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Can Pressure Ulcer be Unpreventable among Terminally ill Cancer Patients?

Hasan Ahmed Abu Nigim, Nezar Ahmed Salim*

Dubai Health Authority, AL-Mamzar, Dubai, United Arab Emirates

***Corresponding Author:** Nezar Ahmed Salim, Dubai Health Authority, AL-Mamzar, Dubai, United Arab Emirates, E-mail: nezar_dubai30@yahoo.com

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Abstract

Background: Pressure ulcers are most common problem encountered the patients, those requiring long-term institutional care. The most important factor to prevent pressure ulcer is pressure redistribution. Ulcers can relieve by two ways: proper patient positioning, and appropriate use of pressure-reducing devices. Pressure ulcers can be related to diabetes, venous insufficiency, or arterial insufficiency, these also risk to the development of a pressure ulcer, and many wounds, especially in the lower extremity, have a multifactorial etiology. Braden assessment tools fail to hold many of the intrinsic risk factors for pressure ulcers, and may be inaccurate.

Purpose: The purpose of this paper was to resolve the controversy between avoidable and unavoidable pressure ulcer in some patient's condition, especially among terminally ill cancer patients.

Methodology: A literature review was conducted by searching in PubMed, Science Direct, EBSCO, and Google Scholar by using keys word: Unavoidable pressure ulcer, Incidence of pressure ulcer, Pressure ulcers Factors.

Conclusion: Pressure ulcer is sometimes unavoidable for patients at risk, even in the best circumstances. However, the acknowledgment that some pressure ulcers are inevitable should never deter the implementation of risk assessment, skin examination, preventive interventions, or the search for new technologies to prevent this end result.

Recommendations: 1. Further study is needed to determine the degree to which resources and intrinsic factors contribute to pressure ulcer development. 2. Continued study is needed to support the creation of an expanded list of risk factors that are more predictive of pressure ulcer development. 3. Clinical practice guidelines should be formulated to address patient management when death is expected and the goals of treatment should incorporate comfort measures and family support. 4. The clinician should also document the clinical explanations why preventives measures are not appropriate or feasible, such as severe pain or patient refusal. If the pressure ulcer is established to be unavoidable, the rationale must be evident.

Keywords: Unavoidable Pressure Ulcer; Incidence of Pressure Ulcer; Pressure Ulcers Factors

1. Introduction

A pressure ulcer, also defined as a pressure injury, is a localized damage to the skin or underlying tissue usually over a bony prominence, resulting from pressure, or combination the shear with pressure Ex. ischium, sacrum, and calcaneus [1]. Pressure ulcers are usually related to immobility Ex. chair-bound individual or bed-bound, but can also result from medical equipment or devices [2]. Pressure ulcers are a most common problem encountered the patients those requiring long-term institutional care. The most important factor to prevent pressure ulcer is pressure redistribution. Ulcers can relieve by two ways: proper patient positioning, and appropriate use of pressure-reducing devices [3]. However, patients with pressure injury suffer continuous pain and a loss of control over their lives. Wound care disrupts normal activity daily living, and patients often feel stigmatized. This results in lifestyle changes leading to depression, social isolation, and decrements in overall quality of life [4]. Pressure ulcers can be related to diabetes, venous insufficiency, or arterial insufficiency, these also risk to the development of a pressure ulcer, and many wounds, especially in the lower extremity, have a multifactorial etiology [5]. Expose the skin to pressure more than the arteriolar pressure (32 mmHg) can prevent delivery of nutrients and oxygen to tissues, while Pressure more than 70 mmHg for two hours can cause irreversible tissue damage [6]. The incidence of pressure injury varies widely by medical setting, while the incidence of pressure ulcers among outpatient is not clear [7]. However, they may be common among patients getting home nursing services. One study has shown that a 9.2 % prevalence of stage 2 or higher pressure ulcers among patients who receiving home care [8], while Ninety-five percent of all pressure ulcers are preventable [9].

As the author mention above that around Ninety-five percent of all pressure ulcers is preventable, but what about the five percent of the patients, especially the patients whom with chronic untreatable disease particularly the terminally ill patient with cancer. Questions and concerns about situations in which they are unavoidable remain. Prevalence of pressure ulcer identified in 10.5-26.0% among palliative patients [10]. Controversy generally considered unfavorable, in the same category as discord, conflict, and disagreement. However, when it takes the form of a respectful discussion rather than debate, controversy can transform opinion and even give rise to unexpected advancement. Most of stakeholder stat that pressure ulcer can be preventable by using the pressure-related device and repositioning for all patients. But what about the patients those have hemodynamic instability that is deteriorated with physical movement and failure to maintain hydration and nutrition status, and the patients whom pressure

redistribution surfaces cannot replace by repositioning and turning; and if enough pressure was relived from the external body the skin cannot always survive. As well, the hypoxia considered the main factor in pressure ulcer development [11]. More than hundred risk factors for the development of pressure ulcers have been recognized in the literature [12]. Risk factors can be classified into those that influence the duration and magnitude of pressure and those that affect individual tolerance and susceptibility [13]. The most important factors include immobility, malnutrition, reduced perfusion, and sensory loss.

2. The Purpose

The purpose of this paper is to resolve the controversy between avoidable and unavoidable pressure ulcer in some patient's condition, especially among terminally ill cancer patients.

3. Background

Before starting the argument, the reader should differentiate between avoidable and unavoidable pressure ulcer. Avoidable pressure ulcer means that the patient developed a pressure ulcer, and that the health care provider has a negative attitude, such they don't evaluate the patient's clinical condition and pressure ulcer risk factors; ignoring implement interventions that are reliable with patient requirements, and failure to follow standards of practice [14]. Unavoidable pressure ulcer means that the patient developed a pressure ulcer even though the health care provider had evaluated the patient's clinical condition and the risk factor for pressure ulcer; defined and implemented interventions that are reliable with patient needs, goals, and provide standards of practice; evaluate and monitor the impact of the interventions; and reevaluate the approaches as appropriate [14].

