



DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF INTENSIVE THERAPY UNITS PATIENTS WITH PRESSURE ULCER

CARACTERÍSTICAS DEMOGRÁFICAS E CLÍNICAS DE PACIENTES DE UNIDADES DE TERAPIA INTENSIVA COM ÚLCERA POR PRESSÃO

CARACTERÍSTICAS DEMOGRÁFICAS Y CLÍNICAS DE PACIENTES DE UNIDADES DE TERAPIA INTENSIVA CON ÚLCERA POR PRESIÓN

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ABSTRACT

Objective: to describe the demographic and clinical characteristics of patients with pressure ulcers hospitalized to Intensive Care Units (ICU). **Method:** it is an exploratory and descriptive study with a quantitative approach carried out in four intensive care units between February to April 2014, with 108 participating in the data collection. The data were processed by SPSS software version 18.0 and presented in tables. The research project was approved by the Committee of Ethics in Research, CAAE 22191113.5.0000.5214. **Results:** there were 28 with pressure ulcers, 25.9%, 12 of them acquired it in the units, 54.6% were male, average age of 52 years old, staying for 30.4 days, 60.7% were browns, 21.4% were from Teresina. A percentage of 82.1% had a single lesion, 54.2% in the sacral region, 60.7% were using antithrombotic. As the cause of hospitalization, 67.9% were cardiovascular or respiratory disorder, and 11 had comorbidities associated with diabetes and hypertension. **Conclusion:** patients with pressure ulcers have unique characteristics that enable to predict their occurrence through risk scales and early clinical evaluation. **Descriptors:** Pressure Ulcers; Intensive Therapy; Nursing.

RESUMO

Objetivo: descrever características demográficas e clínicas de pacientes internados em Unidades de Terapia Intensiva (UTI) com úlcera por pressão. **Método:** estudo exploratório e descritivo, com abordagem quantitativa, realizado em quatro Unidades de Terapia Intensiva entre fevereiro a abril de 2014. 108 participaram da coleta. Os dados foram processados pelo *software* SPSS versão 18.0 e apresentados em tabelas. O projeto de pesquisa teve a aprovação do Comitê de Ética em Pesquisa, CAAE 22191113.5.0000.5214. **Resultados:** 28 apresentaram úlceras por pressão, 25,9%, 12 adquiriram nas unidades, 54,6% eram do sexo masculino, média de 52 anos, tempo de permanência: 30,4 dias, 60,7% pardos, 21,4% provenientes de Teresina. 82,1% tiveram única lesão, 54,2% na região sacral, 60,7% faziam uso de antitrombolíticos. Quanto à causa da hospitalização, 67,9% foram cardiovasculares ou respiratórias, 11 tiveram as comorbidades diabetes e hipertensão associadas. **Conclusão:** pacientes com úlcera por pressão apresentam características peculiares que possibilitam prever sua ocorrência por meio de escalas de risco e avaliação clínica prévia. **Descritores:** Úlceras de Pressão; Terapia Intensiva; Enfermagem.

RESUMEN

Objetivo: describir características demográficas y clínicas de pacientes internados en unidades de terapia intensiva con úlcera por presión. **Método:** estudio exploratorio y descriptivo con enfoque cuantitativo realizado en cuatro unidades de terapia intensiva entre febrero a abril de 2014, 108 participaron de la recolección de datos. Los datos fueron procesados por el *software* SPSS versión 18.0 y presentados en cuadros. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, CAAE 22191113.5.0000.5214. **Resultados:** 28 presentaron úlceras por presión, 25,9%, 12 lo adquirieron en las unidades, 54,6% de sexo masculino, media de 52 años, permanencia, 30,4 días, 60,7% pardos, 21,4% provenientes de Teresina. 82,1% tuvieron única lesión, 54,2% en la región sacra, 60,7% usaban anti-trombolíticos. Referente a la causa de la hospitalización, 67,9% fueron cardiovasculares o respiratorias, 11 tuvieron las comorbilidades diabetes e hipertensión asociadas. **Conclusión:** pacientes con úlcera por presión presentan características peculiares que posibilitan prevenir su ocurrencia por medio de escalas de riesgo y evaluación clínica previa. **Descriptores:** Úlceras de Presión; Terapia Intensiva; Enfermería.

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INTRODUCTION

The intensive care unit (ICU) has been a focus on health research for nursing because their patients have peculiar characteristics that make them susceptible to several complications, among them the pressure ulcer. This problem involves sensitive consequences for the quality of care due to the greater permanence of the patient in the hospital, the highest number of hospitalizations, infections, increased morbidity, mortality and high costs of the particularities of their treatment, which creates a need for professional and specialized products.

