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ORIGINAL ARTICLE

PREVALENCE OF PRESSURE ULCERS IN INTENSIVE CARE UNITS PREVALÊNCIA DE ÚLCERAS POR PRESSÃO EM UNIDADES DE TERAPIA INTENSIVA PREVALENCIA DE ÚLCERAS POR PRESIÓN EN UNIDADES DE TERAPIA INTENSIVA

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ABSTRACT

Objective: to detect the prevalence of Pressure Ulcers (PUs) in patients admitted to Intensive Care Units (ICUs). **Method:** cross-sectional, quantitative study, developed in an emergency and trauma reference hospital in the State of Rio Grande do Norte located in the eastern sanitary district of Natal (RN), Brazil. **Results:** the prevalence found of PUs was 69% in the four ICUs. Individually, the Cardiac ICU had an incidence of 44.4%; the Bernadete ICU, 85.7%; the General ICU, 60%; and the Emergency ICU, 87.5%. **Conclusion:** It is necessary to focus on a strategic planning for prevention and treatment measures to reduce the PU indexes in the institution. **Descriptors:** Nursing; Pressure Ulcer; Intensive Care Units; Prevalence.

RESUMO

Objetivo: detectar a prevalência de Úlceras por Pressão (UPs) em pacientes internados em Unidades de Terapia Intensiva (UTIs). **Método:** estudo transversal, de abordagem quantitativa, desenvolvido em um hospital de referência para o estado do Rio Grande do Norte em urgência e trauma, situado no distrito sanitário leste do município de Natal (RN), Brasil. **Resultados:** a prevalência encontrada de UPs foi de 69% nas quatro UTIs. Individualmente, a UTI Cardiológica apresentou 44,4%; UTI Bernadete, 85,7%; UTI Geral, 60%; e UTI do Pronto-Socorro, 87,5% de prevalência de UPs. **Conclusão:** é necessário nortear um planejamento estratégico para medidas de prevenção e tratamento para redução dos índices de UPs na instituição. **Descritores:** Enfermagem; Úlcera por Pressão; Unidades de Terapia Intensiva; Prevalência.

RESUMEN

Objetivo: detectar la prevalencia de Úlceras por Presión (UPs) en pacientes internados en Unidades de Terapia Intensiva (UTIs). **Método:** estudio transversal, de enfoque cuantitativo, desarrollado en un hospital de referencia para el estado de Rio Grande do Norte en urgencia y trauma, situado en el distrito sanitario este del municipio de Natal (RN), Brasil. **Resultados:** la prevalencia encontrada de UPs fue de 69% en las cuatro UTIs. Individualmente, la UTI Cardiológica presentó 44,4%; UTI Bernadete, 85,7%; UTI General, 60%; y UTI de Pronto-Socorro, 87,5% de prevalencia de UPs. **Conclusión:** es necesario guiar un planeamiento estratégico para medidas de prevención y tratamiento para reducción de los índices de UPs en la institución. **Descriptores:** Enfermería; Úlcera por Presión; Unidades de Cuidados Intensivos; Prevalencia.

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INTRODUCTION

Pressure ulcers (PU) are caused by the pressure exerted on the skin and underlying tissues of a prominent bone. The *National Pressure Ulcer Advisory Panel* (NPUAP) presented in 2014 a new classification for PUs. Based on the severity of the PU in the skin, this can be classified in the following stages: stage I (intact skin with non-blanchable erythema); stage II (partial loss of skin structure or blister); stage III (full loss of skin structure with visible subcutaneous tissue); stage IV (full loss of tissue with exposed muscle and bone structure); unstageable (total loss of skin structure or tissues of unknown depth); and suspected deep lesion (a dark red or purple area located on intact skin or blister filled with blood).¹

The indexes of Pressure Ulcers (PUs) in some countries of the world are much lower than in Brazil. In China, a study identified a prevalence of 1.58% and incidence of 0.63%.² In Iranian hospitals, two prevalence rates were obtained in Intensive Care Units (ICUs): 26.7% for patients followed daily, and 19% based on medical records reviewed.³ In India, the prevalence was 3.1% in nursing wards.⁴

