ADHESION OF NURSING TO THE BLOOD CURRENT INFECTION PROTOCOL
ADESÃO DA ENFERMAGEM AO PROTOCOLO DE INFECÇÃO DE CORRENTE SANGUÍNEA
ADHESIÓN DE LA ENFERMERÍA AL PROTOCOLO DE INFECCIÓN DE CORRIENTE SANGUÍNEA

Natiele Crivelaro1, Ligia Marcia Contrin2, Lucia Marinilza Beccaria1, Isabela Shumaher Frutuoso1, Ana Maria Silveriva1, Alexandre Lins Werneck2

ABSTRACT
Objective: to verify the adherence of the nursing team to the protocol of bloodstream infection in patients using intravascular catheters. Method: A quantitative, field, cross-sectional, observational and descriptive study was carried out in a specialized teaching hospital in six intensive care units. Nurses' checklists were used at the bedside, in the morning, afternoon and evening shifts, from May to August, 2017. Initial (baseline) characteristics were described with counts (%), averages (SD) or medians (IQR) when appropriate. Results: It was verified, in relation to the central venous catheter / peripheral venous access dressing, that 866 (91.64%) were correctly identified and 22 (2.33%) were dirty; 803 (84.97%) were correctly fixed and 11 (1.06%) were wet. Regarding identification, the teams were correct (n = 647; 68.47%) and the colored ribbons were present in 643 (68.04%). During ICU stay, 20 (2.12%) patients had bloodstream infection related to the use of a central catheter. Conclusion: high adherence of the nursing team to the protocol and low index of bloodstream infection related to the central venous catheter when compared with the literature. Descriptors: Nursing team; Clinical Protocols; Blood flow; Patient safety; Catheter-Related Infections.

RESUMO
Objetivo: verificar a adesão da equipe de Enfermagem ao protocolo de infeção de corrente sanguínea em pacientes em uso de cateteres intravasculares. Método: estudo quantitativo, de campo, transversal, observational e descritivo, desenvolvido em um hospital de ensino de porte especial, em seis unidades de terapia intensiva. Foram utilizados checklists preenchidos por enfermeiros à beira do leito, nos turnos matutino, vespertino e noturno, de maio a agosto de 2017. Características iniciais (basais) foram descritas com contagens (%), médias (DP) ou mediana (IQR) quando adequadas. Resultados: verificou-se, em relação ao cateter venoso central / acesso venoso periférico, que 866 (91,64%) estavam identificados corretamente e 22 (2,33%) estavam sujos; 803 (84,97%) estavam fixados de forma correta e 11 (1,06%) estavam úmidos. Em relação à identificação, os equipos estavam corretos (n=647; 68,47%) e as fitas coloridas estavam presentes em 643 (68,04%). Durante a permanência na UTI, 20 (2,12%) pacientes tiveram infecção de corrente sanguínea relacionada ao uso de cateter venoso central. Conclusão: constatou-se alta adesão da equipe de Enfermagem ao protocolo e baixo índice de infeção de corrente sanguínea relacionada ao cateter venoso central quando comparado com a literatura. Descritores: Equipe de Enfermagem; Protocolos Clínicos; Corrente Sanguínea; Segurança do Paciente; Infecções Relacionadas a Cateter.

