

DELIRIUM IN INTENSIVE THERAPY: PREDISPOSING FACTORS AND THE PREVENTION OF ADVERSE EVENTS

DELIRIUM NA TERAPIA INTENSIVA: FATORES PREDISPONENTES E PREVENÇÃO DE EVENTOS ADVERSOS

DELIRIO EN LA TERAPIA INTENSIVA: FACTORES PREDISPONENTES Y PREVENCIÓN DE EVENTOS ADVERSOS

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Objective: to analyze the predisposing factors and to identify the adverse events related to delirium in patients admitted to the intensive care unit. **Method:** a prospective cohort study, which occurred between July and August 2017. Data collection was performed using a specific instrument, with variables related to delirium. The risk ratio was applied for association analysis. **Results:** among the 18 selected patients, delirium was identified in 7 (39%); sleep deprivation and smoking were the predisposing factors with the highest risk ratio (5 and 2.83 respectively) and the occurrence of an adverse event also had a significant positive association related to the occurrence of delirium (RR=4.71). **Conclusion:** the main adverse event associated with delirium was the unplanned withdrawal of invasive devices.

Descriptors: Delirium. Patient safety. Critical care.

Objetivo: analisar os fatores predisponentes e identificar os eventos adversos relacionados ao delirium nos pacientes internados na unidade de terapia intensiva. *Método:* estudo de coorte prospectivo, ocorrido entre julho e agosto de 2017. A coleta de dados foi realizada por meio de instrumento próprio, com variáveis relacionadas ao delirium. Para análises de associação, foi aplicada a razão de risco. *Resultados:* entre os 18 pacientes selecionados, foi identificado delirium em 7 (39%); a privação do sono e o tabagismo foram os fatores predisponentes com maior razão de risco (5

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e 2.83 respectivamente) e a ocorrência de evento adverso também apresentou uma associação positiva significativa relacionada à ocorrência de delirium (RR=4,71). Conclusão: o principal evento adverso associado ao delirium foi a retirada não planejada de dispositivos invasivos.

Descritores: Delírium. Segurança do paciente. Cuidados críticos.

Objetivo: analizar los factores predisponentes e identificar los eventos adversos relacionados al delirio en pacientes internados en unidad de terapia intensiva. *Método:* estudio de cohorte prospectivo, ocurrido entre julio y agosto de 2017. *Recolección de datos* realizada por medio de instrumento propio, con variables relacionadas al delirio. *Para análisis de asociación*, se aplicó la razón de riesgo. *Resultados:* entre los 18 pacientes seleccionados, fue identificado delirio en 7 (39%); privación del sueño y tabaquismo fueron los factores predisponentes con mayor razón de riesgo (5 y 2.83 respectivamente), y ocurrencia de evento adverso también presentó asociación positiva significativa relacionada con la ocurrencia de delirio (RR=4,71). *Conclusión:* el principal evento adverso asociado al delirio fue la retirada no planificada de dispositivos invasivos.

Descriptorios: Delirio. Seguridad del paciente. Cuidados críticos.

Introduction

Delirium is the most acute cerebral dysfunction present in patients hospitalized in intensive care units (ICUs). It is presented in its clinical forms, such as hyperactivity (agitation), hypoactivity (apathy) and mixed (with characteristics of both forms). It is characterized by transient and fluctuating changes in the level of consciousness and periods of restlessness which can last for hours and even days^(1,3). Some studies^(2,4) state that the prevalence rate of delirium in ICUs can vary between 32.3% and 77%.

It is estimated that patients who develop delirium present worse clinical evolutions, with increased hospitalization time, greater risk of adverse events and higher mortality^(1,5). When undiagnosed and treated early, it has an estimated mortality rate of 25% to 33%, which is as high as acute myocardial infarction and sepsis⁽¹⁾.

Despite the high prevalence and high mortality rate, delirium is often underestimated. However, when the team is involved in early diagnosis and validated instruments and well-structured protocols are used, prevention strategies can be considered⁽⁶⁾. Several instruments have been created to identify and recognize delirium. The most widely used instrument in the ICU is the Confusion Assessment Method for Intensive Care Unit (CAM-ICU). This instrument is highly sensitive and specific and was adapted to the Brazilian Portuguese language, and can be

applied by all members of the multidisciplinary team⁽⁷⁻⁸⁾.