PUs represent a problem for hospital and public health institutions.⁵ They incur financial costs to health services, as for example with industrialized dressings.⁶⁻⁷ They also indicate the quality of health care regarding patient safety, since low PU rates are related to good care provided.⁸⁻⁹

Intensive care patients are prone to factors strongly associated with PUs, such as: sepsis, long hospital stay and high risk on the Braden scale.¹⁰ They may lead to impairment of the clinical condition of critically ill ICU patients.⁹ Individuals with PU need care from the multiprofessional team working in the sector, with emphasis to the Nursing Team, as this is the one that stands out for the continuous care 24 hours a day.⁶

Nursing plays an important role in the prevention and treatment of PUs. In this context, the use of indices to classify these lesions has been associated to a quality nursing care,¹¹ and one from the nursing team

can act to help is by applying preventive protocols to reduce high rates of PUs.⁹

In this context, considering the PU indexes as a public health problem and an aggravating factor for the health of ICUs patients, the present study aimed to detect the prevalence of PUs among patients hospitalized in ICUs of a reference hospital in Rio Grande do Norte (RN).

METHOD

This is a cross - sectional study with quantitative approach developed in an emergency and trauma reference hospital in the State of the RN, located in the eastern sanitary district of the Municipality of Natal/RN. The institution has five ICUs: Cardiac ICU (10 beds); Bernadete ICU (10 beds); General ICU (9 beds); Emergency ICU (10 beds); and Pediatric ICU (6 beds).

The inclusion criteria for detecting the prevalence of PUs in patients admitted to the ICUs were: hospitalization for at least 24 hours; signing of the Informed Consent Form (ICF) by a responsible person in the case of unconscious patients; age equal or above 18 years. Exclusion criteria were: time of hospitalization less than 24 hours due to discharge; death or transfer to a sector other than ICU; pediatric ICU; and patients aged less than 18 years.

Four ICUs were included in the research. They have 39 beds intended for the care of patients with varied etiologies and clinical and surgical conditions.

Data collection was done by completing a structured form. The collection was conducted by the researchers at the moment when the nursing professionals were bathing the patient in the bed, a proper moment for identification, evaluation and classification of ulcers.

The collected data was transferred to a Microsoft Excel 2007 worksheet and exported for analysis in the *Statistical Package for Social Science*, version 15.0 (SPSS) to be analyzed, and stratified into figures, Figures and tables.

The prevalence of PUs was determined according to the following calculation:

Number of patients with PU in the ICUs

Prevalence = _____ x 100

Number of patients admitted to the ICUs

The prevalence coefficient can be defined as the ratio of known cases of a given disease and population. Thus, the result is multiplied by the referential base of the population, which is power of 10.¹²

The research respected the ethical precepts of Resolution 446/2012 of the National Health Council¹³, and after receiving approval from the Ethics and Research Committee (REC) of the University Hospital

Onofre Lopes - HUOL/UFRN under Opinion nº 1,255,711 and CAAE: 46268715.8.0000.5292.

RESULTS

On November 4, 2015, 37 of the 39 beds were occupied, one was vacant and the other was unavailable due to maintenance. The study sample consisted of 29 bedridden patients; two patients were aged less than 18 years, two had been hospitalized for less than 24 hours and four patients were unconscious patients whose responsible caregivers refused to participate in the study.

Among the 29 (100%) selected patients, 20 (69%) presented at least one PU, and nine (31%) had none. These data show a prevalence of 69% of PUs in patients admitted to the four ICUs.

Based on the overall prevalence of this study, we stratified the results per ICU studied. Nine (100%) patients from the Cardiac ICU participated in the study; four (prevalence of 44.4%) had PUs, and five (44.6%) had no lesions. Seven (100%) patients from the Bernadete ICU participated in the study; six (prevalence of 85.7%) had PUs and one (14.3%) had no lesions.

At the General ICU, five (100%) patients participated in the study; three (prevalence of 60%) had PUs and two (40%) had no lesions. And in the Emergency ICU, eight patients (100%) participated in the study; seven (prevalence of 87.5%) had PUs and one (12.5%) had no injury. Figure 01 presents the overall prevalence of PUs and the prevalence per ICU.

