

Evaluation of the impairments presented by the elderly admitted in a general hospital

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RESUMEN

El proceso de envejecimiento normal y fisiológico no se considera incapacitante; pero una parte significativa de la población geriátrica desarrollará mala función o discapacidad. Las enfermedades crónicas y discapacitantes que se presentan en la tercera edad se convierten en un gran reto para las estructuras de la salud. También es necesario conocer la población geriátrica y sus limitaciones, lo que ayudará a tratar al paciente geriátrico de forma global y específica. La edad normal es seguida por cambios fisiológicos, graduales y progresivos, y por un incremento en la prevalencia de enfermedades agudas y crónicas. Esto nos ayuda a entender cuáles son los procesos asociados a un incremento en la incidencia del deterioro funcional, aun si no es considerada una enfermedad pero sí un proceso fisiológico. La hospitalización aguda ocasiona un incremento en el deterioro, especialmente en la población geriátrica, debido a diversos factores: cambios en la rutina, cambios en el estado sueño-vigilia, incremento en el consumo de medicamentos. También los escenarios dolorosos no controlados causan deterioro afectando el aislamiento, reducción en la cognición y en la función motora. La depresión contribuye a incrementar la sensación de dolor y a reducir la función motora cognitiva. El propósito del estudio es determinar la presencia de deterioro motor, cognitivo, dolor y deterioro mixto en el paciente geriátrico hospitalizado en el Hospital Santa Casa de Misericordia de Sao Paulo en los departamentos de Medicina Interna, Cirugía, Ginecología y Ortopedia. En las tres primeras semanas de octubre, del 2004, se aplicó un cuestionario de deterioro motor, Mini Mental Test, escalas de dolor, escalas de depresión y se registraron datos demográficos. Resultados: del total de individuos evaluados 34.54% presentaban algún deterioro, el más frecuente el dolor, 52%; seguido por deterioro motor con 49%. Y deterioro cognitivo en 30% de los pacientes (19 pacientes). Se encontró representación significativa de deterioro en la muestra de la población estudiada y el dolor fue uno de los más frecuentes. La presencia de incapacidad podría estar relacionada con el tiempo de hospitalización, no se halló asociación para el género, el número de comorbidad, edad, uso de medicamentos, pérdida en la actividad. El dolor se asocio con síntomas depresivos.

Palabras clave: Evaluación, deterioro, tercera edad y hospital.

ABSTRACT

The normal and physiological aging process is not considered as incapacitating, but a significant part of the elderly population does develop malfunctions or impairments. At present, the chronic and incapacitating diseases that are often presented by the elderly comprise a great challenge for health structures, once they are technologically adapted to handling and solving acute cases. Thus, there is a need to acknowledge the geriatric population and its impairments, aiming at treating the geriatric patient on a more specific and global way. Normal aging is followed by gradual and progressive physiological changes, and by an increase in the prevalence of acute and chronic diseases. That process is associated to an increase in the functional impairments incidence, even if it is not considered a disease, but a physiological process. Acute hospitalization creates an increase in impairments, especially among the elderly population, due to several factors, such as changes in routine, changes in the vigil sleep, increase in medication consumption with several side effects, besides the fact that during hospitalizations there are habits which, when reinforced, lead to a greater impairment, such as circumstances like the patient being hospitalized for a longer time, and the hospital employees performing their tasks. Also, painful scenarios not appropriately controlled cause impairments isolatedly or in association with cognitive reduction and motor function scenarios. Depression is also a factor that increases the number of impairments by acting in increasing the pain sensation and in reducing the motor and cognitive function. This study aims at determining the presence of motor, cognitive, painful and mixed impairments in the elderly inpatient population in the Main Hospital at Santa Casa de Misericórdia de São Paulo within the Medicine, Surgery, Gynecology, and Orthopedics Departments, and evaluating the factors related to the presence of impairments, among them: gender, age, hospitalization time, dependence level previous to the hospitalization, number of chronic diseases, depression, and leisure activities. The survey herein consists of an observational study of transversal active search, in which we studied all the patients with 60 years old or higher at the moment of the evaluation, hospitalized in the Main Hospital at Santa Casa de São Paulo, in the Medicine, Gynecology, Lung and Heart Units Surgery, and Orthopedics and Traumatology Departments, who could communicate themselves or had the data selective to the survey within their medical records, during a period corresponding to the first three weeks in October, 2004. The data collection for the survey herein was performed by means of an application form comprising items regarding the motor impairment (muscle strength loss, articular movement ranges changes, muscle tonus chang-

