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## Assessment of risk factors and clinical profile of patients with pressure ulcers

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### Abstract

**Background:** Pressure ulcers are localized injury to the skin and/or underlying tissue usually over a bony prominence. The present study was conducted to determine clinical profile of patients with pressure ulcers.

**Materials & Methods:** The present study was conducted on 140 chronic hospitalized patients of both genders. Patients were divided into 2 groups of 70 each. In group I, surgical patients and in group II, non-surgical patients were taken.

**Results:** It was found that common risk factors in group I was age >50 years seen 45 in group I and 21 in group II, diabetes mellitus 24 in group I and 14 in group II, hypertension seen 18 in group I and 15 in group II, both DM & HTN seen 32 in group I and 35 in group II and depression 18 in group I and 7 in group II. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Common risk factors were diabetes, hypertension, depression and advancing age for the development of pressure ulcers.

**Keywords:** Diabetes, hypertension, depression, pressure ulcers

### Introduction

Pressure ulcers (PUs) defined as “a localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear” by the National Pressure Ulcer Advisory Panel are an important health concern in hospitalized patients and those receiving palliative care. Previous studies have reported that the prevalence of PU in hospitalized patients ranges from 1.8% to as high as 47.6% in different categories of patients<sup>[1,2]</sup>.

Pressure ulcers (PUs) are a common and costly complication patients experience when hospitalized. Cardiac surgery patients are among those most at risk for PU development; the reported incidence in cardiac surgery patients is as high as 29.5%. Patients who develop PUs suffer from a number of associated consequences including pain, infection, sepsis, disability, and, in rare cases, death<sup>[3]</sup>.

Pressure ulcers affect hundreds of millions of people worldwide. Complicate the delivery of patient care, and contribute to patient deaths and disability. In fact, nearly 60,000 U.S. hospital patients are estimated to die from complications due to hospital-acquired pressure ulcers each year<sup>[4]</sup>. It is estimated that 2.5 million patients are treated each year in U.S. acute-care facilities for pressure ulcers. Incidence rates vary by clinical settings, ranging from 0.4 percent to 38 percent in acute care and 2.2 percent to 23.9 percent in long-term care<sup>[5]</sup>. The present study was conducted to determine clinical profile of patients with pressure ulcers.

### Materials and Methods

The present study was conducted in the department of Dermatology. It comprised of 140 chronic hospitalized patients of both genders. The study was approved from institutional ethical committee. All participants were informed regarding the study and written consent was obtained.

Information such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 70 each. In group I, surgical patients and in group II, non-surgical patients were taken. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

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**Results**

**Table I:** Distribution of patients

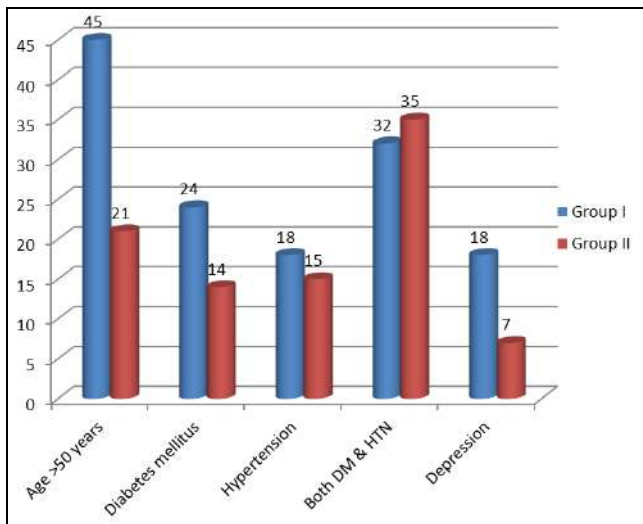
Total- 140		
Group	Group I (Surgical)	Group II (Non- surgical)
Number	70	70

Table I shows that out of 140, in group I, surgical patients and in group II, non- surgical patients were taken. Each group had 70 patients.

**Table II:** Risk factors in both groups

Risk factors	Group I	Group II	P value
Age >50 years	45	21	0.01
Diabetes mellitus	24	14	0.05
Hypertension	18	15	0.52
Both DM & HTN	32	35	0.78
Depression	18	7	0.01

Table II, graph I shows that common risk factors in group I was age >50 years seen 45 in group I and 21 in group II, diabetes mellitus 24 in group I and 14 in group II, hypertension seen 18 in group I and 15 in group II, both DM & HTN seen 32 in group I and 35 in group II and depression 18 in group I and 7 in group II. The difference was significant (P< 0.05).



**Graph I:** Risk factors in both groups

**Discussion**

Previous studies have identified multiple risk factors for PU. Some of these include age, activity, nutrition, and depression [6, 7]. However, the proper implementation of monitoring, education, and care programs help in reduction of the occurrence of these ulcers. Patient and care giver’s education also helps in the reduction of incidence of these ulcers [8]. Furthermore, regular monitoring of the skin using scales, the use of oil- based products to maintain skin integrity, and repositioning as per schedule helps in reduction of these ulcers [9]. The present study was conducted to determine clinical profile of patients with pressure ulcers.

In present study, out of 140, in group I, surgical patients and in group II, non- surgical patients were taken. Each group had 70 patients. Yusuf *et al.* [10] stated that cardiac surgery patients are among those most at risk for developing

pressure ulcers (PUs), with a reported incidence as high as 29.5%. The present study was conducted to identify the risk factors associated with PU development in critically ill, adult, cardiac surgery patients. Twelve high-quality studies were retrieved and included in the review; they revealed 30 potential PU risk factors. Current evidence is limited in 2 important ways. First, the impact of intraoperative factors, such as cardiopulmonary bypass time or body temperature, appears to be underexplored. Second, a substantive discussion of the risk factors associated specifically with deep tissue injuries, a unique PU category, is absent.

We found that common risk factors in group I was age >50 years seen 45 in group I and 21 in group II, diabetes mellitus 24 in group I and 14 in group II, hypertension seen 18 in group I and 15 in group II, both DM & HTN seen 32 in group I and 35 in group II and depression 18 in group I and 7 in group II.

Thomas *et al.* [11] evaluated 290 hospitalized patients over a 4 months period. The main outcomes for our analysis were: (1) Score on the pressure risk assessment scale; and (2) the proportion of individuals who were at severe risk for developing PUs. The mean PU score was significantly higher in the nonsurgical patients compared with surgical patients at baseline (15.23 [3.86] vs. 9.33 [4.57]). About 7% of the total patients had a score of >20 at baseline and were considered as being at high risk for PU; the proportion was significantly higher among the nonsurgical patients compared with the surgical patients (14% vs. 4%). In the adjusted models, there was no difference for severe risk for PU between surgical and nonsurgical patients (odds ratios [ORs]: 0.37, 95% confidence interval. An additional day in the ward was associated with a significantly higher likelihood of being at high risk for PU.

Diabetes mellitus is significantly associated with a higher score of occurrence of PU. It is one condition that affects tissue perfusion and has been shown to be associated with higher occurrence of ulcers. It has been suggested that some of potential pathogenic mechanisms for the occurrence of ulcers in diabetics are: angiopathy, neuropathy, hypoxia, and deranged neuropeptide signaling [12]. Thus, the treatment of such co-morbidities is an important tool in prevention and management of these ulcers, particularly in high-risk patients. It is also important that nurses recognize these co-morbidities that place patients at risk for PU and actively prevent the occurrence of PU in these patients.

**Conclusion**

Authors found that common risk factors were diabetes, hypertension, depression and advancing age for the development of pressure ulcers.

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