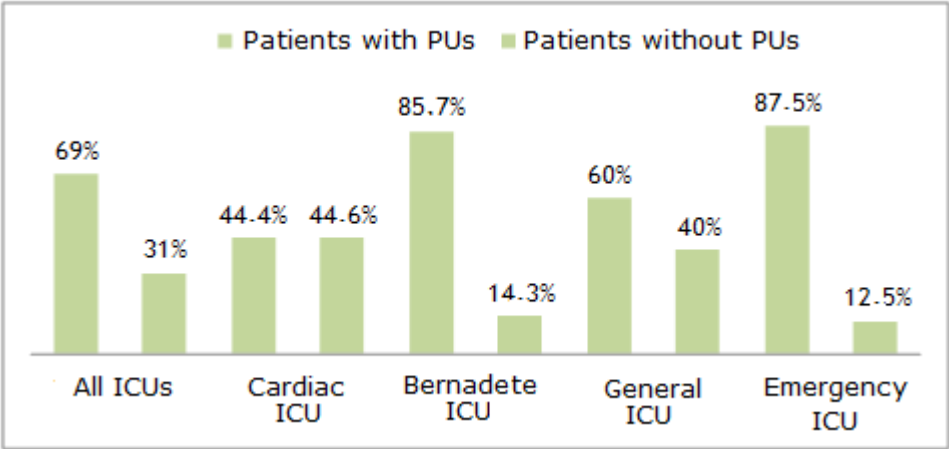


Figure 1. Overall prevalence of PUs in hospitalized patients, and prevalence per ICU. Natal (RN), Brazil, 2015.

Regarding the sex of these patients, 24 (82.76%) individuals were male and five (17, 24%) were female. Analyzing males alone, 17 (70.8%) out of the of the 24 (100%) patients presented PU and seven (29.2%) did not present lesions. Among the five (100%) women, three (60%) presented PU and two (40%) did not present lesions.

Regarding the age group of the 29 (100%) patients who presented or not PUs, the results were as follows: three (10.3%) patients in the age group between 18 and 25 years presented PUs; two (6.9%) patients in the age group

between 26 and 33 years had PUs and two (6.9%) had no lesion.

One patient in the age group between 34 and 41 years (3.5%) had PUs and another patient (3.5%) had no lesions; there were no patients between the ages of 42 and 49; two (6.9%) patients in the age group between 50 and 57 years had developed the lesion and two (6.9%) had not; 12 (41.3%) patients in the age group equal to or greater than 58 years were found with PUs and four (13.8%) were not. The Figure 02 below presents the incidence of PUs per age group.

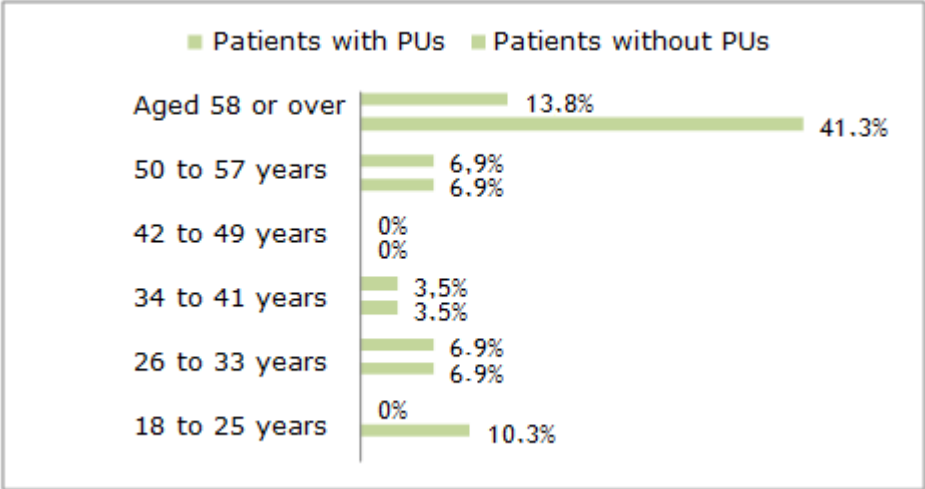


Figure 2. Frequency of patients with and without PUs per age group. Natal (RN), Brazil, 2015.