* Performed in the Main Hospital at Santa Casa de São Paulo.

es, presence of osteomuscular deformities), cognitive impairment (Mini Examination of the Mental Status and Geriatric Depression Scale), and painful impairment (Descriptive Verbal Scale); and the survey of associated factors (gender, age, hospitalization time, dependence level previous to the hospitalization, number of chronic diseases, use of medications, depression). Impairments were found in 54 % of the patients studied (34 sick individuals. The most frequent impairment was pain, observed in 52 % of the patients (32 patients), followed by motor impairments, with 49% (31 patients), and by cognitive impairments, found in 30 % of the patients (19 patients). There is a significant presence of impairments in the sample population studied, and the painful ones are the most frequent. The presence of incapacities might be related to the hospitalization period, but there was no association to gender, number of comorbidities, age, use of medications, leisure activities. Painful impairments presented association to depressive symptoms.

Key words: Evaluation, impairments, elderly, hospital.

INTRODUCTION

The normal and physiological aging process is not considered as incapacitating, but a significant part of the elderly population does develop malfunctions or impairments^{1,2}. At present, the chronic and incapacitating diseases that are often presented by the elderly comprise a great challenge for health structures, once they are technologically adapted to handling and solving acute cases². Thus, there is a need to acknowledge the geriatric population and its impairments, aiming at treating the geriatric patient on a more specific and global way. Normal aging is followed by gradual and progressive physiological changes, and by an increase in the prevalence of acute and chronic diseases. That process is associated to an increase in the functional impairments incidence, even if it is not considered a disease, but a physiological process³. Today, medicine worries not only with treating such impairments, but also preventing, postponing, minimizing, and reducing them, by means of several gerontological interventions.

There are projections that the USA will have around 9,700,000 to 13,600,000 of elderly people with moderate to severe impairments by the year 2020⁴. Such impairments have an estimated cost of 170 billion USD/year in the USA⁵. In Brazil, according to the data from the 2000 census of the Brazilian Institute of Geography and Statistics (I.B.G.E.), it is estimated that 7,200,000 elderly people present some kind of deficiency, which corresponds to 49% of the elderly population in the country.

Impairments in the elderly population are usually multifactorial and interconnected. Patients with three or more deficiencies have a 60% chance of presenting some impairment in one year period, where as patients without any known deficiencies have a 7% chance of acquiring some impairment⁶.

Motor impairments generate associated cognitive impairments^{7,8}.

Acute hospitalization creates an increase in impairments, especially among the elderly population, due to several factors, such as changes in routine, changes in the vigil sleep,

increase in medication consumption with several side effects, besides the fact that during hospitalizations there are habits which, when reinforced, lead to a greater impairment, such as circumstances like the patient being hospitalized for a longer time, and the hospital employees performing their tasks⁹⁻¹³. Also, painful scenarios not appropriately controlled cause impairments isolatedly or in association with cognitive reduction and motor function scenarios¹⁴⁻¹⁶. Depression is also a factor that increases the number of impairments by acting in increasing the pain sensation and in reducing the motor and cognitive function¹⁷⁻¹⁹.

The appropriate use of a particular rehab way demands a clear knowledge of the impairment causes⁵. There are two traditional models for health and sickness which are applied for the treatment of impairments, a physician that focuses on etiological agents and pathological processes related to biological and physiological changes, and a biopsychosocial model which focuses the function, the environment and the well being from which the disease arises, also known as functional model. Impairment is a complex environment, with biological, social and financial causes, and that's why its treatment demands the fusion of both models presented above⁵. The World Health Organization defines three terms by the International Classification for Deficiencies, Impairments, and Disabilities (1990): Deficiency is related to the loss or the abnormality of a structure or psychological, physiological or anatomical function; impairment is related to the consequence the deficiency brings in terms of any restriction or lack of ability to perform an activity either in an specific way or within the normal boundaries for the human being; and disability, resulting from a deficiency or an impairment, which limits or even prevents the fulfillment of a regular task for that individual (depending on the age, gender and social-cultural factors). The disability reflects the disagreement between the individual's performance and his/her expectations or the expectations from the group to which he/she belongs.

Lianza defines handicap as all functional or anatomical lesion that follows a sickness or a trauma; impairment as a consequence to the handicap or lesion, which leads to diffi-

culties or even preventing the individual to perform a specific task; and deficiency as the disadvantage resulting from the impairment that impairs or prevents self-sufficiency in daily life activities, at work or during leisure times. The impairments might reach several health areas, which will be divided herein as motor, cognitive and painful.²⁰

In literature, we usually find data on the elderly pain prevalence which vary between 25 to 50% on an elderly population living within the community and up to 85% between elderly living in institutions²¹.