RESUMEN
Objetivo: verificar la adhesión del equipo de Enfermería al protocolo de infección de flujo sanguíneo en pacientes en uso de catéteres intravasculares. Método: estudio cuantitativo, de campo, transversal, observacional y descriptivo, desarrollado en un hospital de enseñanza de porte especial, en seis unidades de terapia intensiva. Se utilizaron chequeos llenados por enfermeras a la cama, en los turnos matutino, vesperino y nocturno, de mayo a agosto de 2017. Las características iniciales (basales) se describieron con recuentos (%), medias (DP) o mediana (IQR) cuando adecuadas. Resultados: se verificó, en relación al catéter del veno central / acceso venoso periférico, que 866 (91,64%) estaban identificados correctamente y 22 (2,33%) estaban sucios; 803 (84,97%) estaban fijados de forma correcta y 11 (1,06%) estaban húmedos. En cuanto a la identificación, los equipos eran correctos (n=647; 68,47%) y las cintas coloreadas estaban presentes en 643 (68,04%). Durante la permanencia en la UTI, 20 (2,12%) pacientes tuvieron infección de corriente sanguínea relacionada al uso de catéter central. Conclusión: se constató alta adhesión del equipo de Enfermería al protocolo y bajo índice de infección de corriente sanguínea relacionada al catéter venoso central en comparación con la literatura. Descriptores: Grupo de Enfermería, Protocolos Clínicos, Circulación Sanguínea; Seguridad del Paciente; Infecciones Relacionadas a Cateter.

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INTRODUCTION

It is understood that protocol is a specific care / care situation that contains operational details and specifications about what, who, and how it is done, leading professionals to decisions about care for the prevention, recovery or rehabilitation of health. They must have good formal quality, be easy to read, valid, reliable, correctly used and proven effective. All of this implies a rigorous construction process, adaptation to the local reality, as well as follow-up through indicators of use and effectiveness.1

It is known that a care indicator is related to bloodstream infections, which are increasingly represented by different pathophysilogy, in addition to the diagnostic, therapeutic, prognostic and preventive implications, and are therefore considered multifactorial.2 They are currently associated with hospitalization in long-term mechanical ventilation, invasive procedures, age, immunosuppression, use of antibiotics, basic diseases and nutrition.3

It is explained that primary bloodstream infections (PBSIs) are serious systemic infections, bacteremia or sepsis, with no detectable primary focus. The secondary is the occurrence of positive blood culture or clinical signs of sepsis in the presence of signs of infection elsewhere. Other infections related to vascular access are generally of lower severity than those of the bloodstream.2

In addition, the central venous catheter (CVC) plays an important role in the treatment of hospitalized patients, especially in critical conditions, in the Intensive Care Unit (ICU). This device aims to obtain physiological parameters and serves for the administration of drugs, blood and hydroelectrolytic solution. However, it represents a risk of infectious complications. Among them, local infection confirmed by colonization of the catheter and episodes of systemic infection that occur as a direct result of the presence of the device.4 From the handling until its removal, the responsibility is of the nurse and his team. Therefore, there is a need for knowledge, skills and training for the safe management of intravascular devices.5

It is reported that the occurrence of adverse events (AE) has a significant impact on the Unified Health System (UHS), resulting in an increase in morbidity and mortality, in the time of treatment of patients and in care costs, as well as repercussions in other fields of social life and economic.6

It is recalled that patient safety can be defined as preventing, preventing or improving adverse outcomes or injuries arising from the medical-hospital and home care process.7 The focus of patient safety is concern with the magnitude of the occurrence of AE.8

It is complemented that the most used intravascular device in the ICU is the CVC, being responsible for 90.0% of the ICS associated with the catheters. In these units, infection rates range from 18% to 54%, being approximately five to ten times greater than in another hospital stay, and their mortality rates show oscillations of 9% to 38% due to infections.9

OBJECTIVE

• To verify the adherence of the nursing team to the protocol of bloodstream infection in patients using intravenous catheters.

METHOD

This is a quantitative, cross-sectional, observational and descriptive study developed in a special education hospital in the interior of São Paulo, in six ICUs: General UHS (17 beds), Neurological (ten beds), Agreement (23 beds), Cardiology (24 beds), fifth floor SUS (20 beds) and Post Operative Unit (ten beds).

During daily multidisciplinary visits for the reduction of adverse events, IRAS and ICU mortality, checklists for the collection of information, filled by bedside nurses, were applied during the period from May to August, 2017. Were used, as references, protocols, norms and internal routines of the Nursing Service based on the National Patient Safety Program of the Ministry of Health and the recommendations of Hospital Infection Control (HIC).

