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Nursing workload in hematopoietic stem cell transplantation: a cohort study*

Carga de trabalho de enfermagem em transplante de células-tronco hematopoiéticas: estudo de coorte

Carga del trabajo de enfermería en trasplante de células madre hematopoyéticas: estudio de cohorte

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ABSTRACT

Objective: Measure nursing workload required by patients submitted to autologous and allogeneic hematopoietic stem cell transplantation (HSCT) and analyze the Nursing Activities Score (NAS) of the nursing team during the hospitalization period for HSCT. **Method:** A prospective cohort study conducted from January 2013 to April 2014 with 62 patients hospitalized in the HSCT unit of a university hospital in Campinas, São Paulo, Brazil. The workload was measured through NAS and data analysis was through chi-square test or Fisher's exact test, Mann-Whitney test and Spearman's correlation coefficient; with 5% significance level. **Results:** Mean nursing workload was 67.3% (SD of 8.2) in autologous HSCT patients and 72.4% (SD of 13.0) in allogeneic HSCT patients (p=0.1380). *Monitoring and titration* showed, in more than 50% of the time, patients demanded intensified care, requiring two hours or more in a nursing shift for reasons of safety, severity or therapy. **Conclusion:** The nursing workload and the NAS items with the highest scores reflect the magnitude, complexity and specificity of care required by patients submitted to HSCT.

DESCRIPTORS

Hematopoietic Stem Cells Transplantation; Nursing, Team; Workload; Nursing Care; Intensive Care Units.

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INTRODUCTION

Evidence of the nursing team's influence on quality of care and the safety of patients are well documented[1-2], with excessive workload being one of the factors that contribute to negative outcomes, especially in extremely ill patients[3-4].

A study conducted in an intensive care unit (ICU) showed an association between high workload and increased mortality, with 7% increase in the risk of death for every additional patient per nurse[3]. The investigators also observed an inverse relation between hospitalization period and the number of people on the nursing team, suggesting the proper number of nursing professionals reduces the hospitalization period[2]. In an ICU, the best nurse-to-patient ratio showed lower infection rates[5].

A review of nursing workload shows that this indicator is usually defined in terms of nurse-to-patient staffing ratios[2]. However, to show the actual work dimension, the staffing ratios require other complementary tools that include, in such measurement, the care needs based on a patient's medical condition. In this perspective, the Nursing Activities Score (NAS) is a useful instrument to measure the nursing workload, that is, the time spent by a nursing professional to provide patient care[6-7].

Created in 2003 by Miranda[6] to measure the nursing workload in an ICU, and later validated for Brazilian culture[7], NAS is one of the most comprehensive instruments to measure the nursing activities when providing service to extremely ill patients, for instance, patients submitted to hematopoietic stem cell transplantation (HSCT).

In Brazil, in the area of HSCT, despite the great number and complexity of nursing activities in the conditioning phase, on the infusion day and in post-HSCT, which may considerably contribute to increased workload and affect the quality of care and patient safety, there is still no formal system to measure the nursing workload.

Considering the patient's complex and dynamic medical status, the frequent need for intensive care, the nursing workload as an important indicator of staff sizing, and the nonexistence of studies in the literature, the application of NAS in HSCT is essential. The objectives were to measure nursing workload required by patients submitted to allogeneic and autologous HSCT and analyze the NAS of the nursing team during the hospitalization period.

METHOD

Study design

A prospective cohort study conducted in the HSCT unit of a university hospital in the city of Campinas, São Paulo, Brazil. This is a reference service in which, considering transplantations conducted from 1993 to 2013, the mean allogeneic and autologous HSCT procedures per year was 33 (SD of 7.0) and 19 (SD of 10.5), respectively. This unit has nine beds, with a nurse-to-patient ratio of 1:4 and a nursing technician/aide-to-patient ratio of 1:2.