Concerning the motor impairments, according to the last census, 26% of the elderly have serious difficulties related to locomotion due to motor impairments (I.B.G.E., 2000) in Brazil. It is also described that after the hospital hospitalization need, 25 to 50% of the elderly patients are expected to present some motor impairment¹³.

Concerning the cognitive impairments, the I.B.G.E.'s 2000 census indicates that four per cent of the Brazilian elderly population presents severe mental deficiencies (I.B.G.E., 2000), but it does not report any information on non-severe cognitive deficiencies com functional impairment. For inpatients of a general hospital, the cognitive deficits are present around 23% of the patients, reaching up to 70% for inpatients of home hospitals. When only the clinical inpatient beds are evaluated, excluding the surgical beds, the cognitive commitment rate reaches up to 31%²². In other essays, the cognitive commitment rate for elderly inpatients reaches 14% on a university hospital in Chile and 32% in Italy^{12,23}.

PURPOSES

This study aims at:

- 1) Determining the presence of motor, cognitive, painful and mixed impairments in the elderly inpatient population in the Main Hospital at Santa Casa de Misericórdia de São Paulo within the Medicine, Surgery, Gynecology, and Orthopedics Departments, and
- 2) Evaluating the factors related to the presence of impairments, among them: gender, age, hospitalization time, dependence level previous to the hospitalization, number of chronic diseases, depression, and leisure activities.

MATERIAL AND METHODS

The survey herein consists of an observational study of transversal active search, in which we studied all the patients with 60 years old or higher at the moment of the evaluation, hospitalized in the Main Hospital at Santa Casa de São Paulo, in the Medicine, Gynecology, Lung and Heart Units Surgery, and Orthopedics and Trauma-

tology Departments, who could communicate themselves or had the data selective to the survey within their medical records, during a period corresponding to the first three weeks in October, 2004.

Following those requirements, inpatients from the ER and CTI units were excluded, due to their unstable and undefined clinical scenario.

The data collection for the survey herein was performed by means of an application form comprising items regarding the motor impairment (muscle strength loss, articular movement ranges changes, muscle tonus changes, presence of osteomuscular deformities), cognitive impairment (Mini Examination of the Mental Status and Geriatric Depression Scale^{24,25}), and painful impairment (Descriptive Verbal Scale²⁶); and the survey of associated factors (gender, age, hospitalization time, dependence level previous to the hospitalization, number of chronic diseases, use of medications, depression).

Each infirmary has received only one visit with the aim of searching for patients, so the sample distortion by infirmaries with greater elderly rotativity and seasonings were avoided. The month of October was chosen in order to avoid the presence of seasonal epidemic diseases.

The frequency distribution was compared between two qualitative variables, using the Pearson Qui-Quadrado test. The Exact Fisher test was used in situations where the values expected were less than 5. For p values smaller than 0.05 (p-value < 0.05), the statistically significant association between the variables was considered, and, in such cases, the value of the standard residue value above 1.96 was used in order to identify category pairs which corresponded to a value above the expected (Zres), thus indicating statistical significance in the case herein (associated categories) to the five percent significance value.

As for the quantitative variables (hospitalization days, number of baseline diseases, and number of medications used), the non-parametric Mann-Whitney test was applied in order to compare the average values from two independent populations. The non-parametric Kruskal Wallis test was used in order to compare more than two averages. The non-parametric methodology was applied because those variables have presented an abnormal distribution. For p values below 0.05, the averages were considered statistically different.

In order to perform the statistics above, the softwares used were: *MSOffice Excel* version 2000 for database management; *SPSS for Windows* release 10.0 to perform the statistical calculations and provide graphs, and for the tables and text edition, *MSOffice Word* version 2000 was used.

This study was previously submitted to the approval of the Ethics Survey Committee of the Irmandade da Santa Casa de Misericórdia de São Paulo under number 240/02.

RESULTS AND DISCUSSION

After applying the form for a three-week period, 63 inpatients with more than 60 years old were evaluated, from a total of 359 possible beds. According to I.B.G.E.'s data (2000), the number of elderly represents eight per cent of the Brazilian population.

On the average, the elderly present an hospitalization rate twice as great as the non-elderly population². Thus, based on IBGE's last populational census data (2000), approximately 16% of the beds were expected to be occupied by the elderly, which corroborates with the result of the study (17.5%).

