

EPIDEMIOLOGICAL DATA RELATED TO FEMUR FRACTURES TREATED AT THE LUIZ GIOSEFFI JANNUZZI SCHOOL HOSPITAL, FACULTY OF MEDICINE, VALENÇA, RJ, BRAZIL, FROM 2013 TO 2014

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ABSTRACT

Aging consists of a progressive and dynamic process in which biochemical, functional and morphological changes occur, in order to progressively alter the organism making it more susceptible to extrinsic and intrinsic aggressions. The lack of postural balance and falls constitute part of the geriatric syndromes that encompass the most common health alterations in the elderly, and are one of the main public health problems due to their high incidence. Femoral fractures in the elderly often result from low energy traumas, such as loss of postural instability, in order to be associated with a variety of factors, such as osteoporosis, advanced age, hip geometry, decreased muscle strength, impaired calcium intake and Vitamin-D and genetic predisposition. Objectives: To evaluate the prevalence of femoral fractures in the municipality of Valença, Rio de Janeiro, in the period from 2013 to 2014 and its main etiologies. Methodology: The students carried out a study and survey of the retrospective data from medical records for a period of one month, referring to femoral fractures treated at the Luiz Gioseffi Jannuzzi School Hospital in 2013/2014 biennium. Patients were divided according to gender, affected limb, cause, age group and length of hospital stay. Results: Of the total of 32 charts analyzed, 20 were female and 12 were male, the left femur was affected in 18 cases while the right was affected in 14 cases. The triggering factor that led to most of the fractures was the fall of the height itself, with 19 cases, followed by auto accident, 5 cases, falls on horseback, 1 case, work accident, 1 case and other causes not reported, 6 cases. The most important age group was between 81 and 90 years, with 11 cases, followed by 71 to 80 years with 9 cases, 31 to 40 years with 3 cases, 11 to 20, 51 to 60 and 61 to 70 each with 2 cases, and finally 21 to 30, 41 to 50 and over 90 years, 1 case each. The most significant period of hospitalization was between 16 and 30 days with 14 cases, between 1 and 15 days with 13 cases and more than 30 days with 5 cases. Conclusion: Among the data collected in the literature, it can be inferred that the epidemiological transition is becoming more and more present in contemporary society, with a sharpening of the base of the pyramid that is composed of the economically active population and with enlargement of the apex, where the elderly population is located. Given this, a more attentive look at the elderly is of paramount importance, since they are more vulnerable to the intrinsic elements of the aging process and extrinsic, associated with the environment and external factors that restrain them.

KEYWORDS: Aging; Femoral fractures; geriatric syndromes

1. INTRODUCTION

Old age is not a pathology, but rather a process of life events with its own characteristics in which changes occur in the individual, both physical, metabolic, emotional and humoral.¹

Aging consists of a progressive and dynamic process in which biochemical, functional and morphological changes occur, in order to progressively alter the organism, making it more vulnerable to pathologies.²

Functional capacity consists of the ability to maintain the physical and mental abilities necessary for an independent and autonomous life. Therefore, the elderly person who maintains his autonomy and needs only a help or supervision to perform his daily activities should be considered a healthy elderly, Still suffering from one or more chronic diseases.^{2,3}

Senescence itself causes a decline in functional capacity, which becomes more pronounced after the age of 75 and brings important limitations to the elderly, but an event such as trauma, which may occur with the fracture, can have catastrophic implications, such as the temporary end or even permanent existence of an autonomous and independent life.³

The coexistence of systemic diseases and, consequently, the use of several medications predisposes the elderly to the risk of trauma. The use of medications such as antidepressants, psychotropic drugs, sedative and sedative hypnotics, antihypertensives, diuretics increase the propensity of trauma through its side effects and / or drug interactions with other drugs.^{4,5}

The constant process of demographic transition, with aging of the Brazilian population, together with the increase in the prevalence of chronic-degenerative diseases, revealed to be extremely relevant issues related to the elderly and their comorbidities.^{4,6}

This scenario has repercussions in the different spheres of the social, economic, political and cultural structure of society, since the elderly, like the other age groups, have peculiarities in their living conditions.

