Precipitating Factors of Delirium in Elderly Hospitalized Patients

Fatores Precipitantes de Delirium em Pacientes Idosos Hospitalizados

Factores precipitantes del delirio en pacientes ancianos hospitalizados

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RESUMO

Objetivo: Caracterizar os fatores precipitantes e modificáveis de delirium em idosos internados acompanhados pela equipe móvel de Geriatria e Gerontologia. **Método:** estudo transversal, descritivo, exploratório e prospectivo realizado em um hospital de alta complexidade de São Paulo, com idosos hospitalizados. Os dados foram analisados por estatística descritiva. **Resultados:** foram avaliados 12 idosos, sendo 91,7% do sexo feminino, internados predominantemente em enfermarias cirúrgicas 83,3%. Os fatores precipitantes observados foram os ambientais presentes em 100% dos sujeitos do estudo, sendo possível realizar alguma intervenção em 83,3% dos casos, seguida pela categoria das doenças intercorrentes onde 45,4% dos casos foram passíveis de intervenção. **Conclusão:** no presente estudo, ao caracterizar os fatores precipitantes e modificáveis de delirium em idosos hospitalizados, espera-se evidenciar a possibilidade da implementação de prevenção e tratamento do quadro apontado, visando despertar os profissionais que atuam na prestação dos cuidados para a relevância do problema. **Descritores:** Delirium; Assistência Hospitalar; idoso; idoso hospitalizado; Enfermagem Geriátrica.

ABSTRACT

ObjectiveTo characterize the precipitating and modifiable factors of delirium in hospitalized elderly accompanied by the mobile team of Geriatrics and Gerontology. **Method:** cross-sectional, descriptive, exploratory and prospective study conducted in a highly complex hospital in São Paulo, with hospitalized elderly. The data were analyzed using descriptive statistics. **Results**: 12 elderly people were assessed, 91.7% of whom were female, predominantly hospitalized in surgical wards 83.3%. The precipitating factors observed were the environmental factors present in 100% of the study subjects, and it is possible to perform some intervention in 83.3% of the cases, followed by the category of intercurrent diseases where 45.4% of the cases were subject to intervention. **Conclusion**: in the present study, by characterizing the precipitating and modifiable factors of delirium in hospitalized elderly people, it is expected to highlight the possibility of implementing prevention and treatment of the mentioned condition, aiming to awaken the professionals who work in the provision of care for the relevance of the problem.
Descriptors: Delirium; Hospital Assistance; elderly; hospitalized elderly; Geriatric Nursing.

RESUMEN

Objetivo: Caracterizar los factores desencadenantes y modificables del delirio en ancianos hospitalizados acompañados del equipo móvil de Geriatría y Gerontología. **Método:** estudio transversal, descriptivo, exploratorio y prospectivo realizado en un hospital de alta complejidad en São Paulo, con ancianos hospitalizados. Los datos se analizaron mediante estadística descriptiva. **Resultados:** se evaluaron 12 ancianos, 91,7% de sexo femenino, predominantemente hospitalizados en quirófano 83,3%. Los factores precipitantes observados fueron los factores ambientales presentes en el 100% de los sujetos de estudio, siendo posible realizar alguna intervención en el 83,3% de los casos, seguido de la categoría de enfermedades intercurrentes donde el 45,4% de los casos fueron sometidos a intervención. **Conclusión:** en el presente estudio, al caracterizar los factores precipitantes y modificables del delirio en ancianos hospitalizados, se espera resaltar la posibilidad de implementar la prevención y el tratamiento de la condición mencionada, con el objetivo de despertar a los profesionales que laboran en la prestación de cuidados para la relevancia del problema.
Descriptores: Delirio; Asistencia hospitalaria; anciano; ancianos hospitalizados; Enfermería Geriátrica.

ORIGINAL

Introduction

Delirium is a transient and fluctuating neuropsychological organic syndrome frequent in hospitalized elderly and can be considered as the seventh vital sign.[1] According to Inouye[2], it is characterized with an acute onset; with floating course; attention disorder; disorganization of thought; change in the level of consciousness; cognitive deficits; perception and psychomotor disorders. They can be: hyperactive, characterized by agitation and wakefulness, hypoactive characterized by lethargy, with decreased level of motor and mixed activity; alteration of the sleep cycle; emotional disorders, manifested by intermittent and unstable symptoms of fear, paranoia, anxiety, depression, irritability, apathy, anger or euphoria.

