DELIRIUM: PREVALENCE AND FACTORS ASSOCIATED WITH THE POSTOPERATIVE PERIOD OF CARDIOVASCULAR SURGERY IN THE ELDERLY

DELIRIUM: PREVALÊNCIA E FATORES ASSOCIADOS AO PÓS-OPERATÓRIO DE CIRURGIA CARDIOVASCULAR EM IDOSOS

DELIRIUM: PREVALENCIA Y FACTORES ASOCIADOS CON EL PERÍODO POSTOPERATORIO DE LA CIRUGÍA CARDIOVASCULAR EN LOS ANCIANOS

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Objective: to identify the prevalence of *delirium* in elderly inpatients from an Intensive Care Unit in the postoperative period of cardiovascular surgery and to verify an association between *delirium* and sociodemographic and clinical variables. Method: cross-sectional, analytical study, carried out in a cardiology center. Elderly inpatients between June and October 2018 were analyzed. Screening for *delirium* was performed using the Confusion Assessment Method for Intensive Care Unit. Results: males had an incidence of 65% and systemic arterial hypertension (75%) was the most reported chronic disease; 30% had acute myocardial infarction and longer time in cardiopulmonary bypass, in addition to having remained hospitalized longer; and 30% of the delusional ones died. Conclusion: the prevalence found was 40% and was associated with the elderly, with the male sex, with the significant level of education, use of tobacco, previous comorbidities; these remained hospitalized longer and died more when compared to the other group.

Descriptors: Delirium. Aged. Intensive Care Unit. Cardiovascular Surgical Procedures. Cardiovascular Nursing.

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Objetivo: identificar a prevalência de delirium em idosos internados em Unidade de Terapia Intensiva que estejam em pós-operatório de cirurgia cardiovascular e verificar associação entre o delirium e as variáveis sociodemográficas e clínicas. Método: estudo transversal, analítico, realizado num centro cardiológico. Foram analisados idosos internados entre junho e outubro de 2018. A triagem para delirium foi realizada utilizando o Confusion Assessment Method for Intensive Care Unit. Resultados: o sexo masculino teve incidência de 65% e a hipertensão arterial sistêmica (75%) foi a doença crônica mais relatada; 30% apresentaram Infarto Agudo do Miocárdio e maior tempo em circulação extracorpórea além de terem permanecido mais tempo internados; e 30% dos delirantes evoluíram a óbito. Conclusão: a prevalência encontrada foi de 40% e estava associada ao mais idoso, ao sexo masculino, ao nível significativo de escolaridade, ao uso de tabaco, à apresentação de comorbidades prévias; estes, permaneceram mais tempo internados e morreram mais quando comparados ao outro grupo.

Descritores: Delírio. Idoso. Unidade de Terapia Intensiva. Procedimentos Cirúrgicos Cardiovasculares. Enfermagem Cardiovascular.

Objetivo: identificar la prevalencia del delirium en ancianos hospitalizados en una Unidad de Cuidados Intensivos en el periodo postoperatorio de la cirugía cardiovascular y verificar una asociación entre el delirium y las variables sociodemográficas y clínicas. Método: transversal, estudio analítico, realizado en un centro de cardiología. Se analizaron los ancianos hospitalizados entre junio y octubre de 2018. La detección del delirium se realizó utilizando el Confusion Assessment Method for Intensive Care Unit. Resultados: los hombres tenían una incidencia del 65% y la hipertensión arterial sistémica (75%) fue la enfermedad crónica más notificada; El 30% tenía infarto agudo de miocardio y más tiempo en circulación extracorpórea, además de haber permanecido hospitalizado más tiempo; y el 30% de los delirantes murieron. Conclusión: la prevalencia encontrada fue del 40% y se asoció con los ancianos, con el sexo masculino, con el nivel significativo de educación, con el uso del tabaco, con la presentación de comorbilidades anteriores; estos permanecieron hospitalizados más tiempo y murieron más en comparación con el otro grupo.

Descriptores: Delirio. Anciano. Unidad de Cuidados Intensivos. Procedimientos Quirúrgicos Cardiovasculares. Enfermería Cardiovascular.

Introduction

Delirium is characterized by disturbance and dysfunction of the state of consciousness, altered sleep-wake cycle, decreased attention skills, memory dysfunction, problems with language, and psychomotor disorder. It manifests acutely, and may cause hallucinations[1].