Participants and data collection

The consecutive sample was comprised of all patients submitted to HSCT from January 1st, 2013 to April 30, 2014, totaling 62 individuals. A form was used to collect data with the following demographical and medical variables: gender, age, diagnosis, diagnosis-HSCT interval, disease stage, type of HSCT, type of conditioning, comorbidities, systemic arterial hypertension (SAH), bloodstream infection, respiratory failure, use of vasoactive drugs, number of medications/day, Simplified Acute Physiology Score II (SAPS II)[8], length of stay in the hospital, exit condition and causes of death.

SAPSII[8] severity score was used on specific days: conditioning (D)-3, infusion (D0) of hematopoietic progenitor cells (HPCs), in two post-HSCT moments (D+7), and at engraftment for every patient.

Nursing workload was measured through NAS validated for the Brazilian culture[7], which was prospectively applied on a daily basis by the nurses from the HSCT unit, who reviewed the score as required. The work shifts (morning, afternoon and night) filled items 1, 4, 6, 7 and 8 of the instrument, along with their subitems. For NAS calculation, the highest scores of subitems observed in 24 hours were considered, as indicated in the original instrument. The other items were filled once in every 24 hours by the nurses from the afternoon shift. Later, the scores were added up.

NAS was calculated from the admission day until discharge or death. In readmission cases for a new HSCT, the patient was considered as a new subject. NAS has seven major categories: Basic Activities (items 1 to 8), Ventilatory Support (items 9 to 11), Cardiovascular Support (items 12 to 15), Renal Support (items 16 and 17), Neurological Support (item 18), Metabolic Support (items 19 to 21) and Specific Interventions (items 22 and 23)[6]. This instrument presents 23 items and the final score may reach a maximum score of 176.8%, which represents the percentage of time dedicated by a nurse, and by a shift, in providing patient care[6]. In NAS calculation, each score expressed in percentage may be converted to 0.24 work hours of the nursing team[9].

The study was approved by the Research Ethics Committees of Escola de Enfermagem, Universidade de São Paulo (EE/USP) and Faculdade de Ciências Médicas, Universidade Estadual de Campinas (FCM/UNICAMP), under process numbers 222.565 and 256.642, respectively.

Data analysis

For the analysis of NAS items, the absolute and relative frequency was calculated. The Mann-Whitney test was used in the comparison of autologous and allogeneic HSCT patient groups in terms of mean and median age. Chi-square test or Fisher's exact test was used to identify associations of patient groups (autologous and allogeneic HSCT) in relation to demographic and medical variables, as appropriate. The correlation between age and NAS was estimated by Spearman's correlation coefficient. Data pro-

cessing was in Statistical Analysis System®, version 9.2, and 5% significance level was considered.

RESULTS

This study presented the prevalence of male patients (53.2%) and allogeneic HSCT (61.3%). Mean age was 51.9 years (SD of 12.1) and autologous HSCT patients presented greater mean age (p=0.0198). On average, the patients used 11.7 (SD of 2.6) medications; autologous HSCT patients were hospitalized for 34.7 days (SD of 19.5) and allogeneic HSCT patients, for 34.3 days (SD of 14.1). Most frequent diagnoses were lymphoma (32.3%) and leukemia (30.6%).

Table 1 shows that a significant statistical difference was observed between the autologous and allogeneic groups, in the following variables: diagnosis that indicated HSCT (p<0.0001), presence of comorbidities (p=0.0443), systemic arterial hypertension (SAH; p=0.0471) and disease stage at HSCT (p=0.0002).