Such demands have aroused great interest in the area of public health, since they can have economic costs more than expected.^{7,8}

The Unified Health System (SUS) has increased costs with treatments for fractures due to falls. In 2006, R \$ 49,884,326 was spent on hospitalizations of elderly people for femoral fractures and R \$ 20 million for medicines²

The economic cost with hospitalization was estimated at US \$ 5,500 per patient in Brazil, between 1980 and 2003.⁹

Life expectancy in 1950/1955 was around 33.7 years, rose to 66.25 in 1995 and is expected to reach 77.08 in 2020/2025. The Brazilian Institute of Geography and Statistics (IBGE) has as a perspective that the population over 60 years of age is approximately 11% of the general population by the year 2020.²

This increase is due to improved living conditions and medical advances. Nevertheless, this aging brought with it problems such as fractures, among them femurs, common and important etiology of mortality and morbidity in this group.¹⁰

One of the most notorious pillars related to aging is the fact that increased life expectancy is associated with a high rate of comorbidities. Postural instability and the consequent ones are one of the central clinical and public health problems due to its high incidence and consequent complications, as well as the high costs of care.²

Among other definitions, a fall can be understood as an unintended event that results in the change of position of the individual to a lower level, relative to their initial position. The same happens due to the total loss of the postural balance, and may be related to the sudden insufficiency of the neural and osteoarticular mechanisms involved in the maintenance of the posture.¹¹

The falls are an important public health problem among the elderly due to the high socioeconomic cost and morbimortality of the lesions provoked. In addition to producing a considerable loss of autonomy and quality of life, they can also have repercussions on their caregivers, The family members, who should mobilize around special care, modifying their routines according to recovery or adaptation after the fall.^{10, 12}

Individuals of all age groups are at risk of falling. However, for the elderly they have a greater importance, because it can lead them to disability, injury and death.²

Causes that lead to falls can be grouped into extrinsic and intrinsic factors. Among the former, the use of inappropriate footwear and environmental hazards has become more prominent. Among the intrinsic are physiological changes, pathological conditions, adverse effects of medications or polypharmacy. Most of these events are inherent in the complex interaction between these factors, compromising the various systems involved in

equilibrium.¹³

Studies conducted in Europe and the United States show that approximately one-third of the population over 65 years of age has experienced at least one episode of depletion in the last 12 months.¹²

Data from emergency services in the United States show that falls are a frequent cause of injury and are the leading cause of accidental death in people over 65 years of age. In the Brazilian context, according to data from the Medical Information System / Ministry of Health, approximately 54,730 people died due to falls, 52% of which were elderly, with 39.8% of them between 80 and 89 years of age in 1979 and 1995.¹¹

Femoral fractures in the elderly often result from low energy traumas due to loss of postural stability, associated with a variety of factors, such as osteoporosis, advanced age, hip geometry, decreased muscle strength, impaired calcium and vitamin intake - D and genetic predisposition. The main causes of the increase in the number of these fractures in the elderly is osteoporosis, as well as the higher incidence of falls.^{10, 14}

The financial and social cost of femoral fracture is high and results from its morbidity and mortality, a variable hospitalization period, associated diseases, clinical and surgical care, and rehabilitation for long periods.^{3,10}

The present study aims to perform a data collection aiming at evidencing the triggering factors associated with femoral fractures treated at the Luiz Gioeffi Jannuzzi School Hospital, in the city of Valença, Rio de Janeiro, from 2013 to 2014, once the knowledge about of physical, psychic and social consequences may lead to strategies aimed at an integral approach of this age group, involving from primary strategies, aimed at the prevention of injuries to a rehabilitation centered approach.

2. METHODOLOGY

The students carried out a study and survey of the retrospective data from the charts regarding femoral fractures treated at the Luiz Gioeffi Jannuzzi School Hospital in the biennium 2013/2014. This collection resulted in a total of 32 medical records. The inclusion criterion was the presence of any femoral fracture. Any medical records that involved other fracture sites were excluded from the survey. The results of this survey were organized more and more according to the date of hospitalization in a database in Excel and presented in graphs and tables. Statistical analyzes were performed using the significance index of $\alpha = 0.05$. Patients were divided according to gender, affected limb, cause, age group and length of hospital stay.

The literary survey was carried out in electronic databases, such as Lilacs (Latin American and Caribbean Literature in Health Sciences) and SciELO (Scientific Electronic Library Online), with a cross-referencing of the same and with the search more directed to the elderly terms, falls, quality of life, fractures, as well as their respective terms in the

English language.

3. RESULTS

Table 1 evidences that of the 32 files analyzed, 20 were female and 12 male, so the table 2 shows that the left femur was affected in 18 cases while the right was 14. It can be seen that from table 3, the triggering factor that led to most of the fractures was the fall of the height itself, with 19 cases, Followed by automobile accident, 5 cases, falls on horseback, 1 case, work accident, 1 case and other causes not reported, 6 cases.