Adequate monitoring contributes to safe and quality care in the critical care environment. Intensive care nurses have a fundamental role as they have frequent contact with the patient which allows them to observe any changes in their level of consciousness at an early stage, as well as identifying risk factors more easily⁽⁹⁾.

Delirium routinely manifests itself in critical patients hospitalized in ICU associated with risk factors that are divided into modifiable and non-modifiable. The non-modifiable risk factors are: age and gender. The modifiable factors are: smoking, systemic arterial hypertension, isolation, physical restraint, sleep deprivation, absence of clocks and windows, absence of family or visitors, prolonged hospitalization, invasive devices, the use of mechanical ventilation and the prolonged use of antipsychotic drugs, hydroelectrolytic disturbances, and fever^(1,9).

Thus, it is hypothesized that the evaluation of delirium based on the identification of predisposing factors prevents the occurrence of adverse events and in turn provides safer and more individualized care.

Therefore, the objective of this study is to analyze the predisposing factors and to identify the delirium-related adverse events in patients admitted to the ICU.

Method

A prospective cohort desk research with a quantitative approach. The aim of this study was to identify the occurrence of delirium in the medical records of ICU patients using the CAM-ICU instrument, predisposing factors and adverse events, according to the literature.

The study was performed in a General Intensive Care Unit with 10 beds in a university hospital in the city of Rio de Janeiro, Brazil. One of the ten beds is designed for respiratory isolation and can be used for this purpose depending on the demand.

The clientele profile are surgical and clinical patients. This ICU is the main working area of the nursing resident in the intensive care nursing program. The ICU department depends on a multidisciplinary team (doctors, nurses, physiotherapists, nutritionists and psychologists) on a daily basis. The nursing team consists of: 15 nurses, 7 second year residents and 8 first year residents, giving a total of 30 nurses.

The inclusion criteria used were: patients over 18 years of age and length of hospital stay longer than 24 hours. Exclusion criterion was: patients with a history of psychiatric illness.

The sample calculation and the statistical power of the study were estimated with a sample error of 5% (95% significance level), a population of 25 patients (monthly hospitalization average in the studied institution in the year 2017) and a maximum percentage of 77% (highest rate of delirium in ICU evidenced in the literature), obtaining a sample of 23 patients.

In July and August 2017, 23 patients were admitted to the General ICU of the study, but 5 were excluded from the study: 3 because they had a history of psychiatric illness and 2 because they stayed less than 24 hours in the ICU. Data from the medical records of 18 patients were collected. The CAM-ICU was used to confirm delirium in patients who presented with agitation or an altered level of consciousness. The application of CAM-ICU was positive in 7 patients.

Prior to data collection, a pre-test of the instrument was performed for two weeks with

the intention to to evaluate the positive points and weaknesses. Those who were not clinically relevant were changed because they were given beyond what was necessary, and others because they were not suitable for what was intended.

Data collection was performed through an instrument developed by the researcher. Each form was used weekly for each selected medical record using the variables: age, gender, length of ICU stay, death, use of mechanical ventilation, smoking, alcohol consumption, arterial hypertension (BP > 140x90 mmHg), hyperthermia (Tax > 37.5 °C), sepsis, sleep deprivation, use of invasive devices, hydroelectrolytic changes, psychotropic medications (sedatives, benzodiazepines and antipsychotics) and adverse events (self-extubation, catheter withdrawal and prolonged hospitalization time).

Numerical variables were dichotomized. Age was divided into <60 and > 60 years old and days of hospitalization <7 and > 7. All patients with delirium were on mechanical ventilation and were taking psychotropic medications. For this reason, the risk ratio for these variables was not calculated.

The data were organized in the light of descriptive statistics and organized using the Microsoft Excel Office XP® program. The organization occurred by grouping the results into databases created on the basis of the collection instrument and study variables. Next, the statistical analysis was performed using the OPEN EPI®, an open source epidemiological statistics program for Public Health, available for free on the OpenEpi website (<http://www.openepi.com>).

