50 - FALL RISK FACTOR FOR FRACTURES OF THE FEMUR IN ELDERLY

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INTRODUCTION

Aging is a stage of life where human beings are more vulnerable to functional disorders, morphological and biochemical changes reflecting a reduced homeostatic capacity. It results in constantly changes in organism; in this way elderly people are more prone to develop harmful events to health disease process that may worsen and lead to death as fall followed by fracture (GUIMARÂES et al., 2004; GARCIA; LEME; GARCEZ-LEME, 2006).

Falls are defined as lack of capacity of elderly to correct their balance once they had stumbled. Changes showed in somatosensory, visual and vestibular system with aging may provide an inappropriate feedback to the centers of postural control (GUIMARÂES et al., 2004).

This situation is considered by the World Health Organization (WHO) as an external cause (EC) and is defined as all action originated from injuries by trauma or aggressions. The International Classification of Disease (ICD-10) in chapter XX, considers as ES the transport accidents; accidental injury (falls, accidental drawing and submersion, poisoning, electric current, fire, burns); intentional self-harm (suicide) and aggressions; Event of undetermined intent; legal intervention and operations of war (accidents by firearm discharge); Complications of medical and surgical care; sequelae of supplementary factors related to causes of morbidity and mortality classified elsewhere (MATIAS; JORGE; ANDRADE, 2006; OMS, 2007).

Falls may resulting from physiologic and physiopathology changes and for this reason are figured as intrinsic factors. Other factors that may add to this event are those identified as extrinsic, in other words, environment factors such as inadequate luminosity, poorly designed buildings, slippery surface, bathroom without adaptations and furniture in positions that is an obstacle to elderly locomotion. (GUIMARÃES et al., 2004; MUNIZ et al., 2007).

In this sense, these are considered the main reason to lead fracture in elderly, Brazil achieve the third position in mortality by these causes among male and female, representing the sixth leading cause of death in those aged 65 years old. Moreover, it is allowed to state that from the people victimized by femur fracture, 20% end up dying and half of them had physical limitation, not reversible and not rehabilitate (GUIMARÃES et al., 2004; GAWRYSZEWSKI; JORGE; KOIZUMI, 2004).

Regarding treatment of these patients is important highlight the nursing care rule. In this situation is necessary outline the epidemiological profile of the elderly people prone to fall, this will ground the care process, allowing the development of preventive and curative measures that is responsible of nursing profession (MATIAS; JORGE; ANDRADE, 2006).

Therefore, this study has fundamental scientific relevance, since knownledgment on aging process in Brazilian people is essential to known factors that lead to falls as such causative agents and consequences. All this are relevant to professionals linked to health management to make plausible decisions about prevention trying to identify the reasons and sequelae of falls and mainly about fractures in elderly people. In this context we ask: what kind of falls, nature of injury and body locations more affected at the time of fall? Is there some kind of physical dependence in elderly activities of daily living before the accident?

Based upon all questions, it is aimed to study elderly patients victimized of falls from a Trauma-Orthopedics Hospital in Natal/RN intending to characterizer in accordance to sociodemographic variables important to this study; identify the kind of fall, nature of injury and body location more affected; identify the occurrence of any kind of physical dependence in their daily living before the accident.

MATHERIAL AND METHODS

It is an exploratory and descriptive study with qualitative approach. The population was constituted of 30 elderly patients suffering from fracture of the femur originated of falls admitted to the Trauma-Orthopedics Hospital in Natal/RN, the data collect was carried out from October to November 2008.

The first part of the tool is made by two items and consists on information about personal identification and external causes that triggered the fracture. The second is made by six items and investigate the activities of daily life, also on personal social relationship before suffering a fall.

The variables considered were those with population socio demographic characterization as gender, age, marital status, children, ethnicities and educational level; the dependent variable is characterized as fractures of the femur from falls and the independent variable is fall at the same level as those from slipping, tripping and stumbling.

At the beginning of study, it is asked to patient or caregiver to read and sign or use digital identification (in case of illiteracy person) on Term of Informed Consent (TCLE) to participate in the study, in accord to ethic and legal principles that guide the research involving human beings recommended in the National Health Council Resolution Nº196/96, expressed through approval of protocol record of Committee Ethic and Research (CEP) – UFRN 158-06.

The data collected were categorized and processed in a electronic database through typing in Excel Spreadsheet Software (Office 2000), and then analyzed with descriptive statistics and presented with their percentage distributions.