Its peculiar nature reveals several factors in its appearance, usually observing the presence of a previous history of delirium, dementia, alcoholism, history of previous stroke, bladder catheterization, malnutrition, polypharmacy, infection, dehydration, postoperative, immobility, severe diseases, frailty, visual deficits, among others[2].

Thus, as it is a more functional than structural disorder, it is important to use the clinical characteristics combined with instruments capable of facilitating its identification[3]. The lack of diagnosis is a constant problem in several treatment units; it is believed that up to 66% of cases are no longer observed, thus increasing the associated morbidity and mortality. Although some patients recover, many evolve to stupor, coma, convulsions and even death, due to associated causes such as pneumonia, skin lesions, falls and fractures[4].

Delirium is more frequent among elderly patients and is associated with more severe cognitive deterioration when compared to a younger patient population. There is a significant increase in the prevalence of *delirium* in the general population according to age: they occur in 0.4% of individuals aged over 18 years, in 1.1% of individuals aged over 55 years and in 13.6% of the elderly aged over 85 years[5].

Thus, varied mechanisms are involved in the triggering of delusional conditions, and perioperative factors can interact with individual and environmental particularities, creating a connection that will result in the installation of *delirium*[6].

In particular, delirium in patients in the postoperative period of cardiac surgery shows

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results such as increased morbidity and mortality, besides presenting an increased risk of developing arrhythmias, kidney diseases and congestive heart failure[7], and may be associated with an increase of at least six times the chances of death[8]. Thus, there is need to identify the factors associated with delirium in the elderly undergoing cardiovascular surgery.

Therefore, this study is justified by the need to elucidate the factors associated with delirium, in order to treat better this clientele, aiming to reduce morbidity and mortality, the chances of complication and death in elderly patients undergoing cardiovascular surgical procedures.

To meet this purpose, the present study aimed to identify the prevalence of delirium in elderly inpatients in Intensive Care Units (ICU) in the postoperative period of cardiovascular surgery, and to verify an association between delirium and sociodemographic and clinical variables.

Method

This is a quantitative, cross-sectional and analytical study conducted in the ICU of a cardiology reference care institution in the Federal District (FD), specialized in clinical and high-complexity surgical cardiology, of a philanthropic nature, which performs private care, agreements and partnership with the Unified Health System (UHS).

Data collection was performed between June and October 2018, during which 56 cardiovascular surgical interventions occurred. The study included patients aged over 60 years undergoing surgical procedures addressing the cardiovascular system and whose postoperative period occurred in the ICU bed. Patients who died intraoperatively were excluded. Of the 56 individuals planned for surgical intervention, six refused to participate in the research; thus, the access population consisted of 50 seniors, that is, 89.28% of the initial population.

Data were taken from medical records and collected by interview with ICU patients or their families. The data collection instrument was created by the team of researchers and addressed sociodemographic (gender, age, education) and clinical characterization variables (reason for hospitalization, outcome of hospitalization, length of stay in the ICU, comorbidities, medications used, clinical complications and invasive procedures). The *delirium* outcome variable was evaluated by the Confusion Assessment Method for Intensive Care Unit (CAM-ICU). The CAM-ICU is an ideal instrument for using with ICU patients on mechanical ventilation or not, and can be used by any professional in the multidisciplinary team[9]. It is a rapid application tool, which does not need the patient's verbal responses to verify the diagnosis[10].

CAM-ICU evaluation criteria evaluate the four diagnostic features of delirium CAM using questions that do not require verbal answers. Feature 1 is evaluated using the Richmond agitation and sedation scale. If there is a fluctuation in the sedation scale or evidence of acute alteration, the characteristic is considered present. Feature 2 is evaluated using the Attention Screening Exam, involving the Vigilance A task and image recognition. Feature 3 is evaluated based on the patient's ability to correctly answer two questions, yes or no, and to follow basic commands. Feature 4 is evaluated using the Richmond Agitation-Sedation Scale (RASS), considering values other than 0 as abnormal. After determining the presence or absence of each CAM feature, the CAM diagnostic algorithm is used to determine the presence or absence of delirium[3].