The subjects in this context are more likely to develop this problems because they are critical patients and their risk factors, such as hemodynamic instability, respiratory failure, disease severity, multiple organ failure, besides being sedated, ventilated and, for most of them, confined to bed for long periods, being difficult to maintain skin integrity.

In this sense, a great concern factor for nursing within this scenario is the incidence of pressure ulcers (PU), defined as a resultant tissue damage from a friction or shearing pressure or a combination of them, which show pathologic changes in dermal blood supply to tissues.¹

Considered as a public health problem, its epidemiological panorama does not differentiate between developed and developing countries. In the United States, its prevalence and rising costs with prolongation of hospitalization is 15% and 50%, respectively.² While in Europe, countries like England, Germany, Sweden, Italy and the Netherlands are 7%, 9%, 8.3%, 20%, 23% and 24.2% respectively. In Asia, in countries such as South Korea, the prevalence varies between 10.5% - 45.5%. In Brazil, there are publications that detected a prevalence ranging from 27% to 39.4% among the hospitalized patients.³⁻⁴

This ratio is increased in the intensive care unit based on studies conducted in Brasilia in 2007, showing that the incidence of 37.03% of PU, while in São Paulo in 2009, showed an incidence of 41 02%.^{5,6} In Teresina, a survey conducted in 2011, showed a percentage of 29.03%.⁷

Therefore, knowing the demographic and clinical characteristics of these patients, there is a relationship established between the risk factors related to the appearance of this sensitive care quality indicator to provide

information to managers and health professionals, especially nurses, about the profile and clinical outcomes of the assisted population for the early identification of resource requirements for the care and facilitating the development of a strategic plan focused on the quality of care and safety of critically ill patients in order to prevent.⁸

The objective of the study is to describe the demographic and clinical characteristics of patients hospitalized to intensive care units with pressure ulcers.

METHOD

It is an exploratory and descriptive study with a quantitative approach, in the city of Teresina, Piauí, in four adult ICUs of two public hospitals in the state capital, listed as being the main public hospitals in the state reference that provide intensive care. The study enrolled patients aged at least 18 years old, both genders, who presented or not pressure ulcers when hospitalized, remaining in the ICU for at least 48 hours to accept voluntarily after the clarification of the research or with the authorization of a responsible. Data collection was conducted with assessments on admission, the first 24, 48 and 72 hours. From the third day of hospitalization, the observations were performed every other day to the discharge or the end of the collection.

Data collection took place between February to April 2014 using a questionnaire to collect sociodemographic and clinical data. There were 108 meeting the inclusion criteria of the study, giving rise to our sample. It was conducted pretest data collection instruments to check its feasibility, clarity and compatibility with the proposed objectives.

The Informed Consent Form (TCLE) was given to the participants and their caregivers according to the guiding principles in Resolution 466/2012 of the National Health Council.⁹

At the end of data collection, the results were tabulated in Microsoft Excel spreadsheets and submitted to descriptive analysis of data using SPSS software version 18.0 when the data were presented in absolute numbers and percentages to exposed discussion tables according to their distribution frequency and percentages. The Research Ethics Committee (CEP) has authorized the research on January 8, 2014 under CAAE 22191113.5.0000.5214 and the research was also appreciated and approved by the Ethics Committee and Research of the hospitals in the study.

RESULTS

One hundred and eight patients were followed for three consecutive months during data collection for the study. Of the population who developed PU (n=28), 4 died in the ICU 3, predominantly male, with an average age of 52.0 years old, ranging

between 22 and 86. Considering the nutritional status, 89.3% had an average BMI considered eutrophic. The self-reported skin color or referred by family members was mostly mulatto with 60.7%. There was a prevalence of patients from Teresina 21.4% as shown in Table 1.

Table 1. Sociodemographic characterization of hospitalized patients in the Intensive care Units with PU (n=28). Teresina, 2014.