To identify the association and risk of the development of delirium in patients, the risk ratio (RR) was measured, which is the measure of the association strength and the occurrence of the disease. When values are > 1 they demonstrate a positive association of delirium with exposure; however, when they are <1 they suggest a protection factor. A 95% confidence interval (CI) and p value (<0.05) calculated by the Fisher's exact test was used for the analysis.

The study was approved by the Research Ethics Committee of the institution under No. 2.138.724 and was exempt from requiring a signed the Informed Consent Form (TCLE) due to the nature of the study and the conditions of a critical patient.

Results

Among the 18 patients studied, 39% (n=7) were affected by delirium in the collection period, all with more than 7 days of hospitalization, requiring MV and psychotropic medication,

the majority 27% (n=5) had sleep deprivation. The number of male and female patients was equivalent: 22% (n=4) males and 17% (n=3) females. Delirium had a greater proportion in patients <60 years old.

Among the 5 patients who died, 11% (n=2) had were diagnosed with delirium. Systemic arterial hypertension, sepsis and hyperthermia were the factors with lower prevalence and the same percentage for delirium, with 17% (n=3) being affected. Table 1 describes the characterization and predisposing factors of the occurrence of delirium analyzed in this study.

Table 1 – Characterization of patients admitted to the Intensive Care Unit related to the occurrence of delirium. Rio de Janeiro, RJ, Brazil - 2017. (N = 18) (continued)

Variables	With delirium (n= 7)		Without delirium (n=11)		Total (n=18)	
	n	%	n	%	n	%
Sex						
Female	3	17	6	33	9	50
Male	4	22	5	28	9	50
Age						
<60	4	22	5	28	9	50
>60	3	17	6	33	9	50
Length of Hospitalization						
<7	-	-	4	22	4	22
>7	7	39	7	39	14	78
Died						
Yes	2	11	3	17	5	28
No	5	28	8	44	13	72
Predisposing factors						
Mecanical Ventilation						
Yes	7	39	8	44	15	83
No	-	-	3	17	3	17
Hypertension						
Yes	3	17	4	22	7	39
No	4	22	7	39	11	61
Sepsis						
Yes	3	17	4	22	7	39
No	4	22	7	39	11	61
Hyperthermia						
Yes	3	17	3	17	6	34
No	4	22	8	44	12	66
Sleep deprivation						
Yes	5	27	1	6	6	33
No	2	11	10	56	12	67
Hydroelectrolytic Changes						
Yes	4	22	6	33	10	55
No	3	17	5	28	8	45

Table 1 – Characterization of patients admitted to the Intensive Care Unit related to the occurrence of delirium. Rio de Janeiro, RJ, Brazil - 2017. (N = 18) (conclusion)

Variables	With delirium (n= 7)		Without delirium (n=11)		Total (n=18)	
	n	%	n	%	n	%
Psychotropics						
Yes	7	39	6	33	13	72
No	-	-	5	28	5	28

Source: Created by the authors.

Note: Conventional sign used:

- Numeric data equal to zero not resulting from rounding up.

Upon analysing the data, it was observed that there is an association of quantitative factors predisposing the development of delirium. Among the 7 patients who presented with delirium, 4 had more than 5 of these factors and 3 had between 1 and 5. In other words, all the

patients who presented with the syndrome had at least one predisposing factor.

To analyse whether the occurrence of delirium was positively associated with the presence of predisposing factors and with the occurrence of adverse events, the Risk Ratio (RR) was calculated (Table 2).

Table 2 – Measures of association of the occurrence of delirium with predisposing factors and adverse events. Rio de Janeiro, RJ, Brazil - 2017. (N = 18)

Predisposing factors	p value	Risk Ratio	95% Confidence Interval
Smoking	0.07	2.83	1.48 – 5.39
Systemic Arterial Hypertension	0.99	1.17	0.36 – 3.75
Sepsis	0.99	1.17	0.36 – 3.75
Hyperthermia	0.85	1.5	0.48 – 4.65
Sleep Deprivation	0.02	5	1.34 – 18.62
Hydroelectrolytic Changes	0.99	1.06	0.33 – 3.44
Exposure: delirium			
Adverse event	0.01	4.71	1.29 – 17.12

Source: Created by the authors.