The collected data were inserted in the statistical program Statistical Package for the Social Sciences (SPSS), IBM SPSS, version 17, Armonk, NY, IBM Corp. Quantitative variables were presented as a mean ± standard deviation, while qualitative variables were shown as absolute and relative frequency.

The normality of data distribution was verified using the Kolmogorv-Smirnov test. To analyze the association of qualitative variables with normal distribution and outcome (presence or absence of delirium), student's t-test was used. For those with non-normal distribution, the chi-square test was used. For matrices with expected values below 5, the Fischer Exact Test was applied. The F test (Model ANOVA) was used to compare

continuous variables between the groups (with and without delirium). P values below 0.05 were considered statistically significant.

The present study complied with all ethical precepts in accordance with Resolution no. 466/12 and was approved by the Research Ethics Committee (REC) of the Cardiology Institute of the Federal District, CAAE n. 79451717.2.0000.0026 and Opinion no. 2.402.029.

Results

Among the 50 patients evaluated, there was a prevalence of delirium of 40%, with the hypoactive form as the most, with 55% of the cases, followed by the mixed type with 25% and hyperactive with 20% (Figure 1).

Figure 1 – Delirium prevalence and forms in the elderly. Brasília, Distrito Federal, Brazil – 2019
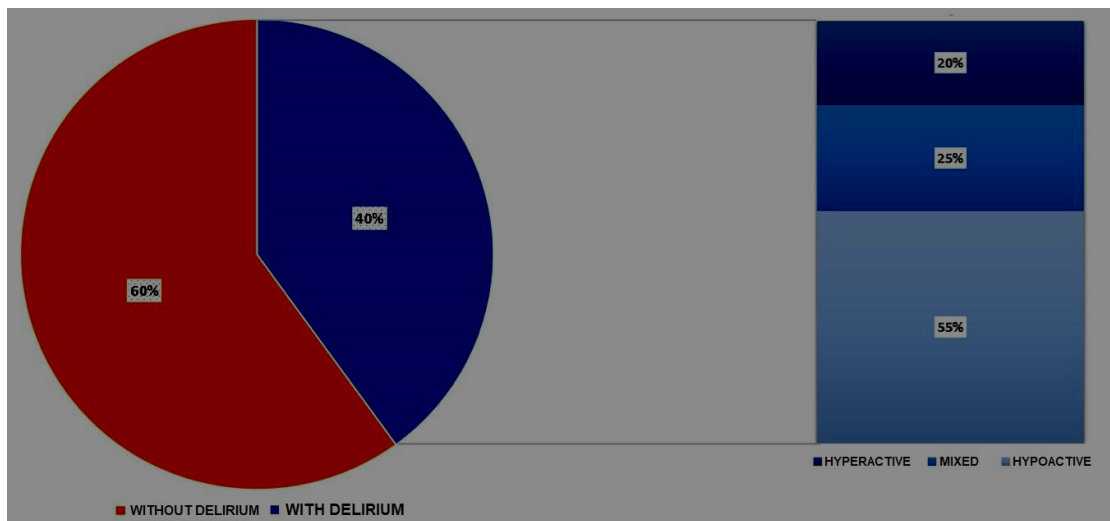
Source: Created by the authors.

Among the elderly with delirium, most were aged 60 to 69 years (80%), male (65%) and schooling up to high school (40%) (Table 1).

For the group with delirium, the most reported comorbidity was systemic arterial hypertension (SAH) (75%). About 45% of the delusional were active smokers and 70% did not have the habit of drinking alcoholic beverages (Table 1).

Table 1 – Sociodemographic and clinical profile of the elderly inpatients in the Intensive Care Unit in postoperative cardiovascular surgery. Brasília, Distrito Federal, Brazil – 2019. (N=50)　　(continued)

Variables	Without *delirium* (n=30) n (%)	With *delirium* (n=20) n (%)
Age (years)		
60 - 69	24 (80)	10 (50)
70 - 79	3 (10)	8 (40)
>80	3 (10)	2 (10)
Sex		
Female	11 (36.7)	7(35)
Male	19 (63.3)	13(65)
Schooling		
Primary education	16 (53.3)	6 (30)
Secondary Education	4 (13.3)	8 (40)

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Table 1 – Sociodemographic and clinical profile of the elderly inpatients in the Intensive Care Unit in postoperative cardiovascular surgery. Brasília, Distrito Federal, Brazil – 2019. (N=50) (conclusion)