Characteristics	$\bar{x}(s)$ ⁱⁱ	min-Max	n	%*
Gender				
Male			17	60.7
Female			11	39.3
Age	52,0	22-86		
18-49	(21,7)		11	39.3
50-59			2	7.10
60-70			8	28.6
71-79			3	10.7
>80			4	14.3
BMI				
18.5-24.99			25	89.3
25.0-29.99			2	7.1
30.0-34.99			1	3.6
Skin Color				
White			06	21.4
Mulatto			17	60.7
Not identified			05	17.9
Origin				
Teresina			06	21.4
Interior of Piauí			05	17.9
Others			04	14.3
Not informed			13	46.4
Total of patients per UTI			5	17.9
UTI 1			4	14.3
UTI 2			16	57.1
UTI 3			3	10.7
UTI 4				

i Average ii Standard Deviation

The average of hospitalization was 30.4 days (SD=19.3). The average time of the PU onset was 17.1 days (SD=12.5). As for the number of PU, most of them presented a single lesion (82.14%), however, (17.86%) of the patients had more than one lesion, totaling 48 PUs. The highest prevalence of PUs location was the sacral region (54.2%) followed by the occipital region (16.7%), Table 2.

Among the medications used, 59.6% were using antibiotics, 60.7% used antithrombotic, 50% of painkillers, sedatives with 32.1%, and 17.8% of antipsychotics. As for the cause of hospitalization, there were 67.9% having cardiovascular and respiratory causes, followed by multiple trauma or severe trauma, 28.6%, as shown in Table 2.

Table 2. Patients’ characterization hospitalized in the Intensive Care Units with PU (n=28), time of hospitalization, average time of PU onset, total of Pus (n=48) and location. Teresina, 2014.

Characteristics	$\bar{x}^i(s)^{ii}$	min-Max	n	%*
Presence of PU				
Yes			28	25.9
No			80	74.1
PU at the hospitalization				
Yes			16	57.1
No			12	42.9
Time of hospitalization in the ICU (days)	30.4 (19.3)	04-78 01-40		
Average time of PU onset (days)	17.1 (12.5)			
Location				
Occipital			08	16.7
Sacral			26	54.2
Left calcaneous			07	14.6
Right calcaneous			05	10.4
Others			02	04.1

i Average ii Standard Deviation

DISCUSSION

The intensive care unit provides medical care for critically ill patients or risk potentially recoverable in need of constant monitoring and agility which creates a need for professional and specialized products.

While the ICU is an appropriate location for the treatment of critically ill patients, it is also considered one of the most aggressive hospital environments, tense and traumatic, damaging the psychological structure. Besides the patient’s condition, other factors contribute to the onset of complications such as infections, muscle atrophy, as well as frequent therapeutic interventions, isolation, lack of favorable conditions for sleep, stay in bed for a long time, fear of worsening disease and death, favoring the emergence of pressure ulcers (PUs).¹⁰⁻¹

The data presented in the research showed similarities with other studies on the PU phenomenon. Of the 108 patients, 28 showed PUs, 26%, 12 of those acquired them in the ICU, 42.85%. Considering only those who acquired Pus in the ICU, the percentage was 11.11%. The result approached the findings in the study⁷ held in the same city where the incidence of PUs was 29.03%. The data show similarities with other studies addressing incidence and prevalence of PUs phenomenon that showed indices between 15 and 50% and 41.02% respectively.^{2,6}

Of the population who developed PUs (n=28), 60.7% were male as found other in national study¹² conducted in the ICU which showed a predominance of men developing Pus with 57.9%. The average age was 52 years old with a standard deviation of 21.7 years old

with minimum and maximum of 18 and 85, respectively. The results regarding age are in accordance with the literature, as mentioned in a study³ whose average age was 54 years old with a standard deviation of 20 years old, ranging from 18-86 years old. In another study, it was observed an average of 55 years old for patients with PU, varying between 24-92 years old.⁶

Although a considerable number of PUs occurred in patients aged between 18-59 years old (46.4%), there was a higher prevalence in patients older than 60 years old (53.6%). Studies show that older people are the largest group at risk for PUs development, due to their high degree of morbidity associated with the aging process. Their skin undergoes transformations inherent in this physiological process by reduced elasticity, changes in its texture, decreased muscle mass and cell replacement frequency, making it more fragile. These changes may predispose to lesions induced by external factors such as pressure, friction, shear and moisture, as well as factors related to co-morbidities such as hypertension and diabetes.

Of the 28 patients with PUs, 11 had associated diabetes mellitus and hypertension. These co-morbidities are directly associated with the wound healing process of the injury due to vascular complications which lead to poor circulation and consequent deficiency in wound healing and moreover, the diabetes mellitus can facilitate infectious processes.¹³ In another study in a capital of the Brazilian Northeastern these factors have predisposing conditions in 80% and 30% respectively in

patients with PUs, cited as the most frequent and important in the genesis of this problem.¹⁰

It is known that one of the risk factors for PU is the nutritional status so all critically ill patients should be referred to a previous and continuous BMI. Most of the population studied (89.3%) was appropriate. Studies address that BMI below 18.5 kg/m² is associated with decreased body fat which reduces protection against pressure on prominent bony areas.