Sleep deprivation and smoking were identified as the predisposing factors with the highest risk ratio (RR=5 / RR=2.83), i.e., patients with sleep deprivation are five times more likely to develop delirium while those patients who smoke are almost three times as to develop delirium when compared to patients with normal sleeping patterns (p value=0.02) and non-smokers (p value=0.07).

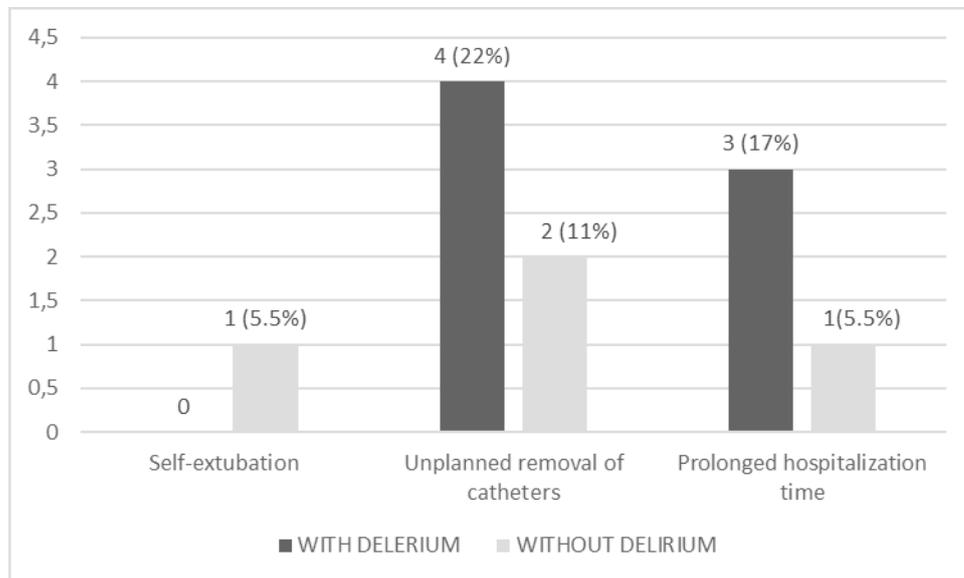
The other predisposing factors, although not statistically significant in the association with delirium, had risk ratios higher than one,

which confirms a positive relation between the exposure and the outcome.

The occurrence of an adverse event also had a significant positive association related to the occurrence of delirium (RR=4.71 / p value=0.01), i.e., patients with delirium had a 4.71 higher risk of presenting some adverse event related to the received care.

The principal adverse events identified in the study patients related to the presence of delirium are presented below.

Graph 1 – Adverse events related to the occurrence of delirium. Rio de Janeiro, RJ, Brazil – 2017. (N = 18)



Source: Created by the authors.

The most identified adverse event among the patients who presented with delirium was related to the unplanned removal of invasive devices (nasogastric tube), with 22% (n=4); prolonged hospitalization time also contributed to a higher occurrence in patients with delirium 17% (n=3).

Discussion

Among the critical patients with delirium in the ICU, 32% to 66% are correctly diagnosed and treated. It is estimated that delirium can affect approximately 80% of patients, depending on the population characteristics and the diagnostic forms used^(2,10).

In the present study, it was identified that 39% (n=7) of the patients presented with delirium. This is a relevant percentage, considering that the monitoring of this syndrome is not yet systemically implemented in the studied area, which may prevent an absolute result for early diagnosis.

Delirium is relevant not only because of its high prevalence, but also because of its consequences⁽⁹⁾, which can cause greater harm

to the patient, the professional and the institution. The cause of the syndrome is multifactorial, and its development involves a relationship between predisposing and exposure factors⁽⁶⁾.