Regarding the length of hospitalization: among patients hospitalized for 1 to 15 days, 10 (34.5%) had PUs and eight (27.5%) had no lesions; among patients hospitalized for 16 to 30 days six (20.7%) had PUs and one (3.5%) had no lesions; among patients hospitalized

for 31 to 45 days, one (3.5%) had PUs; among patients hospitalized more than 46 years, three (10.3%) were identified with UPs. Figure 03 presents the frequency of patients with and without PU in relation to the length of hospitalization in the sectors discussed.

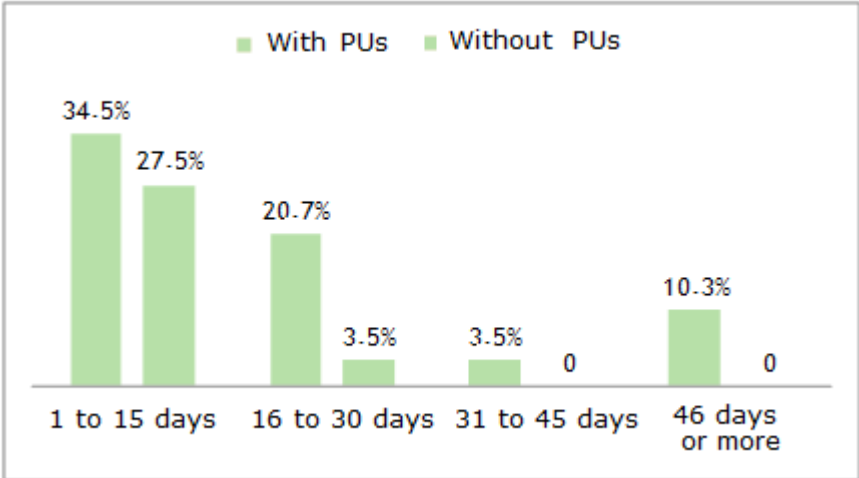


Figure 3. Frequency of patients with and without PUs in relation to the length of hospitalization. Natal (RN), Brazil, 2015.

In the evidence of the prevalence of PUs, it was possible to quantify and classify these lesions. Forty-two (100%) PUs were identified: nine (21.4%) stage I PUs; 23 (54.8%) stage II PUs; eight (19%) stage III PUs; and two (4.8%) stage IV PUs.

The Sacrococci region was affected by 11 (26.2%) PUs. Of these, there were: one stage I PU, two stage II PUs, six stage III PUs and two stage IV PUs. In the Trochanter region, one (2.4%) stage I PU was found.

In the Occipital region, there were six (14.3%) stage II PUs; in the middle Ankle were found two (4.7%) PUs, one stage I PU and one

stage II PU; in the Elbow region, two (4.7%) PUs were found, one stage I PU and one stage III PU.

Calcaneus PU corresponded to 18 (42.9%) lesions, six of them being stage I PUs and 12 stage II PUs; there was also one case of PU in the penis (2.4%), being a stage II PU; and the ear region presented one (2.4%) stage II PU. Figure 4 shows the frequency of PUs in relation to their location.

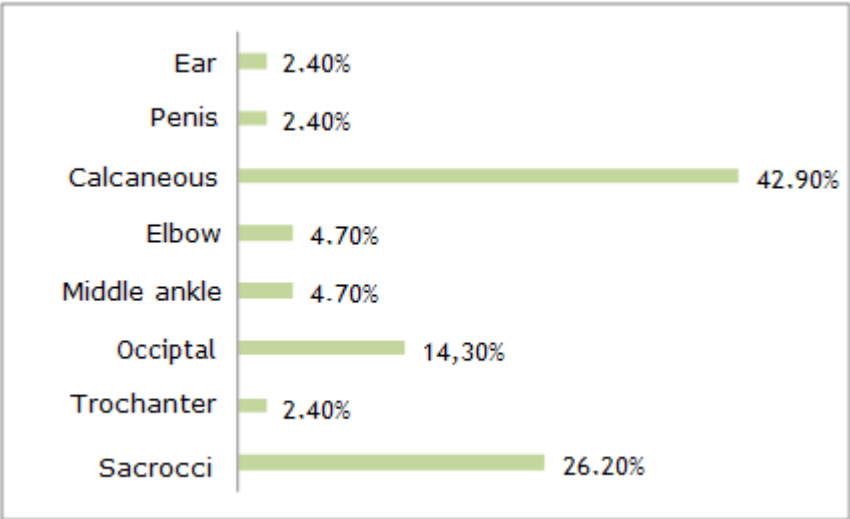


Figure 4. Frequency of PUs in relation to their location. Natal (RN), Brazil, 2015.