Table 1 - Distribution of patients submitted to hematopoietic stem cell transplantation. according to the type of procedure and demographical and medical variables - Campinas. São Paulo. Brazil. 2014

Demographical and medical variables	Type of HSCT				p-value
	Autologous		Allogeneic		
	n	%	n	%	
Gender					0.0919*
Male	16	66.7	17	44.7	
Female	8	33.3	21	55.3	
HSCT diagnosis					**<0.0001****
Leukemia	1	4.2	18	47.4	
Lymphoma	10	41.7	10	26.3	
Multiple myeloma	11	45.8	6	15.8	
Other	2	8.3	4	10.5	
Diagnosis-HSCT interval					0.7173*
≤12 months	6	25.0	8	21.1	
>12 months	18	75.0	30	78.9	
Disease stage					**0.0002****
Early	2	8.3	10	26.3	
Intermediate	16	66.7	6	15.8	
Late	6	25.0	22	57.9	
SAH					**0.0471***
No	11	45.8	27	71.1	
Yes	13	54.2	11	28.9	
Comorbidities*					**0.0443***
No	7	29.2	21	55.3	
Yes	17	70.8	17	44.7	
Bloodstream infection					0.2575*
No	11	45.8	23	60.5	
Yes	13	54.2	15	39.5	
Exit condition					0.1930**
Survivor	21	87.5	28	73.7	
Death	3	12.5	10	26.3	

*p-value obtained through chi-square test; **Fisher's exact test.

In this study, 21% of total patients died. Of these, most (76.9%) were submitted to allogeneic HSCT and the causes of death were: bacterial infection (5; 38.4%), recurrent disease (5; 38.4%), fungal infection (2; 15.4%) and graft-versus-host disease (GvHD) (1; 7.7%). On average, the death group severity score (SAPS II) was 34.6 points in the conditioning phase.

Regarding the conditioning regimen, half the number of allogeneic HSCT patients were submitted to myeloablative conditioning (MAC) and the other half to non-myeloablative (NMA) or reduced intensity conditioning (RIC). The most common antineoplastic agents were fludarabine (n=24; 63.1%) and busulfane (n=23; 60.5%). In case of patients with autologous HSCT, the prevalent conditioning regimen was with melphalan (n=13; 54.2%).

In relation to clinical progress, around one fourth (24.2%) of the patients presented respiratory failure requiring ventilatory support and 25.8% presented hypotension requiring vasoactive drugs (VADs).

Regarding severity measured by SAPS II, autologous HSCT patients presented mean score ranging from 30.7 (SD of 6.5) in the conditioning phase to 41.7 points (SD of 7.5) at D+7. In allogeneic HSCT patients, mean SAPS II score ranged from 29.5 (SD of 10.5) in the conditioning phase to 36.4 points (SD of 23.5) at D0. Autologous and allogeneic HSCT patients were similar in terms of severity (SAPS II) in the conditioning phase (p=0.1434), on the infusion day (p=0.7894) and at engraftment (p=0.1809). However, at D+7, autologous HSCT patients presented a higher severity score (41.7 points) in relation to allogeneic HSCT patients (33.5 points), with significant statistical difference (p=0.0004).

The mean nursing workload during all phases of HSCT was 69.7% (SD of 17.4). For the autologous HSCT patients, mean NAS was 67.3% (SD of 8.2) and for the allogeneic HSCT patients, 72.4% (SD of 13.0). No difference was observed between the groups (p=0.1380) and age did not present correlation with NAS (p=0.7588).

The mean values of NAS in the distinct HSCT phases did not show any significant statistical difference between the types of HSCT (Table 2).

In the study period, 2,193 observations were conducted for NAS activities. Table 3 shows the group of *Basic Activities* of NAS (items 1 to 8, except for item 5) and the item related to the quantitative measurement of urinary output (item 17) were conducted for 100% of the patients. *Monitoring and titration* and *Hygiene procedures* were scored, in more than half of the time, in subitems 1b and 1c and subitems 4b and 4c, respectively. *Left atrium monitoring* and *intracranial pressure measurement* were not scored for any patient.

