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### ELDERLY VICTIMS PROFILE OF TRAUMATIC CRANIAL INJURY HOSPITALIZED IN INTENSIVE CARE UNIT OF REFERENCE HOSPITAL

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#### ABSTRACT

The objective was to identify the frequency, age and gender of the elderly victims of head trauma, admitted to an intensive care unit (ICU). Retrospective study of descriptive and documentary nature, conducted with medical records of elderly patients suffering from brain injury trauma ICU of an emergency care hospital located in Fortaleza, Ceará. The research period was from January to August 2013. The results showed that the determinants of hospitalization among the elderly in the ICU were: fall from own height, car accident, fall from the first floor, stair fall, beating and unknown factor. In conclusion, the elderly require special and differentiated attention, mainly because of their physical condition, so that way they can carry out their daily activities without compromising their mobility, avoiding accidents such as those mentioned.

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## INTRODUCTION

In the last decades there was an increase in the elderly population throughout the world. In Brazil, the proportion of people with age between 60 and 70 years increased from 6.7% in 1990 to 8.1% in 2000. The projections of the Brazilian Institute of Geography and Statistics suggest that this population will reach 64 million by 2050, which corresponds to 24.6% of the total population (1).

The advancement of science and the growing development of technologies aimed at health, resulted in an increase in people's living time and thereby grow the number of elderly people, which makes it necessary, further training of professionals dedicated to the care of this population. Aging is a stage of life that involves several changes and many seniors are not prepared to face this reality. In order to healthy aging it is necessary that the individual is able to adapt to certain situations such as physical, social and emotional losses (2).

The elderly have less ability to perform daily activities with vigor and energy and shows a greater risk of developing diseases or chronic degenerative conditions, which may compromise your health and predispose to falls. This demonstrates a possible weakness inherent in the age group, and the high risk of falls one of the commonly used parameters for gerontology and geriatrics professionals to characterize the term frailty in elderly (3).

In 2004, the mortality of elderly people in Brazil from external causes accounted for 2.8% of all deaths in this age group (4). When the subject comes to fall from own height is evident in 20.5% of deaths from this cause. Among elderly women the proportion of deaths due to fall was even higher, about 28.3% of all deaths from external causes in 2004 (5). These data are of great importance, because the increasing complaints of elderly victims of falls with brain traumatic consequences are still a constant.

The Traumatic Brain Injury (TBI) is a major public health problems (6). Studies have demonstrated an increase in the number of injuries in the elderly, which can be associated with this population growth. (2). Thus, the objective of this study was to identify the frequency, age and gender of elderly victims of head trauma, admitted to an intensive care unit.

## METHODOLOGY

This is a retrospective study of descriptive and documentary nature with a quantitative approach.

Data collection was performed in Dr. José Frota Institute, a tertiary hospital with urgency and emergency services in Ceará, which is a reference in Brazil in the care of trauma patients.

Initially data was collected from 288 elderly victims of Traumatic Brain Injury (TBI), from January to August 2013, with a sample of 100% of the total population. After application of the inclusion and exclusion criteria, the sample was composed to 37 patients.

Inclusion criteria were adopted with the following conditions: cases of the year 2013, patients aged less than 60 years and victims of head trauma with hospitalization in some Intensive Care Unit. The charts with illegibility of data were excluded and those who reported falls, but were not cases of TBI.

Data collection was carried out through an analysis focused on selected records, with the collection instrument a form with pre-established questions focused on the study objectives. The variables used were: the number of hospitalizations, type of accident, type and severity of injury and age.

Data were organized in IBM SPSS Statistics 20 Spreadsheet program, which allowed the preparation of tables, percentage calculations and descriptive statistics.

The project was approved by the Ethics Committee in Research of the State University of Ceará, under advice number 383,688.

## RESULTS

### Patient characteristics

37 (100%) patients suffering from cranial trauma, aged 60-90 years old, were admitted to the Intensive Care Unit. Of the 37 patients admitted, 27 (73%) were male and 10 (27%) were female, as shown in Table 01.

**Table 01- Number of admissions for TBI in the months from January to August 2013 and stratification by sex. Fortaleza CE, 2014.**

Internments from TBI	N	%
Male	27	73%
Female	10	27%
TOTAL	37	100%

Table 2 shows the distribution of the victims of TBI second external cause record, showing that the most common cause generating TBI were falls from own height with 23 (62.1%) victims, followed by traffic accidents, accounting for 09 ( 24.3%) cases.