Variables	Without *delirium* (n=30) n (%)	With *delirium* (n=20) n (%)
Schooling		
College	5 (16.7)	3 (15)
Illiterate	5 (16.7)	3 (15)
Previous diseases*		
Systemic Arterial Hypertension	23 (76.7)	15 (75)
Diabetes Mellitus	17 (56.7)	8 (40)
Dyslipidemia	15 (50)	5 (25)
Atrial fibrillation	2 (6.7)	3 (15)
Stable Angina	2 (6.7)	3 (15)
Previous Acute Myocardial Infarction	5 (16.7)	4 (20)
Cerebrovascular Accident	-	2 (10)
Smoking	11 (36.7)	9 (45)
Former-smoker	11 (36.7)	5 (25)
Alcohol consumption	7 (23.3)	2 (10)
Former-drinker	1 (3.3)	4 (20)

Source: Created by the authors.

Note: Conventional signal used:
    - Numerical data equal to zero not resulting from rounding.

*Some patients had over one disease.

Regarding the need for surgical approach in the delusional elderly, 40% were approached for various health reasons, but 30% had Acute Myocardial Infarction with ST Segment Supra Elevation (AMIWSTSE). Moreover, the delusional elderly remained longer in cardiopulmonary bypass (CPB) (1:58 ±0:56) and had longer ICU stay (5.4 ±3.3). However, 70% of the elderly with delirium evolved with improvement (Table 2).

Table 2 – Clinical profile of the elderly inpatients in the Intensive Care Unit in postoperative cardiovascular surgery. Brasília, Distrito Federal, Brazil – 2019. (N=50)

Reasons for the surgical procedure	Without *delirium* (n=30) n (%)	With *delirium* (n=20) n (%)
Aortic Aneurysm	1 (3.3)	3 (15.0)
Unstable Angina	4 (13.3)	-
Atherosclerotic disease	2 (6.6)	2 (10.0)
AMIWSTSE	8 (26.6)	6 (30.0)
AMIWOSTSE	4 (13.3)	1 (5.0)
STEMI/Atherosclerotic Disease	2 (6.6)	-
Other miscellaneous diagnoses	9 (30.0)	8 (40.0)
Outcome		
Discharge due to improvement	28 (93.3)	14 (70.0)
Transfer	2 (6.6)	-
Death	-	6 (30.0)

Source: Created by the authors.

Note: Conventional signal used:
    - Numerical data equal to zero not resulting from rounding.

AMIWSTSE: Acute Myocardial Infarction with ST Segment Supra Elevation; AMIWSOTSE: Acute Myocardial Infarction without ST Segment Supra Elevation.

Table 3 shows data on the clinical profile of elderly inpatients in the intensive care unit in the postoperative cardiovascular surgery.

Table 3 – Clinical profile of elderly patients admitted to the Intensive Care Unit in the postoperative period of cardiovascular surgery. Brasília, Distrito Federal, Brazil – 2019. (N=50)

Variables	Without D*elirium* (n=30)	With D*elirium* (n=20)	
	Variables ±SD	Variables ±SD	P-Value
ICU time (days)	3.3 ±1.5	5.4 ±3.3	0.01
CEC (hour)	1:23 ±0:21	1:58 ±0:56	0.01
SpO2 (%)	96 ±2.4	96 ±3.7	0.93
Blood glucose (mg / dL)	139.7 ±43.7	137.6 ±29.6	0.84
Urea (mg / dL)	49.3 ±20.0	57.2 ±25.6	0.31
Creatinine (mg / dL)	1.3 ±0.5	1.6 ±0.7	0.22

Source: Created by the authors.

SD: Standard deviation; ICU: Intensive care unit; CPB: cardiopulmonary bypass; SpO2: Peripheral oxygen saturation;

P-value less below 0.05: statistically significant association.

Considering invasive procedures and treatment during stay in the ICU, CPB was performed intraoperatively in 90% of cases with delirium. Also in the delirious group, pain was identified in 75%, the use of invasive mechanical ventilation in 40% and the use of devices, such as the central venous catheter (CVC) and the bladder delay tube (BDT), were observed in 90% and 95% of the elderly, respectively, in addition to 65% that were mechanically contained (Table 4).

