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Characterization of the sedation and analgesia in Intensive Care Unit: an observational study

Karina Dantas dos Santos[1], Ivo da Costa Martins[1], Fernanda Alves Ferreira Gonçalves[1]

1 Clinic Hospital of Federal University of Goiás

ABSTRACT

Aim: to evaluate the process of sedation and analgesia in patients undergoing invasive mechanical ventilation (IMV). **Method:** cross-sectional, observational study conducted from September 2014 to February 2015 in the ICU of a teaching institution in Goiânia/GO. The sample consisted of 30 patients over 18 years old, intubated and sedated for more than 24 hours (protocol no. 763.827/2014). **Results**: continuous and intermittent sedation, and analgesia were used, with fentanyl and midazolam hydrochloride commonly used drugs. **Discussion:** the standard treatment for critically ill patients and submitted to IMV was continuous sedation administered due to anxiety in order to facilitate the nursing staff care. The main indication for sedation was the maintenance of IMV. **Conclusion:** lack standardization of approaches in the management of sedation. It is recommended to develop protocols with multidisciplinary effort.

Descriptors: Hypnotics and Sedatives; Intensive Care; Analgesia; Deep Sedation.

INTRODUCTION

Hospitalization in the Intensive Care Unit (ICU) is usually associated with several invasive procedures (mechanical ventilation (MV), endotracheal intubation, bladder and enteral catheterism, venous and arterial punctures). This environment is uncomfortable due to the use of intensive monitoring equipment and environmental noise[1].

Critical patients are often anxious, agitated, confused, in pain, caused by immobility, injury and/or wounds, and therefore by the adverse environment that surrounds the ICUs. Often there is need to initiate analgesia and sedation as a way to reduce discomfort. In this context, therapeutic, pharmacological and environmental behavior should be considered in order to minimize responses to the environment and to stimuli[2,3].

Therefore, it is necessary to early identification and appropriate management of the possible underlying causes of agitation (pain, delirium, hypoxia, hypoglycemia, hypotension, alcohol withdrawal syndrome and other drugs) [4]. Note that both pain and anxiety generate situations of intense acute stress in the human body; humoral response is characterized by an increase in circulating levels of catecholamines, glucagon and cortisol. The metabolic effects of the response of these hormones to stress results in increased oxygen consumption, hyperglycemia, protein and lipid hypercatabolism, water retention and renal clearance of potassium. Therefore, the use of sedation and analgesia requires careful and accurately monitoring achieved in the assessment of sedation levels in order to avoid deep sedation, decrease the time of MV and hospitalization, and therefore reduce hospital costs [5].

Sedation attenuates the physiological response to stress, positively favoring the patient's prognosis. When combined with analgesia is an essential therapy in preventing post-traumatic stress syndrome in the ICU[1]. Thus, the sedatives are commonly used as adjuvants of anxiety and agitation therapy; some patients require sedation to keep sync with the MV [6].

It should also be noted that, in the context of ICU, it is customary to maintain patients with a high level of sedation, totally disconnected from the surrounding. However, nowadays the difference in the analysis of sedation is evident, as it seeks to promote patient comfort, but keeping it open to awaken easily. This can be achieved when aims to achieve a sedative effect with minimal drug or combination. However, achieving adequate but not excessive sedation in critically ill patients is a complex process due to, among other factors, the metabolism of these drugs are unpredictable [1,3].

Faced with this, the patient in sedative therapy should be evaluated daily by the multidisciplinary team so that treatment may be beneficial to his recovery. The need for constant monitoring of parameters of pain, sedation and agitation reflects the dynamic nature of the critical patients. Furthermore, frequent reevaluation promotes accurate monitoring of treatment response, facilitating the management of undesirable signs and symptoms, and avoiding excessive sedation[3]. In this context, it highlights the work of the nursing staff to provide care to the patient sedated and the use of established sedation protocols that can reduce mortality, and time of MV and hospitalization[1,7,8].