RESULTS AND DISCUSSION

From the 30 elderly patients studied, 12 (40%) aged between 71 and 80 years, followed by aged from 81 and 90 years, with 11 (36,6%). Similar data were found in other study carried out in Rio de Janeiro in 2004, where the incidences were higher in fracture in elderly older than 70 years (GIACOMIN et al., 2008; COUTINHO, BOLCH; RODRIGUES, 2009).

Regarding the gender, 24 (80%) were female due the strong effect of age in bone mineral density (DMO), making them more vulnerable to suffer fractures and have osteoporosis. This pathology is characterized as being preventively, with easy diagnostic and possibility of treatment (GAWRYSZEWSKI; JORGE; KOIZUMI, 2004; GIACOMIN et al., 2008).

Relating to marital status, 15 (50%) were widowed, and 9 (30%), married. In studies involving elderly in Fortaleza/CE, in 2005, 48% were widowed and 37%, married or in consensual union. Loss of a partner is a predisposing factor to a depressive

state in elderly. Thus, this phenomenon deserves clinical attention because emotional factors can have an effect in health quality of life of ancient people and lead to falls occurrence (GAWRYSZEWSKI; JORGE; KOIZUMI, 2004; SILVA et al., 2006).

Considering the ethnicity, white race was predominate with 15 (50%), followed by black with 8 (26, 6%). Similar results were found in a research made in 2007, in Londrina/PR, in that occasion, 59 human subject research were white (66,29%). In addition to age, gender and race are among the mainly determinants of bone mass indices and tendency to fracture risk. People of color have better bone mass indices and are less vulnerable to suffer of osteoporosis than those whites and Asian races (MUNIZ et al., 2007).

In our research, data related to injury caused at the time of fall according to body location, showed 30 (100%) had involvement of members and pelvis. Members are the body location most affected due the reflex action of bend the knee in a moment of fall. Trauma in pelvic evolve from the strength propagated to the femur axis, which comes to achieve it (GAWRYSZEWSKI; JORGE; KOIZUMI, 2004).

Concerning the International Classification of Disease - ICD-10 falls from slipping, tripping and stumbling was prevalent (W00) in 19 elderly (63, 4%). These finds contribute toward data found in a research with a group of ancient people made by Federal University of Rio de Janeiro in 2005, when 38% of these events were resulted from tripping, 19% from slipping and 17% from stumbling, which converge with the findings of our data collected (GUIMARÃES; FARINATTI, 2005).

Aging process lead to decrease in strength and increase in stiffness of flexor muscle as ankle joint muscle. This causes limitation of joint flexion which during walking may result in stumbling and falls (SILVA et al., 2008).

These factors that may cause falls may be avoided by simples and low cost measures, for example osteoporosis prevention and treatment, ophthalmic deficits, and changes in daily life conditions, removing barriers which might cause accidents. Many falls in the elderly results in major injuries and fractures, mainly those on hip (MUNIZ et al., 2007; ARAÚJO; BACHION, 2005).

Findings in this study show that 29 (96,7%) of the population stated not be directed dependent on someone to care of them in the daily life activities. Functional independence is linked to mobility and to functional capacity where the person doesn't need help to develop everyday basic and instrumental activity (GIACOMIN et al., 2008).

When questioned about possibility to stand up without help before the fall event, 29 (96,6%) reported standing up regularly. Regarding the capacity to walk regularly, 29 (96,6%) said to be able to walk. Among ancients patients admitted to hospital by hip fracture, in 2000, in Brazil, the mobility condition before the fracture were preserved (97%), from them 76% walked both inside and outside of their home (GARCIA; LEME; GARCEZ-LEME, 2006).

Regarding factors that may interfere with elderly mobility, it has those related to environment whose are responsible for the biggest incidence of falls and also furniture in inappropriate places; steep stairs; carpets and rugs poorly adapted; little luminosity; loose parquet on the floor; waxing and slippery floor; high beds; sofas, chairs and toilet bowl very low; shelves hard to reach; presence of pets in the house; use of slippers or shoes in bad conditions and maladjusted and loose electrical wires (GUIMARÃES et al., 2004; MUNIZ et al., 2007).

Elderly education is essential to living at home; being necessary show them which risks they are exposed and promote reasonable adjustments as appropriated stairs with handrails, adequate environment luminosity, and proper floor with the use of nonskid (GUIMARÃES et al., 2004).

One research developed in Rio de Janeiro in 2005, made an analysis of the falls history among an elderly group over 65 years old. It was found that external factors that cause falls were almost due to bad state of environment conservation (holes, loose stones, hilly ground, very high steps, slippery or unstable floors). Among those more events that occur more often, tripping (38%) and slipping (19%) were the most frequent (GUIMARÃES; FARINATTI, 2005).

