



Applied nutritional investigation

Prevalence of pressure ulcers in hospitals in Brazil and association with nutritional status—A multicenter, cross-sectional study

Patrícia Alves Brito M.Sc.^a, Simone de Vasconcelos Generoso Ph.D.^{b,*},
Maria Isabel Toulson Davisson Correia M.D., Ph.D.^c

^a Surgical Post Graduate Program, Medical School, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

^b Nursing School, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

^c Medical School, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

ARTICLE INFO

Article history:

Received 15 October 2012

Accepted 19 November 2012

Keywords:

Pressure ulcer

Pressure ulcer prevalence

Status nutritional

Malnourished

Risk factors

ABSTRACT

Background: Pressure ulcers (PU) represent a widespread, painful, and expensive health care problem directly associated with increased morbidity, mortality, and length of hospital stay. The aim of this study was to determine the prevalence of PU in hospitalised patients in public and private Brazilian institutions and the ulcers' associations with nutritional status and other risk factors.

Methods: A multicenter, cross-sectional, quantitative and qualitative study was carried out in hospitals in different geographic regions of Brazil from March 2009 to February 2011. The prevalence and characteristics of PU, the nutritional status and the association between the presence of PU, and the nutritional status and other study variables were evaluated. The association of the presence of PU with the study variables was performed by univariate analyses and multivariate logistic regression models. The final multivariate model was one in which all variables were significant at the 0.05 level.

Results: According to the subjective global assessment (SGA), the prevalence of PU was 16.9%, and 52.4% of patients were malnourished. PU and their severity were directly associated with malnutrition ($P < 0.05$). Patients who are bedridden, who are elderly, who have neurological disorders or cancer, who are staying at a public or private institution, and who are staying at the hospital between 8 d and 15 d had an increased risk of PU ($P < 0.05$).

Conclusion: The prevalence of PU in Brazilian general hospitals is high, and the prevalence of malnutrition is extremely high. Malnourishment is one of the most important risk factors associated with the development and severity of PU in hospitals. Patients who are malnourished are more prone to developing PU.

© 2013 Elsevier Inc. Open access under the [Elsevier OA license](http://creativecommons.org/licenses/by/3.0/).

Background

Pressure ulcers (PU) represent a widespread, painful, and expensive health care problem [1–3] directly associated with increased morbidity, mortality, and length of hospital stay [4–7].

This paper was partially supported by FAPEMIG (Fundação de Amparo à Pesquisa do Estado de Minas Gerais) Project **CDS APQ-1546-4.08/07**.

Patrícia Brito developed the study design, collected the data and drafted the manuscript.

Simone de Vasconcelos Generoso analysed data and drafted the manuscript.

Maria Isabel Toulson Davisson Correia developed the study design, supervised the study and finalised the manuscript.

* Corresponding author. Tel.: 15 55 31 88128650.

E-mail address: simonenutufmg@gmail.com (S. de Vasconcelos Generoso).

Several risk factors, including malnutrition, are associated with the development of PU [8]. Malnutrition has been shown to be strongly related to the risk of developing these lesions because of its negative impact on wound healing [9,10].

PU and malnutrition are an extremely inconvenient combination for patients and the health care system [11,12]. The relationship between PU and malnutrition deserves further assessment, as the latter is highly prevalent worldwide [13]. In the literature, there have been several studies assessing the prevalence of pressure ulcers, but most are restricted to specific regions and cities, and some hospital clinics and specific patient groups [14–20].

The aim of this study was to determine the prevalence of PU in hospitalised patients in public and private Brazilian institutions and its association with nutritional status and other risk factors.

Methods

Study population

This study was a multicenter, cross-sectional, quantitative and qualitative study carried out in hospitals in different geographic regions of Brazil from March 2009 to February 2011.

Hospitals were enrolled if they were classified as general institutions; had more than 100 beds; agreed to participate based on a previous invitation sent to one of the nutritional team members; and were approved by the ethical committee. In each hospital, patient selection was performed by a random drawing based on a map of the bed distribution. If the chosen bed was empty or if the patient did not fulfil the inclusion criteria, the next bed was chosen in ascending order. Patients who were younger than 18 yr, had psychiatric disorders, could not communicate or had no guardian to do so, or were in contact isolation were excluded from the study. The numbers of patients included in each city as well as the number of that city's inhabitants are depicted in Table 1. All patients or their guardians provided written consent prior to their enrollment.

Seventy-four percent of the evaluations were carried out by the principal investigator.

Assessment of pressure ulcers and clinical characteristics

Patients underwent a physical examination to evaluate skin integrity to detect the presence of PU. If PU was detected, the location and classification of the stage were recorded. If more than three PU were detected, this information was recorded in the protocol as an independent variable. The severity of PU was based on international classification guidelines proposed by the guide of prevention and treatment of the European Pressure Ulcer Advisory Panel and the American National Pressure Ulcer Advisory Panel (EPUAP/NPUAP) [21]. This system classifies ulcers from stage I to stage IV. In addition, medical records were reviewed to determine risk factors. Age, sex, primary diagnosis, presence of infection, and length of hospital stay from the d of admission until the d of the current assessment were collected.

