






SELECTION CRITERIA FOR PRIMARY DRESSINGS IN THE TREATMENT OF PRESSURE ULCERS IN HOSPITALIZED PATIENTS

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ABSTRACT

Objective: To analyze the criteria for choosing primary dressings prescribed by nurses for the treatment of pressure ulcer in hospitalized patients.

Method: cross-sectional and descriptive study with quantitative approach conducted in a private hospital in Jaboatão dos Guararapes-Pernambuco, Brazil, between February and April 2019. The sample included 345 medical records of patients with pressure ulcer, admitted from January to December 2018. An instrument was used to collect sociodemographic data, descriptive analyses were performed and Chi-square test with 95% confidence level ($p < 0.05$).

Results: there was a significant relationship between the choice of dressings and lesion characteristics. However, 64 (18.5%) patients in the sample had adequate records and 10 (3%) had disagreement with scientific evidence.

Conclusion: This study highlights the importance of implementing protocols that ratify the criteria for choice of dressings for the treatment of pressure ulcers in hospital services.

DESCRIPTORS: Wounds and injuries; Pressure ulcer; Inpatients; Nursing records; Quality of Health Care.

CRITERIOS DE SELECCIÓN DE APÓSITOS PRIMARIOS PARA EL TRATAMIENTO DE ÚLCERAS POR PRESIÓN EN PACIENTES HOSPITALIZADOS

RESUMEN:

Objetivo: analizar los criterios de elección de las coberturas primarias prescritas por los enfermeros para el tratamiento de la lesión por presión en pacientes hospitalizados. **Método:** estudio transversal y descriptivo con enfoque cuantitativo realizado en un hospital privado de Jaboatão dos Guararapes-Pernambuco, Brasil, entre febrero y abril de 2019. La muestra incluyó 345 historias clínicas de pacientes con lesión por presión ingresados de enero a diciembre de 2018. Se utilizó un instrumento de recogida de datos sociodemográficos, análisis descriptivos y prueba de Chi-cuadrado con un nivel de confianza del 95% ($p < 0,05$). **Resultados:** hubo una relación significativa entre la elección de los apósitos y las características de la lesión. Sin embargo, 64 (18,5%) pacientes de la muestra contenían registros adecuados y 10 (3%) presentaban discordancia con la evidencia científica. **Conclusión:** Este estudio resalta la importancia de implantar protocolos que ratifiquen los criterios de elección de los apósitos para el tratamiento de las UP en los servicios hospitalarios.

DESCRIPTORES: Heridas y traumatismos; Úlcera por presión; Pacientes internos; Registros de enfermería; Calidad de la atención de salud.

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INTRODUCTION

Pressure ulcers (PUs) are characterized by a discontinuation of the skin and underlying soft tissues, called wounds, which can be common in bony prominences or caused by numerous other factors, which can be chemical, physical or biological⁽¹⁾. The injured skin tissue starts the healing process in a continuous and complex way, which involves overlapping phases for skin recovery⁽²⁾.

The PUs are classified by stages, depending on factors such as lesion depth, exposure time, and pressure intensity of the injured tissue, and are strongly influenced by intrinsic aspects such as hypertension, diabetes mellitus, among others. Thus, lesions range from Stage 1, in which the skin is intact but with a non-blanchable erythema, to Stage 4, when there is total loss of skin thickness and exposure or direct palpation of tissues such as fascia, muscle, tendon, ligament, cartilage or bone⁽¹⁾. There are also "Unclassifiable" PUs, which have total tissue thickness loss, and it is difficult to identify the extent of the wound, since it is covered by sphacelus or eschar⁽²⁾.

Currently the market offers several different brands and types of dressings that act in various stages of the healing process. Thus, the professional, when working with wounds, needs to recognize the injury and know how to indicate the best dressing. The use of institutional protocols helps the professional to have security and ensures the quality of care⁽³⁻⁴⁾.

Moreover, it is essential to record information in order to ensure continuity of care and evaluation of the expected results. Such information must be systematic and justify the prescribed coverage, in addition to containing the characteristics of the lesion, type of tissue, and stage of healing⁽⁵⁾. The nurse is a technically and scientifically trained professional, who has a relevant role in the treatment of injuries, from the evaluation, prescription of the type of coverage to the guidance of patients and families⁽⁶⁻⁷⁾.

Given the important role of this professional in the maintenance and recovery of tissue integrity, this study sought to analyze the criteria for choosing the primary dressings prescribed by nurses for the treatment of Pressure Ulcer in hospitalized patients.

METHOD

This is a cross-sectional, descriptive study, with a quantitative approach, which guarantees on one occasion, from an adequate sample, to examine the distributions of variables within that sample, designating the predictor and outcome variables based on biological plausibility and on information from other sources⁽⁸⁾.

