



Epidemiological and Clinical Characteristics of Patients with Pressure Ulcers in Butembo, Democratic Republic of the Congo

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Authors' contributions

This work was carried out in collaboration between all authors. Authors MMV and FKS designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors JKK and MKI managed the analyses of the study. Author SUA critically review the first manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Pressure Ulcers constitute a public health problem. The objective of this study was to determine the epidemiological and clinical characteristics of patients with pressure ulcers in Butembo.

Methods: This was a descriptive cross-sectional study from September 2016 to February 2017, carried out at the Matanda hospital and Cliniques Universitaires du Graben in Butembo, Province

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of North-Kivu, Democratic Republic of the Congo.

Results: Among 762 patients hospitalised in the surgery department of Matanda hospital and Cliniques Universitaires du Graben, 33 had pressure ulcers i.e. prevalence of 4.3%. Among them, there were 19 males and 14 females with mean age of 46.2 years. The mean time of appearance of pressure ulcers was 26.6 days; 75.8% of pressure ulcers were developed in hospital. 19 cases (57.6%) had second-degree pressure ulcers; sacral localisation was the most recorded in 51.5% or 17 cases. Nine patients out of 33 or 27.3% who had pressure ulcers had a traumatic neurological deficit as well as those with disabling medical conditions.

Conclusion: Pressure ulcers remain a real public health problem in our community. They concern any patient, regardless of age or gender. Special attention should be paid to patients with conditions that lead to prolonged bed rest.

Keywords: Pressure ulcers; epidemiological; clinical; Butembo.

1. INTRODUCTION

The pressure ulcer or bedsore is a spontaneously developing sore at the level of the support areas in hospitalised and bedridden patients, most often elderly, with a deteriorated general state and reduced mobility and sensitivity. Its impact on quality of life is essential because it causes pain and discomfort and restricts patients' daily activities [1].

Even if the quality of life of the patient suffering from pressure ulcers and the psycho-social consequences of the pressure ulcer are poorly known today, the pressure ulcer must be considered as a severe and debilitating disease for the patient [2].

Literature reports that the prevalence and incidence of pressure ulcer vary from one country to another one [3]. In the United States, the prevalence reported is 3 to 14% in institutions hosting acute patients [4]. In Canada in 2007, during a 6-month pilot phase in an acute care facility, the prevalence of pressure ulcers was 15.2% [5]. In Ethiopia, a study conducted in December 2014 on factors associated with bedsore in hospitalised patients found a prevalence of 16.8% [6]. In a study conducted in Teaching hospitals in Nigeria in 2013, a prevalence of 3.22% was reported [7]. This situation is not far from what is found in South Africa where a prevalence ranging from 2.7 to 42.7% reported in orthopaedic services by Shorney in 2014 [8]. In Kenya, the prevalence of pressure ulcers varies between 4.2% and 68% respectively in internal medicine and surgery [9].

Up to now, there is no available data on pressure ulcers in the Democratic Republic of the Congo (DRC) whereas healthcare providers are facing

this problem in their practice. Therefore, this study aims to determine the epidemiological and clinical characteristics of patients with pressure ulcers in Butembo, Eastern DRC.

2. MATERIALS AND METHODS

2.1 Site of Study

This study was carried out at the Matanda hospital and Cliniques Universitaires du Graben in Butembo, Province of North-Kivu, Democratic Republic of the Congo.

2.2 Population

Our study population consisted of 762 patients hospitalized in the department of Surgery, in two health structures in the City: Matanda Hospital and Cliniques Universitaires du Graben. The choice of these health institutions was based on the criterion of attendance of patients but also on the fact that they are taken as teaching hospitals. The sample consisted of 33 patients with pressure ulcers. The information was collected in the different registers of the surgery department and patients' health files.

