

Assessment of risk for pressure ulcers using the Norton scale in nursing practice

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Abstract

Purpose: The aim of our study was risk assessment for the development of pressure ulcers and thus defining a group of patients considered to be at risk of developing pressure ulcers. It also helped to define the role of the nurse in the early assessment of the risk for developing pressure ulcers.

Material and methods: Risk assessment for the development of pressure ulcers was carried out in 199 patients hospitalised in The District Hospital in Bielsk Podlaski. The research was carried out with patients admitted to The Departments of General Medicine, Infectious Diseases and Long-Term Care. Risk assessment for the development of pressure ulcers was performed with the aid of the Norton scale.

Conclusions: An increased risk for the development of pressure ulcers was found in more than half of the patients examined (53.8%). Pressure sores developed in 17.6% of the patients, women being at significantly greater risk. Risk assessment for the development of pressure ulcers with the aid of one of the recommended scales facilitates the early recognition of those patients at risk of developing pressure ulcers.

Key words: pressure ulcer, risk assessment, nursing.

Introduction

Pressure ulcers are a considerable problem in people with serious health difficulties. For many years they were thought to be the result of inadequate nursing care. However, once the aetiology of pressure ulcers was understood, it became clear that, in patients with impairments of mobility and sensation, incontinent of urine and faeces, who are receiving inappropriate nourishment and have incorrect fluid balances, they are a sign of irreversible deterioration [1,16]. The proportion of pressure ulcers in newly hospitalised patients is somewhat variable and ranges between 0.4% to 38% [10]. Following admission to a hospital ward, all patients should be assessed in terms of their risk for developing pressure ulcers. Risk assessment for pressure ulcers is based on observation of the patient's health status with the aid of one of the recommended scales e.g. Norton, Waterlow, Douglas. The resultant score is recorded in the appropriate documentation, which forms part of the patient's case notes.

The aim of our study was to carry out a risk assessment of pressure ulcers using the Norton scale and to identify the group of patients that were at greatest risk of developing ulcers. A further aim was to define the role of the nurse in the early assessment of the risk for developing pressure ulcers.

Material and methods

The study was carried out among 199 hospitalised patients in The District Hospital of Bielsk Podlaski from 2002 to 2003. *Tab. 1* shows the characteristics of the patient sample.

Risk assessment for pressure ulcers was carried out with the aid of the Norton scale in which the following risk factors are taken into consideration: the general health status of the patient, level of consciousness, level of mobility, continence of urine and faeces, independence in the ability to change body position. Each of these factors is assessed on a scale of 1 to 4 points and the patient may score between 5 and 20 points overall. An increased risk for the development of pressure ulcers is

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Table 1. Characteristics of patients n=199

	Infectious diseases		Long-term care		General medicine	
	n=82	%	n=28	%	n=89	%
Female	43	52.4	13	46.4	49	55.1
Men	39	47.6	15	53.6	40	44.9

Sex	Female		Men	
Age	n=105	%	n=94	%
40-64	7	6.7	4	4.3
65-89	93	88.6	88	93.6
90- <	5	4.7	2	2.1

Table 2. Assessment of risk for pressure ulcers using the Norton scale

The risk	Female		Men	
	n=105	%	n=94	%
High ≥ 14 points	59	56.2	48	51.1
Low < 14 points	46	43.8	46	48.9

considered to be represented by a score of 14 points or less, whilst a score above 14 represents a low risk for the development of ulcers [4,6,7,12,13].