Although most studies show poor nutrition as a risk factor since this would reduce the tolerance of tissue to injury, another important factor to consider is obesity, as this can influence the pressure and distribution of patient's weight and change position, besides contributing to the presence of moisture in the joints of these patients.¹⁴

Skin color self-referred or referred by family members was mostly mulattos (60.7%), which differs from most studies on the PU phenomenon in which the prevalent population is white.¹⁵ However, in a study⁷ held also in the capital of Piauí showed (64.5%) brown color patients, which is probably explained by the mixing of races existing in the northeast, with the immigration of blacks and whites. In this study, no black participant developed PUs. The structure of the skin varies with the color, there are similarities in basic structure and function of all skin types, but there are subtle variations. One of these variations is the structure of the stratum corneum, which is more compact in black, giving the largest black skin resistance to chemical irritation and characterized as more effective barrier to external stimuli.¹⁶

There was a prevalence of patients from Teresina (21.4%). It is noteworthy the fact that (57.1%) are from 3 ICU patients receiving mostly trauma or severe multiple trauma from car accidents mostly from the capital. However, in other study, the people who developed PU were mostly from the interior of the state (47.5%)⁷, which shows the inefficiency and lack of structure in the state of the peripheral services, making people migrate in search of qualified assistance.

The ICU length of stay had an average of 30 days with a standard deviation of 19.3 days, with variation of a minimum of 4 days and a maximum of 78 days. The average time of Pus onset was 17 days (SD=12.5) with a minimum of 01 and maximum of 40 days. In patients who acquired PU in the ICU, there was a higher incidence in those who remained for more than 10 days in hospital, which is similar

to studies that deal with the period of 11-20 days. Also studies show an association between length of stay greater than 10 days and the very high incidence of this disease.¹⁵

The highest prevalence of PU location was the sacral region (54.2%) as many studies as³ obtained a prevalence (82%) of PU in the sacral region. According¹⁷⁻⁸, this region is considered one of the most susceptible to developing pressure ulcers because of bony prominences and proximity to incontinence areas. The authors report that most of the ulcers occurring in the lower half of the body owing to the presence of large bony prominences and uneven weight distribution in those areas.

Most patients with PUs were caused in the ICU, stroke, myocardopathy Acute infarction and/or respiratory failure or associated disease which affected the cardiovascular or respiratory system (67.9%) followed by poly-trauma or severe trauma (28.6%). Among the medications used, 59.64% were using antibiotics, 60.71% use of antithrombotic, 50% of painkillers, 32.14% sedatives and 17.85% antipsychotics. These critically ill patients may have sensory loss due to sedation by drugs, diseases such as peripheral neuropathy, spinal cord injury, stroke and coma and, with limited mobilization that are more susceptible to developing Pus.¹⁹

The profile of elderly patients are bedridden and association of chronic degenerative diseases, age of study patients was composed mostly from 18-59 years old (60.2%) and (43.5%) between 18 and 49 years old. Similar to a study conducted in ICUs with similar characteristics to this study showed most of young adults aged between 18 and 25 years old (31%), followed by those from 36 to 46 years old (26.2%). The same study explains that this difference existed because one of the study sites is a service specializing in care of emergency care in traumatology and neurology, which most of the patients had assistance associated with automobile accidents with young male victims, as found in this study.²⁰

The characteristics of pressure ulcer patients showed similar peculiarities to other studies, showing the risk factors that predispose this problems. Although studies show many risk factors for the development of PUs, the quality of care indicator is still routine in health services and their costs become high and research shows that the best way to reduce costs is prevention.²¹

Knowing the characteristics presented in the study combined with a daily clinical

evaluation from admission through risk measurement instruments that meet the intensive care unit become necessary to prevent this adverse event.

CONCLUSION

Although this phenomenon goes beyond nursing care, studies directing the care and prioritizing prevention are essential, as it is a completely preventable event. Therefore, preventive nursing action are important in the implementation of prevention strategies that include decubitus changes, systematization of daily assistance, placement of instruments required for pressure relief, in addition to predictive scales and staff training for a clinical evaluation that favor prevention. Care as an art is what moves the nurses, it is their most effective tool for prevention. Since this is the highest available resource, the specification of this group substantiate other research in this area.

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