The Main Hospital at Santa Casa de São Paulo is a tertiary school hospital that receives patients from the Public Health System (*Sistema Único de Saúde*) in Brazil, which represents patients from a low social-financial level.

The patients ages varied from 60 to 91 years old, with a 73.25 ± 8 average.

Ten patients did not answer the questionnaire due to severe impairments which prevented them to communicate themselves, representing 16 % of the population surveyed. Those patients did not undergo any cognitive tests for the

Mini Mental Examination and the Geriatric Depression Scale, and they were not questioned about sleep disorders, education, previous leisure and pain presence.

Impairments were found in 54 % of the patients studied (34 sick individuals), a value a little below the ones found in literature, which estimates incapacities for that age range in 60%², due to chronic processes for an outpatient population, and identical to the one found by Ramos et al.¹ on their survey on the elderly impairments incidence in the city of São Paulo.

The most frequent impairment was pain, observed in 52 % of the patients (32 patients), followed by motor impairments, with 49% (31 patients), and by cognitive impairments, found in 30 % of the patients (19 patients).

When the results of the study herein are compared to each other, it is observed that the frequency of painful and motor incapacities is within the values expected. There is a great variation in the frequency rates for cognitive impairments in literature due to different patient groups evaluated and with social and cultural level differences. Our work is closer to the results found in an inpatient group for an Italian general hospital¹², despite our expectations of finding results similar to the ones of a group studied in Chile²³ due to the financial and geographical proximity.

The patients' average hospitalization time was of nine \pm 13 hospitalization days, considering 62% of the patients presented hospitalizations up to one week. Only 24% of the patients presented hospitalizations of up to three days, which might indicate the tendency of a greater hospitalization time for geriatric patients. Despite the fact that the association between the hospitalization time and the presence of incapacities ($p > 0.05$) could not be statistically proven, *Figure 1* shows that the patients with some kind of impairment tend to be hospitalized for a longer time.

When the patient's previous functional capacity is evaluated, 30% of the patients are found to present dependence for daily life activities and practices, and those are the same patients who keep dependence scenarios during hospitalization. Before hospitalization, 54% of the patients were fully independent to perform their daily lives activities and practices, a number that fell to 51% during hospitalization. From the rest of the patients, seven were initially independent with help, and three were semi-dependent, and after hospitalization, the semi-dependent number of patients increased from five per cent to 9.5% (six patients). Such results show that the patients who were previously dependent keep that functional status, while there was an increase in the semi-dependent patients number and, as a consequence, a reduction in independent patients number with our without help.

In hospitalization scenarios an increase in functional incapacities is expected, followed by a worsening in function-

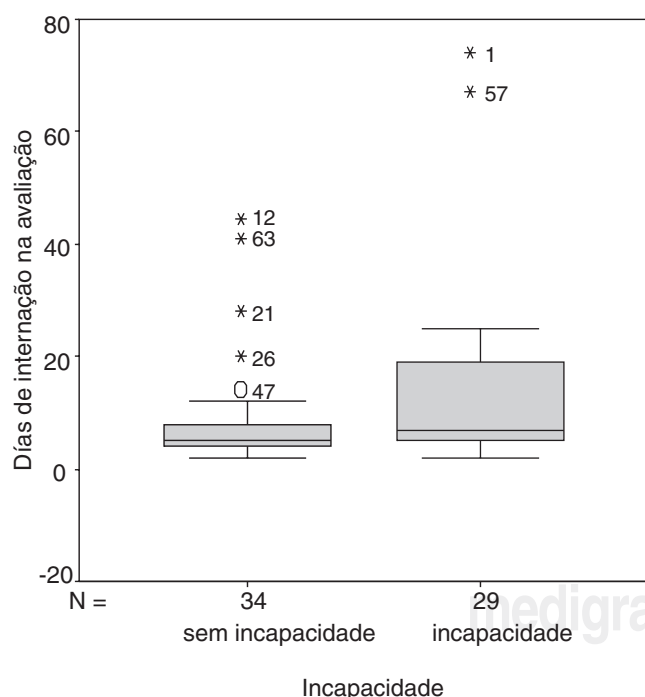


Figure 1. Comparison between the number of hospitalization days and the presence of impairments in elderly inpatients in the Main Hospital at Irmandade da Santa Casa de Misericórdia de São Paulo (ISC MSP) in October 1-20, 2004.

al levels^{9,11}, which was observed very discretely. That increase in incapacities with a decrease in functional capacity –that might reach up to 50% of the elderly hospitalized²⁷– has not been really expressive in this sampling, due to the fact that the patients did not have long hospitalization periods and the impairments rates previous to hospitalization was already high.