DISCUSSION

The mean score of nursing workload, measured by NAS, was 69.7% (16.7-hour support) in the general sample, with similar values between the autologous and allogeneic HSCT groups (p=0.1380). At first, it was expected, due to the type of graft, that the autologous HSCT group would require a lower workload. However, numerous aspects may have contributed to this finding, such as similar medical status of patients in both groups, similar severity score (SAPS II) in the conditioning phase (p=0.1434), on the

Table 2 - Descriptive statistics of the Nursing Activities Score of patients submitted to hematopoietic stem cell transplantation, by procedure type and phase - Campinas, São Paulo, Brazil, 2014.

Phases of HSCT	NAS score (%)				p-value*
	Autologous		Allogeneic		
	Mean (SD)	Median (Min.-Max.)	Mean (SD)	Median (Min.-Max.)	
Conditioning (n=24; n=38)	63.4 (7.4)	63.5 (50.4-79.8)	68.9 (12.6)	65.7 (50.2-105.4)	0.1535
Infusion (n=24; n=38)	74.4 (19.8)	73.3 (39.2-120.6)	84.6 (20.0)	85.1 (39.2-142.4)	0.0645
Post-HSCT (n=24; n=35)	68.1 (9.4)	67.2 (53.8-92.2)	71.6 (13.0)	70.9 (45.6-109.3)	0.2220

*p-value obtained through the Mann-Whitney test.

Table 3 - Frequency of Nursing Activities Score obtained by the patients during the hospitalization period for hematopoietic stem cell transplantation - Campinas, São Paulo, Brazil, 2014.

Observations in the period for HSCT *(total f=2193)*			
Nursing activities	***Subitens***	***f***	**%**
Basic Activities			
1. Monitoring and titration	**1a**	1035	(47.2)
	1b	969	(44.2)
	1c	189	(8.6)
2. Laboratory		2193	(100)
3. Medication		2193	(100)
4. Hygiene procedures	**4a**	1031	(47.0)
	4b	967	(44.1)
	4c	195	(8.9)
5. Care of drains		102	(4.6)
6. Mobilization and positioning	**6a**	1838	(83.8)
	6b	329	(15.0)
	6c	26	(1.2)
7. Support and care of relatives and patient	**7a**	2126	(96.9)
	7b	67	(3.1)
8. Administrative and managerial tasks	**8a**	458	(20.9)
	8b	1691	(77.1)
	8c	44	(2.0)
Ventilatory Support			
9. Respiratory support		274	(12.5)
10. Care with artificial airways		100	(4.5)
11. Treatment for improving lung function		150	(6.8)
Cardiovascular Support			
12. Vasoactive medication		122	(5.6)
13. Intravenous replacement of large fluid losses		39	(1.8)
14. Left atrium monitoring		–	–
15. Cardiopulmonary resuscitation		01	(0.05)
Renal Support			
16. Hemofiltration techniques		47	(2.1)
17. Quantitative urine output measurement		2193	(100)
Neurological Support			
18. Measurement of intracranial pressure		–	–
Metabolic Support			
19. Treatment of complicated acidosis or metabolic alkalosis		30	(1.4)
20. Intravenous hyperalimentation		344	(15.7)
21. Enteral feeding		70	(3.2)
Specific Interventions			
22. Specific interventions in the intensive care unit		151	(6.9)
23. Specific interventions outside the intensive care unit		126	(5.7)

infusion day (p=0.7894) and at engraftment (p=0.1809). In addition, other factors may have contributed to similar care required by both groups. In post-HSCT (D+7), the severity score of the autologous group was higher than the allogeneic group (p=0.0004). The autologous HSCT patients also presented greater mean values of age and comorbidities. Age is considered a universal predictor of adverse outcomes[10] and, in Hematology-Oncology, it is a pre-HSCT risk factor[11]. In addition, half the allogeneic HSCT patients received, in the conditioning phase, the NMA or RIC regimen, which is potentially less toxic and, in general, reduces post-HSCT complications.

