



Assessment of the profile of victims of femur fractures treated at an urgent and emergency hospital in the Brazilian western Amazon

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Ennely Mendonça Gutzeit

Centro Hospital João Paulo II, RO, Brasil
E-mail: ennely@gmail.com

Thiago Vaz Lopez

Universidade Federal do Acre, UFAC, Brasil
E-mail: thiagovlopes@hotmail.com

Silvecler Cortijo de Campos

Hospital de Base Ary Pinheiro, RO, Brasil
E-mail: silvinhocortijo@hotmail.com

Breno de Oliveira Chagas Barreto

Centro Universitário São Lucas, UNISL, Brasil
Email: Kenjiolive@gmail.com

Camila Wehbe

Centro Universitário São Lucas, UNISL, Brasil
E-mail: wehbefarma@gmail.com

Felipe Gabriel Abreu Gonçalves

Centro Universitário São Lucas, UNISL, Brasil
E-mail: wehbefarma@gmail.com

Iara Vaz Lopes

Centro Universitário Aparício Carvalho, FIMCA, Brasil
E-mail: lopesiaravaz@hotmail.com

Josiel Neves da Silva

Centro Universitário São Lucas, UNISL, Brasil
E-mail: josiel.nsilva@gmail.com

Juliana Costa Rodrigues

Centro Universitário São Lucas, UNISL, Brasil
E-mail: julianamedvet_@hotmail.com

Raissa Santos Reimann

Centro Universitário São Lucas, UNISL, Brasil
E-mail: raissareimann@hotmail.com

Saraí Vieira Ferraz

Centro Universitário São Lucas, UNISL, Brasil
E-mail: saaraferraz@hotmail.com

ABSTRACT

Femur fractures have higher morbidity and mortality at all levels of health care. Thus, falls among the elderly are quite frequent as they lead to a decrease in functional capacity and serious consequences for these patients. Traffic accidents are relevant, affecting more young male adults, with recklessness being the main cause of these accidents. The profile of victims of femur fractures treated at an urgent and emergency hospital in Porto Velho/RO was evaluated, through the stratification of the data presented by sex, age group, affected side, and trauma mechanism. The methodology of this study was carried out through data collected from medical records, deliberated by the HOSPUB system. The results evaluated the number of traumatic admissions by orthopedics in the period from January to April of year 2021, totaling 2,043 patients treated in the red room and outpatient clinic, of this total 63 are femur fractures 3.08% (63/2,043), being the distribution of these in the months; January 41.2% (26/63), February 17.4% (11/63), March 25.3% (16/63) and April 15.8% (10/63). The gender variable was evaluated, among the patients seen, there was a predominance of males in the age group of 21-49 years 30.5% (19/63) being equivalent when compared to other results, this being the most affected by accidents and violence. It is concluded that the profile of victims with femur fractures is predominant in females when treating the elderly, where the main cause falls. The highest prevalence among young adults is male, with motorcycle accidents as the main trauma mechanism.

Keywords: Femur fractures, falls, Traffic accident.

1 INTRODUCTION

A priori, longevity conditioned to demographic transition has become common in several countries. Therefore, in the year 2060, it is estimated that there will be an increase of 38 million Brazilians over 60 years of age (Oliveira et al., 2020). In this sense, biological, social, and economic factors, in addition to external causes and diseases, contribute to aging. Therefore, they are associated with a significant decrease in the functional capacity of the elderly (Soares et al., 2014). Thus, falls among the elderly are quite frequent, causing psychological and social problems and serious consequences for these patients (Maia et al., 2011).

The most prevalent diseases among the elderly are femur fractures, with females being the most affected, since the lack of estrogen causes bone fragility (Machado et al., 2012). Furthermore, fractures of the femur generate costly health impacts due to long periods of hospitalization and complications for these patients (Santos Júnior & Silva, 2021). Because of the above, osteoporotic fractures are more significant in women over 50 years of age, and their incidence is proportional to increasing age, early menopause, family history, previous history of fractures, Type 1 and 2 Diabetes Mellitus and low calcium intake (Santos et al., 2021).