Only three patients (5%) were still working full time, and most of them were housekeepers or retired, but around 48% still had regular leisure activities – defined by the patients as performed with the aim of providing mental relaxation, data that does not match I.B.G.E.'s (2000), which highlights the fact that 27% of the elderly are family heads, being economically active still. The low number of workers might be a consequence of the low social level of the population studied, associated to a low education level.

Despite the small percent of economically active patients, 30 patients had regular leisure activities (48%). This is a low number if we consider that 70% of the population does not present severe impairments. This data is important because leisure and work reflect the maintenance of the abilities²⁸. Inoye²⁹ considers the absence of leisure activities as a risk factor for the presence of impairments. The fact that part of the patients studied does not have regular leisure activities even in the absence of impairments is also explained by the patient's social origin, which face greater difficulties to access such activities.

Among motor limitations, there is a low rate of muscular tonus changes according to the Ashworth scale³⁰, as the hypotonias are more frequent due to a longer immobilization in highly dependent patients (11%). Such patients have also shown a reduction in muscle strength according to the Kendall test³¹.

Among the motor impairments found, the most frequent is the articular range deficit, especially for great joints as shoulders, knees and hips, and the shoulder is the most present, with 14 patients, followed by the knee with 12 patients, hip with eight patients, ankle with four patients, and elbow and wrist with one patient each, with a total of 31 sick patients, some with multiple deformities (nine patients). Thus, this sample has shown articular limitation in 49% of the patients, as the shoulder, knee and hips joints represent 84% of the joints affected.

Most limitations were mild (49%), followed by severe (29%) and moderate (22%). When compared to the entire sample, 9.5% of the patients studied have some severe articular limitation. According to data found in literature, such limitations are associated to a progressive increase in impairments in other areas, as the cognitive⁷, which was corroborated when we observed all patients with multiple limitations presented a severe associated cognitive commitment. It is important to highlight the presence of shoulder articu-

lar limitation, which is usually not considered, but that presented the greater limitation rate (22%). In hospitalizations, due to the decrease in functional activities, and the longer tempo for bedfast recovery, associated to the loss of the articular liquor composition quality due to aging, there is a reduction in the scapular waist mobility, leading to an articular limitation. It is important to survey that limitation, because the shoulder is one of the first joints to lose mobility during immobilization, which reflects the reduction of the functional capacity, due to pain or by the impairment to performs tasks with the higher member itself¹⁰.

Sleep is still a little known organic phenomenon, with a complex integration among organic, physiological and psychological factors inherent to the individual himself, associated to cultural, social and physical environment factors³². Among the patients studied, 25 refer to sleep disorders (40%), 12 patients with frequent awakenings (19%), nine patients with the beginning of the deep sleep (14%), seven patients with a duration of nocturnal sleep of less than six hours (11%), and four patients with sleep inversion for day time (6%), and seven patients presented more than one of these disorders.

Thus, the sleep disorders above were found in 40% of the patients, considering 16 % not being surveyed due to their being unable to communicate. An increase in sleep disorders is expected due to hospitalization, related to several factors, among them, worries with hospitalization, the disease condition itself that led to the hospitalization, the associated diseases, the use of medications in the hospital, besides the inactivity itself that resulted from the hospitalization. These sleep cycle changes lead to a worsening in vigil quality, which further causes a worse quality of life, which can potentially generate a worsening of painful and of the cognitive function scenarios³. Sleep disorders are common for a third of the elderly population³³, and they can increase in hospital hospitalization.

The patients had a low education level, with 25 illiterate individuals (40%), 20 who studied up to the fourth grade (junior high) (32%), and only seven with more than four years in school (11%). That fact is probably due to the low social-financial level of the patients that participated in the study.

Therefore, the population was expected to present a greater number of low scores in the Mini Examination of the Mental Status (M.E.E.M.) test³⁴, which could represent a greater part of cognitive impairments. The cognitive changes by the M.E.E.M. (scores lower than 24), were detected in 79% of the patients (42 patients), not considering the individuals education level. When correcting the results according to the education level^{34,35} for values expected in a population with an average study (normal values up to 18), 30 patients (48%) were found to have a low score, but normal for their education level. When the other ten non-communicating patients are considered, the rate reaches 35% of the

Table 1: Dependence level rate distribution according to the presence of depressive symptoms by E.G.D. of the elderly patients hospitalized in the Main Hospital at Irmandade da Santa Casa de Misericórdia de São Paulo (ISC MSP) in the period between October 01-20, 2003.