The evaluation of these patients requires objective measures, reliable and reproducible for the depth of sedation control and for effective analgesia. Both excessive and insufficient sedation are harmful, so for most patients, sedation targets aim to alleviate anxiety, promote sleep, enabling the nursing

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care and the MV, and reduce the consumption of myocardial oxygen[3,9]. Therefore, the ideal scale to assess sedation levels should guide the titration of therapy and have validity and reliability [6,10].

The Ramsay scale is the most commonly used in the ICU as a unidimensional instrument based on clinical criteria. It is characterized numerically with scores ranging from 1 to 6 and thus evaluates the patient responses graded according to the level of sedation [1,6,10].

The Richmond Agitation-Sedation Scale - RASS covers precisely the level of agitation and anxiety and it is configured in a superior manner to the Ramsay scale[5]. Besides, it is one of the most valid assessment tools, both relevant and reliable in measuring the quality and depth of sedation in critically ill adult patients. It is also likely to be used in clinical practice and protocols in order to minimize the negative impacts of excessive sedation and agitation[4,10].

As a sedation target, it is expected to calm the patient who can be easily awakened while maintaining normal sleep-wake cycle. However, some patient require deep sedation to promote synchrony with the MV[6].

In clinical practice there is still a stigma attached to the fact that deep sedation is supposedly better for critical patient to support stimuli inherent to the ICU. It is common to associate it with convenient conditions for the practice of nursing, so there is legitimate consideration of the real needs of patients. Therefore, it is necessary to maintain adequate levels of sedation, standardize procedures and conduct thorough neurological monitoring to ensure quality care, which justifies this study.

This research aims to assess the process of sedation in patients undergoing invasive mechanical ventilation (IMV).

METHOD

Cross-sectional, observational study carried out between September 2014 and February 2015 in the ICU of a large public teaching institution, located in Goiânia/GO. During this period 278 patients were admitted.

Were included patients over 18 years old, admitted for clinical and/or surgical treatment, intubated and sedated for more than 24 hours and in need of IMV. Were excluded patients over 18 years old in use of neuromuscular blockers, continuously in infusion pump, diagnosed with amyotrophic lateral sclerosis (ALS), myasthenia gravis, Guillain Barré and other neuromuscular diseases.

Data collection was conducted through structured and participant observation, using an instrument called "Monitoring Form Patient sedated" after previous completion of the pilot test. To characterize the effect of the sample general data was collected, such as name, date of birth, gender, ethnicity, medical record number, date of admission to the hospital and ICU, comorbidities, type of admission, cause of admission, discharge data and indexes of prognosis and severity. It was also evaluated with this a checklist instrument of analgesia-sedation which included daily information for each patient on the level of consciousness (through the scale of RASS[12] and Glasgow Coma Scale[13]), agents used, type of infusion (continuous or intermittent), and reason for sedation.

On the scale of RASS, the alert and calm patient receives a score of 0 (zero). There are four agitation levels (ranging from restless to aggressive) graded in increasing order from one to four, and there are five levels of sedation scored from one to five negative where, for example, deep sedation (when the patient move or opens his eyes only with physical stimulation) equals -4 (four negative); if not arousable, the patient gets RASS -5 (five negative) [12].

The severity and prognosis indices are important tools that enable minutely analyze the clinical condition of critically ill patients. In this context, we have highlighted the Acute Physiology and Chronic Health Evaluation II (APACHE II), for example, which classifies patients according to the deviation of 12 measured physiological variables and checks mortality risk, the Simplified Acute Physiology Score 3 (SAPS 3), which also makes an estimation of the risk of death, and the Sequential Organ Failure Assessment (SOFA), which assesses the risk of organ dysfunction[13, 14, 15]. In this study, the indices were collected from medical records on the day of ICU admission (Day 0).

The study was approved by the Research Ethics Committee of the Hospital das Clinicas of Federal University of Goiás, protocol number 763,827/2014. The legal guardians of the patients were informed about the research and only after the formal release, by signing the Informed Consent (IC), were the data collection instruments filled up.