Although in our study regarding to physical activity practice, it was identified that 26 (86,6%) did not practice any kind of physical activity and 4 (13,4%) did practice. The most physical activity practiced, walking was the most popular with 3 (75%), opposed to cycling with one elderly (25%). Within the percentage of those considered sedentary, 24 (93,4%) did not have physical activity restriction and 02 (6,6%) had.

In one survey carried out in Lavras/MG, it was found that elderly people that do regularly physical activity, 95% showed a lower propensity for risk of falls. Thus, it infers that physical activity should be considered as a therapeutic modality that improve physical mobility and tack on diminish the aging decline, sedentary had been increased a lot nowadays, contributing to accelerate functional looses in elderly (GUIMARÃES et al., 2004).

Nevertheless, intolerance to physical activity is related, in many times, to lack of motivation due prolonged immobilization or cardiovascular and respiratory diseases. Some diseases, including coronary artery disease, peripheral vascular, cardiac arrhythmias, congestive heart failure, chronic pulmonary diseases and pneumonia, reduce tissue oxygenation and, consequently, leave the individual unable to practice physical activity (GARCIA; LEME; GARCEZ-LEME, 2006).

Regarding preexisting diseases in ancient people victimized by falls, was evident in our study that 13 (27%) had high blood pressure and 12 (25%) had history of rheumatism, 9 (18,7%) diabetes and 5 (10%) by osteoporosis.

Among pathologies that can lead to falls, has the degenerative joint disease, cerebrovascular accident (CVA), muscle atrophy caused by pain and lack of physical conditioning. The elderly people most vulnerable to falls are those with preexisting disease, mainly those leading to changes in mobility, postural balance and control, also they had occurred in a directly proportional to degree of disability (GUIMARÃES et al., 2004).

GENERAL DISCUSSION

Fall is one of the most important external cause that affect ancient people, 12 (40%) aged between 71 and 80 year, mainly women 24 (80%), belonging to white race 15 (50%), widowed 15 (50%). Regarding to the part of body most injured, incidence of 30 (100%) of members and pelvis. Considering ICD-10 the occurrence of the falls, mainly those on the same level from slipping, tripping and stumbling (CID-10, W00) were most present in 19 (63,4%).

The daily life activities are developed in an independent way for most of elderly 29 (96,7%), where they are able to walk and stand up regularly through the rooms of their homes 29 (96,7%). Regarding to physical activity, 26 (86,6%) did not practice any kind of exercise and 4 (13,4%) did some. With regard to preexisting disease, the findings show that many ancient people 13 (27%) had high blood pressure.

This article enables to close and understands the elderly needs in interaction with health professionals, mainly nurses. It is expected to contribute to enhance preventive interventions and investment from health management sector in policies that encourage promotion and prevention to elderly health. These should aim to assure prolonged life as much as possible maintaining functional, physical and mental capacity. In this way, we hope that this article should be a sentinel for the care given to elderly as this study traced the profile of elderly people more vulnerable to falls.

KEY-WORDS: ELDERLY, FALL ACCIDENTS, EXTERNAL CAUSES, FRACTURES OF THE FEMUR.

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FALL RISK FACTOR FOR FRACTURES OF THE FEMUR IN ELDERLY

ABSTRACT

Aging is a stage of life where human beings are more vulnerable to functional disorders, morphological and biochemical changes reflecting a reduced homeostatic capacity. It results in constantly changes in organism; in this way elderly people are more prone to develop harmful events to health disease process that may worsen and lead to death as fall followed by fracture, mainly femur. Factors that may contribute to occurrence of fall are: advanced age, female gender, history of falls, immobility, muscle weakness and abnormal walk as facilitators of the fall. It is aimed to study elderly patients victimized of falls from a Trauma-Orthopedics Hospital in Natal/RN. It is an exploratory and descriptive study with qualitative approach carried out at Trauma-Orthopedics Hospital in Natal/RN. Regarding to the results 24 (80%) elderly were female, white race was 15 (50%) and 29 (96,7%) of the population stated not be directed dependent on someone to care of them before the fall. It is conclude that greater degree of independence in activities of daily life of elderly, greater is the possibility of falling and fracturing of the femur

KEYWORDS: Elderly, Fall Accidents, External Causes, Fractures of the Femur.