Thus, femoral fractures have higher morbidity and mortality at all levels of health care (Bracco et al., 2009). Thus, preventive measures and the control of complications and associated diseases could reduce the injuries, mortality, and functional disability of these patients (Borges et al., 2012). Traffic accidents represent a serious public health problem (Rios et al., 2019). Thus, the average number of deaths in the world reaches 1.24 million on the roads (Peden, 2005). In addition, traffic accidents harm the economic sector, especially in developing countries, due to the removal from work activities (Araújo et al., 2021).

The incidence of high-energy trauma has led to the appearance of difficult-to-treat diaphyseal fractures (Pires et al., 2010). This group has more men, who are economically active young people, who are subject to surgical reduction of femur fractures (Dias & Gonçalves, 2021). As a result, injuries affect the quality of life of patients, with fractures of the femur hampering their work activities and burdening public services (Rocha et al., 2020). Thus, the present study aims to evaluate the profile of victims of femoral fractures treated at an emergency hospital in Porto Velho/RO.

2 METHODOLOGY

The data for this study were collected from medical records, deliberated by the HOSPUB system in an emergency hospital in Porto Velho/RO. It was carried out in December 2021, concerning the consultations, from January to April of the same year, carried out by the orthopedics and traumatology sector.

The composition of the sample was due to the number of patients seen during this period, to participate in the research, patients were victims of trauma and were admitted directly to the referred sector or through another medical specialty, with subsequent internal referral to orthopedics and traumatology.

The data collected from the medical records were typed into Microsoft Office Excel® spreadsheets for data organization and standardization and subsequently exported to a second program called Statistic®, in which averages, prevalence, median and standard deviation were evaluated, and data were combined. generated by both programs, presented in the form of tables and graphs.

All national and international ethical precepts were respected, and this research was submitted and authorized by the ethics committee for research and experimentation in humans, CEP 4.875.244 of July 30, 2021, observing and following Council Resolution 196/96 National Health.

3 RESULTS

The number of traumatic admissions by orthopedics in an emergency hospital in the city of Porto Velho-RO was evaluated, revealing the profile of these victims, as well as some variables. The consultations carried out from January to April of 2021, totaling 2,043 patients treated in the red room and outpatient clinic of the reference hospital in orthopedics and traumatology in the city of Porto Velho-Rondônia, of which 63 are fractures of the femur 3.08% (63/2043), with their distribution in months; January 41.2% (26/63), February 17.4% (11/63), March 25.3% (16/63) and April 15.8% (10/63).

When evaluating the number of consultations against the gender variable, a predominance of males 54% (34/63) to 46% of females (29/63) was observed, with the male age group with the highest prevalence being 21-30 years with 12.6% (8/63) and females aged 71-80 years with 15.8% (10/63). As shown in Table 1.

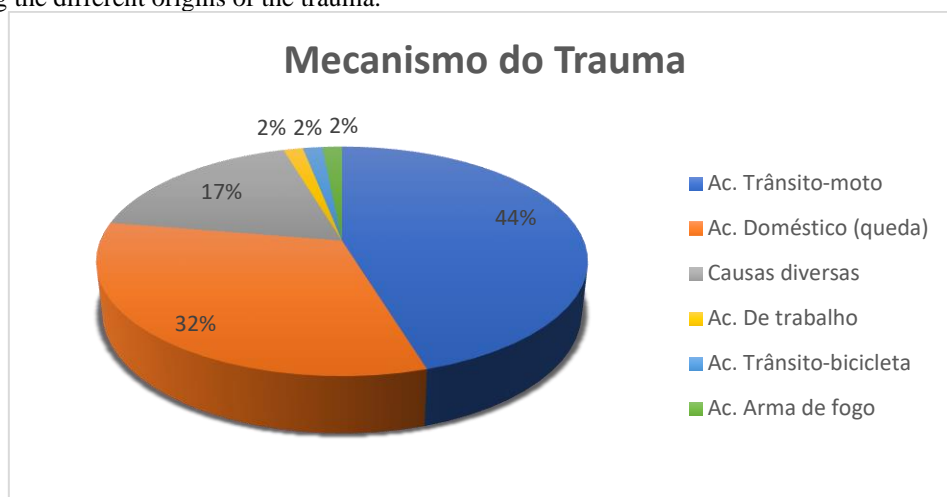
Table 1 – Distribution of victims of femur trauma, assisted in the red room of an emergency hospital in the city of Porto Velho-RO, in percentage for gender and age group.