The data collection was typed up using the Statistical Package for Social Sciences (SPSS) program, version 20 for Windows. We conducted data analysis through absolute and relative frequencies, as well as measurement of central tendency (median and standard deviation).

RESULTS

The study included 30 patients, totaling 565 days of hospitalization (corresponding to the result of the sum of days of hospitalization of 30 patients included in the study) and 263 days of continuous use of sedatives (result of the sum of the time that the 30 patients were in use sedatives). It is characteristic of this ICU admit patients predominantly in the immediate postoperative period from surgery and hemodynamic center. Most of them stayed less than 24 hours in the ICU, which justifies the small sample size and the period of data collection.

There was a predominance of men, with an average age of 61 years (σ ± 15.4 years) with acute respiratory failure **(Table 1)**.

Table 1 - Socio-demographic characteristics and clinical data of patients admitted to the ICU from September 2014 to March 2015 (n=30). Goiânia, 2015.

Characteristics	n (%)
Gender	
Male	16 (53,3)
Female	14 (46,7)
Age (years)	
20-35	02 (6,7)
36-50	06 (20,0)
51-65	09 (30,0)
>65	13 (43,3)
Admission reason	
Clinical	21 (70,0)
Emergency surgery	05 (16,7)
Elective surgery	04 (13,3)
Hospitalization reason	
Acute Respiratory Failure	06 (20,0)
Sepsis	05 (16,7)
Neurological disorders	04 (13,3)
Cardiovascular disorders	04 (13,3)
Postoperative monitoring	03 (10,0)
Liver disorders	02 (6,7)
Vascular	02 (6,7)
Digestive disorders	01 (3,3)
Renal/metabolic disorders	01 (3,3)
Haematological disorders	01 (3,3)
Postcardiorespiratory arrest	01 (3,3)
Length of Stay in ICU (days)	
2-7 days	09 (30,0)
8-15 days	07 (23,3)
>15 days	14 (46,7)
Type of discharge	
Death	19 (63,3)
Transfer	11 (36,7)
Comorbidities	
Yes	20 (66,7)
No	10 (33,3)
Diabetes Mellitus*	14 (42,4)
Systemic Arterial Hypertension*	10 (30,3)

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Chronic Renal Failure*	03 (9,1)
Stroke*	02 (6,1)
Neoplasia*	02 (6,1)
Congestive heart failure*	01 (3,0)
Hepatical ciffhosis*	01 (3,0)

**n= 33 Source: Own elaboration, 2015.*

The SOFA score achieved overall median of 11 (σ ± 3.8); the median APACHE II was 28.5 (σ ± 9.4) and SAPS3 was equivalent to 75 (σ ± 14.5). It was found that the average SOFA and the probability of death generated by APACHE II and SAPS3 indexes prognostic were not significantly different average in patients who died compared to those who were discharged from the ICU. However, the highest average SAPS 3 among patients who died can be justified because the profile of patients in this sample was formed by a majority of older and in a more serious condition **(Table 2)**.

Table 2 - Value of prognosis and mortality among patients who evolved to death versus patients who were discharged from the ICU. Goiânia, 2015.

Score	Averages death group	Averages discharge group
SOFA	10	9,7
SAPS3	73,7	68,8
APACHE II	27,6	26,8

Source: Own elaboration, 2015.

Factors related to the indication of sedation are shown in Table 3.

Table 3 - Factors for indication* of sedation in 30 patients. Goiânia, 2015.

Sedation reason	n (%)
Mechanical ventilation	28 (80,0)
Comfort	03 (8,6)
Prevent increase ICP**	02 (5,7)
Agitation	01 (2,8)
Palliative care	01 (2,8)

** In this analysis, it was found that some patients have more than one reason for the indication of sedation (n = 35).*
***ICP – intracranial pressure*
Source: Own elaboration, 2015.

The mode of administration by continuous infusion was present in 30 patients (100%), but 19 (63.3%) of them also received intermittent sedation for some time of ICU **(Table 4)**.