In the characterization of patients, the prevalence of delirium occurred 22% (n=4) of male patients. Studies⁽¹¹⁻¹²⁾ show that the proportion of delirium between the sexes reveals a predominance in males, as male patients are more susceptible to the development of the phenomenon and this fact may be related to possible beliefs and stereotypes, since men do not usually seek health care believing that it affects their masculinity⁽¹¹⁾. This study corroborates this finding and reports that the male sex is a predisposing factor for the development of this syndrome⁽¹²⁾.

In the present study, the highest occurrence of delirium was in 22% (n=4) of patients <60 years old, a result that contrasts with those found in some studies^(1,10,13), which consider delirium to be the group of the main geriatric syndromes⁽⁶⁾ associated with deterioration cognitive impairment, whose frequent complication of hospitalization usually occurs in

patients over 65 years of age, because they are susceptible due to the physiological alterations of aging⁽¹⁴⁾. However, when associated with other types of care, it contributes to the prevention of diseases, such as delirium. Justifying the findings of the study, it is understood that this disorder is associated with several factors, which may lead to patients with less advanced ages also presenting with the syndrome^(7,10).

Among the patients with prolonged hospitalization time, 39% (n=7) were hospitalized for more than 7 days and 11% (n=2) died during data collection. Over the past 10 years, studies^(2,4,15) have clearly demonstrated an association between delirium and increased mortality, duration of mechanical ventilation, and hospital stay.

A study that associated the mortality rate with the occurrence of delirium, highlighted that patients diagnosed with delirium during hospitalization had a 5.5 higher hospital mortality rate than patients diagnosed with dementia. Patients surviving hospitalization have a very high mortality rate during the months immediately following hospital discharge⁽¹⁶⁾.

Regarding predisposing factors, mechanical ventilation had a considerable percentage, with 39% (n=7) of MV users presenting delirium. The prevalence of ICU patients varies among studies and can affect up to 80% of critically ill patients on mechanical ventilation^(3,5).

At the study site, the patients presented with respiratory failure, which impaired weaning and withdrawal of ventilatory support. The potential reasons for agitation would be the presence of the endotracheal tube, secretions and ventilator asynchrony. Patients on mechanical ventilation may not be able to communicate their needs to the health care team. The inability to communicate is also described as a risk factor for delirium⁽¹⁾.

In addition to mechanical ventilation, the use of sedatives and psychotropic medications has a high relation with delirium, 39% (n=7). In clinical practice, sedatives, benzodiazepines, antipsychotics and emergency medications are frequent used in ICUs. When the patient presents with some type of disorientation or agitation,

antipsychotic medications are the first choice followed by sedatives, which in turn makes it difficult to diagnose delirium as the problem is masked.

Some studies^(6,9) evaluating the development and exacerbation of delirium related to drug use have found that benzodiazepines (midazolam, lorazepam, diazepam) may cause paradoxical agitation, hostility, aggression and confusion, and narcotics negatively affect cognition and aggravate this disorder.

The sedative and opioid agents, widely used in ICUs, represent an important subgroup of medications known to cause delirium. In a study conducted in Denmark, patients who received fentanyl were ten times more likely to present with cognitive impairment, and the use of lorazepam was associated with an increased risk of delirium⁽⁹⁾. Prophylactic use of haloperidol in patients at high risk for this syndrome may reduce complications.

Other drugs commonly used in intensive care, such as propofol, meperidine, morphine and anticholinergics (such as atropine and hyoscine) have also been shown to have potential in delirium development. The purpose of sedation is to maintain a cooperative calm patient, with adequate sleep, without pain and minimal anxiety. However, excessive sedation depresses cardiorespiratory function, decreases intestinal motility, increases the risk of mechanical ventilation-related pneumonia, as well as increasing the length of ICU stay⁽⁹⁾.

In addition, risk factors for delirium and sleep disorders overlap in the ICU setting, including medications, such as benzodiazepines, which decrease slow-wave sleep, leading to severe sleep fragmentation. Thus, it is plausible that delirium may also be precipitated by sleep deprivation⁽⁴⁾.

Another potential predisposing factor for delirium is sleep deprivation. In the current study, 27% (n=5) of the patients with sleep deprivation presented with delirium, revealing a relevant relationship compared to other predisposing factors. It is known that sleep deprivation influences recovery, the ability to resist infections,

causes neurological and respiratory problems, and may prolong the duration of ventilation and stay in the ICU.