To obtain the sample, we used the sample size calculation for qualitative variables in finite samples in a simple random manner, which consisted of 345 medical records analyzed in the universe of 3,398 patients seen in 2018. To perform the sample size calculation, the equation was used, for a finite population: $n = \frac{z^2 * p(1-p)}{e^2/1} + \frac{z^2 * p(1-p)}{e^2 * N}$. Where n=sample size; N=population size; Z=z-score; e=margin of error; and P=standard deviation⁽⁹⁾.

Data collection was performed in a hospital located in Jaboatão dos Guararapes-PE, between February and April 2019. The following inclusion criteria were considered for the study: electronic medical records of patients admitted between January and December 2018 and with PU, admitted to the intensive care, orthopedics, medical clinic, or long-term care unit sectors.

The pre-structured instrument prepared by the researchers themselves sought to investigate the following secondary variables: sociodemographic data (gender, age group, marital status, education), information on disease history, and the comorbidities associated with risk factors for PU healing (hypertension, diabetes, smoking, alcoholism, stroke, impaired mobility, and malnutrition).

As for the characteristics of the injury, the following were identified and recorded from the instrument: type of injury (acute or chronic), causative agents, time of existence, type of tissue present in the wound bed, location, signs of infection, odor, amount of exudate, appearance of secretion, and pain, and finally, the selection of the type of dressing prescribed.

For data tabulation, Microsoft Excel 2013 was used, and later, the software Statistical Package for the Social Sciences - SPSS v. 23 was used for data analysis, in which descriptive analyses of the study population were performed in relative and absolute values, through measures of central tendency and frequency distribution. Furthermore, Pearson's Chi-square test was performed to verify the relationship between location and stage of the lesion, types of tissue present and the prescribed dressings, considering a confidence level of 95% and p-value <0.05.

The results were presented by tables and discussed based on the evidence presented by the guideline of the Quick Reference Guide: prevention and treatment of pressure ulcers⁽¹⁰⁾.

The project was submitted to Plataforma Brasil and the data were collected after approval by the ethics committee of the Faculdade Tiradentes de Jaboatão dos Prazeres, under opinion no. 2.987.168.

RESULTS

Regarding the sociodemographic profile of the sample studied (n=345), there was a prevalence of male subjects (n=173;50%), who were predominantly in the 61 to 80 age group (n=181;52%).

Regarding intrinsic comorbidities and patient conditions, according to the medical and nursing diagnosis, as the cause/motive/reason for hospitalization, Impaired Mobility (PM) stood out with 161 (47%), followed by Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM) with 136 (40%) and 114 (33%), respectively. It was identified that these comorbidities were more present in females when compared to males, with 81 (51%), 75 (55%), and 66 (58%), respectively, as shown in Table 1.

Table 1 - Relationship of the sociodemographic profile and comorbidity/conditions of patients in a public hospital. Jaboatão dos Guararapes, PE, Brazil, 2018 (continues)

Variables	Female		Male	
	n	%	n	%
Age Group				
20 to 40 years old	0	0	4	1
41 to 60 years old	9	2	16	5

61 to 80 years old	86	25	95	28
> 80 years old	77	22	58	17
Comorbidities/Conditions				
Medical Diagnostics				
Smoking	1	11	8	89
Alcoholism	0	0	5	100
Arterial Hypertension	75	55	61	45
Diabetes Mellitus	66	58	48	42
Vascular Accident Encephalic	37	45	46	55
Nursing Diagnosis				
Impaired Mobility	81	51	80	49
Undernutrition	37	54	31	46

Source: Authors (2018)

As for the location of the PU, of the 345 records analyzed, only 317 presented information about the location and stage of the ulcer, among which it was possible to notice a higher percentage in the sacrococcygeal area, mainly in stage II of the ulcer, which corresponded to 55 (22%) of the total ulcers, followed by the calcaneal region in stage III with four (14%), as shown in Table 2.

Table 2 - Relationship of the variables "ulcer location" X "ulcer stage" in patients' medical records. Jaboatão dos Guararapes, PE, Brazil, 2018

Body part	Stage I		Stage II		Stage III		Stage IV		Unclassified	
	n	%	n	%	n	%	n	%	n	%
Sacrococcygeal	12	5	55	22	33	13	6	1	5	2
Heel	0	0	2	7	4	14	1	3	1	3
Trochanter	2	7	2	7	1	4	1	4	0	0
Right lower limb	0	0	0	0	0	0	0	0	0	0
Left lower limb	0	0	1	20	0	0	0	0	0	0
Malleolus	0	0	2	28	0	0	0	0	0	0
Other body parts	1	2	11	25	3	7	0	0	0	0

Source: Authors (2018)

In relation to the variables "type of tissue" and "dressings used", from the 345 medical records, it was verified that only 79 (22.89%) contained information regarding the characteristics of the ulcer and only 64 (18.5%) justified from the records the criteria for choice of dressing. From these 64 records with registered information, it was possible

to identify the choice of dressings prescribed for each type of tissue, as shown in Table 3. It is important to emphasize that the same ulcer may present more than one tissue in its extension, which justifies the need of prescribing more than one dressing per ulcer found.