Table 4 - Continue sedation* schemes evaluated in 30 patients. Goiânia, 2015

Drugs	n (%)
Fentanyl	23 (56,1)
Midazolam and Fentanyl	17 (41,5)
Midazolam	01 (2,4)

** It has been found that some patients had more than one sedation scheme for this analysis (n=41). Source: Own elaboration 2015.*

The average fentanyl dose was 130 mcg/kg/day (σ ± 80 mcg/kg/day), while the average dose of midazolam was 4.68 mg/kg/day (σ ± 4.04 mcg/kg/day) **(Table 5).**

Table 5 - Analgesia-sedation* intermittent schemes evaluated in 30 patients. Goiânia, 2015.

Drugs	n (%)
Midazolam	13 (27,1)
Morphine**	12 (25,0)
Haldol***	09 (18,7)
Clonazepam	08 (16,7)
Propofol	02 (4,2)
Diazepam	02 (4,2)
Fentanyl	01 (2,1)
Lorazepam	01 (2,1)

** In the evaluations, it was found that patients received various analgosedation schemes (n=48).*
*** Administered for comfort and pain control (before dressing and bath in bed).*
**** Used as a therapeutic for agitation and anxiety.*
Source: Own elaboration, 2015.

The observed average was RASS -4 (σ ± 2.02). Among the 263 assessments performed, excessively high levels of sedation were observed in 162 days (61.6%) by the scale of RASS (RASS -4 or -5).

They showed up inappropriately low levels of sedation (RASS> 0) in 10 ratings (3.8%). There were also complications associated with agita-

tion during which the mechanical restraint was implemented four times **(Table 6)**.

Table 6 - Adverse events related to agitation during the sedation period (n=16). Goiânia, 2015.

Intercurrences	n (%)
Inadvertent withdrawal of enteral catheter	07 (43,7)
Asynchrony with MV	05 (31,2)
Accidental extubation	03 (18,7)
Kinking of EVD*	01 (6,2)

**External Ventricular Drain*
Source: Own elaboration, 2015.

The average number of days with and without continuous use of sedative was 16.96 (σ ± 6.56) and 6.86 (σ ± 8.3) respectively, while the Glasgow Coma Scale averaged 7 (σ ± 5.6).

DISCUSSION

It is estimated that 42% to 52% of ICU admissions are elderly patients[17]. The analysis of the age of the study participants has shown that the data observed corroborates with earlier studies and pointed to a clientele with most elderly in ICUs[18,17].

The predominant length of stay in the sample was more than 15 days, but there is no consensus in the literature about the prolonged ICU stay. This was supposedly justified by the fact that most studies were performed in units with mixed sample, ie, clinical and surgical [19].

Sedation is a key component in the care of critically ill patients and therefore submitted to MV[20, 19, 9]. Sedatives in intubated patients are usually administered due to anxiety and to facilitate the care of the nursing staff[9]. This study noted that the main indication for sedation maintain artificial ventilation.

Sedatives should be administered intermittently or according to the patient's need. The bolus infusion of certain drugs should be performed with caution, especially in patients breathing spontaneously, due to the probability of causing respiratory depression [6]. Intermittent sedation was used, but found complications were not related to this type of infusion.

In Brazil, a cross-sectional study found that midazolam and fentanyl were the most widely used sedative agents (97.8% and 91.5%, respectively), with propofol in third place (55%) [22].

Sedation with benzodiazepines can increase the length of stay in ICU, while opioids can produce sedative effects but do not diminish intense wakefulness and have no amnesia effect in case of stressful procedures. Without amnesia, most patients who leave the ICU have symptoms of post-traumatic stress[4,6]. Fentanyl, a short-acting opioid, may have an immediate sedation effect and give comfort to the patient[6] and has been widely used in the study unit.

The Ramsay scale is criticized for its lack of clear discrimination and specific descriptors to differentiate between the various levels, but it is widely used in clinical practice[6]. In the ICU studied, it is the predominant scale in medical and nursing records. RASS is perhaps the most extensively studied scale. It was validated for ability to detect changes in sedation during consecutive days of care in the ICU, as well as delirium [8].