In ICU context, several factors are related to sleep deprivation in critical patients, including environmental factors, such as: noise, brightness and care activities; intrinsic factors related to the patient and his / her acute illness and / or injury; and those related to ongoing treatment, such as ventilatory support and drug therapy. Despite the identification of these factors, the exact role of each of them in the critical patient's sleep is still unknown^(9,15).

In this context, it is imperative that real importance is given and attention is paid so that the environment in the nocturnal period is calm and the lights dimmed in order to provide effective sleep. When the ICU environment is not considered, patients admitted to the ICU are likely to have reduced quality of sleep, with fragmentation and other possible disorders.

It is known that sleep deprivation causes inattention, fluctuation of mental capacity and cognitive dysfunction, characteristics that are also present in patients with delirium. Moreover, neurohormonal changes and anatomical structures are also involved in delirium and sleep disturbances^(2,4).

Ratifying what was presented in the literature, the majority of patients in this study presented with disorientation at night, with recurrent episodes of delirium which often led to adverse events. Therefore, this study confirms that sleep deprivation is a potential risk.

In the current study, 22% (n=4) of the patients had hydroelectrolytic changes and delirium. Hydroelectrolytic alterations^(4,9) were mostly reported in renal patients, who are already hospitalized due to their comorbidity and, ultimately present with other factors that also cause delirium. The cited studies do not justify the relation of hydroelectrolytic changes with this syndrome but include them as risk factors.

In addition to hydroelectrolytic changes, smoking was also evaluated and only 6% (n=1) of the study patients were smokers. This single smoker developed delirium and sometimes

requested smoking during his periods of disorientation. Smoking is also recognized as a risk factor for agitation, contributing to unfavourable prognosis⁽⁴⁾.

The importance of the implementation and monitoring of delirium cannot be underestimated, as during the study the identification of the patients with the syndrome was a problem as this is not an implemented practice in the studied scenario. A study⁽⁷⁾ on the implementation of the evaluation of delirium by nurses in an ICU was effective in reducing the use of sedation drugs, physical restraint and was successful in the improved management of aspects related to the ICU environment, such as luminosity and noise level, due to the influence of the interventions prescribed by the nurses.

Monitoring delirium in the ICU is important not only as an indicator of an organic dysfunction but also for the prevention of adverse events. Thus, safe care is promoted, allowing the ICU team to implement preventive and therapeutic measures to provide adequate rehabilitation and potentially decrease the losses related to quality of life⁽⁴⁾.

Adverse events can be defined as an undesirable occurrence arising from the care provided (directly or indirectly) to the patient and that results in damage or impairment to their health condition⁽¹⁷⁾. In this study, it was identified that the unplanned withdrawal of the nasogastric tube presented the highest rate of adverse event 22% (n=4). Nasogastric tube removal was seen several times and with the same patient, even on the same shift. The removal of the nasogastric tube was reported in the medical records, at various times, and its occurrence as more frequent during the night services.

However, the occurrence of this event is detrimental to the patient because it prolongs the hospitalization time. In addition to the adverse events, the occurrence of some incidents is also evident in clinical practice. An incident refers to the "[...] event or circumstance that could have resulted or resulted in unnecessary harm to the patient"^(17: 477), such as the physical restraint of a patient. In most cases the delirious patient

needs to be restrained and often gets even more agitated when physical restraint is used, which can cause skin lesions, sleep deprivation and even the removal of devices.

During the study, it was noticed that some patients needed to be physically restrained. Among these patients, 22% (n=4) had delirium. Physical restraint may be necessary in several situations in order to avoid adverse events. However, good communication between the nurse and the multidisciplinary team is recommended in order to apply this type of restriction in the most careful way⁽¹⁰⁾. In some countries, such as Denmark, physical restraint can only be used with the permission of a psychiatrist⁽¹⁾.