2.3 Methods

This was a descriptive cross-sectional study covering a period from September 2016 to February 2017. Were included in our study; all patients of all ages admitted to hospital for pressure ulcers and those who presented pressure ulcers during their hospitalisation in our study period. The following socio-demographic parameters were studied: age; sex; profession; place of occurrence. Clinical parameters included:

- Causal illness :
 - a. Traumatic neurological deficits [paraplegia on vertebromedullary traumatism, Horse tail syndrome]
 - b. Disabling Medical Conditions [Diabetic Coma, Hepatic Cirrhosis, Heart Failure, Encephalitis, Kahler's Disease, Lyell's Syndrome, Hypocalcemia]
 - c. Prolonged bed rest for musculoskeletal disorders [femur fracture, leg amputation for diabetic gangrene, myositis of the thigh]
 - d. Disabling surgical conditions [peritonitis, bowel obstruction, thoracic tumour mass]
 - e. Neuropsychiatric disorders [Psychosis, Alzheimer's]
- Degree of pressure ulcer
- Number of injuries
- Time of occurrence
- Appearance and Location(s) of the pressure ulcer.

results has made our study exempt from any ethical problem.

3. RESULTS

During our study period, 762 patients were hospitalised in the surgical ward, and among them, 33 had pressure sores, a prevalence of 4.3%.

3.1 Sociodemographic Characteristics of Patients with Pressure Ulcers

The male sex predominated with 57.6% (a sex ratio of 1.36); the average age was 46.2 years with a minimum of 7 years and a maximum of 86 years; the farming profession was mostly concerned first with 51.6% of all recorded cases; 75.8% of pressure ulcers had developed during hospitalization (Table 1).

3.2 Basic Medical Conditions, Appearance and Time of Onset of Pressure Ulcers

Neurologic and traumatic neuropathy dominated the basic diseases presented by these patients with 9 cases out of 33 patients (27.3% of pressure ulcers), and those with disabling medical conditions (27.3%). The second degree was more represented (57.6%) regardless of

Data were processed using EPI INFO software, version 3.5.4.

2.4 Ethical Consideration

Respect for anonymity in collecting information about patients and the overall presentation of our

Table 1. Distribution of patients with pressure ulcers by socio-demographic characteristics

Variables	Frequency	%
Sex		
Male	19	57.5
Female	14	42.5
Age class (in years)		
≤20	6	18.2
21 - 40	7	21.2
41 - 60	9	27.3
61 - 80	9	27.3
81 - 100	2	6.1
Profession		
Farmer	17	51.6
Housewife	7	21.2
Pupils / teacher	6	18.1
Shopkeeper / Taximan / Electrician	3	9.1
Location of occurrence		
In the course of hospitalization	25	75.8
At home	8	24.2

Table 2. Distribution of patients with pressure ulcers by basic medical condition, degree, time of occurrence and aspect of pressure ulcers

Variables	Number, N=33	%
Basic medical conditions		
Traumatic Neurological Deficits	9	27.3
Disabling medical conditions	9	27.3
Extended bed rest for musculoskeletal condition	8	24.2
Disabling surgical conditions	4	12.1
Neuropsychiatric disorders	3	9.1
Degree		
First	6	18.2
Second	19	57.6
Third	5	15.1
Fourth	3	9.1
Time of occurrence of pressure ulcers(in days)		
≤20	12	36.4
21 - 40	17	51.5
41 - 60	2	6.1
61 - 80	1	3.0
81-100	0	0
101 - 120	1	3.0
Aspect of the pressure ulcer		
Clean	25	75.8
Necrotic	8	24.2

Table 3. Distribution of pressure ulcers according to their number and their location

Localisations (region)	Number of pressure ulcers		Total	
	Unique Number, n=15	Multiple Number, n=18	Number, N=33	%
Unique				
Gluteal	5	5	10	30.3
Sacral	9	0	9	27.3
Trochanteric	1	5	6	18.1
Multiple				
Sacral + trochanteric	0	3	3	9.1
Gluteal + Trochanterian	0	2	2	6.1
Sacral + lumbar	0	2	2	6.1
Sacral + buttocks	0	1	1	1.0

the number of pressure ulcers in the same patient. Pressure ulcers appeared within 21 to 40 days in 17 patients out of 33 (51.5%) with a mean time of occurrence of 26.6 days; the minimum is 2 days and the maximum 120 days. Twenty-five out of 33 patients (75.8%) had clean ulcers (Table 2).