Results

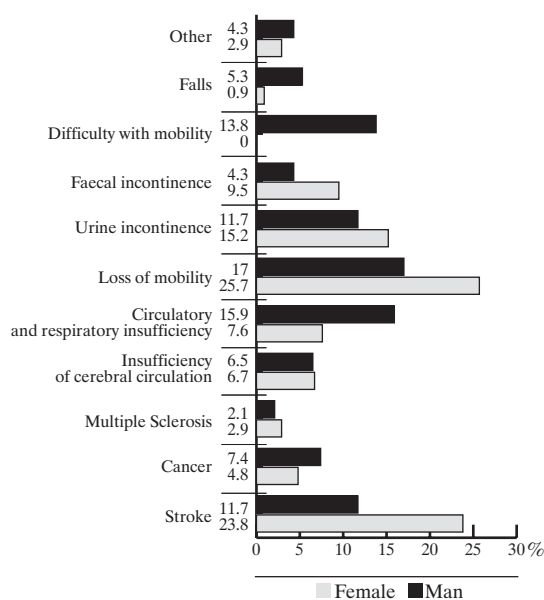
In considering the information presented in *Tab. 1*, it is worth noting that the greatest proportion of patients (91%) were in the age range 65-89 years. *Fig. 1* shows the reasons for admission in relation to the hospital wards to which the patients were admitted: Departments of General Medicine, Infectious Diseases and Long-Term Care. The most frequent reasons for admission in the case of female patients were immobility (25.7%), stroke (23.8%), urine incontinence (15.2%) and faecal incontinence (9.5%). Male patients were most frequently admitted for reasons of: immobility (17%), circulatory and respiratory insufficiency (15.9%), difficulties with mobility (13.8%), stroke (11.7%) and urine incontinence (11.7%).

Pressure ulcers most commonly occur in patients who have been considerably weakened by long-term illness, those in the advanced stages of cancer, patients who are bedridden, those with disturbances of consciousness, with limited mobility, those of advanced age and those who are unconscious. It is extremely important to prevent the development of pressure ulcers by ensuring that the patient's body position is regularly changed and to increase standards of hygiene in patients who are incontinent of urine and faeces, as well as ensuring that the skin is protected against damage and maceration [4].

Among the patients examined in this study, an increased risk for the development of ulcers was found in 107 cases (59 women and 48 men) which represented 53.8% of the sample. A low risk was found in 92 patients (46 women and 46 men) which is 46.5% of the sample (*Tab. 2*).

During the period of hospitalisation, pressure ulcers

Figure 1. Reasons for hospitalisation of the sample (%)



developed in 35 (17.6%) of the patients, of whom 21 (10.1%) were women and 14 (7%) were men. The most frequent occurrence for ulcers was in the sacral and iliac area, on the buttocks and heels.

Discussion

Pressure ulcers are a serious problem for both the patient and the nursing staff involved in his/her care. They are the result of circulatory insufficiency to the affected tissues over long periods of time, due to repeated pressure. It is extremely important to follow the appropriate guidelines for prevention in those patients considered to be at increased risk of developing pressure ulcers. Prophylactic care of this kind depends on the identification of early signs (reddening of the skin which does not disappear once pressure has been released, blisters and abrasion of the epidermis, thickening, reddening and swelling as well as slight increases in body temperature) [4,18].

There are a number of scales which attempt to assess the risk of developing pressure ulcers. They differ from one another significantly in terms of the variables used to characterise sensitivity and precision. This is most likely a result of methodological differences between studies, clinical conditions and the patient populations studied. The ideal scale for the risk assessment of pressure ulcers would have high sensitivity and precision, as well as being straightforward to use [13].

Risk assessment for pressure ulcers with the aid of the recommended scales should be repeated on numerous occasions in association with a very precise examination of the condition of the patient's skin, as pressure ulcers may develop even in those patients in whom the risk assessment is minimal [15,19].

In the present study, more than half of the sample examined were found to be at high risk of developing ulcers and these are in keeping with the results of previous studies.

In a study reported by Sopata et al. carried out in a sample of palliative care patients over a period of 30 months, the risk of developing ulcers was assessed in 265 patients. It was found that at the point of admission, 50% of the patients were considered to be at risk (Norton <14 points) and a further 16% were added to this high risk group as a result of a steady deterioration in their health during the period of hospitalisation. However, only 23% of patients actually developed ulcers during the hospitalisation period [16].