In a study⁽⁹⁾ which aimed to understand intensive care from the patient's point of view, mentioned physical restriction in the bed as an unsatisfactory perception of hospitalization time, related to unpleasant or unfavorable experiences and feelings. It also recommended that physical restraint should only be used when it is the only possible way to prevent harm to the patients or to others, and should not be prolonged, nor used for disciplining, punishing or coercion or for the convenience of the team⁽⁹⁾.

As seen in the current study, 17% (n=3) of the patients had worse prognosis, which constitutes these occurrences as chain events. Discussions on patient safety have gradually increased in the scientific and health care setting due to the frequency of adverse events in hospital institutions⁽¹⁸⁾ and have encouraged professionals to have more differentiated perspectives and be more thorough in order to minimize adverse events and provide better prognosis.

In the absence of delirium adverse events are fewer, compared to events in patients with delirium. This leads to the finding that delirium has a great association with the occurrence of adverse events in intensive care patients⁽¹⁹⁾.

When the team is involved in the early diagnosis of delirium and makes use of the validated instruments and well-structured protocols, it is possible to think about early identification and prevention strategies. Some of the strategies

described, such as non-pharmacological sleep protocol, early mobilization and early removal of catheters and restraints, ventilatory weaning and correction of dehydration and electrolytes, have been shown to be effective in the prevention and treatment of this syndrome⁽⁶⁾.

In addition to these measures, we have recently proposed a strategy based on the ABCDEF algorithm, which has been recommended as a way to encourage interdisciplinary collaboration and the implementation of a standardized approach. This strategy consists of: A - awakening; B - breathing; C - coordination; D - delirium monitoring; E - physical exercise / early mobility; Engagement and Family Empowerment in the ICU^(8,20).

Nurses who work in the ICU need to be trained in its application as they can work with the team and with the family educational processes. This contributes to better quality care, through the early identification of the dysfunction that determines the causes, allows the identification of the predisposing factors, prevents adverse events and allows the planning of therapeutic interventions together with the multiprofessional team^(1,6-7).

The following are considered limitations of the study; the short period of data collection, the non-implementation of the routine as a routine evaluation of delirium in the sector under study, and the reduced staff numbers, which did not allow the CAM-ICU to be applied at night, which may have resulted in underestimating the rate found.

Conclusion

During the study, it was possible to identify and relate predisposing factors and occurrences of adverse events to delirium. The presence of this multifactorial dysfunction was evident in patients with a greater number of predisposing factors, such as mechanical ventilation, psychotropic medications, sleep deprivation and smoking. It was concluded that the main adverse event associated with delirium was the unplanned withdrawal of invasive devices, exposing the

patient to higher risks and, consequently, an increase in hospitalization time.

It is recommended that institutions have an early detection protocol that is based on the identification of risk factors. The existence of this protocol, rules or routine based on the prevention and treatment of delirium, allows the multidisciplinary team to plan care for patients who are at risk of developing delirium, understand which factors are predisposing and the adverse events that may occur, and thus direct care with the control and balance in order to prioritize patient safety.

Once again, it is highlighted that delirium must cease to be underdiagnosed and underestimated, and the predisposing factors and preventing adverse events must be considered, as it is the cause of longer hospitalizations, the use of mechanical ventilation and mortality.

This study is important to health academics and their knowledge, who will experience this subject as well as to the professionals who already work the care setting but have no implemented protocols and do not know how to deal with the patient. Thus, it will benefit the teaching and the improvement of the professionals, as well as improving the care given to these individuals. In the scope of scientific research, the assessment of predisposing factors and adverse events related to delirium will contribute to the research, having a theoretical and practical basis in the performed study. Therefore, change is a matter of attitude, and nurses are on the front lines positively adding to this reality. Delirium is an emergency and needs to be recognized.

Collaborations:

1. conception, design, analysis and interpretation of data: Monique Hellen Oliveira da Silva, Flavia Giron Camerini and Danielle de Mendonça Henrique;

2. writing of the article and relevant critical review of the intellectual content: Luana Ferreira de Almeida, Andrezza Serpa Franco and Sandra Regina Maciqueira Pereira;

3. final approval of the version to be published: Monique Hellen Oliveira da Silva and Flavia Giron Camerini.

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