**TABLE 2 - Distribution of victims of TBI second external cause record.**

external causes	n°	%
Traffic accident	09	24.3%
Fall from own height	23	62.1%
Fall of first floor	01	2.7%
Stair Fall	01	2.7%
Beating	02	5.5%
Unknown	01	2.7%
Total	37	100%

Table 3 shows that the types of injury resulting from TBI in the elderly were mainly diffuse brain injury with 23 (62.1%) patients, followed by acute subdural hematomas, accounting for 10 (27.0%) cases.

**TABLE 03- Distribution of TBI victims, according to the type of injury arising from trauma. Fortaleza-CE 2014.**

Lesion tipe	Total	%
Diffuse brain injury	23	62.1%
Acute subdural hematoma	10	27.0 %
Chronic subdural hematoma	01	2.7 %
Epidural hematoma	02	5.5%
Intracranial Injury unspecified	01	2.7 %
TOTAL	37	100%

To assess the severity of TBI is used the Glasgow Coma Scale, by evaluating the eye opening, verbal response and motor response that provides data on the patient's condition and makes it possible to classify the trauma. According to Table 4, which represents the gravity generated by TBI according to the Glasgow Coma Scale, 23 elderly (62.1%) had severe gravity, followed by 08 (21.7%) with moderate severity, and only 6 (16.2%) of cases with mild severity.

**TABLE 04- Distribution of victims of TBI, according to severity of the injury according to the Glasgow coma scale. Fortaleza-CE 2014.**

Glasgow scale	Total	%
Mild	06	16.2%
Moderate	08	21.7%
Severe	23	62.1%
TOTAL	37	100%

## DISCUSSION

A recent study evaluated the characteristics of the elderly affected by TBI and found that the increase in the number of trauma in the elderly may be associated with the growth of this population. For them this kind of trauma is a major public health problem, being very common due to some common weaknesses that stage of life as: reduced reflexes, altered memory, intercurrent diseases, idle and impaired sensorium with vision impairments and hearing, resulting in altered reaction time (2).

Among the various causes of TBI in the elderly, the fall from own height remains the main, followed by vehicle accidents, reaffirming the already exposed by another Brazilian research from Santa Catarina, which also showed that the proportion of secondary TBI violence has increased in the last decade (7). Corroborating with published data which shows that a serious problem of public health in Brazil, is the lack of resources to an increasing demand for health services. The elderly are hospitalized more often and takes up the bed for longer when compared to other population groups. In this context, the falls in the elderly emerge as an important determinant of hospitalization. In Brazil, about 30% of elderly people suffer falls at least once a year (3).

Regarding the examination reports, all admitted patients underwent CT scans, and they showed abnormalities. The most frequent change in computed tomography was diffuse brain injury. Regarding the severity of TBI, the main diagnosis was severe TBI, in which the change occurs in the level of consciousness. With regard to coma, this can be prolonged, lasting several hours, days or even weeks when there is swelling, diffuse axonal injury, bruising or laceration of the cortex (8).

For objective of the neurological status of the patient assessment is used the Glasgow Coma Scale (GCS), though the GCS has some limitations and its reliability depends on the absence of confounding factors as: sedation, hypothermia and hypotension. Moreover, you can not compensate for the lack of eye opening in patients with periorbital trauma or loss verbal response in intubated patients (9). In this study a score less than or equal to 8 in the GCS was statistically significant as a predictive factor related to lethality, in agreement with several studies (9, 10).

Low GCS on admission has been an excellent discriminator of poor outcome after TBI, with high statistical significance (4).

The TBI appears as the main cause of deaths and sequelae in polytrauma patients. In Brazil, every year, half a million people need hospitalization in consequence of traumatic brain injury. Of these, 75 to 100 thousand people die in the course of time while other 70 to 90 thousand develop irreversible loss of some neurological function (8).

## CONCLUSION

TBI in elderly patients is a serious medical condition and epidemiological importance.

It is of great important the monitoring and control of the elderly-related problems as: diseases that can alter their balance, reflection and marching and make them more susceptible to falls, so that way can prevent them. It was identified that the main cause of TBI are the fall from own height followed by traffic accidents, which is needed more attention in the care of these patients, as well as the orientation of their caregivers. Preventive measures should be addressed within the public health and hospital setting. It is the role of nursing staff to educate the elderly population with the goal of promoting health and make them responsible for their quality of life, working also with the family of this patient favoring a more peaceful and secure environment.

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