Depression category	Not depressed	N	independent				Total
			independent	indep/partial	depend/partial	dependent	
			31	3	4	3	41
		%	81.60%	50.00%	80.00%	21.40%	65.10%
	Depressed	N	7	3	1	1	12
		%	18.40%	50.00%	20.00%	7.10%	19.00%
	Not responsive	N	0	0	0	10	10
		%	0.00%	0.00%	0.00%	71.40%	15.90%
Total		N	38	6	5	14	63
		%	100.00%	100.00%	100.00%	100.00%	100.00%

p-value < 0.001 (Fisher Exact test)

patients with a cognitive deficit. We should reinforce that the test was applied for a cognitive difficulties survey, not for dementia evaluation, and that is why lower values should be considered as an impairment, for they probably interfere with the patients' daily activities.

According to literature data³³, cognitive impairments of a severe dementia type are expected in 5% of the elderly population, and in other 10% on a mild to moderate way, and among inpatient elderly the cognitive impairments rates are from 31% to 40%^{22,12}.

Thus, despite the low education levels presented by the population in the study herein, the value for cognitive impairment is among the ones expected according to the literature. Despite being described in literature³⁶ as a factor following the cognitive impairments in hospitalized patients, depression has not presented a statistically significant association in the study herein, when comparing the M.E.E.M. results to the results of the geriatric depression scale (E.G.D.), maybe due to the fact that part of the patients with severe cognitive diseases was not able to answer the E.G.D.

It could also be realized that there was no association between the changed values of the M.E.E.M. when related to other factors as hospitalization period, number of comorbidities, and number of medications used by the patients, factors that could interfere, increasing the cognitive impairments by *delirium*³, which are transitory cognitive deficits, and fluctuating following pathological processes.

The Yesavage et al.'s geriatric depression scale²⁵ was used as a means to detect depressive symptoms because it is easy to be applied and is sensitive to the detection of depression for the elderly³⁷. According to the E.G.D., depressive scenarios symptoms were found in 12 patients (19%). Considering only the patients that participated in the test, the presence of depressive scenarios increases to 26%. According to the World Health Organization (WHO)

data from 1979³⁸, it is estimated that 10% of the people above 60 years old have depression. According to the same authors, in hospitalized individuals that number increases to 35% of the patients, even that the diagnostics or the treatment rarely occurs. Clark & Siebens³ report a prevalence of 2 to 5% in community elderly, considering that impaired patients would have a risk three times greater to develop depressive scenarios.

Due to the multifactorial aspects of hospitalization, it is hard to establish if the depressive scenario occurs due to hospitalization itself or either spontaneously, favoring the appearance of physical, psychological and social complications.

The depressive symptoms have been coincident in 92% with the patients with a moderate to strong pain intensity scenario evaluated by the Descriptive Visual Scale (E.V.D.) Patients that did not present depressive symptoms (39 patients) have not complained about pain in 50% of the cases and reported mild pain intensity in 8%, moderate pain in 16% and strong pain in 26%. In hospitals, depressive scenarios must be quickly investigated, because not identifying and treating them might associate these situations with a longer hospitalization period, therapeutic failures, and an increase of impairments^{17,36,39}. When evaluating *table 1*, the statistically significant association can be noticed between the functional dependency level and the presence of depression, corroborating literature reports that show a functional worsening associated to depressive scenarios^{10,17,36}. Not associating these scenarios to cognitive is probably due to the fact that cognitive impairments are less frequent, causing no statistical association. It cannot be stated that depressive impairments cause a greater number of impairments, or if it is the presence of impairments that cause the depressive impairment. Anyway, we believe it is imperative to perform the early diagnosis of the depressive scenarios so that activ-

ities are stimulated as a way to reduce loneliness and inactivity typical from the hospital environment.

For the evaluation of the pain scenarios the Descriptive Verbal Scale was used⁴⁰, due to being appropriate for the elderly and presenting reliable results when compared to the Visual Analogue Scale^{41,26}. Even patients with mild cognitive commitments are capable of answering to pain intensity scales¹⁴. Non-communicating patients (ten) due to severe cognitive function commitment were not evaluated in relation to pain. Pain was divided according to its result in E.V.D. as mild (scores from one to four), moderate (scores from five to six) and intense (scores from seven to ten) in order to facilitate the study⁴².