		Variable		
Gender	Male	34	54% (34/63)	
	Female	29	46% (29/63)	
	TOTAL	63		
Age	Age group	Total	Male	Female
	0 a 10 years	0,0% (0/63)	00,0% (0/63)	0,0% (0/63)
	10 a 20 years	6,34% (4/63)	6,34% (4/63)	0% (0/63)
	21 a 30 years	17,4% (11/63)	12,6% (8/63)	4,7% (3/63)
	31 a 40 years	17,4% (11/63)	9,52% (6/63)	7,93% (5/63)
	41 a 50 years	9,52% (6/63)	7,93% (5/63)	1,5% (1/63)
	51 a 60 years	9,52% (6/63)	4,7% (3/63)	4,7% (3/63)
	61 a 70 years	12,69% (8/63)	6,34% (4/63)	6,34% (4/63)
	71 and 80 years	19,04% (12/63)	3,17% (2/63)	15,8% (10/63)
	81 a 90 years	7,93% (5/63)	3,17% (2/63)	4,7% (3/63)
	> 90 years	0,0% (0/63)	0% (0/63)	0,0% (0/63)

Source: Prepared with data from this research.

As for the affected side, the right side was predominant at 52.3% (33/60), when compared to the left at 44.4% (28/63). Regarding the trauma mechanism, traffic-motorcycle accidents represented 44.4% (28/63) of the cases, followed by domestic accidents (fall) at 31.7% (20/63), miscellaneous causes at 17.4% (11/63), accidents at work at 1.5% (1/63), traffic-bicycle accidents 1.5% (1/63) and firearm accidents 1.5% (1/63), shown in the graph below.

Graph 1- Quantitative of patients assisted by orthopedics and traumatology, in an emergency hospital in the city of Porto Velho-RO, demonstrating the different origins of the trauma.



Source: Prepared with data from this research.

- Subtitle: Motorcycle traffic accident
- Domestic accident (fall)
- Miscellaneous causes
- Work accident
- Traffic accident (bicycle)
- firearm accident

Among the hospitalized patients, four of them lasted longer due to complications, and one of them was already a nephrologist with a history of dialysis for 1 year and 6 months, remaining hospitalized for 22 days awaiting evaluation by nephrology. A second patient, an elderly woman with a history of aneurysm, arterial hypertension, and diabetes mellitus, remained hospitalized for 5 days until hemodynamic stability was obtained for transfer to a high-complexity hospital. A third with a history of polytrauma and advanced arthrosis, a victim of a traffic accident, remained hospitalized for 4 days awaiting transfer. The fourth patient with complications was an elderly man with a history of mental retardation since childhood, with untreated diabetes mellitus, liver disease, and nephropathy hospitalized for 4 days awaiting transfer.

4 DISCUSSION

In this study, when evaluating the gender variable among the patients treated, there was a predominance of males in the age group of 21-49 years 30.5% (19/63), which is equivalent when compared to the results of Conceição et al., (2016) finding 38.87%, this being the gender most affected by accidents and violence. As for females, the highest prevalence of the age group is between 70 years and over with a

percentage of 20.5%, even when compared to the same author, observed discrepancy in results (75.53%), although this large difference in values, we agree that this is the age group with the highest prevalence for women, as the main fracture mechanism is falling from standing height.

In the study carried out by Lopes et al., (2021 A) in the same period and at the same Hospital in Porto Velho – RO, it was found that forearm fractures were superior in males, with 64.61% (42/65) and females, with 35.38% (23/65), when compared to this study, the results were equivalent, with the male gender also being more prevalent with 54% (34/63) to 46% of females (29/63) in traumatic admissions.

According to Lopes et al., (2021 B) in the same period, it was observed that a traffic accident with a motorcycle was the reason that most triggered humeral fractures in patients, 36.4% (32/88), followed by a fall with 33.0% (29/88) when compared to this study, the results were equivalent, regarding the mechanism of trauma, motorcycle accidents being the most prevalent, 44.4% (28/63), followed by falls with 31.7% (20/63).

