzed the medical records of 535 seniors who suffered some kind of trauma and were met at the ready availability of the emergency unit of the Hospital, identified through computerized records.

The age of the elderly presented average 73.36 years with a standard deviation of 9.41 years and median 72 years. It was observed the presence of a discrepant value (*outlier*) that influenced the value of average age: an elderly aged 108 years. The data of the age did not follow normal distribution by the Anderson-Darling test ($P < 0.005$). The minimum age was 60 years and observed

maximum of 108 years. Most of the elderly met victims of trauma was male (296-55.33%), female (215-44.67%).

The results presented in table 1 show that the occurrence of fracture of femur prevails among the elderly female, while traumatic brain injury and other types of trauma in elderly males prevail.

Table 1. -Percentage Distribution of types of trauma in relation to sex. São José do Rio Preto, SP, Brazil, 2011.

Types of trauma	Sex		Total
	Female	Male	
Fracture of femur	34 (59.65%)	23 (40.35%)	57 (10.65%)
Other types of trauma	115 (44.06%)	146 (55.94%)	261 (48.79%)
Traumatic brain injury	90 (41.47%)	127 (58.53%)	217 (40.56%)
Total	239 (44.67%)	296 (55.33%)	535 (100%)
Value P	0.048		

You can see the data presented in table 2, which the motorcycling automobile accidents, bicycle, road kills and attacks were more

frequent in the elderly male, being that the falls were more frequent in the elderly female.

Table 2. Percentage distribution of causes of traumas in relation to sex. São José do Rio Preto, SP, Brazil, 2011.

Causes of trauma	Sex		Total
	Female	Male	
Automobile accident	26 (34.67%)	49 (65.33%)	75 (14.02%)
Accident with motorcycle or bicycle	2 (8.70%)	21 (91.30%)	23 (4.30%)
Aggression	7 (21.21%)	26 (78.79%)	33 (6.17%)
Trampling	12 (38.71%)	19 (61.29%)	31 (5.79%)
Fall	192 (51.47%)	181 (48.53%)	373 (69.72%)
Total	239 (44.67%)	296 (55.33%)	535 (100%)
Value P	< 0.001		

According to the results presented in table 3, the majority of seniors who were retired, at home or working in the area of General Services presented the fall as leading cause of

trauma. On the other hand, the elderly who worked in the commercial area showed how the trauma the automobile accident.

Table 3. Percentage Distribution of causes of injuries in relation to the profession. São José do Rio Preto, SP, Brazil, 2011.

Causes of trauma	Profession				Total
	Retired	Trade	Of home	Services	
Automobile accident	17 (16.19%)	15 (42.86%)	20 (10.64%)	21 (11.05%)	73 (14.09%)
Accident with motorcycle or bicycle	7 (6.67%)	2 (5.71%)	1 (0.53%)	12 (6.32%)	22 (4.25%)
Aggression	8 (7.62%)	1 (2.86%)	5 (2.66%)	18 (9.47%)	32 (6.18%)
Trampling	8 (7.62%)	4 (11.43%)	9 (4.79%)	10 (5.26%)	31 (5.98%)
Fall	65 (61.90%)	13 (37.14%)	153 (81.38%)	129 (67.89%)	360 (69.50%)
Total	105 (20.27%)	35 (6.76%)	188 (36.29%)	190 (36.68%)	518 (100%)
Value P	< 0.001				

Table 4 shows the data relating to types of trauma in the elderly, and the fall appeared with greater frequency. In addition, it is possible to notice that in most cases the fracture of the femur was bound to fall,

followed by the head trauma and other kinds of trauma.

Table 4. Percentage Distribution of types of traumas in relation to cause of these traumas. São José do Rio Preto, SP, Brazil, 2011.

Cause	Type of trauma			Total
	Fracture of femur	Other types of trauma	Traumatic brain injury	
Automobile accident	2 (3.51%)	40 (15.33%)	15.21 (33%)	75 (14.02%)
Motorcycle accident or bicycle	1 (1.75%)	16 (6.13%)	6 (2.76%)	23 (4.30%)
Aggression	0 (0.00%)	29 (11.11%)	4 (1.84%)	33 (6.17%)
Trampling	3 (5.26%)	15 (5.75%)	13 (5.99%)	31 (5.79%)
Fall	51 (89.47%)	161 (61.69%)	161 (74.19%)	373 (69.72%)
Total	57 (10.65%)	261 (48.79%)	217 (40.56%)	535 (100%)
Value P	< 0.001			

In relation to the follow-up to hospitalization, the results presented in table 5 show that the majority of seniors who had femur fractures, underwent surgery, received

high return. Interestingly a considerable percentage of elderly people with traumatic brain injury who evolved to death.

Table 5. Percentage distribution of types of traumas in relation to follow-up to hospitalization. São José do Rio Preto, SP, Brazil, 2011.