Pain is a frequent symptom in patients evaluated, with the presence of a strong intensity pain in 19 patients (30%), moderate intensity pain in 14 patients (22%), and low intensity pain in four patients (6%). Thus, 52% of the patients participating in the study refer to moderate to strong intensity pain on a descriptive verbal scale, which demonstrates the importance of its study in this particular population. In literature, pain is prevalent from 25 to 30% in community elderly population, around 60% among home elderly¹⁴, and 45 to 65% among hospitalized patients¹⁶.

CONCLUSION

There is a significant presence of impairments in the sample population studied, and the painful ones are the most frequent.

The presence of incapacities might be related to the hospitalization period, but there was no association to gender, number of comorbidities, age, use of medications, leisure activities. Painful impairments presented association to depressive symptoms.

REFERENCES

- Ramos LR, Rosa TEC, Oliveira ZMC, Medina MCG, Santos FRG. Perfil do idoso em área metropolitana na região sudeste do Brasil. *Rev Saude Publica* 1993; 27: 87-94.
- Chiovatto J. Reabilitação em geriatria. In: Netto MP, Gerontologia. 1ª edição, São Paulo, ed. *Atheneu* 2002: 324-30.
- Clarck GS, Siebens HC. *Rehabilitation of the geriatric patient*. In: Delisa JA, Gans BM, ed. *Rehabilitation medicine: principles and practice*, JB. Lippincott-Philadelphia, 1998: 1013-48.
- Kunkel SR, Applebaum RA. Estimating the prevalence of long term disability for an aging society. *J Gerontol* 1992; 47: 253-60.
- Hoenig H, Nusbaum N, Brummel-Smith, K. Geriatric Rehabilitation: state of art. *J Am Geriatr Soc* 1997; 45: 1371-81.
- Tinetti ME, Inouye SK, Gill TM, Doucette JT. Shared risk factors for falls, incontinence, and functional dependence. *JAMA* 1995; 273: 1348-53.
- Bean J, Kiely DK, Leveille SG, Morri J. Associating the onset of motor impairments with disability progression in nursing home residents. *Am J Phys Med Rehabil* 2002; 81: 696-704.
- Rolland Y, Pillard F, Lauwers-Cances V, Busquere F, Vellas B, Lafont C. Rehabilitation outcome of elderly patients with hip fracture and cognitive impairment. *Disabil Rehabil* 2004; 26: 425-31.
- Hirsch CH, Somers L, Olsen A, Mullen L, Winograd CH. The natural history of functional morbidity in hospitalized older patients. *J Am Geriatr Soc* 1990; 38: 1296-303.
- Clarck LP, Dion DM, Barker WH. Taking to bed: rapid functional decline in an independently mobile older population living in an intermediate care facility. *J Am Geriatr Soc* 1990; 38: 967-72.
- Sager MA, Franke TF, Inouye SK, Landefeld CS, Morgan TM, Rudberg MA, Sebens, H, Winograd CH. Functional outcomes of acute medical illness and hospitalization in older persons. *Arch Intern Med* 1996; 156: 645-52.
- Molaschi M, Ponzetto M, D'Agostino E, Francisetti F, Maero B, Maina P, Russo F, Fabris F. Assessment of cognitive and functional status in hospitalized elderly. *Recenti Prog Med* 2001; 92: 327-31.
- Weitzel T, Robinson SB. A model of nurse assistant care to promote functional status in hospitalized elders. *J Nurses Staff Dev* 2004; 20: 181-6.
- Ferrell BA, Ferrell BR, Rivera L. Pain in cognitively impaired nursing home patients. *J Pain Symptom Manage* 1995; 10: 591-8.
- Santos EMM, Pimenta CAM. Contradictions between the prevalence of postoperative pain and pain relief satisfaction. *Rev Bras Cancerol* 2000; 46: 93-105.
- Rainfray M, Brochet B, de Sarasqueta AM, Michel P. Assessment of pain in elderly hospitalized patients: a transversal descriptive survey. *Presse Med* 2003; 32: 924-9.
- Rothschild AJ. The diagnosis and treatment of late life depression. *J Clin Psychiatry* 1996; 57: 5-11.
- Raji MA, Al Snih S, Ray LA, Pate LKV, Markides KS. Cognitive status and incident disability in older Mexican Americans: findings from the Hispanic established population for the epidemiological study of the elderly. *Ethn Dis* 2004; 14: 26-31.
- Mossey JM, Gallagher RM, Tirumalasett F. The effects of pain and depression on physical functioning in elderly residents of a continuing care retirement community. *Pain Med* 2000; 1: 340-50.
- Lianza S. *Avaliação Clínica da Impairment*. In: Lianza, S. – Medicina de reabilitação. Rio de Janeiro, Guanabara-Koogan 2001: 11-21.
- Nikolaus T, Zeyfang A. Pharmacological treatments for persistent non-alignant Pain in Older Persons. *Drugs Aging* 2004; 21: 19-41.
- Hickey A, Clinch D, Groarke EP. Prevalence of cognitive impairment in the hospitalized elderly. *Int J Geriatr Psychiatry* 1997; 12: 27-33.
- Marín PP, Valenzuela E, Reyes, P Cubillos AM, Molina O, Guidi D. Evaluación geriátrica de adultos mayores en un hospital universitario. *Rev Med Chil* 1994; 122: 1362-6.
- Folstein MF, Folstein SE, McHugh PR. Mini mental state: a practical method of grading the cognitive state of patients for the clinician. *Psychiatry Res* 1975; 12: 189.
- Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, Leirer VO. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 1983; 17: 37-49.
- Dalton JA, McNaul F. A call for standardizing the clinical rating of pain intensity using a 0 to 10 rating scale. *Cancer Nurs* 1998; 21: 46-9.
- Siqueira AB, Cordeiro RC, Perracini, MR, Ramos LR. Impacto funcional da internação hospitalar de pacientes idosos. *Rev Saude Publica* 2004; 38: 687-84.
- Kemp B. *Psychosocial and mental health issues in rehabilitation of older persons*. In: Brody SJ, Ruff GE ed. *Aging and rehabilitation: advances in the state of art*, Springer-Verlag-New York, 1986: 122-58.
- Inouye SK, Wagner DR, Acampora D, Horwitz RI, Cooney LM, Hurst LD, Tinetti ME. A predictive index for functional decline