Assessment of nutritional status

The nutritional status of the patients was determined by subjective global assessment (SGA). The SGA was carried out as proposed by Detsky et al. [22] and it comprises an evaluation of current weight, weight before illness, and weight change in the previous 6 mo and in the last 15 d; nutritional history (appetite, dietary intake, gastrointestinal symptoms); gastrointestinal derangements (diarrhea, vomiting, nausea); functional physical capacity; and physical assessment (fat loss, muscle wasting, and presence of leg and sacral edema and ascites). The information necessary to complete the SGA was collected from either the patients or their accompanying family members. Patients were classified as well-nourished, suspected or moderately malnourished, or severely malnourished.

Statistical analysis

The data were processed using Excel software and the statistical analysis was performed with SPSS 13.0 (SPSS Inc., Chicago, USA). Continuous variables were expressed as the mean \pm standard deviation when normally distributed and as the median \pm interquartile range for non-normal variables. Normality was assessed by the Shapiro Wilks test. The association of the presence of PU with the study variables was performed by univariate analysis and a multivariate logistic regression model. The final multivariate model was one in which all variables were significant at the 0.05 level. The fit of the multivariate model was assessed by the Hosmer-Lemeshow goodness-of-fit test.

Table 1

Estimated and actual number of primary assessments achieved in each city in Brazil included in the study, 2011

| Cities | N inhabitants* | N assessments (%) |
|-------------------|----------------|-------------------|
| Belo Horizonte—MG | 2,412,937 | 86 (18.2) |
| Manaus—AM | 1,646,602 | 49 (10.4) |
| Rio de Janeiro—RJ | 6,093,472 | 127 (26.8) |
| São Paulo—SP | 10,886,518 | 86 (18.2) |
| Cuiabá—MT | 526,830 | 33 (7.0) |
| Natal—RN | 774,230 | 32 (6.8) |
| Curitiba—PR | 1,797,408 | 60 (12.7) |
| TOTAL | 32,440,772 | 473 (100) |

* Data based on Instituto Brasileiro de Geociências, 2009.

Results

General characteristics and nutritional status

A total of 473 patients, 251 men and 222 women, with a mean age of 58.4 (18–103) years were enrolled in the study. There were 184 (38.9%) patients classified as elderly. The majority of patients were admitted to public hospitals (157; 33.2%), with 75 (15.9%), 196 (41.4%) and 45 (9.5%) in university, private, and public institutions, respectively. The most prevalent diagnoses were cancer (23.5%), followed by diabetes (16.3%) and infections (14.8%). One hundred forty-three patients (30.4%) were bedridden, and the median length of hospital stay was 8 d, with an interquartile range of 18 d (Table 2).

Prevalence and characteristics of PU

Eighty patients had PU, giving a prevalence of 16.9%. Thirteen (16.3%) had more than three PU. Sacral, trochanteric, calcaneal, and back and elbow regions were the most affected. Other locations, such as the occipital region, neck, ankle, ear, and sides of the knee were also observed. Most patients presented with stage I and II ulcers (Table 3). There was no significant difference in PU prevalence among geographic regions.

Nutritional status

According to the SGA, 47.4% patients were classified as well nourished, 30.2% were classified as suspected or moderately malnourished, and 22.4% were classified as severely malnourished.

Association between presence of PU, nutritional status, and other study variables

PU and their severity were directly associated with malnutrition, as shown in Table 4. Elderly patients, patients with clinical diagnoses, neurology and cancer patients, bedridden patients, infected patients, and patients in use of nutritional therapy also presented with increased risk of PU when assessed by univariate analysis. There was a significant association between the presence

Table 2

Clinical data of 473 hospitalized patients in Brazil, 2011

| Patient characteristics | N | % |
|-------------------------|-----|------|
| Diagnosis | | |
| Infections | 70 | 14.8 |
| Diabetes | 77 | 16.3 |
| Cancer | 111 | 23.5 |
| Miscellaneous | 258 | 46.4 |
| Specialties | | |
| Neurology | 80 | 17.0 |
| Oncology | 106 | 22.6 |
| Orthopedics | 37 | 7.9 |
| Others | 250 | 52.5 |
| Type of treatment | | |
| Surgical | 236 | 49.6 |
| Clinical | 239 | 50.4 |
| Terminally ill | | |
| No | 334 | 70.6 |
| Yes | 54 | 11.4 |
| No information | 85 | 17.9 |
| Bedridden | 143 | 30.2 |
| Length of stay | | |
| Up to 7 d | 233 | 49.2 |
| From 8 d to 15 d | 84 | 17.8 |
| Greater than 16 d | 156 | 33.0 |

Download English Version:

<https://daneshyari.com/en/article/6089870>

Download Persian Version:

<https://daneshyari.com/article/6089870>

[Daneshyari.com](https://daneshyari.com)