Table 1: Sex of the patients

SEX	Number of patients	%
Male	12	37,5
Female	20	62,5

Table 2: Affected limb

Affected limb	Number of patients	%
Left	18	56,25
Right	14	43,75
Total	32	100

Table 3: Triggering factors

Triggering factors	Number of patients	%
Fall from own height	19	59,4
Automobile accident	5	15,6
Horseback fall	1	3,1
Work accident	1	3,1
Others	6	18,8
Total	32	100

Table 4: Age group

Age	Number of the patients	%
11 - 20years	2	6,25
21 - 30years	1	3,1
31 - 40years	3	9,4
41 - 50years	1	3,1
51 - 60years	2	6,25
61 - 70years	2	6,25
71 - 80years	9	28,15
81 - 90years	11	34,4
> 90years	1	3,1
Total	32	100

Table 4 reveals that the most important age group was between 81 and 90 years, with 11 cases, followed by 71 to 80 years with 9 cases, 31 to 40 years with 3 cases, 11 to 20, 51 to 60 and 61 to 70 each with 2 cases, and finally 21 to 30, 41 to 50 and greater than 90 years 1 case each. Therefore, table 5 shows that the most significant period of hospitalization was between 16 and 30 days with 14 cases, between 1 and 15 days with 13 cases and more than 30 days with 5 cases.

Table 5: Period of hospitalization

Hospital stay (days)	Number of patients	%
0 - 15	13	40,65
15 - 30	14	43,7
> 30	5	15,65
Total	32	100

4. DISCUSSION

Fractures in the elderly can affect several sites, especially the hip, femur, arm, forearm. Among them, the most cited was the femur, especially in the left femur. The studies evaluated demonstrated that the occurrence of fractures seems to be greater in women older than in this age group in males. This greater propensity of the elderly to the fractures probably occurs due to the existence of osteoporosis.^{11,12,13,14} This fact is in agreement with the data collection carried out by the present study, where the majority of the affected group were women in the age group of 81 (11 patients, 34.40%), followed by the age group of 71-80 years (9 patients, 28.15%), and the left dimidium was the most affected, with a total of 18 cases (56.25%) in contrast to the right with a total of 14 patients (43.75%). Such a scenario has an important impact on health policies, since such a situation can be diagnosed, treated and prevented.^{15, 16}

Thus, considering the damage brought by fractures to the elderly, it is important that prevention and treatment programs for this disease be implemented, such as awareness campaigns about elderly care and the adequate treatment of their illnesses.^{16, 17}

The frequency of falls is greater within the home or around the house, with the fall of height itself being the most related to this type of fracture.² The explanation for this high number of falls in the domestic environment is due to the fact that the elderly fall in the house for staying longer in this place, which may be justified by the elderly not leaving home due to physical difficulties and a more restricted social life. In addition, there are a number of obstacles that facilitate falls in households, such as beds, poor lighting, carpets, toilets and toilets without a support bar.³ In addition to fractures, another consequence related to falls was soft tissue injuries, since this group is more susceptible to these elements, it presents a more fragile epithelium, with a greater chance of abrasions.² Of the medical records analyzed, 19 patients (59.40%) presented this profile of affection, being the fall within their home responsible for the majority of cases, especially in the older group of the elderly, from 81 to 90 years.

Some medications, such as hypnotics, sedatives, antihypertensives, and secretagogues, present an increased risk of falls and fractures among the elderly, especially in benzodiazepine users.¹² However, not all the medical records included the medications used by all patients, which made this association difficult in this study.

The hospitalization time of these patients can vary

from 5 to 35 days, and the recovery of the fracture may take much longer, in order to become an aggravating factor for complications, increasing morbidity and mortality. This period may be sufficient for the elderly to lose autonomy and quality of life, causing the family to mobilize for special care, modifying their routine according to the recovery or adaptation of the elderly.^{7,9,11} In the present, It can be seen that the time of hospitalization predominated in the corresponding interval of 15-30 days, with 14 patients, which corresponds to 43.70%, followed by the first two weeks, from 1-15 days, with 13 patients, which corresponds to 40.65%.

It is noteworthy that there was no statistical difference in length of stay between men and women, which is why this data was not explored in greater detail in the present study.

As mentioned earlier, the consequences of falls do not only cover the falling elderly, but also their family. Increased dependence on the elderly after falling may be an explanation for this finding. It is understood that this change also occurs due to the high costs and change in the routine of the whole family, since the family should make modifications in the physical structure of the home, so that the elderly can have a better quality of life, thus reducing the risk of further falls. Besides paying for complementary treatments.^{2, 18, 19}

5. CONCLUSION

Among the data collected in the literature, it can be inferred that the epidemiological transition is becoming increasingly present in contemporary society, so that the occurrence of falls in the elderly can result in a relevant health problem, causing physical damage, tissue damage, Injuries and fractures, functional decline and increased dependence and psychosocial issues, such as isolation and loss of autonomy. In view of this, a more attentive look at the elderly is of paramount importance, since they are more prone to functional decline, evidencing a need for effective fall prevention programs. In addition to these, it is also important to implement rehabilitation programs after falls, with the objective of reintroducing them as early as possible to their routine with the maximum possible quality of life, since such a framework sets up not only manifestations and consequences for The elderly, as well as their families who mobilize to provide the necessary support to them.

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