It is imperative to emphasize that the implementation of the RASS scale enables more targeted therapeutic approaches to the various levels of agitation and anxiety - as it is more accurate, has added more validity and reliability for measuring the quality and depth of sedation in adult patients critically ill[4,5], which justified its implementation in the evaluation of patients included in this study.

Adequate levels of sedation (Ramsay 2

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to 4 and RASS 0 to -3) are associated with ICU discharge, thus maintaining minimum levels of sedation are related to favorable clinical outcomes[5,4]. However, there was a greater tendency to maintain deep levels of sedation which may relate to mortality, extending the length of stay in ICU, making it expensive.

It is recommended that the sedative drugs are adapted and maintained to a light level of sedation in adult ICU patients, unless there is clinical contra-indication. For example, in patients with increased intracranial pressure or patients with difficult ventilation is needed complete sedation (Ramsay 5-6). In addition, the recommended level of sedation can vary depending on the severity of the disease [4,3].

The extremely deep sedation and analgesia deficient in painful procedures should be avoided. As in this study, there are other evidences of a large proportion of patients in profound sedation[23,22,25,26].

In a systematic review, it was found that 40% to 60% of performed sedation assessments are considered deep and more than 20% of patients have a suboptimal sedation (too deep or too light). The authors suggested a uniform approach to monitor the depth and quality of sedation that will improve health care[25]. The risk of patients develop subsequent psychological change to the ICU was higher in patients sedated and underwent deep sedation levels and/or were prolonged[26]. From this perspective, it can be considered that the patients included in this study are susceptible to this risk.

Under the historical approach, it has been common to use benzodiazepines (i.e. midazolam and lorazepam) for sedation of patients in intensive care. However, they should be used, preferably, the sedation schemes that include non-benzodiazepine sedative drugs (propofol or dexmedetomidine) to benefit the clinical outcomes in critical patients who are under MV[4]. However, in clinical practice, benzodiazepines are the most commonly used sedative and have anxiolytic, hypnotic and amnesic effect[25]. There was also a preference for the use of benzodiazepines such as midazolam in continuous sedation schemes in combination and, mainly in the intermittent infusion mode. You can see the discrepancy between what is recommended in the guidelines and what is implemented in practice.

In this study, the average number of days of continuous use of sedative was 16.96, which can be considered high, because patients who use opioids or sedatives for another week may develop dependence, while the rapid removal of these agents can cause abstinence[6].

The potential for opioid, benzodiazepines, and propofol abstinence must be considered after use for more than seven days of continuous treatment. The guidelines also state that frequent reassessment of the patient's sedation on the need for infusion can prevent the extension of the sedation effects [6]. In this sense, it's highlighted as fundamental the role of the nurse in the continuous evaluation of the level of consciousness of the sedated critical patient, and it is necessary to enroll this professional as a participant by the multidisciplinary team in therapeutic decisions regarding sedation schemes used.

When sedation is done without standardizations and when managed the clinical criteria, patients stay longer in MV and ICU. In addition, these patients remain awake for less time, hindering proper neurologic evaluation[27]. It appears as problematic to find the lack of strategies and sedation goals [25].

Recent studies have been conducted to improve the sedation and analgesia plan with patients undergoing MV, and the results show that simple strategies such as the use of institutional protocols and daily interruption

of sedation by continuous infusion results in a decreased time of MV and ICU stay[7,8,25,26]. Although there is evidence available, the best sedation practices are still heterogeneous and deployed on a small scale worldwide. It is imperative to change this remarkable discrepancy between research and practice [28].

CONCLUSION

This study showed that sedation was part of the patient's therapy in mechanical ventilation. The sample was predominantly of men aged on average 61 years old.

Regarding sedation schemes, there wasn't standardization in the service regarding the dosages and types of medication were mainly used a continuous infusion of fentanyl and midazolam, alone and associated.