DISCUSSION

A study carried out in a university hospital in the city of Botucatu/SP analyzed the 332 hospitalized patients from September 2007 to August 2008 and identified a prevalence of PUs of 17.79%⁽¹⁴⁾. In a city in the state of Rio de Janeiro, the prevalence found was 22.9%

among 109 hospitalized patients from March to May, 2010, in a federal hospital¹⁵

The research that presented the most similar results to our present data, but still with a notable difference, was the one performed in a public hospital in the Federal District. The total prevalence was 57.89% among 19 patients on April 13, 2007. The authors found the following prevalences per

each subunit: 50% in a general unit, and 87.5% in a unit specialized in trauma. The result found in the trauma unit of this study is similar to the result of the current survey, which also showed a prevalence of 87.5% in the emergency ICU.⁶

Likewise in the current study, in the research developed at the university hospital of the city of Botucatu/SP, males were the most affected by PUs. Among the patients with PUs, 55% were male and 45% were female.¹⁴ The age group equal to or greater than 58 years presented the largest number of people affected with PUs in the present study. Age appears as a contributing factor for the development of these lesions. It is notable that aging slows the healing process and vascularization, as well as decreases the function of collagen; as an example, quick healing of similar wounds is observed in children as compared to an older people.¹⁶

According to the Figure 03 of the present study, at least one patient hospitalized from 16 to 30 days did not present PUs, but no patient in the group of 31 to 45 days remained without injury. Thus, it can be said that a long hospitalization time is a risk factor for the development of PUs.¹⁰

As for the region most frequently affected by PUs in the present study, the Calcaneal region prevailed (42.9%), followed by the sacral region (26.2%). Another study identified that the most affected area was the calcaneal region, with nine occurrences, followed by the malleolar and sacral regions with four and three occurrences respectively. The data of this research in relation to the most affected site are comparable to those of current research, presenting the calcaneal region as the most affected, as well as the presence of PU in the penile region, as well as in the current study.⁶

CONCLUSION

The prevalence of PUs found in this study is considered high in comparison to research carried out in ICUs from other hospital institutions in the country. This may be a reflection of the quality of healthcare provided at the institution or the lack of implementation of preventive strategies, as standard protocols.

The existence of PUs has repercussions on stressful situations for health professionals, specifically for the nursing team, as they are responsible for the daily dressings and preventive measures to maintain the patients' skin integrity. All this responsibility, besides other activities such as drug administration and bathing in the bed, causes an excess of

work for this team and can represent a factor that contributes to the formation of the lesions. An overwhelmed professional may not perform his duties with quality.

PUs affect the patient's health in physical, psychic and emotional aspects; cause concern among the family members regarding the consequences that these lesions may have on the affected individual; and incur a high financial cost to the institution, which invests in products for treatment.

Among the regions affected by PUs, the lesion found in the penis is notable. No research shows theoretical basis for the formation of this type of ulcer, although this lesion was mentioned in one study.⁶ The PU in the penis can lead to consequences such as penile dysfunction and partial loss of the organ, depending on the staging of the lesion. These consequences may cause negative feelings and future frustrations to the patient.

In this study, we raise the hypothesis that the lesion in the penis is the result of the continuous use of a device for collecting urine. More research on PUs in penile regions is necessary in order to list which causes lead to the occurrence of this type of injury.

Early use of plaque covers for protection in the sacral region was observed and this area was not predominant in the study. It is possible to raise the hypothesis that the other areas did not receive this preventive measure and for that reason they developed PUs. The calcaneal region was the most affected, and during the collection of the data, the erroneous form of cushion disposition for protection of the calcaneus was observed. These were placed directly in the region and not letting the feet float.

Studying PU is always necessary, since this injury is a frequent public health problem and can influence the recovery of hospitalized patients, specifically in ICUs. Further research is needed to ascertain the magnitude of the occurrence of these lesions in Brazil, because scientific basis is fundamental to apply optimal conducts for prevention and treatment.

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