- in hospitalized elderly medical patients. *J Gen Intern Med* 1993; 8: 645-52.
30. Bohannon RW, Smith MB. Interrater reability of a modified Ashworth scale of muscle spasticity. *Phys Ther* 1987; 67: 206-7.
31. Kendall FP, McCreary EK. *Muscles: testing and function*. 3rd ed. Baltimore: Williams & Wilkins 1983. *Guanabara-Koogan* 2001: 11-21.
32. Ceolim MF. *O Sono do Idoso*: In: Netto, MP. Gerontologia 1^a edição, São Paulo Ed. *Atheneu* 2002: 190-205.
33. Morgan K. *Sleep and insomnia in later life*. In Tallis R, Fillit H, Brocklehurst JC. *Brocklehurst's Textbook of Geriatric Medicine and Gerontology*. Londres, Ed. Churchill Livingstone 1998: 1399-412.
34. Bertolucci PHF, Brucke SMD, Campacci SR, Juliano Y. O mini exame do estado mental em uma população geral. Impacto da escolaridade. *Arq Neuropsiquiatr* 1994; 52: 1-7.
35. Brucki S, Nitrini R, Caramelli P, Bertolucci PHF, Okamoto IH. Suggestions for utilization of the mini-mental state examination in Brazil. *Arq Neuropsiquiatr* 2003; 61: 777-81.
36. Marengoni A, Agüero-Torres H, Cossi S, Ghisla MK, De Martinis, M, Leonardi, R, Fratiglioni L. Poor mental and physical health differentially contributes to disability in hospitalized geriatric patients of different ages. *Int J Geriatr Psychiatry* 2004; 19: 27-34.
37. Almeida OP, Almeida SA. Reliability of the Brazilian version of the Geriatric Depression Scale (GDS) short form. *Arq Neuropsiquiatr* 1999; 57: 421-6.
38. Carvalho VFC, Fernandez MEDF. *Depressão no Idoso*. In: Netto, MP Gerontologia. 1^a edição, São Paulo Ed. *Atheneu* 2002: 160-173.
39. Covinsky KE, Fortinsky RH, Palmer RM, Kresevic DM, Landefeld CS. Relation between symptoms of depression and health status outcome in acutely ill hospitalized older people. *Ann Intern Med* 1997; 126: 417-25.
40. Melzack R. The puzzle of pain. New York, Basic Books, 1973.
41. Ohnhaus EE, Adler R. Methodological problems in the measurement of pain: comparison between the verbal rating scale and the visual analogue scale. *Pain* 1975, 1: 379-84.
42. Serlin RC, Mendoza TR, Nakamura Y, Edwards KR, Cleeland CS. When is cancer pain mild, moderate or severe? Grading pain severity by its interference with function. *Pain* 1995; 61: 277-84.

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