It is described that the checklist consisted of 14 items with an emphasis on the identification of equipment, identifications and conditions of the central and peripheral access dressings, identification with colored ribbons in the access routes, and the protocol established was the Control Protocol for Infection Related to Health Care (Bloodstream Infection).

As inclusion criteria, all adult patients (≥18 years) with ICU stay longer than 48 hours were enrolled. Exclusion criteria were all patients who were on procedure at the time of data collection; patients admitted to the unit considering hospitalization less than three hours and patients with contraindication to the care provided.

Data was collected after approval by the Research Ethics Committee (REC), under Opinion No. 2,074,847, and the guidelines and

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norms recommended by Resolution No. 466/12 of the National Health / MS, which regulate research involving human subjects.

**RESULTS**

A total of 945 patients were investigated, of which 538 (56.93%) were male. The age group with the highest prevalence was 61 to 80 years old, with 427 (45.19%) participants, and the lowest was the age range of up to 20 years, with 19 (2.01%). Regarding the length of hospital stay, 680 (71.96%) were hospitalized for approximately 15 days in the ICUs. Regarding mortality, it was observed that 32,80% (310) died, according to table 1.

<table>
<thead>
<tr>
<th>Sex</th>
<th>N (945)</th>
<th>% (100%)</th>
<th>SD</th>
<th>SE</th>
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<td>56.93</td>
<td>92.63</td>
<td>3.01</td>
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<td>Female</td>
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<th>% (100%)</th>
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<td>21 to 40 years</td>
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<td>11.32</td>
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<tr>
<td>41 to 60 years</td>
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<td>28.89</td>
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<tr>
<td>61 to 80 years</td>
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<td>45.19</td>
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<tr>
<td>&gt; 80 years</td>
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<td>71.96</td>
<td>264.68</td>
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<td>16 to 30 days</td>
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<td>31 to 45 days</td>
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<td>46 to 60 days</td>
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It was found that, in relation to the CVC / AVP dressing, 866 (91.64%) were identified; 22 (2.33%), dirty; 803 (84.97%), correctly fixed and 11 (1.06%) wet. Regarding the identification, 647 (68.47%) teams were identified and the colored ribbons were present in 643 (68.04%) teams, according to table 2.
It was observed that, when crossing the dependent variable CVC / AVP IDENTIFIED with the independent variables "Age", "Sex" and "Time of hospitalization", the variable with the greatest explanatory power of the dependent variable was "Time of hospitalization" (p = 0.027). However, this variable presented a degree of statistical.

However, when the variable CVC / AVP-DIRT was crossed with the independent variables "Age", "Sex" and "Time of hospitalization", the results showed that only age (p = 0.012) presented evidence dependency statistics.

When we crossed the dependent variable CVC / AVP-SOLTO with the independent variables "Age", "Sex" and "Time of hospitalization", there was statistical evidence related to age (p = 0.022).

It was observed that, at the intersection between the variable CVC / AVP-HUMID with the independent variables "Age", "Sex" and "Length of hospitalization", the results showed that only age (p = 0.46) presented statistical evidence of dependency.

When checking "Identified Equipment", "Age", "Sex" and "Length of Stay", there was no statistical evidence of dependence.

It was found differently, when analyzing the colored ribbons in the CVC with the variables "Age", "Sex" and "Time of hospitalization", that only Age (p = 0.003) presented statistical evidence of dependence.

In relation to the crossover with the dependent variable CVC / AVP-identified, dirty, loose, wet, equipment identified, alcohol in the bed and "Colored ribbons", no statistical evidence was found to be dependent. It was observed that the variable with greater explanatory power of the dependent variable oscillation was "CVC / AVP-SOLTO" (p = 0.125).

DISCUSSION

It is recorded that of the 945 patients verified, 538 (56.93%) were male. In a study
Carried out in the hospital of a city in the interior of the State of Paraíba (PB), it was verified the prevalence of men in the ICU admissions. From a sample of 310 patients, 54.8% (n = 170) were males. The results of another survey in an adult ICU with 14 beds of a public hospital that exclusively serves the Unified Health System (UHS), located in the city of Florianópolis (SC), indicated that of a total of 695 patients, 61.6% were male. This may be due to men's low interest in health.