In this sense, the main determining factor in the occurrence or not of a fracture is bone quality. Women after menopause tend to have low levels of estrogen, which is responsible for maintaining bone mass, making bones less resistant to impacts (Rocha et al., 2020). Associated with this, a sedentary lifestyle, family history of osteoporosis, irregular menstrual cycles, absence of pregnancy, and use of some medications (corticosteroids, anticonvulsants, aluminum hydroxide, diuretics, anti-inflammatory drugs) contribute to rapid bone degeneration (Araújo et al., 2020).

As reported by Morais et al., (2016), the mechanisms of trauma due to mortality make these fractures a public health problem, with traffic accidents being among the main mechanisms, comprising 50% of them, a percentage that is equivalent to those presented in this survey (44.4%) for car accidents.

In this context, several factors collaborate with this reality, traffic accidents related to motorcycles generate numerous public health problems for the country. As a result, the increase in vehicles in circulation, in addition to the lack of stricter laws, impunity, lack of adequate inspection, the advanced age of the fleet, and the lack of structure on public roads generate problems related to signaling (Junior & Golias, 2021), and rehabilitation for these patients and lack of allocation to the labor market generate expenses for the State.

About domestic accidents, the fall from height represents a percentage of 31.7% in this research, and when compared to Muniz et al., (2007), it is shown to be much lower close to the 89.89% he demonstrated. Thus, this type of fracture could be avoided by simple and low-cost measures, such as the prevention and treatment of osteoporosis, ophthalmological deficits, changes in daily life conditions, and eliminating obstacles that could eventually cause accidents.

Given the above, the main factor responsible for the increase in the incidence of femoral fractures in the age group above 60 years is osteoporosis, it is estimated that one-third of white women aged over 65 years have osteoporosis, and 30% of them experience at least one fall per year. As a result, these fractures

mainly affect elderly women, considered one of the biggest public health problems in the country (Soares et al., 2015).

Nessa pesquisa, os acidentes de trabalho representa 1,5% das fraturas de fêmur já quando comparado ao estudo de Morais et al., (2016), esse valor está abaixo dos por ele apresentado que foi de 6%, necessitando assim esses de reabilitação para realocação de suas funções laborais.

In this study, firearm projectile injuries (FAPs) represent 1.5% of femur fractures affecting males, when compared to the results demonstrated by Baumfeld et al., (2019) by this same mechanism which it was demonstrated the percentage of 94.4%, for the same cause, but he worked with the involvement of these different bone parts; spine, femur, tibia, fibula, hand, and forearm. The author Morais et al., (2016), who worked on specific data for femur fractures also using this mechanism, presented an average number (1%) equivalent to that found in this research.

Finally, the incidence of fracture of the femur is increasing nowadays, and the quality of life of these patients due to diseases such as osteoporosis is compromised, which affects more females because there is a reduction in the hormone estrogen, resulting in bone fragility.

In this way, another consequence is the falls that affect the elderly who end up being harmed and making their work activities difficult. In addition, traffic accidents also represent a relevant quantity, affecting mainly men in the age group of 21-49 years, with a higher prevalence according to the data collected in the present study.

As a result, the morbidity and mortality of these patients are high and the impact on public health ends up being costly for the State, as the increase in hospitalization time and complications for these patients contribute to this situation. Thus, the results of this study demonstrate targeting prevention strategies for public policies as well as media campaigns in the prevention of falls and awareness of traffic would be good measures for these patients.

5 CONCLUSION

It is concluded that the results obtained throughout the work were to evaluate the profile of victims with fractures of the femur, because of the higher prevalence in females when treating the elderly, associated with one of the main consequences, serious as falls. . As for young adults, the predominance was male, with motorcycle accidents being the main trauma mechanism.

It is important to emphasize that orthopedic trauma has been increasing every year, impacting public health in the country. Thus, it is necessary to implement epidemiological studies that address this type of trauma, including new studies with an informative base for new orthopedic centers in Brazil.

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