The number of working hours of the nursing staff required by autologous HSCT patients (16.1 h) and especially the allogeneic HSCT patients (17.4 h), was very close to the amount required in intensive care. According to Resolution 293/2004 of the Brazilian Federal Council of Nursing[12], semi-intensive care patients require at least 9.4 nursing hours and intensive care patients, 17.9 hours or more. This calculation of nursing hours can be supported by patient severity, whose mean SAPS II values (autologous HSCT: SAPS II of 30.7-41.7 points; allogeneic HSCT: SAPS II of 29.5-36.4 points) were similar to those described for ICUs [13-14].

The type of transplantation is an important indicator for the patient's medical progress, with impact on workload, an aspect that seems to support the guidelines from the Brazilian Ministry of Health, which show allogeneic HSCT patients require intensive care[15]. However, in this study, aspects such as basic medical condition of autologous HSCT patients and conditioning type for the allogeneic HSCT patients (50% NMA or RIC) seem to have contributed to similar transplantation groups in terms of severity and number of hours, close to the guidelines for intensive care.

Finding an association between the results for nursing workload required by HSCT patients and prior studies[16-17] is not a simple task. In the National Institute of Cancer (INCA), the use of "eleven stages for proper staff sizing"[16] showed that 18.2 hours of nursing care were required in pre-HSCT and 19.7 hours in post-HSCT, regardless of the transplantation type. This workload found in INCA, greater than the one found in this study, is perhaps linked with differences in nursing work process.

A recent study that used NAS in Hematology and HSCT unit showed the autologous HSCT group presented NAS of 39.7% (9.5 h) and the allogeneic HSCT group, depending on the type of donor, ranged from 46.2% (11.1 h; a family member) to 50.8% (12.2 h; not a fam-

ily member)[17]. The highest number of hours identified for transplanted patients in this study can be explained by the sample profile: greater mean age (51.9 *versus* 42.0 years old), longer mean hospitalization period (33 *versus* 16 days) and greater number of patients with comorbidities (54.8% *versus* 34.6%). These variables may indicate a difference in medical variables and explain the greater nursing workload. In addition, HSCT patients, the focus of this study, although requiring intensive care, are not transferred to the ICU.

The entire sample scored in the items: *Monitoring and titration*, *Laboratory, Medication, Hygiene procedures, Mobilization and positioning, Support and care of relatives and patient; Administrative/managerial tasks* and *Quantitative urine output measurement*. Except for the quantitative measurement of urinary output, which is from the *Renal Support* category, the other items are from the *Basic Activities* category, which, in the original study of NAS, corresponded to 81% of the time spent by nurses in an ICU[6], once they are daily activities of nurses and/or the nursing team.

The activity of *Monitoring and titration* was scored in more than half the observations in items 1b and 1c. In one of the work shifts, it took two hours or more (1b), or four hours or more (1c) of continuous observation for safety, severity or therapy reasons. Intensive monitoring may have occurred due to required patient evaluation of different adverse events, especially in terms of infusion reactions related to medication and blood components, which may occur in any stage of HSCT.

In this investigation, due to its specialty, several medications and treatments required administration, which was combined with additional medications in *Monitoring and titration* as follows: antineoplastic agents, anti-thymocyte globulin (ATG), ganciclovir, amphotericin, foscarnet, phenytoin and blood components[18]. Such situations contributed to increased nursing workload in HSCT.

Infusion reaction to antineoplastic agents is well known in pre-HSCT [19]. For instance, busulfane is frequently used in conditioning regimens [19], with potential to cause seizures. In this study, around 40.0% of the sample took busulfane.

The activity of *Laboratory* investigations was scored by 100% of the patients, which can be explained by the daily exams conducted. In HSCT, this practice is encouraged by the required biochemical monitoring of patients and drug dosing that may lead to adverse events, especially in the liver and kidneys.

