

Epidemiology of Risk Factors for Pressure Ulcers in the Medical Ward of Sominé Dolo Hospital in Mopti [Mali]

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Abstract

Original Research Article

Introduction: Pressure ulcers impair patients' quality of life. Although a source of pain and discomfort, they are not inevitable. They represent a complication in the care of many hospitalised patients. Although preventable, they are most commonly observed in elderly people or those with physical disabilities. The aim of this study was to describe the epidemiology of pressure ulcers in the medical ward of Sominé Dolo Hospital in Mopti. **Methods:** This was a descriptive cross-sectional study conducted from 1 January 2023 to 31 December 2023 in the medical ward of Sominé Dolo Hospital in Mopti. This study included all hospitalised patients who, on the day of the survey, had one or more pre-existing or newly acquired pressure ulcers. The diagnosis of pressure ulcers was based primarily on clinical findings. A pressure ulcer was defined as the presence of a soft-tissue wound between the surface on which the patient was lying and the underlying bone. **Results:** out of 321 hospitalised patients, 21 had pressure ulcers, representing a prevalence of 6.54 per cent. The mean age was 56.38 years. Men accounted for 52.4 per cent and women for 47.6 per cent. The sites affected were the occiput [9.5 per cent], the ears [4.8 per cent], the back [19 per cent], the shoulder blade region [9.5 per cent], the heels [14.3 per cent], the toes [9.5 per cent], the iliac crests [23.8 per cent], the sacrum [76.2 per cent], the trochanter [52.4 per cent], the malleoli [9.5 per cent], the ischial tuberosities [19 per cent] and the buttocks [81 per cent]. Stages I, II, III and IV accounted for 23.8 per cent, 52.4 per cent, 14.3 per cent and 57.1 per cent respectively. The risk factors identified were advanced age [71.4 per cent], prolonged immobility [85.7 per cent], diabetic neuropathy [19 per cent], hemiplegia [38.1 per cent], paraplegia [14.3 per cent], malnutrition [85.7 per cent], dehydration [71.4 per cent], urinary/faecal incontinence [81 per cent] and underlying vascular conditions [57.1 per cent]. The comorbidities identified were dilated cardiomyopathy [19 per cent], diabetes [19 per cent], hypertension [19 per cent], immunosuppression/HIV [9.5 per cent], chronic kidney disease [19 per cent] and Pott's disease [14.3 per cent]. No pressure-relief equipment [mattresses and/or cushions] was used.

Keywords: Epidemiology, pressure ulcers, Sominé Dolo Hospital.

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INTRODUCTION

Pressure ulcers impair a patient's quality of life. Although they are a source of pain and discomfort, they are not inevitable[1].

They are common, albeit potentially preventable, lesions that are most frequently observed in high-risk groups such as the elderly or those with physical disabilities[2].

More than 50 per cent of pressure ulcers occur in patients aged 80 years[3]. The prevalence is around 8 to 9 per cent, and the incidence varies depending on where the patient is located [medical ward, intensive care unit, care homes for frail elderly people, at home][4].

Pressure ulcers are a multifactorial condition, but only immobility and malnutrition are genuine predictors of pressure ulcer risk[5].

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They represent a complication in the care of many patients, particularly elderly in-patients[6].

In addition to the complications they cause, the overall cost of care represents a significant financial burden in terms of treatment for the community and a human cost for each individual affected[2].

Despite knowledge of risk factors and preventive measures, this complication of hospitalisation remains common and is often poorly assessed. To date, no precise data on the incidence of pressure ulcers is available at the Sominé Dolo Hospital in Mopti, which is why this study was initiated.

A better understanding of the epidemiology and clinical presentation will therefore enable the necessary actions to be tailored as closely as possible to the needs of patients and the healthcare professionals who care for them in our country.

The aim of this study was to describe the epidemiology of risk factors for pressure ulcers in the medical ward of Sominé Dolo Hospital in Mopti [Mali]

PATIENTS AND METHODS

This was a descriptive cross-sectional study conducted from 1 January 2023 to 31 December 2023 in the medical ward of Sominé Dolo Hospital in Mopti. This hospital is the largest referral centre in Mali's 5th region [Mopti], with an average of 358 admissions per year to the general medicine ward.

This study included all inpatients who, on the day of the survey, had one or more pre-existing or newly acquired pressure ulcers. The diagnosis of pressure ulcers was based primarily on clinical findings, and additional tests were carried out to investigate underlying conditions [complete blood count, blood glucose, serum creatinine, urea, uric acid, transaminases, serum albumin, ESR].

A pressure ulcer was defined as the presence of a soft-tissue wound between the surface on which the patient is lying and the bony surface.

Pressure ulcers are classified into four stages of increasing severity.

- **Stage I:** erythema on apparently intact skin that does not resolve upon removal of pressure;
- **Stage II:** loss of tissue involving the epidermis and part of the dermis, presenting as a blister, an abrasion or an erosion;
- **Stage III:** tissue loss involving the subcutaneous tissue, with or without peripheral detachment;
- **Stage IV:** loss of tissue extending to and beyond the fascia and potentially involving bone, joints, muscles or tendons.

Thus, all patients, regardless of age or sex, who agreed to participate in the study and met the case definition were included in the study.

