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Geriatric epidemiology of trauma in a hospital in Southern Colombia

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ABSTRACT

Objective: To describe the clinical and sociodemographic characteristics of geriatric patients who were treated at a university hospital in southern Colombia.

Methods: A database of trauma patients over 65 admitted between June 2014 and December 2015 was constructed. Univariate analysis was performed. Measures of central tendency and dispersion for continuous variables were calculated.

Results: A total of 760 patients were analyzed, the median age was 74 years (65–98). The median injury severity score was 9 (4–25) the 71.97% were men, and overall mortality was 25.39%. The 92.10% was blunt trauma, and the main mechanism of injury was falls.

Conclusions: Trauma in the elderly is a common condition with high risk of mortality. It is important to know the frequency of these injuries to provide the best possible handling. In our hospital we found that geriatric trauma is a common disease, the main cause is falls without embargos traffic accidents are common in this population.

1. Introduction

The trauma is of global importance, causing around 5 million deaths a year, of which million are traffic accidents[1,2]. According to a study of the World Health Organization in global disease overload, published in 2010[3,4], the trauma still is a public health problem and generates an important load for the health systems in Latin-American countries. In Colombia the global load of injuries, is more prominent in males economically active between ages of 12 to 45. But the trauma is a heterogeneous pathology and affects elderly people finding

a high percentage of mortality and morbidity in these group of patients.

The trauma constitutes an important cause of incapacity and death in all ages, but it impacts differently in each group. It's responsible of 25% of death in the different group ages, but only 5.7% of departure on 65 years old patients. Although is estimated that death by trauma in elders is six times more than in younger population managed by injury degree. It has been proofed advanced age is a risk factor to negative outcomes in patients with trauma[5-7].

The physiological deterioration and chronic disease affecting old people are responsible of increase in morbidity and mortality related with trauma in this demographic group. The objective of this study was to describe the clinical and sociodemographic characteristics of geriatric patients attended in a university hospital in South Colombia.

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2. Materials and methods

2.1. Design and patient population

Retrospective descriptive observational study of the patients older than 65 years old victims of traumatic injury attended in the Neiva University Hospital (NUH) between June 2014 and December 2015. Approval from the NUH quality improvement office and the institutional review boards of NUH was obtained prior to conducting this study. Were included in the study those patients with trauma older than 65 years admitted in the institution. NUH is a level 1 hospital that counts with 504 beds and an important trauma center of reference for the region. NUH admits approximately 2000 adult trauma patients per year and has 30 adult intensive care unit beds. The hospital is the primary trauma center for 3.2 million inhabitants living in an area extending over 60000 square miles. Its radius of care extends far into the Amazonian region, where the most intense fighting among rebel groups, cocaine traffickers and government forces has taken place for over 40 years.

2.2. Data collection and statistical analysis

The method used for data recollection was direct observational nonparticipating. The document review was made by data recording writing down the outcomes on data sheet with epidemiological data, clinical and social data. Confidentiality on the content of the records was kept by the investigators and information was only utilized for the research purpose. The results obtained in the study were stored and analysed in an online statistical software R version 2.15.2. Measures of central tendency and dispersion for continuous variables were calculated as well as frequencies and proportions for the categories.

3. Results

A total of 760 patients were analyzed. The median age was 74 years (65–98). The median injury severity score was 9 (4–25). The 71.97% were men, and overall mortality was 25.39%. The clinical variables were shown in Table 1.

Table 1
Clinical and sociodemographic features of patients victims of trauma ($n = 760$).

Variable	Results	
Gender [n (%)]	Male	547 (71.97%)
	Female	213 (28.03%)
Age (years)	Median	74
	Range	65–98
Glasgow (income)	Mean \pm SD	6.60 \pm 3.54
Injury severity score	Median	9
	Range	4–25
Result [n (%)]	Alive	570 (75%)
	Death	190 (25%)

Patients who entered the institution, victims of trauma, the general mortality was of 25.39%, and the principal type of trauma was convincing. In the background identification, the 78.94% (600) were hypertensive, 42.89% (326) diabetics, 35.13% (267) smokers. Regarding the type of injury presented, falls were the most common cause in 68.15% followed by traffic accidents in 25.39%, hurt by sharp short weapon 5.26% and ballistic trauma at 1.18%. Table 2 describes the diagnoses found regarding the anatomic location of the trauma. Vehicles related with the traffic accidents were seen in Table 3. The average length of hospital stay was [(16.60 \pm 5.78) days].

Table 2
Clinical findings of patients admitted to the institution ($n = 760$).

Diagnostic	n (%)
Multiple trauma	268 (35.3%)
Severe head injury	261 (34.3%)
Chest trauma	104 (13.7%)
Abdomen trauma	127 (16.7%)

Table 3
Type of vehicle related with the notice of patients admitted to the institution ($n = 193$).

Type of vehicle	n (%)
Motorcycle	66 (34.19%)
Bicycle	91 (47.15%)
Light vehicle	5 (2.60%)
Truck/bus	25 (12.95%)
Other	6 (3.11%)

4. Discussion

Trauma is one of the pathologies that cause greater disability and mortality globally, generates about 5 million deaths per year and affects people between the ages of 14 to 45 years in which young people are more productive from the labour perspective[6]. In our study we observed a population of over 65 are a common cause of admission to our hospital, with a median age of 74 years[7-9].

We must differentiate the elderly between 65 and 80 years from the advanced elderly, over 80 years, with mortality four times higher. A third of patients over 65 years old have preexisting conditions that contribute to double up the hospital stay in comparison with younger adults, but advanced age is a physiological alteration itself incapacitates the patient to respond to stress. This causes lesions in patients with moderate injury, so we should offer care corresponded to more severe injuries in younger people. The elderly are more susceptible to serious injury with less severe injuries than anyone younger, at the same time is less able to produce an adequate physiological response[9-11]. The elders made less frequently risk activities than younger people to suffer trauma,

but are more likely to suffer them in everyday activities such as falls at home. When driving motor vehicles have a higher number of accidents to be more frequent syncopal in this age group as well as by decreasing sensory faculties and reaction to an external stimulus[9-12].

Confusion and loss of hearing and vision makes some elderly vulnerable even in their own homes[8-10,13,14]. Even in the absence of cataracts and glaucoma, visual acuity, accommodation, peripheral vision and dark adaptation diminish with age. The balance is worse, therefore aging of the vestibular system as the usual side effects of their medications. There is almost always some degree of cervical osteoarthritis. The decreased muscle mass and bone disorders degenerative worse coordination[15,16]. Orthostatic hypotension is common, but even more if they are involved in treatments with diuretics or benzodiazepines. Wet floors, stairs, carpets, etc. are not an architectural risk for young people, but for the elderly they are. This is important to keep in mind to avoid trauma[14-18]. In our study we found that geriatric trauma is an important pathology, the main income associated with head injuries. It is important to identify these lesions and establish institutional management protocols to help decrease morbidity and hospital mortality.

The trauma in elderly people is a frequent pathology, with high risk of mortality. It is important to know the frequency of these injuries and handle it in the best way possible. In our hospital we found geriatric trauma is a frequent pathology, and the principal cause is falling, however traffic accidents are common in this population.

Conflict of interest statement

The authors report no conflict of interest.

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