In agreement with a study that shows the complexity of drug therapy in HSCT[20], the activity related to medication was scored by the entire sample. In these patients, drugs are administered almost exclusively intravenously (IV) and, in a IV line replacement a nurse may spend, on average, 11.95 minutes[21]. In addition, the administration of antineoplastic agents, scored in this item, is a highly complex activity due to toxicity and acute adverse events. A nurse spends, on average, 3.3 hours with chemotherapy-related activities[22]. Of note, the mean number of medications was high (11.7; SD of 2.6), an aspect that also contributed to increasing the nursing workload.

The activity of *Hygiene procedures* scored in 53% of the times in items 4b and 4c. That means, in one of the shifts, it took two hours or more (4b), or four hours or more (4c) to conduct such procedures. In this investigation, adverse events like diarrhea and mucositis increased the workload[23]. Besides hygiene issues, a precisely quantification of diarrhea episodes are required for a rigorous fluid balance of patients[18].

Oral mucositis is an important focus of nursing care in HSCT centers, involving oral mucosa evaluation and the utilization of care protocols that include cryotherapy, oral hygiene, lip lubrication and pain management[24]. Oral cryotherapy is a recognized protocol to reduce mucositis in patients receiving high doses of melphalan[25] and, in the studied unit, this activity was always conducted by nurses.

The activity of *Mobilization and positioning* received a score of 100%. During the thrombocytopenia period, the nursing team helps the patient in ambulation and any other activity that involves the risk of fall and bleeding[26]. In some cases, the highest score in *Mobilization and positioning* (6b and 6c) may have occurred due to the fact that 25% of the patients required respiratory support and VADs. In these situations, the patient requires bed and periodical change of supine position, situations that explain such increased workload.

The activity of *Support and care of relatives and patient* was always scored. The HSCT patients, due to neutropenia and higher risk of infection, do not have full-time people to accompany them. Exceptions in terms of companions are accepted in special situations, such as severity and imminent risk of death. These particularities of HSCT may require greater availability of the nursing team for patient support. A study showed transplanted patients may require differentiated attention of the nursing team due to absence of family, fear of death, limited physical space and change in routine life[27].

Regarding the activity of *Administrative/managerial tasks*, these are related to the service routine, such as shift work transfer, multiprofessional medical visits, drug scheduling, nursing process elaboration, as well as audits, preparation and forwarding to exams and death situations. Such activities are similar to those in UTI, but, in terms of admission and discharge status in HSCT, they may involve more administrative and managerial activities, considering that, in these periods, many details have to be explained to patients and their family members. Such particularities of HSCT contributed to 77.1% of observations attributed to item 8b, requiring around 2 hours from the nurse in any shift to conduct these administrative and managerial tasks.

At admission, nurses provide guidance about risk and prevention of infection and rigorous fluid balance, actions that require the attention of patients and/or family members, and about adverse events (AEs) resulting from drugs to be used during the therapy. Even after discharge, patients should receive instructions about periodical follow-up visits and complications.

An American study about nursing management in HSCT showed similarities with the studied unit when

showing the managerial responsibilities of nurses, such as participation in multiprofessional medical visits, scheduling of specific pre-transplantation exams, participation in all activities involving education of patients and family members in admission and discharge processes[28-29].

The activity of *Quantitative urine output measurement* is conducted on a daily basis in all shifts of HSCT, considering the rigorous fluid balance this unit requires. This activity should be a rigorous practice, especially during the conditioning phase, to reduce the risks of hemorrhagic cystitis[26].

Bloodstream infection may have influenced more than half (53.8%) of the deaths in this study. In total, 24.2% of the patients presented respiratory failure requiring invasive ventilation, and 86.7% of them died. The result of this study is similar to the result found in the literature, which shows pulmonary complications as one of the main reasons of HSCT patient admission in an ICU and the mechanical ventilation required as a cause of increased mortality[30]. In the conditioning period, the severity score (SAPS II) of the death group was 34.6 points, similar to the score of patients in an ICU[13]. Such complications require nursing care with artificial airways, such as endotracheal aspiration and inhalation therapy, and cause an increment to other items like *Monitoring and titration*, given the patient severity. In addition, other activities, such as those related to *Mobilization and positioning* of patients requiring invasive ventilation, are more complex and require more than one professional to perform them.