Regarding diet and the use of sedative/ neuroleptic drugs or vasoactive properties, 65% of delusional patients remained on a zero diet, dobutamine was the most frequently used vasoactive drug (40%) and haloperidol and fentanyl were used in 20% and 25% of the cases respectively (Table 4).

Table 4 – Clinical profile of elderly patients admitted to the Intensive Care Unit in the postoperative cardiovascular surgery in relation to invasive procedures and treatment during hospitalization. Brasília, Distrito Federal, Brazil – 2019. (N=50) (continued)

Variables	Without *delirium* (n=30) n (%)	With *delirium* (n=20) n (%)
Cardiopulmonary bypass	25 (83.3)	18 (90.0)
Pain	7 (23.3)	15 (75.0)
Central Venous Catheter	28 (93.3)	18 (90.0)
Invasive Ventilation	-	8 (40.0)
Bladder Delay Tube	8 (26.7)	19 (95.0)
Containment	-	13 (65.0)
Daily wake-up call	29 (96.7)	13 (65.0)
Diet		
Zero Diet		13 (65.0)
Food refusal	2 (6.7)	2 (10.0)
Oral route	28 (93.3)	5 (25.0)
Sedation		
None	29 (96.7)	11 (55.0)
Midazolam	1 (3.3)	3 (15.0)
Propofol	-	1 (5.0)
Dexmedetomidine	-	5 (25.0)
Haloperidol	-	4 (20.0)
Fentanyl	1 (3.3)	5 (25.0)

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Table 4 – Clinical profile of elderly patients admitted to the Intensive Care Unit in the postoperative cardiovascular surgery in relation to invasive procedures and treatment during hospitalization. Brasília, Distrito Federal, Brazil – 2019. (N=50)   (conclusion)

Variables	Without *delirium* (n=30) n (%)	With *delirium* (n=20) n (%)
Vasoactive Drugs		
Dobutamine	4 (13.3)	8 (40.0)
Norepinephrine	1 (3.3)	3 (15.0)
Norepinephrine/Dobutamine	1 (3.3)	7 (35.0)
Others	2 (6.7)	1 (5.0)
None	22 (73.3)	1 (5.0)

Source: Created by the authors.

Note: Conventional signal used:
     - Numerical data equal to zero not resulting from rounding.

The use of haloperidol (p = 0.02; OR: 2.87), fentanyl (p = 0.03; OR: 9.66), DVA (p<0.001; OR: 24.75), pain (p<0.001; OR: 9.85), containment (p<0.001; OR: 5.28), SVD (p<0.001; OR: 52.25), invasive ventilation (p<0.001; OR: 3.51). Daily awakening was a protective factor (p = 0.005; OR: 0.06) (Table 5).

Table 5 – Association between sociodemographic and clinical variables and the presence of delirium. Brasília, Distrito Federal, Brazil - 2019. (N = 50)   (continued)

| Variables | *Delirium* | | | | 95% Confidence Interval | |
	Yes	No	P-value	Odds Ratio	Lower Limit	Upper Limit
Cardiopulmonary bypass > 1 hour	17	24	1.0[*]	1.42	0.08	24.1
Sex						
Female	7	11	0.91	0.93	0.28	3.03
Male	13	19	-	-	-	-
Systemic Arterial Hypertension	15	23	1.0	0.91	0.24	3.41
Diabetes Mellitus	8	17	0.24	0.51	0.16	1.61
Dyslipidemia	5	15	0.07	0.33	0.09	1.15
Congestive heart failure	2	3	1.0[*]	1.0	0.15	6.59
Atrial fibrillation	3	2	0.37[*]	2.47	0.37	16.3
Stable Angina	3	2	0.37[*]	2.47	0.37	16.3
Previous Acute Myocardial Infarction	4	5	1.0[*]	1.25	0.29	5.36
Cerebrovascular Accident						
Yes	2	0	0.15	2.66	1.85	3.84
Smoking						
Yes	9	11	0.68	-	-	-
Former-smoker	5	11	-	-	-	-
Alcohol consumption						
Yes	2	7	0.11			
Former-drinker	4	1				
Haloperidol	4	0	0.02	2.87	1.93	4.27
Sedation	3	1	0.08	0.12	0.01	1.24
Fentanyl	5	1	0.03*	9.66	1.03	90.41
Benzodiazepine	1	0	0.40*	2.57	1.81	3.66