LA CHUTE COMME FACTEUR DE RISQUE POUR FRACTURES DE FÉMUR CHEZ LES GENS ÂGÉS

RÉSUMÉ

La vieillesse est la période de la vie où l'être humain se trouve vulnérable aux troubles fonctionnels, aux altérations morphologiques et biochimiques qui réduiront la capacité homéostatique le rendant fragile à des évènements qui portent préjudice au processus santé-maladie, qui peuvent s'aggraver et causer donc la mort de l'individu, comme une chute suivie de fractures surtout du fémur. Les facteurs qui peuvent provoquer l'incidence de chutes sont: âge avancé, sexe féminin, histoire préalable de chutes, immobilité, faiblesse musculaire et altération de la marche comme agents de facilitation de la chute. Nous eûmes pour but de caractériser les âgés victimes de chutes ayant été hospitalisés dans la traumato-orthopédie. La méthode utilisée fut du type exploratoire descriptif avec une approche quantitative réalisée dans un Hôpital de Traumato-orthopédie de la ville brésilienne de Natal/RN. Quant aux résultats, nous détectâmes que vingt-quatre âgés (80%) étaient des femmes, quinze (50%) de race blanche et vingt-neuf (96,70%) affirmèrent qu'ils ne dépendaient directement de personne qui puisse s'occuper d'eux avant la chute. Nous concluons que plus les gens âgés sont indépendants dans leurs activités quotidiennes, plus ils sont atteints de chute suivie de fracture du fémur.

MOTS CLES: Agé; Accidents Par Suite De Chutes; Causes Externes; Fractures Du Fémur.

CAÍDAS COMO FACTOR DE RIESGO PARA FRACTURAS DE FÉMUR EN ANCIANOS

RESUMEN

Envejecer es la fase de la vida en la que el ser humano se encuentra vulnerable a disturbios funcionales, alteraciones morfológicas y bioquímicas que irán a reducir la capacidad homeostática, dejándolo propenso a eventos prejudiciales al proceso salud-enfermedad que pueden agravar y llevar al individuo a la muerte como la caída seguida de fracturas, principalmente del fémur. Los factores que pueden contribuir para ocurrencias de caídas son: edad avanzada, sexo femenino, historia previa de caídas, inmovilidad dbilidad muscular y alteración en la marcha como ocasionadores de la caída. Tuvimos como objetivos, caracterizar a los ancianos acometidos por caídas atendidos en un hospital de traumo-ortopedía. El método utilizado fue del tipo exploratorio descriptivo con abordaje cuantitativo el cual de realizó en un hospital de Trauma-ortopedía de Natal./RN. En relación a los resultados detectamos que: 24 (80%) eran mujeres.15 (50%) raza blanca y 29 (96,70%) afirmaron no depender directamente de álguien para cuidar de ellos antes de la caída. Se concluye que cuanto mayor el grado de independencia en las actividades de vida diaria del anciano, mayor es la posibilidad de facilidad de caída saguida de fractura de fémur.

PALABRAS-CLAVE: ANCIANO, ACCIDENTES POR CAÍDAS, CAUSAS EXTERNAS, FRACTURA DEL FÉMUR.

QUEDA COMO FATOR DE RISCO PARA FRATURAS DE FÊMUR EM IDOSOS

RESUMO

Envelhecer é a fase da vida que o ser humano encontra-se vulnerável a distúrbios funcionais, alterações morfológicas e bioquímicas que irão reduzir a capacidade homeostática, deixando-o propenso a eventos prejudiciais ao processo saúde-doença que podem agravar e levar o indivíduo à morte como a queda seguida de fraturas, principalmente do fêmur. Os fatores que podem contribuir para ocorrência de queda são: idade avançada, sexo feminino, história prévia de quedas, imobilidade, fraqueza muscular e alteração na marcha como facilitadores da queda. Tivemos como objetivos caracterizar os idosos acometidos por quedas atendidos em um hospital de traumato-ortopedia. O método utilizado foi do tipo exploratório descritivo com abordagem quantitativa o qual realizou-se em um Hospital de Traumato-ortopedia de Natal/RN. Em relação aos resultados detectamos que 24 (80%) eram mulheres, 15 (50%) raça branca e 29 (96,70%) afirmaram não depender diretamente de alguém para cuidar deles antes da queda. Conclui-se que quanto maior o grau de idependência nas atividades de vida diária do idoso, maior a possibilidade de ocorrência de queda seguida de fratura de fêmur.

PALAVRAS-CHAVE: Idoso, Acidentes por Quedas, Causas Externas, Fraturas de Fêmur.

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