CONCLUSION

In the studied area of HSCT, nursing workload was 69.7% (16.7 h), close to the workload identified in ICUs, indicating similarities between these two areas in terms of severity and care requirements. This aspect is confirmed by the NAS items of greater scores, which reflect the magnitude and complexity of care provided by the nursing team in the distinct phases of the procedure.

RESUMO

Objetivo: Mensurar a carga de trabalho de enfermagem requerida por pacientes submetidos ao transplante de células-tronco hematopoiéticas (TCTH), autólogo e alogênico e analisar as atividades do *Nursing Activities Score* (NAS) executadas pela equipe de enfermagem durante a internação para o TCTH. **Método:** Coorte prospectiva realizada de janeiro/2013 a abril/2014 com 62 pacientes internados na unidade de TCTH de um hospital universitário de Campinas/SP, Brasil. Mediu-se a carga de trabalho por meio do NAS e analisaram-se os dados utilizando os testes Qui-quadrado ou Exato de Fisher, Mann-Whitney e o coeficiente de correlação de Spearman; considerou-se nível de significância de 5%. **Resultados:** A média da carga de trabalho de enfermagem foi de 67,3% (DP 8,2) em pacientes de TCTH autólogo e de 72,4% (DP 13,0) no TCTH alogênico (p=0,1380). O item *Monitorização e controles* apontou, em mais de 50% das observações, que os pacientes demandaram intensificação deste cuidado, exigindo duas horas ou mais em algum turno de trabalho por motivos de segurança, gravidade ou terapia. **Conclusão:** A carga de trabalho de enfermagem e os itens do NAS mais pontuados refletem a magnitude, complexidade e especificidade dos cuidados demandados pelos pacientes submetidos ao TCTH.

DESCRITORES

Transplante de Células-Tronco Hematopoiéticas; Equipe de Enfermagem; Carga de Trabalho; Cuidados de Enfermagem; Unidades de Terapia Intensiva.

RESUMEN

Objetivo: Medir la carga de trabajo de enfermería requerida por los pacientes sometidos al trasplante de células madre hematopoyéticas (TCTH), autólogo y alogénico, analizando actividades del *Nursing Activities Score* (NAS) emprendidas por equipo de enfermería en la internación para el TCTH. **Método:** Cohorte prospectiva realizada entre enero/2013 y abril/2014 con 62 pacientes internados en la unidad de TCTH de hospital universitario en la ciudad de Campinas/SP (BR). En el análisis se utilizaron las pruebas Chi-cuadrado o test Exacto de Fisher, las no paramétricas Mann-Whitney o Kruskal-Wallis y el coeficiente de correlación de Spearman, conforme apropiado. Fijos los niveles de significación en 5%. **Resultados:** La media de la carga de trabajo fue de 67,3% (DP 8,2) para los pacientes de TCTH autólogo y de 72,4% (DP 13,0) para los de TCTH alogénico (p=0,1380). El ítem *Monitorización y controles* apuntó que los pacientes, en más 50% de las observaciones, demandaban intensificación del cuidado por dos horas o más en algunos turnos de trabajo por cuestiones de seguridad, gravedad o terapia. **Conclusión:** La carga de trabajo en enfermería y los ítems del NAS puntuados reflejan la magnitud, complejidad y especificidad de los cuidados demandados por los pacientes sometidos al TCTH.

DESCRIPTORES

Trasplante de Células Madre Hematopoyéticas; Grupo de Enfermería; Carga de Trabajo; Atención de Enfermería; Unidades de Cuidados Intensivos.

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