Table 5 – Association between sociodemographic and clinical variables and the presence of delirium. Brasília, Distrito Federal, Brazil - 2019. (N = 50)

(conclusion)

Variables	Delirium		P-value	Odds Ratio	95% Confidence Interval	
	Yes	No			Lower Limit	Upper Limit
Vasoactive Drug	18	8	<0.001	24.75	4.65	131.47
Ache	17	7	<0.001	9.85	2.63	35.86
Containment	13	0	<0.001	5.28	2.71	10.29
Bladder catheter	19	8	<0.001	52.25	5.98	456.51
Invasive ventilation	8	0	<0.001	3.51	2.17	5.64
Central venous catheter	18	28	1.0*	0.64	0.08	4.98
Sepsis	3	0	0.058*	2.76	1.89	4.04
Daily Awakening	13	29	0.005*	0.06	0.007	0.57

Source: Created by the authors.

Note: Conventional signal used:
- Numerical data equal to zero not resulting from rounding.

* Fisher's Exact test.

Discussion

Of the 50 participants who comprised the access population of this study, 40% had at least one episode of dysfunction during hospitalization in an intensive care environment. The mean age was 70.4±5.83, males were more distributed among the delirious group (65%) and 40% claimed to have completed high school.

The most observed subtype of delirium was the hypoactive, with 55% of the apparitions, a percentage corroborated in a study conducted in Italy in intensive hospitals [2]. However, sometimes, in contradiction, the subtype of mixed delirium can occur more frequently in the ICU [11].

The educational level is seen as a factor that can predispose to the occurrence of delirium [2, 12]. In this study, the number of elderly with delirium who finished high school is higher than those who studied less time or were illiterate.

Despite several studies, presenting different types of prevalence that can reach up to 80 % [1], another Brazilian study, conducted with 335 elderly also in the ICU, identified a prevalence of 36%, approaching the finding of this study [13].

Thus, delirium may be associated with numerous modifiable or non-modifiable factors. Among the non-modifiable factors, previous

comorbidities can favor the occurrence of the syndrome. In view of the profile of the investigated patients, the most observed chronic diseases were SAH (75%), DM (40%), DLP (25%) and previous AMI (20%). Moreover, the patients in this study used tobacco in 45% of the cases.

Cardiovascular diseases, especially acute myocardial infarction, are the main causes of death among the elderly worldwide [14]. SAH, which is very prevalent among them [15], and smoking are risk factors for cardiovascular diseases, besides increasing the risk of complications, negative outcome and death [16].

Thus, cardiac surgeries are highly invasive procedures, and the sternotomy technique can cause severe postoperative pain [8]. Thus, pain was evidenced for 75% of the group. Besides being a trigger of the condition, post-surgery pain was considered a high risk factor (9.85 times); the establishment of management protocols is important since the indiscriminate use of opiates are also considered risk factors [17].

The findings of this study demonstrated that the time of hospitalization, the use of sedation with Fentanyl, Haloperidol and mechanical ventilation increase the chance of delirium in elderly inpatients hospitalized in the ICU [13].

The most prescribed VAD was Dobutamine (40%), followed by the combination of

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Norepinephrine (30%). When using vasoactive amines was verified in the postoperative period, 90% of the delusional patients were using the medications, contrasting with those who did not have delirium in which only 26.7% had the prescription. Patients who were using these medications had OR: 24.75 (P<0.001), and the risk of the elderly developing delirium was significant[8].

Regarding the use of Fentanyl, this factor can be justified by the difficulty of pain assessment, especially in mechanically ventilated patients. In this case, fentanyl infusions are used in order to provide analgesia and anxiolysis and increase the patient's tolerance to the ventilator[18]. This procedure can also increase the chance of developing the syndrome in up to 18 times[13].

Regarding the treatment of delirium, the preferred drug is the antipsychotic Haloperidol, used on a large scale, but which still has little scientific evidence to reduce the onset of delirium[18]. This divergence was highlighted by this study, as well as in another study[13] that demonstrated that this drug is associated with high risk of delirium and does not reduce complications.