Follow-up	Type of trauma			Total
	Fracture of femur	Other types of trauma	Traumatic brain injury	
Surgery with high and return	53 (94.64%)	48 (55.81%)	4 (6.67%)	105 (51.98%)
Exams with high and return	0 (0.00%)	34 (39.53%)	42 (70.00%)	76 (37.62%)
Death Certificate	3 (5.36%)	4 (4.65%)	14 (23.33%)	21 (10.40%)
Total	56 (27.72%)	86 (42.57%)	60 (29.70%)	202 (100%)
Value P	< 0.001			

DISCUSSION

Studies describe a worldwide growth of the elderly population, an increase in life expectancy, the technology applied to health, and the level of education of the population has contributed to improving the quality of life, providing a more active lifestyle. Thus, these factors have led these people to a greater exposure to aggressive agents, evidenced by the increase of cases of elderly victims of some type of trauma.¹⁵

The average age of the elderly met in emergency was 73 years. In relation to gender, 53.33% were male, 44.67% female.

Of records searched, the fracture of the femur was 59.65%, for females, followed by 40.35% of the males. Through a prospective¹⁶ that aimed to analyze the rates and risk factors associated with fracture of femur in a population with 65 years or more, the researchers describe the incidence of fracture of the femur in women was 66% and that appropriate measures of prevention need to be implemented in this growing population. Another¹⁷ in a study sample (n = 571) with proximal femoral fractures, the results of this survey showed an incidence of 86% female literacy affected by this occurrence. Um important point to be considered in the elderly with femoral fracture is the presence of Comorbidities, because the higher the number of coexisting diseases smaller are the chances of recovery of gait pattern in post-

operative, hindering the partial return of ambulation in rehabilitation period.¹³

In relation to the mechanism of trauma, there was predominance to fall in 51.47% female, for the profession of home, the fall represented 81.38%. In relation to the type of trauma, the fall has significant relationship with the fracture of femur 89.47% and traumatic brain injury 74.19%. The biggest cause of falls in females can be explained by greater exposure to domestic activities, higher prevalence of chronic diseases like osteoporosis, minor amount of lean body mass and muscle strength compared to men of the same age.³

An important aspect that should be subject to greater attention to the health of the elderly is drug therapy. The benzodiazepine drugs, neurolípticos, antidepressants, and the use of multiple drugs are associated with an increased number of falls.¹⁸ The drugs that can increase the risk of falls include: Anxiolytics and antidepressants (increases the risk of a fall of 1.2 -6 times), cardiovascular medicines can cause orthostatic hypotension, such as beta blockers, nitrates, vasodilators and diuretics, and pain medication such as opioids.¹⁹

In the Brazilian scientific production,²⁰ research aimed to analyze the prevalence of falls in the elderly and the influence of associated variables, the results of this study have described the prevalence of falls associated with old age, sedentary, self-

perception of health is bad and higher number of medications referred to continuous use.

The highest incidence of elderly falls is in the households, as these are not always in conditions of adequate housing to serve this population.⁵ Are various obstacles and facilitators of falls, such as: high beds, high steps or narrow, inappropriate footwear, loose rugs, toilet low, support bar, floor mats, Dim lighting, wobbly chairs, badly maintained public roads with potholes or uneven, combined with lack of knowledge of family members and caregivers regarding falls prevention measures.^{5,21} to decrease morbidity and mortality measures simple and specific changes in the households can increase security and contribute to the prevention of injuries in the elderly.²²⁻³

The lack of maintenance in the process publishing is still a major factor in the media, when it comes to traumatic incidents involving elderly, this while transiting through the streets without a companion or family member ends up getting exposed to the risk of traumatic injuries.

Other measures should be adopted for the prevention of falls and through muscle strengthening programs for seniors, eye treatment, safe houses projects, prevention and treatment of osteoporosis, calcium supplement and vitamins, hormone replacement, specific medications.¹¹ the visual acuity loss contributes to the elderly fall, the greater the loss of vision, the greater the risk of the elderly fall.²⁴

As for the causes of trauma related to the profession, 67.89% worked in the area of general services and 42.86% in the commercial area. This fact is evidenced in scientific research have shown that the elderly retired, often back to the Labour market for complementary income, whereas the income from their retirement are very low.²⁵

In relation to the follow-up to hospitalization, 94.64% of the patients with femoral fracture underwent surgery and were discharged with follow-up clinic of orthopedics. Those fractures must be accompanied during the postoperative period, since they are related to a prognosis reserved, mainly as regards the loss of functional ability.²⁶

The study found that of patients with TEC 70% carried out examinations and were discharged with outpatient, return the hospital mortality rate of older people with TBI was 23.33%. This is consistent with the results found in a study²⁷ where the researchers find that 25.3 percent of elderly

patients hospitalized with TBI have evolved to death. Note-If a considerable percentage of deaths of elderly people with traumatic brain injury. The TEC is one of the world's leading public health problems, showing high and growing incidence and represent an important cause of morbidity and mortality.²⁸ Has been observed an increased mortality resulting from ECA, particularly in developing countries.²⁹

CONCLUSION

Considering the objectives proposed in this study showed that the majority of older people affected by trauma was female, victims of the fall with femoral fracture in the home, which underwent surgery and were discharged, and the average age was 73 years.

By means of the results obtained in this study believed that the strategies of educational and preventive measures, whether individual or collective, are actions to reduce the incidence of trauma in the elderly, thus minimizing morbidity and mortality in this population.

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