Delirium recurs during hospitalizations and its prevalence on admission is between 14 and 24%. On the other hand, the incidence, during the hospitalization period, is highly variable, ranging from 7 to 52%.[3] Despite the high frequency, delirium is not always noticed due to the variability of its presentation, with up to 70% of the cases being underdiagnosed, leading to longer hospitalizations.[4]

It is considered a multifactorial condition, in some cases, it can be triggered by an isolated factor, although the interrelation of associated factors is more frequent. It is known that the cause for the occurrence of delirium involves a complex interaction between a vulnerable variable (predisposing) and exposure to harmful factors (precipitating).[2-3]

Predisposing factors can be linked to risk factors present at hospital admission, thus significantly increasing the chances of delirium occurrence. Predisposing factors are considered: being male; have cognitive deficit; having a history of previous delirium; depression; immobility; the low level of physical activities; have a history of falls; dehydration; malnutrition; polypharmacy; multiple comorbidities; serious illnesses; renal failure; liver diseases; diseases: terminal, neurological, psychiatric and metabolic; fractures or traumas, HIV infections and, especially the age of over 65, the presence of dementia, sensory deficits and functional dependence.[1,3-4]

As for the precipitating factors, we can mention the use of medications, mainly those with psychoactive action, primary neurological disease; complications, especially infections, fever, hypothermia, anemia, dehydration and malnutrition; surgeries; and environmental factors such as physical restriction, the use of bladder and integral tubes, multiple procedures, pain, constipation with fecaloma formation, sensory deficits and sleep deprivation.[5-6]

Thus, it becomes essential to identify the factors involved in the occurrence of delirium, so that the health professional can design interventions aimed at its prevention and control, since the action on one or more of these factors is sufficient to minimize the severity from the board.[7]

In this sense, the objective of the study was to identify the precipitating and modifiable factors of delirium in elderly patients followed up by the Interconsultation Team of the Discipline of Geriatrics and Gerontology in a highly complex hospital.

Method

Cross-sectional, descriptive, prospective and exploratory study, carried out in the clinical, surgical and intensive care units of a University Hospital of high complexity and large in the city of São Paulo.

The study population consisted of elderly people aged 60 years or over, accompanied by the Interconsultation Team of the Discipline of Geriatrics and Gerontology, during the month of October 2015, who were attended, upon request, during the period of hospitalization.

For data collection, a questionnaire with open and closed questions was used, divided into: characterization of the patient to outline the profile and identification of the potential precipitating factors of delirium such as the use of medications, drugs, the presence of diseases, surgeries, environmental factors and complications.

The questionnaire was applied within 24 hours after the geriatrician's assessment, in a single moment, the data were obtained through interview and physical evaluation of the patient and consultation of the medical record, when necessary, the patient's companion was requested as an informant.

In the analysis of the results, descriptive statistics were presented, presented in the form of frequency tables.

In order to comply with the ethical precepts of research with human beings, according to Resolution CNS / MS 466 of December 12, 2012, it was submitted and approved by the Ethics and Research Committee with human beings of the Federal University of São Paulo, under opinion nº 1.325. 856/15. Participants were instructed on the study procedure, read, agreed and signed the Free and Informed Consent Form.

Results

Twelve hospitalized elderly patients attended by the Geriatric and Gerontology Interconsultation Team participated in the study during the proposed period.

Among hospitalized elderly, there was a predominance of females (91.7%), aged 80 years or over (41.7%), widowed (50%), living with children or grandchildren (58.3%) and most were hospitalized in surgical wards (83.3%), as shown in Table 1.

Table 1- Distribution of study participants according to their characterization. Sao Paulo - SP, 2015

Identification Data	N	%
Age Range		
60 – 69 years	3	25
70 – 79 years	4	33,3
80 years or more	5	41,7
Sex		
Female	11	91,7
Male	1	8,3

Marital Status		
Widower	6	50
Married	5	41,7
Divorced	1	8,3
Who you live with?		
Spouse	5	41,7
Children / Grandchildren	7	58,3
Type of infirmary		
Clinic	1	8,3
Surgical	10	83,3
ICU	1	8,3

The most frequent previous diagnoses among the elderly were diseases of the circulatory system, endocrine, nutritional and metabolic diseases, which were present in 91.7%. In current diagnoses, the category of mental and behavioral disorders was the most prevalent with 41.7%.

As for the categories of precipitating factors, we observed that environmental factors were present in all study subjects, being possible to carry out some intervention in 83.3% of the cases, followed by the category of intercurrent diseases, of which 91.7% of the cases, 45, 4% were amenable to intervention (Table 2). On the other hand, primary neurological diseases and surgeries are non-modifiable factors.