Using the Douglas scale to assess the risk of pressure ulcers, Nicikowska examined 30 patients with lung conditions and found that 23% were at low risk, 74% at moderate risk and 3% of the patients were at high risk. In the patients at moderate risk, 29% went on to develop pressure ulcers, whilst in the high risk group only one patient went on to develop ulcers [11].

Bergstrom et al. assessed ulcer risk in 843 patients using the Braden scale and reported that pressure ulcers developed in 12.8% of their patients. Those at higher risk of developing ulcers were older people and women [2].

In a study of 220 patients in a nursing home, both the CBO scale (Consensus Prevention of Bedsore according to Duth) and the Norton scale were used in order to determine which of the two scales performed better at predicting the development of pressure ulcers. It was found that both scales gave similar results, but that the Norton scale is shorter and easier to use by community nurses and family doctors [8].

It is difficult to give a precise figure for the frequency of development of pressure ulcers in Poland, or indeed for the cost of their treatment. It is therefore necessary to determine the extent of the existing problem and to introduce the appropriate prophylactic measures [16,17].

In many hospitals there is as yet insufficient awareness of the need to address the problem using preventative measures. Furthermore, such hospitals do not have a committee for the prophylaxis of pressure ulcers, proper records are not kept detailing the causes of ulcers nor of the number of patients at risk. The main aim of a programme for the prophylaxis of pressure ulcers is to gather information about the causes, incidence and extent of ulcers as well as to determine the numbers of patients that are at risk [5].

A fundamental example of the kind of prophylactic activities that can be undertaken by nurses in order to reduce unnecessary discomfort and suffering is the use of, and compliance with, prophylactic standards for pressure ulcers. Among patients in whom these standards have been applied, the indicator for ulcers was 0.48% [13]. In our own study however, where the standards were not followed, ulcers developed in 17.6% of patients.

The application of prophylactic standards for ulcers facilitates the achievement of a recognised course of action with patients at risk and allows nurses to follow a unified set of criteria when determining the risk of ulcers in hospitalised patients, as well as having an influence on the quality of care delivered [14,20]. Current advice is that the risk of ulcers should be assessed in every newly admitted patient during the first 2 hours of his/her hospital stay using one of the recommended scales (Norton, Waterlow, Douglas or other recognised scales which allow the risk to be assessed). The assessment should be repeated whenever the health status of the patient requires

intensive nursing care. Concurrently, it is important to keep the necessary documentation. In patients in whom the risk of developing ulcers is high, documentation for patients at risk of ulcers should be kept. If patients go on to develop ulcers, it is necessary to set up the necessary documentation for patients with ulcers and documentation for patients at risk of ulcers [20,21].

On admission, it is the role of the nurse, amongst others, to assess the risk of ulcers and where a high risk is indicated, to introduce the required preventative procedures. If the condition of the patient deteriorates, the assessment should be made every day and if he/she is stable, once a week. The course of any prophylactic activities should be planned and the proposed actions recorded in the documentation [14].

Every practising nurse is obliged to ensure that the appropriate and safe prophylactic measures are carried out in order to meet the needs of individual patients. Patients with chronic conditions, who are immobile in the long-term, have difficulties with changing their body position independently, with impairments of sensation, circulation and nutrition should form the focus of her attention, in order to reduce complications, pain and additional suffering [9].

Patients at home in the care of their families are also at risk. It is extremely important, sometimes even a priority in these situations, to provide education and training to these patients and their families [3]. Professional assistance in preparing carers for the task of self-care helps to increase their awareness and skills and creates the conditions for better comfort and an improved quality of life in the conditions of the home.

Conclusions

1. An increased risk for the development of pressure ulcers was found in more than half of the sample studied (53.8%). Ulcers developed in 17.6% of patients and women were found to be at significantly greater risk.
2. Risk assessment for the development of ulcers using one of the recommended scales facilitates early recognition of the risk for developing pressure ulcers in patients.
3. It is recommended that standards for the prevention of pressure ulcers should be adopted in nursing practice and that a systematic analysis of the resultant course of action in at risk cases be undertaken.

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