Patients on a continuous sedation scheme had an average RASS -4, which means that they had excessive levels of sedation in 162 days, which may interfere with ventilatory weaning, increased duration of mechanical ventilation, risk of infection, and delirium.

It is noticed that there is a certain distance from the multi-professional team regarding sedation. It is worth noting that nurses use this service in their assessments Ramsay scales to assess sedation and Glasgow to assess the level of consciousness.

In the unit where the study was conducted, the development of sedation or sedation interruption protocol is recommended, one that includes a multidisciplinary effort to avoid deep sedation and/or prolonged that is deleterious. However, it is essential staff awareness for adherence to protocol, so they may develop strategies that enable this process to contribute to the quality of care and the reduction of hospital costs.

It is recommended the elaboration of studies with larger sample and include associations between severity scores and Nursing Activities Score (NAS)[29].

REFERENCES

1. Luna, AA, Sousa WA, Ferraz VM. Avaliação de *delirium* em pacientes em uso de sedativos. Rev Rede de Cuidados em Saúde. 2011; 5(1): 1- 11.
2. Nasraway SAJ, Jacobi J, Murray MJ, Lumb PD. Sedation, analgesia, and neuromuscular blockade of critically ill adult: Revised clinical practice guidelines for 2002. Critical Care Med. 2002; 30(1): 117-118.
3. Miranda ML, Bersot CD, Villela NR. Sedação, analgesia e bloqueio neuromuscular na unidade de terapia intensiva. Rev HUPE. 2013; 12(3): 102-109.
4. Barr J, Fraser LG, Puntillo K, Ely WE, Devlin JW, Kress JP, et al. Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit. Critical Care Med. 2013; 41(1): 263-306.
5. Mendes CL, Vasconcelos LCS, Tavares JS, Fontan SB, Ferreira DC, Diniz LAC, et al. Escalas de Ramsay e Richmond são equivalentes para a avaliação do nível de sedação em pacientes gravemente enfermos. Rev Bras Terap Intensiva. 2008; 20(4): 344-348.
6. Jacobi J, Gilles LF, Douglas BC, Richard RR, Dorrie F, Eric TW, et al. Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult. Critical Care Med. 2002; 30(1): 119-141.
7. Minhas MA, Velasquez AG, Kaul A, Salinas PD, Celi LA. Effect of Protocolized Sedation on Clinical Outcomes in Mechanically Ventilated Intensive Care Unit Patients: A Systematic Review and Meta-analisys of Randomized Controlled Trials. Mayo Clinic Proceedings. 2015; 90(5): 613-623. [included in the review]
8. Scott B, Eckle T. The impact of sedation protocols on outcomes in critical illness. Annals of Tanslational Medicine. 2016; 4(2): 33-36. [included in