Tabela 2- Distribuição dos participantes do estudo de acordo com as categorias dos fatores precipitantes de delirium e possibilidade de serem modificados. São Paulo - SP, 2015

	Frequency		**Modifiable**	
Categories	**n**	**%**	**n**	**%**
Environmental Factors	12	100	10	83,3
Complications	11	91,7	5	45,4
Medication / Drugs	11	91,7	2	18,2
Surgeries	6	50	0	0
Primary Neurological Disease	2	16,7	0	0

Among the environmental factors, pain is the most frequent precipitating factor (83.3%) and subject to some type of intervention to be modified (80%), followed by sleep deprivation (50%), where modification of the condition, also, had a high occurrence (83.3%) (Table 3).

As for medications, polypharmacy was the most frequent factor identified (75%), however, with a low percentage of intervention (11.1%) (Table 3). Constipation/fecaloma (25%), urinary retention (16.7%) and fever (8.3%) are the most susceptible to change among the intercurrent diseases (Table 3).

Orthopedic surgeries (41.7%) were the most frequent, but they are not subject to changes, as well as primary neurological diseases (16.7%) (Table 3).

Table 3- Distribution of study participants according to the precipitating factors of delirium and the possibility of being modified. Sao Paulo - SP, 2015

Category	Frequency		Modifiable	
Environmental Factors	n	%	n	%
Pain	10	83,3	8	80
Sleep deprivation	6	50	5	83,3
Prolonged Immobilization	5	41,7	0	0
Enteral Probe	4	33,3	0	0
Decreased Visual Acuity	4	33,3	1	25
Bladder Probe Delay	3	25	0	0
Multiple Procedures	3	25	0	0
Decreased Hearing Acuity	2	16,7	0	0
Physical Restriction	1	8,3	0	0
Medication / Drugs				
Polypharmacy	9	75	1	11,1
Narcotics	5	41,7	1	20
Hypnotics	1	8,3	0	0
Anticholinergics	1	8,3	0	0
Intercurrent Disease				
Severe Acute Disease	7	58,3	1	14,3
Anemia	7	58,3	0	0
Malnutrition	7	58,3	0	0
Infections	3	25	0	0
Constipation / fecaloma	3	25	3	100
Urinary retention	2	16,7	2	100
Dehydration	2	16,7	1	50
Fever	1	8,3	1	100
Surgeries				
Orthopedic	5	41,7	0	0
Other surgeries (non-cardiac)	3	25	0	0
Primary Neurological Disease				
Primary neurological disease (stroke, intracranial hemorrhage, meningitis, encephalitis)	2	16,7	0	0

Discussion

In order to identify the precipitating and modifiable factors of delirium in elderly patients, it is observed that the longer I live the greater the chance of developing delirium.[8-9]

There is a predominance of females, corroborating with the study conducted in Rio de Janeiro, where of the 767 elderly people evaluated, 60.5% (n = 464) were female.[10] According to DSM-IV, 11 the proportion of women to men increases with advancing age. The high male mortality rates related to violence and traffic accidents, added to the greater female demand for health services, can help to justify this difference,[12-13] however, it is worth mentioning that, in the case of delirium, the male gender is considered as a predisposing factor, although in our study it was not possible to verify it, due to the small sample size.

In the present study, it was observed that half of the elderly were widowed, however, none of the subjects lived alone, with 41.7% (n = 5) living with their spouse and 58.3% (n = 7), with others relatives.

The fact that in Brazil the elderly person has the right to remain accompanied during the hospitalized period, 14 the companion can play a reassuring role, and be an important ally during hospitalization, and should be encouraged to encourage the elderly, keeping him or her oriented about the time and space, this being a collaborative factor for the prevention of delirium.

Regarding diagnoses, delirium and femur fracture were the most recurrent, being present in 33.3% (n = 4) of the cases. A review15 pointed out that in-hospital mortality due to fractures of the proximal femur in the elderly is 5.52% in one month, reaching 24.94% in two years.

When analyzing the categories of precipitating factors, we observed that environmental factors were present in all the elderly evaluated, it is important to note that, of these, 83.3% were subject to some intervention, demonstrating the importance of health professionals being able to identify them and propose some type of intervention.