Table 3 - Relationship of the variables "type of tissue" and "coverings used" in the ulcers in the patients' records. Jaboatão dos Guararapes, PE, Brazil, 2018

	EFA*		Collagenase and		Hydrogel		Activated charcoal		Calcium alginate	
	n	%	n	%	n	%	n	%	n	%
Tissue Type										
Hyperemia	1	14	2	20	1	5	0	0	0	0
Tissue	4	57	4	40	4	19	0	0	2	17
Granulation										
Necrotic Tissue	4	57	7	70	13	62	7	10	4	33
Sphacelus Tissue	3	43	1	10	8	38	3	9	4	33

*EFA= Essential Fatty Acids

Source: Authors (2018)

Essential fatty acids (EFA) were prescribed for all tissue types, in which the following percentage was found hyperemic tissue one (14%), granulation tissue four (57%), necrotic tissue four (57%), and sphacelus tissue three (43%).

The prescription of collagenase was recorded mainly in the presence of necrotic tissue in seven (70%), in ulcers with sphacelus one (10%), in granulation tissue four (40%), and in lesions characterized by hyperemia two (20%).

The use of hydrogel was present in all types of tissues, being prescribed once (5%) for hyperemia tissue, four times (19%) for granulation tissue, and mainly for devitalized tissues such as necrotic tissue, in which it was used 13 times (62%), and eight times (38%) for sphacelus tissue.

Activated charcoal was chosen seven times (10%) as a cover in necrotic tissue, three times (9%) in sphacelus tissue, and 10 times (42%) in ulcers with a foul odor. Calcium alginate was used twice in ulcers with granulation tissue (17%), four times (33%) in necrotic tissue, and four times (33%) in sphacelus tissue. It was possible to notice that 15 (3%) records were in discrepancy with the literature regarding the characteristics of the ulcer and choice of dressing.

The present study verified the association between the variables "type of tissue" and "dressings used", as can be seen in Table 4, by means of the chi-square test. A significant association was observed for the variables: EFA in granulation tissue ($p=0.000$), as well as in necrotic tissue ($p=0.011$); collagenase in necrotic tissue ($p=0.000$) and in granulation tissue ($p=0.000$); hydrogel in granulation tissue ($p=0.019$), in necrotic tissue ($p=0.000$) and in sphacelus tissue ($p=0.000$); and finally activated carbon in necrotic tissue ($p=0.032$).

Table 4 - Description of the chi-square test for the coverages related to the type of tissue used in the ulcers in the patient records. Jaboatão dos Guararapes, PE, Brazil, 2018

	EFA	Collagenase	Hydrogel	Activated charcoal	Calcium alginate
Hyperemia	0,829	0,198	0,509	0,179	0,277
Granulation Tissue	0,000*	0,000*	0,019*	0,244	0,157
Necrotic Tissue	0,035*	0,000*	0,000*	0,032*	0,215
Sphacelus Tissue	0,114	0,795	0,000*	0,713	0,246

*Statistically significant data, with p-values <0.05.

Source: Authors (2018)

DISCUSSION

Among the comorbidities and risk factors associated with PU, the impaired mobility presented a higher percentage in the sample studied. The degree of physical limitation directly interferes with the individual's ability to perform daily activities, which may predispose to the development of PU⁽¹¹⁾. In these situations, in which there is walking limitation, the sacral region is the most affected site, and its incidence can range from 29.51% to 35.84%, followed by the calcaneal and trochanteric regions, due to the patient remaining in dorsal decubitus and the compression of the tissue in bony prominence, consequently reducing the blood flow capacity and favoring dermal hypoxia⁽¹²⁾.

The presence of comorbidities and advanced age of the sample analyzed in this study may corroborate the literature regarding the presence of risk factors. In addition to impaired mobility, diabetes mellitus and hypertension were identified as the main causes for delaying or preventing the progress of the PU healing process in patients due to altered tissue perfusion and the consequent possibility of ischemia⁽¹³⁾.

The selection of the dressing should be based on the following selection criteria: capacity to keep the lesion bed moist, bacterial approach, nature and volume of the lesion exudate, condition of the tissue in the ulcer bed, size, depth and location, besides the presence of tunneling and/or cavitations⁽¹⁰⁾. The lack of adequate records found in the analyzed data may indicate that these criteria are not being taken into consideration when choosing the dressing, besides making it difficult to monitor the evolution of the ulcer.