The most prevalent age group in this study was 61 to 80 years old (n = 427, 45.19%). In a study carried out in the ICU of a hospital in Goiânia (GO), the prevalence of the elderly was observed (50.7%), in the age group from 60 years of age. Regarding the age group, study performed in the ICU of a general hospital in Fortaleza (CE) indicated an even higher percentage (68.3%) of patients aged ≥60 years.

It is understood that aging is marked by a complex interaction of biopsychosocial factors and that the elderly need specific care and attention due to their state of greater vulnerability and risk of adverse clinical outcomes, such as functional decline, falls, hospitalization, institutionalization and death.

In relation to hospitalization time, 680 (71.96%) patients were hospitalized for approximately 15 days in ICUs. A study carried out in a philanthropic hospital with tertiary care, in the city of Campo Grande (MS), Brazil, points out that the length of stay of hospitalized ICU patients ranged from two to 49 days, with a mean of 13.97 and a median of 12.

It was found, in relation to the mortality rate, that 310 (32.80%) patients hospitalized in the units died. In another study carried out in an ICU in Recife, Brazil, the “death” outcome occurred in 47.6% of the cases analyzed. In the United States, the mortality attributable to this syndrome generally exceeds 10%, and may reach 25% in some patients at higher risk.

It is recalled that, during ICU stay, 20 (2.12%) patients had bloodstream infection related to the use of CVC. In a study performed at the Santa Casa de Misericórdia Hospital in São Paulo (SP), catheter-related infection occurred in 11 (9.64%) of 96 patients.

It is performed in the CVC / AVP curative in which the following items are observed: identified; dirty; loose; humid. The standard established in the protocol of the hospital studied indicates that, when the catheter dressing does not fit within the conformities (without identification, loose, dirty or moist), the nurse of the sector should be informed and the same will provide the necessary adjustment.

It is reported that no data were collected on the type and range of dressing replacement in this study. However, the protocol established in the ICUs includes the exchange of the cover with sterile gauze every 48 hours, or before, if it is dirty, loose or moist and for semipermeable transparent cover every seven days, or before, if dirty, loose or wet. Study reported that the first dressing should be performed 24 hours after CVC implantation and, when performed with dry gauze and porous hypoallergenic adhesive tape, should be changed within 48 hours and, when done with film, within seven days. The need for change in this interval will be assessed and indicated by the nurse.

Both studies recommend that all dressings should be protected during bathing.

It was found that 68.04% of the teams were correctly identified with colored ribbons, as recommended in the hospital routine. The color standardization of adhesive tapes and their respective invasive devices are: red tape for invasive blood pressure (IPA); blue tape for central venous catheter (CVC) routes; yellow tape for nasogastric tube (SNG), nasoenteral (SNE), orogastric tube (SOG) and oroenteral tube (SOE) and green adhesive tape for intracranial pressure catheter (PIC). No articles were found that showed statistics with regard to this standardization.

It was identified that 68.47% of the teams were identified according to the protocol of the institution. However, no articles were found on this data. The interval of equipment exchange according to the institution's protocol is up to 96 hours, corroborating the literature, in which continuous infusion equipment should not be changed at intervals of less than 96 hours and emphasizes that repeated disconnections with consequent reconnection of the system increases the risk of contamination of the equipment luer, catheter hub and needleless connectors, with consequent risk of IPCs. The tip of the equipment must be protected aseptically with a single-use, sterile protective cap if disconnection is required. Do not use needles for protection.

**CONCLUSION**

High adherence of the nursing team to the protocol for the prevention of bloodstream...
infection was observed, in relation to the high compliance index of preventive actions, such as identification, hygiene conditions and CVC / AVP fixation, identification of the equipment and presence of tape colored in the CVC. There was also a low rate of CVC-related bloodstream infection when compared to the literature.

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Adhesion of nursing to the blood current...


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