Pain was the most frequent and modifiable environmental factor. A review[16] on the measurement of pain in the elderly, concluded that there is a tendency for professionals to despise or devalue the pain report and that, in addition, there are still interferences of cultural values where patients demonstrate that they do not want to raise concerns, assuming that pain is normal part of old age. The professional must be open to listening to the patient, paying attention to the nonverbal of the patient, because through facial expressions and changes in behavior, possible pain complaints cannot be raised spontaneously.

Another aspect that should be raised is that in the hospital, the nursing team is responsible for deciding when to administer the medications previously prescribed by the doctor in case of "if necessary",[17] therefore, professionals should pay attention to the moments that require greater manipulation of the elderly, such as bathing, exams in other sectors, dressings and diaper changes, as well as in physiotherapy sessions, where pain complaints are commonly intensified and can be minimized with previous administration of analgesia.

Sleep deprivation of the elderly in the hospital environment is another factor pointed out in the study. Environmental factors associated with hospitalization stress must be constantly evaluated, as they contribute to sleep problems in old age.[18] The health team must provide the patient with a calm environment, reducing noise, adopting strategies such as the adequacy of the night medication schedules and the performance of procedures during this period. In addition, the elderly must remain awake during the day and avoid caffeine intake to sleep at night.[1,18-19]

Prolonged immobility during hospitalization is another factor that must be avoided. Devices such as catheters and probes contribute to limiting movement, as well as physical restraint in the bed, which in addition to increasing the occurrence of delirium, worsens agitation and is a potential cause of trauma. In situations where rest is prescribed, or the patient is unable to move, the team must be concerned with the correct positioning of the patient in the bed, aiming at the prevention of pressure injury and patient comfort.[20] Physiotherapy and early passive mobilization are also factors that must be implemented.[1,19]

Sensory deficits deserve attention from health professionals due to their impact on the life of the elderly. In the present study, one third of the patients had a decrease in visual acuity in addition to a decrease in hearing acuity, a result similar to the study[21] carried out in Belo Horizonte, demonstrating the frequency of these deficits in this population. There are potential interventions that can be implemented to minimize these deficits, and consequently, minimize the chances of delirium, such as the use of adequate lighting, adaptation of utensils, use larger letters, encourage the use of glasses, when already in use, to minimize visual deficits, and for hearing deficits, professionals must speak clearly, maintaining eye contact with the patient and encourage the use of hearing aids, when indicated.[1,5] It is noteworthy that family members often forget deficit correction devices at home, the team being able to advise on their importance and request that they be used by the patient during the hospital stay.

Regarding medications, it is known that its management becomes even more difficult in the elderly population, several medications are associated with the development of delirium, we can mention opioid analgesics, benzodiazepine sedatives, anticholinergics, reuptake inhibitor antidepressants serotonin and tricyclic drugs, among others.1 It is important to note that none of these medications is totally contraindicated, as there are situations where the benefits to the patient are greater than the risks they offer, however, they must be used with caution, avoiding or reducing their use whenever possible.

As for intercurrent diseases, health professionals should devise strategies for their control, whenever possible. In our study, although infrequent, constipation / fecaloma, urinary retention and fever were totally modifiable conditions. The professional must be attentive when carrying out the physical examination and always question about the patient's eliminations, as he often does not value changes in his intestinal and urinary habit, requiring some type of intervention, such as the use of laxatives, suppository, intestinal lavage or relief bladder catheter to improve the condition. Although not all intercurrent diseases can be stopped immediately, it is important that their detection is done as early as possible. The prevention and correct treatment of intercurrent diseases are configured as a preventive factor for the delirium.

There are also other aspects that, although they constitute precipitating factors, are not subject to direct interventions, such as surgeries and primary neurological diseases, however, it is important that the professional is aware of this relationship, considering that orthopedic surgeries have an incidence which can reach 50%,[22] and professionals should be attentive to all aspects already discussed, especially regarding mobilization and pain, for the prevention of delirium.

Conclusion

As we have seen, delirium is a recurrent clinical disorder during hospitalizations of the elderly population, however, often underdiagnosed, and consequently undertreated.

For its management and prevention, it was evidenced in the present study that environmental factors had a high prevalence, with pain and sleep deprivation being subject to intervention in a short period of time. Intercurrent diseases such as constipation / fecaloma, urinary retention, fever and dehydration, although not very prevalent, are also factors with a high possibility of modification, and deserving special attention when it comes to the hospitalized elderly population, therefore, health professionals must be prepared to identify the precipitating factors of delirium, which favor its development.

Multiprofessional action is extremely important for the management of elderly patients in the hospital, since non-pharmacological actions and treatments are an important preventive factor for delirium.

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