Regarding the use of primary dressings, EFA is highly effective in ulcers related to the skin, infected or not, promoting angiogenesis and epithelialization, in order to maintain the moist environment and favor the process of tissue granulation. Its application in intact skin has great absorption because it forms a protective film, presenting high hydration capacity and providing local cell nutrition⁽¹⁾. The broad possibility of using EFA explains the prescription in several types of tissues found in the analyzed medical records.

However, although there are no contraindications, there is no evidence of results in the literature as to the effectiveness of EFA dressing with respect to angiogenesis in devitalized tissues⁽³⁾, as found in this study, which may delay healing time and prolong hospitalization, with significant increase in costs related to treatment⁽¹⁴⁾. It should be noted that in this study there was the possibility of using dressings with proven scientific effectiveness for removal of devitalized tissue, such as collagenase and hydrogel.

Collagenase presents a great enzymatic potential that favors the removal of devitalized

tissue, regardless of its origin and location, being potentially effective in debridement of collagen cells and should remain for up to 24 hours. Although the efficacy of collagenase in granulation and epithelial tissues still generates doubts, since the increase in proteins ends up causing degradation of the cell membrane⁽³⁾, the prescription of this was present in hyperemia and granulation tissues in the analyzed medical records, which may lead to impairment in the healing time of the ulcer and be indicative of the need for investment in the continuing education of professionals to ensure evidence-based practice and quality of care.

For both autolytic debridement and granulation tissue healing, the hydrogel dressing was made available in the analyzed medical records. This cover is a colorless transparent gel composed of water, carboxymethyl cellulose, which facilitates cell rehydration and debridement, and propylene glycol, which could absorb water and hydrate the skin, promoting the release of exudate and tissue hydration, in addition to bacteriostatic action⁽¹⁵⁾. It should remain in the ulcer for up to 72 hours, performing debridement by promoting a humid environment, stimulating leukocyte migration and enzyme action⁽¹⁶⁾.

In cases of neoplastic or infected ulcers, activated carbon should be used to absorb exudate and filter unpleasant odors, exercising a bactericidal function because of the action of silver and consequently controlling the infection⁽¹⁾. It should be changed every 24 hours, depending on the adsorption capacity, after improvement of the lesion, and should be changed in no more than 48 or 72 hours⁽¹⁷⁾. This indication explains the presence of this dressing, albeit in a small percentage, in ulcers with necrotic tissue and sphacelus in the results found.

The use of calcium alginate is suggested by the literature, both in the presence of granulation tissue as in necrotic tissue, since it presents hemostatic properties, besides facilitating autolytic debridement, promoting the stimulation of granulation tissue⁽⁷⁾. Thus, calcium alginate, prescribed in different types of injuries in this paper, is indicated in open wounds, highly absorbent and biodegradable derived from nonwoven absorbent material, with or without the appearance of infections and facilitating the rapid stimulation of granulation tissue.

Alginate should be changed every 24 hours in wounds and lesions considered infected and every 72 hours in necrotic ones⁽¹⁶⁾. Treatment with calcium alginate as primary dressing aims debridement and is effective for non-classifiable and granulating PU in stages III and IV⁽¹⁷⁾. Thus, systematically recording the evaluation and type of dressing used in the treatment of lesions is a fundamental element to ensure qualified nursing care.

It was observed in this study that nurses do not describe the clinical characteristics of injuries, that is, they do not specify their size, skin characteristic, amount of exudate, odor, type of tissue present in the ulcer and pain. Such data are extremely important, since they interfere in the specific choice of the type of dressing, as well as in the healing of lesions⁽¹²⁾. The lack of recording the characteristics of the lesion in medical records or incomplete and generic records generates insufficient parameters for the follow-up of results and can compromise the assistance provided to the patient⁽¹⁸⁻¹⁹⁾.

Nursing professionals are not aware of the relevance of writing, as the record of care performed methodically; as a result, the use of both repetitive and vague phrases and terms is observed, which do not reflect the totality of the assistance provided⁽²⁰⁾. The record of the evaluation, evolution and dressing used in the exchange of the type of coverage, enable the continuity of care and the performance of statistics of the various care, also serving as a source of consultation and legal documents, which favor the improvement of the quality of care⁽⁷⁾.

This absence in the nursing notes was the major limitation in this study, as it hindered the more detailed analysis of the potentialities and weaknesses of the service in the treatment of ulcers and, consequently, in the efficiency of the dressings used.

CONCLUSION

The absence of a record of the nursing developments in the patients' medical records was evidenced; even though there is a specific instrument for monitoring the PU in the hospital, this is not used by all professionals, which makes it difficult to plan and evaluate the quality of care.

It was possible to identify prescriptions that go against scientific evidence and with inconsistent criteria. These findings highlight the importance of the implementation of a clear protocol that ratifies the criteria for the choice of primary coverings by nurses.

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