Regarding the use of devices, the CVC (90%) and SVD (95%) were present in almost all cases, however, only the SVD was correlated with delirium, increasing the chances in up to 52.25% of the elderly to develop delirium. Specifically, SVD is a precipitating factor to delirium because it is an invasive device that modifies/alters physiological function due to the state resulting from sedation and causes immobility[19].

In the case of containment, which was associated with the outcome, this technique is widely used for patients in a state of agitation, but should be seen by professionals only when it is the only possible care tool to prevent damage to the patient and others[20].

In this study, patients with a positive diagnosis for delirium (90%) were submitted to CPB, with an approximate time of 1:58 ±0:56. When compared to the other group, which remained 1:23±0:21, the delusional patients had a longer time of CPB, however, care with a time longer than 1 hour did not show to be a significant risk factor in case of an association test between CPB and Delirium factors[6-7].

The use of circulatory assistance during cardiovascular surgeries is routinely common. However, its application can lead to numerous iatrogenic diseases for the individual; tissue ischemia and blood contact in artificial endothelium can therefore activate the inflammatory system; microembolization and hypoperfusion may cause neuro-inflammatory changes, possibly being a triggering factor of postoperative delirium[21].

Thus, the ICU is considered a hostile environment, a risk factor for delirium, and the indiscriminately use of sedation can contribute to its appearance[18]. Thus, this syndrome increases the time of hospitalization in the ICU and in the hospital, the time of mechanical ventilation, mortality, interferes in the evaluation and approach of pain and other symptoms, increases hospital costs and decreases functionality and quality of life after discharge. Therefore, it has a negative impact on patients, family members and health professionals[18].

Daily awakening was the only factor that proved protective against delirium in this study, as found by other researchers. Thus, daily awakening, decrease or absence of sedation at some point in the day is essential for the evaluation of delirium[13].

Launching energy in non-pharmacological approaches, offering a calm, comfortable and silent environment, promoting dialogue and insertion of family members in care, ensuring reorientation with the use of calendars and clocks, in addition to respecting the Circadian rhythm of the individual, encouraging him/her as soon as possible to resume the use of glasses, dental and hearing aids are all simple strategies that contribute to prevent the risk of delirium.

A limitation of this study includes the lack of detection of medical conditions that could interfere in the evaluation of delirium. However, a systematic review study with meta-analysis showed that CAM-ICU has higher accuracy of the diagnostic test and is recommended as the ideal

tool for assessing delirium[1], which the concern in choosing the best method of identification. Furthermore, this study contributes to the disseminating scientific evidence regarding the detection, evaluation and diagnosis of delirium, as well as the factors associated with it.

Conclusion

The elderly characterized in this study do not differ considerably from what is already pointed out in the current literature. The prevalence of delirium found was 40%. The oldest male patient with a significant level of education, who used tobacco, who presented comorbidities associated with surgery remained hospitalized longer in the ICU and died more when compared to the other group.

Finally, when statistically comparing all the variables investigated to establish an association of occurrence in delirium episodes, commonly known factors in intensive care environment, such as invasive mechanical ventilation, use of haloperidol, fentanyl and vasoactive amines, the presence of bladder catheterization device, presence of pain crises, in addition to the diagnosis of sepsis and the use of physical restraints, are closely linked to the odds of occurrence of developing delirium for the analyzed public.

To ensure greater quality and safety in the care of this specific audience, there is need to recognize the non-modifiable risk factors and work thoroughly on the main modifiable factors, train the multidisciplinary team and standardize the use of a routine detection instrument.

Collaborations:

1 – conception, design, analysis and interpretation of data: Klícia Barbosa Bezerra Matioli, Rodrigo Marques da Silva and Maria Liz Cunha de Oliveira;

2 – writing of the article and relevant critical review of the intellectual content: Klícia Barbosa Bezerra Matioli, Iel Marciano de Moraes Filho, Thaís Vilela de Sousa, Mayara Cândida Pereira, Rodrigo Marques da Silva, Erika Silva de Sá and Maria Liz Cunha de Oliveira;

3 – final approval of the version to be published: Klícia Barbosa Bezerra Matioli, Iel Marciano de Moraes Filho, Thaís Vilela de Sousa, Mayara Cândida Pereira, Rodrigo Marques da Silva, Erika Silva de Sá and Maria Liz Cunha de Oliveira.

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