For each patient included in the study, a standardised, anonymised questionnaire was completed. The variables collected concerned:

- Socio-demographic data: age, sex
- The patient's nutritional status: weight, height, serum albumin level.
- Length of hospital stay in days
- Duration of the pressure ulcer in days.
- Risk factors: mobility [normal, limited], neurological disorders [diabetes, stroke, paraplegia], malnutrition [adequate, insufficient], dehydration, moisture [urinary and/or faecal incontinence], underlying vascular disease, associated acute or chronic conditions.
- Characteristics of pressure ulcers: place of origin [acquired in hospital or pre-existing], location [occiput, shoulder blade, back, elbows, sacrum, heels, ears, iliac crests, trochanter, inner and outer sides of the knees, medial and lateral malleoli, ischial tuberosities, spine, buttocks], size, number, stage [I, II, III, IV].
- Prevention equipment: provision of static mattresses and cushions;

Ethical considerations and data processing: respect for the individual, including the obtaining of informed consent, anonymity, confidentiality and discretion regarding the information collected, were upheld.

The data were entered and analysed using SPSS version 18.0.

RESULTS

In total, out of 321 hospitalised patients, 21 had pressure ulcers, representing a prevalence of 6.54 per cent. The patients' ages ranged from 8 to 84 years, with a mean of 56.38. The age groups were distributed as follows : 0–15 years [9.5 per cent], 16–60 years [38.1 per cent] and over 60 years [52.4 per cent].

The patients comprised 11 men [52.4 per cent] and 10 women [47.6 per cent]. The sex ratio was 1.1.

Twelve pressure ulcers [57.1 per cent] developed during the hospital stay and 9 [42.9 per cent] were acquired from other wards.

The average length of stay in the ward was 15.67 days. The average duration of the pressure ulcers was 10.14 days. The average size of the lesions was 11.7 cm. The average number of pressure ulcers per patient was 3.67.

Pressure ulcers were located on: the occiput [2.9 per cent], the ears [1.4 per cent], the back [5.8 per cent], the shoulder blade region [2.9 per cent], the heels [4.3 per cent], the toes [2.9 per cent], the iliac crests [7.2 per cent], the sacrum [23.2 per cent], the trochanter [15.9 per cent], the malleoli [2.9 per cent], the ischial tuberosities [5.8 per cent] and the buttocks [24.6 per cent].

Stages I, II, III and IV accounted for 16.1 per cent [n = 5], 35.5 per cent [n = 11], 9.7 per cent [n = 3] and 38.7 per cent [n = 12] of all pressure ulcers, respectively.

The risk factors identified were: reduced mobility [18.9 per cent], diabetic neuropathy [4.2 per cent], hemiplegia [8.4 per cent], paraplegia [3.2 per cent], malnutrition [18.9 per cent], dehydration [15.8 per cent], urinary and/or faecal incontinence [17.9 per cent], and underlying vascular conditions [12.6 per cent].

The comorbidities identified were: dilated cardiomyopathy [19 per cent], diabetes [19 per cent], high blood pressure [19 per cent], immunosuppression/HIV [9.5 per cent], chronic kidney disease [19 per cent] and Pott's disease [14.3 per cent].



Figure: Stage IV pressure ulcer affecting the buttocks and trochanteric regions

DISCUSSION

To the best of our knowledge, this is the first study conducted on the epidemiology of pressure ulcers at the Sominé Dolo Hospital in Mopti. This hospital is the largest referral centre in Mali's 5th region [Mopti].

Among the conditions found in patients admitted to the medical ward at Sominé Dolo Hospital in Mopti, pressure ulcers accounted for 6.54 per cent. This prevalence is significantly higher than that found at the Mali Hospital[6,7] .

Among patients with pressure ulcers, 52.4 per cent were aged over 60. This is comparable to the figure found in a short-stay hospital in France [8].

In our series, pressure ulcers acquired during hospitalisation were more common than those acquired prior to admission. This finding is consistent with a study carried out in France[8].

The average length of stay on the day of the survey was 15.67 days, comparable to that found in a teaching hospital[8].

In our patients, the locations of pressure ulcers varied widely and were mainly situated below the waist [86.8 per cent]. These results are consistent with the literature, which reports that 80 per cent of pressure ulcers occur below the waist[6–8]

The most common stage in our study was stage IV [38.7 per cent], whereas stage III is usually predominant[6,9]. This difference cannot be attributed to an underestimation of stages I and II, as a careful skin examination of the patients was systematically carried out by experienced investigators.

The three most frequently identified risk factors were: reduced mobility [18.9 per cent], malnutrition [18.9 per cent], and urinary and/or faecal incontinence [17.9 per cent]. In this study, the circumstances surrounding the onset of pressure ulcers were

predominantly multifactorial, a factor cited far more often than neurological aetiologies[6,7,10] .

The role of malnutrition in the development of pressure ulcers is complex. It nevertheless appears that inadequate dietary intake, a low body mass index [BMI], low serum albumin levels and weight loss are associated with an increased risk of pressure ulcers[11] .

Studies have shown that more than half of patients with pressure ulcers suffered from urinary and/or faecal incontinence, and that amongst faecally incontinent patients, the risk of developing a pressure ulcer was 22 times higher than in continent patients [12]

The comorbidities found in our patients were all non-cancerous conditions. One study reports that in one in five cases, the person with a pressure ulcer has cancer at an advanced stage [13]

CONCLUSION

This study enabled us to determine the prevalence of pressure ulcers [6.54 per cent] amongst patients in the medical ward at Sominé Dolo Hospital in Mopti and to identify the risk factors. This initial study has helped to raise awareness amongst healthcare staff regarding the prevention of pressure ulcers.

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