3.3 Number and Location of Pressure Ulcers

The pressure ulcers had a unique location in 15 cases (45.5%) and multiple in 18 cases (54.5%). In single locations, gluteal and sacral pressure ulcers predominated (30.3% and 27.3%,

respectively), whereas, in multiple locations, trochanteric pressure ulcers were the most common (15.2%). Overall, the sacral location was found in 15 patients (45.5%), the gluteal location in 13 patients (39.4%), trochanteric in 11 patients (33.3%) and lumbar in two patients (6.1%) (Table 3).

4. DISCUSSION

4.1 Prevalence of Pressure Ulcers

This study showed that the prevalence of pressure ulcers was 4.3%, for 33 patients with pressure ulcers out of a total of 762 patients

hospitalised in surgery have been recorded. This prevalence is higher than the one found by the International Prevalence Measurement of Care Problems (IPMCP) which found 3% among hospitalised patients in Swiss hospitals with stage 2, 3 and 4 pressure ulcers and 2.6% in social, medical institutions [10]. Our prevalence is lower than that found by Defloor in a study of the incidence of pressure ulcers in Belgian hospitals in 2008, which is 12.1% [11]. Our result could be explained by the fact that we worked in only two structures and this for a concise period compared to IPMCP and Defloor.

4.2 Sociodemographic Characteristics of Patients with Pressure Ulcers

Our study found that the male sex was predominant (57.6%) compared to the female sex (42.4%) with a sex ratio of 1.36 in favour of the male sex. This predominance is found in the 2015 Bredesen study in Norway. He found 44.1% of women and 55.8% of men with a sex ratio F / M of 0.8 [12]. In Egypt, Samah found, in 2013, a distribution of 56% of men and 44% of women with pressure ulcers [13].

In our study, the mean age was 46.2 years with a minimum of 7 years and a maximum of 86 years. In China, Jiang, in a multicenter study of the incidence, risk factors for pressure ulcers in hospitalised patients in 2014, found that 42% of patients were aged between 40 and 69 years [14]. But our prevalence is lower than that of Briggs in the United Kingdom in 2013, which estimated the average age at 65.8 years [15]. This result would be explained by the fact that the studies of other authors focused on the elderly while ours included any patient carrying pressure ulcer whatever his age.

4.3 Basic Medical Conditions, Appearance and Time of Onset of Pressure Ulcers

The primary medical conditions that caused pressure ulcers were dominated by a neurological and traumatic deficit with 9 out of 33 patients (27.3% of pressure ulcers) and those with disabling medical conditions (Table 2). The second degree was more represented (57.6%) regardless the number of bedsores in the same patient. Pressure ulcers occurred in 21 to 40 days in 17 out of 33 patients, or 51.5% with an average of 26.6 days, the minimum is 2 days and the maximum 120 days. This interval would be

very concerned because the majority of our patients had pathologies that exposed them more to remain motionless, a factor at the base of the rapid development of pressure ulcers.

4.4 Location, Number and Degree and Pressure Ulcers

Sacral localisation was most concerned, followed by gluteal and trochanteric localisation. These results are similar to those of Jiang et al. who found that the 2nd degree was in first position with 35.82%, followed by the 1st degree with 28.68%, then came the third (12.68%) and fourth-degree (12.99%) [14]. Similarly, in Japan, the predominant location found in the Igarashi study in 2013 was the sacral location with 60.5%, followed by the trochanteric with 15.7%, then the heel with 9.7% [15]. Stevenson et al. They also reported that the sacral location was the most common (33.9%) followed by the heel with 25.9% and the buttock of 27.3% [16].

5. CONCLUSION

Pressure ulcers remain a real public health problem in our community. They concern any patient, whatever the age or sex. The pathologies that favour the occurrence of pressure sores are dominated by the traumatic neurological deficit and by disabling medical conditions. The most relevant localisation is the sacral region followed by the gluteal and trochanteric regions. Multiple locations are found in about one-quarter of patients. Particular attention should be paid to patients with pathologies that cause prolonged bed rest.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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