the review]
9. Kress JP, Hall JB. Sedation in the mechanically ventilated patient. Critical Care Med. 2006; 34(10): 2541-2546.
10. Barra DCC, Nascimento RP, Bernardes JFL. Analgesia e sedação em terapia intensiva: recomendações gerais. Rev Min Enferm. 2006; 10(2): 176-180.
11. Yousefi H, Toghyani F, Yazdannik AR, Fazel K. Effect of using Richmond Agitation Sedation Scale on duration of mechanical ventilation, type and dosage of sedation on hospitalized patients in intensive care units. Iranian Journal of Nursing and Midwifery Research. 2015; 20(6): 700-704. [included in the review]
12. Ely EW, Truman B, Shintani A, Thomason JWW, Wheeler AP, Gordon S, et al. Monitoring Sedation Status Over Time in ICU Pacients: Reliability and Validity of Richmond Agitation-Sedation Scale (RASS). Journal of The American Medical Association (JAMA). 2003; 289(22): 2983-2991. [included in the review]
13. Teasdale G, Jennett B. Assessment of Coma and Impaired Consciousness. Lancet. 1974; 304(7872): 81-84. [included in the review]
14. Knaus WA, Draper EA, Wagner DP, Zimmerman JE. APACHE II: a severity of disease classification system. Crit Care Med. 1985; 13(10): 818-829. [included in the review]
15. Metnitz PG, Moreno RP, Almeida E, Jordan B, Bauer P, Campos RA, et al. – SAPS 3 – From evaluation of the patient to evaluation of the intensive care unit. Part 1: Objectives, methods and cohort description. Intensive Care Med. 2005; 31:1336-1344. [included in the review]
16. Vincent JL, Moreno R, Takala J, Willatts S, De Mendonça A, Bruining H, et al. The SOFA (Sepsis-related Organ Failure Assessment) score to describe organ dysfunction/failure. On behalf of the Working Group on Sepsis-Related Problems of the European Society of Intensive Care Medicine. Intensive Care Med. 1996; 22(7): 707-710. [included in the review]
17. Schein LE, Cesar JA. Perfil de idosos admitidos em unidades de terapia intensiva gerais em Rio Grande, RS: resultados de um estudo de demanda. Rev Bras Epidemiol. 2010; 13(2): 289-301
18. Juncal VR, Britto LAN, Camelier AA, Messeder OHC, Farias AMC. Impacto clínico do diagnóstico de sepse à admissão em UTI de um hospital privado em Salvador, Bahia. J Bras Pneumol. 2011; 37(1): 85-92.
19. Oliveira ABF, Dias OM, Mello MM, Araújo S, Dragosavac D, Nucci A, et al. Fatores associados à maior mortalidade e tempo de internação prolongado em uma unidade de terapia intensiva de adultos. Rev Bras Ter Intensiva. 2010; 22(3): 250-256.
20. Strom T, Martinussen T, Toft P. A protocol of no sedation for critically ill patients receiving mechanical ventilation: a randomised trial. Lancet. 2010; 375 (9713): 475-80.
21. Tanaka LMS, Azevedo LCP, Park M, Schettino G, Nassar APJ, Réa-Neto A, et al. Early sedation and clinical outcomes of mechanically ventilated patients: a prospective multicenter cohort study. Critical Care. 2014;18(4):R156.
22. Salluh JI, Dal-Pizzol F, Mello PV, Friedman G, Silva E, Teles JM, et al. Brazilian Research in Intensive Care Network. Delirium recognition and sedation practices in critically ill patients: a survey on the attitudes of 1015 Brazilian critical care physicians. J Crit Care. 2009; 24(4): 556-62.
23. Mehta S, McCullagh I, Burry L. Current sedation practices: lessons learned from international surveys. Anesthesiol Clin. 2011; 29(4): 607-624.
24. Shehabi Y, Chan L, Kadiman S, Alias A, Ismail WN, Tan M, et al. Sedation depth and long-termmortality in mechanic ally ventilated critically ill adults: a prospective longitudinal multicentre cohort study. Intensive Care Med. 2013; 39: 910-918.
25. Jackson DL, Proudfoot CW, Cann KF, Walsh TS. The incidence of sub-optimal sedation in the ICU: a systematic review. Critical Care. 2009; 13(6): 1-14.
26. Costa JB, Marcon SS, Macedo CRL, Jorge AC, Duarte PAD. Sedação e memórias de pacientes submetidos à ventilação mecânica em unidade de terapia intensiva. Rev Bras Ter Intensiva. 2014; 26(2): 122-128.
27. Trikha A, Rewari, V. Sedation, Analgesia and Muscle Relaxation in the Intensive Care Unit. Indian Journal of Anaesthesia. 2008; 52(5): 620-631.

28. Shinotsuka CR, Salluh JIF. Percepções e práticas sobre *delirium*, sedação e analgesia em pacientes críticos: uma revisão narrativa. Rev Bras Ter Intensiva. 2013; 25(2): 155-161.
29. Queijo AF, Padilha KG. Nursing Activities Score (NAS): adaptação transcultural e validação para a língua portuguesa. Revista da Escola de Enfermagem da USP. 2009; 43(esp): 1018-1025. [incluída na revisão]

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