In this corner, the unavoidable Pressure ulcer is not the result of neglect, ignorance, or inappropriate care of nurses. There are limited articles related to this issue and the lack of available research data for unavoidable pressure ulcer, which is very important to discuss in order to provide clear guidelines for inevitable pressure ulcer. As well, it is important to discuss such topic to decrease the stress and burden among nurses

For many years, the authors and experts of wound care supply guidelines that pressure ulcers are not generally preventable [15]. The research that sustains evidence-based prevention is far from complete, and recommendations depend on the expert's opinion. The studies that showed prevention often excludes the most vulnerable patients, in which the etiology of pressure ulcers is multifactorial and complex [15]. Braden assessment tools fail to hold many of the intrinsic risk factors for pressure ulcers, and may be inaccurate, underused, and potentially unrelated to pressure ulcers progress. Most of the pressure ulcers classification and prevention criteria built on the belief that pressure injury develops "from the outside in," but new evidence suggest that many pressure injuries develop "from the inside out" [16].

3.1. The agreement with unavoidable pressure ulcer

In this corner, the authors will state the evidence that support unavoidable pressure ulcer. The unavoidable pressure ulcers are determined if it develops in spite of the health care providers efforts to prevent it. Most pressure ulcers develop among patients in acute care hospitals, the prevalence of pressure ulcer has ranged from 3 to 17 percent [17]. The development of pressure injury is a complex and multifactorial, that requires the application of external

pressure to the skin. However, external pressure alone is not sufficient to cause an ulcer; rather the interaction of these pressures with host-specific factors is what eventually leads to tissue damage [18]. Most of the times the Braden tool fails to assess the intrinsic factor to develop a pressure ulcer. Applying the traditional teaching is that pressure ulcer development caused by a combination of pressure, friction, shearing, and moisture, but other factors may contribute; friction and moisture may have a limited role to proper assess for pressure ulcer [18]. Hypoxia usually considered the main factor to develop a pressure ulcer, more and more it is becoming recognized that reperfusion and compression playing an important role. In the animal trial, two hours compression will lead to irreversible tissue damage, while damage resulting from tourniquet-induced ischemia over the same duration of time was reversible [11].

When patients are placed on an inclined surface, shearing will occur. Subcutaneous fat, deeper tissues, and muscle are pulled downward by gravity, while the dermis and superficial epidermis remain fixed through contact with the external surface. The result is angulation, stretching, and trauma to local blood vessels and lymphatic. The patients are dragged across an external surface, friction will occur. This causes abrasion with damage to the most superficial skin layer [9].

Methods of reporting and studying the incidence of pressure ulcer include direct patient assessment, surveys, and use of databases. These studies tend to be a small sample, and most of the time involves only a single facility, making the generalizability uncertain. When reporting and interpreting the incidence and prevalence of pressure ulcer caution is required since the duration of follow-up and methodology varies between studies [20].

The most predisposing factor for developing a pressure ulcer is urinary incontinence, many studies suggest that incontinent patients have up to a fivefold higher risk to develop pressure ulcer [21]. Moreover, the immobility considered from the most factor that contributes to pressure ulcer development. As well, the methods to measure immobility in the patient assessment are generally not available [22].

The involvement of insufficient skin perfusion in the formation of pressure ulcers has become increasingly known. In the occurrence of decreased tissue perfusion, the pressure applied to the skin for even less than two hours may be enough to cause serious damage. When vital organs such as the kidneys and the gastrointestinal tract are inadequately perfused, this results in decreased blood flow to the skin, which enhances the risk of pressure ulcer development [3].

A retrospective correlational study was performed in a sample of 306 medical-surgical and cardiothoracic intensive care unit patients receiving vasopressor agents during the year 2015. They discovered that norepinephrine and vasopressin were suggestively associated with the development of pressure ulcers. They also observed that patients who were starting to develop pressure ulcers had a statistically prolonged infusion time for pressor agents and longer duration of mean arterial pressure (MAP) less than 60 mmHg. These findings support the growing evidence that hypotension itself is a major factor of pressure ulcer formation by decreasing perfusion to the skin and deeper tissues. Another significant finding was the association of prolonged mechanical ventilation with pressure ulcer formation. It was observed that patients who were ventilated more than 72 hours were 23 times more likely to

develop pressure ulcers than those who were not. The study reinforced the common concern that continuous elevation of the head during mechanical ventilation may predispose a patient to shear forces, hence increasing the risk of forming pressure ulcers [24].

While wound care professionals do not totally comprehend the extent to which these intrinsic risks affect pressure ulcer development, it is fair to say that the higher the number of risks, the greater the challenge can be in preventing or reducing pressure ulcer development and deterioration. Skin damage, which occurs days or even hours before the clinical findings are detected, can still result in tissue injury. This can be the case especially if the patient has become immobilized by a vascular event, trauma, fracture, or prolonged operating room time. In some cases, especially that of palliative care, the family's need for support and the need for comfort can displace pressure ulcer prevention. This is because many pressure ulcer prevention interventions are commonly inappropriate as they cause pain and family burdens near the end of the patients' life [25].

4. Conclusion

Pressure ulcers are usually considered a quality indicator, and their occurrence raises the probability of wrongdoing on the part of healthcare providers. However, there is another concern that pressure ulceration may not always reflect substandard quality. This paper is part of an increasing body of evidence that challenges the relationship between pressure ulcers and quality. It supports the argument that pressure ulceration is sometimes unavoidable for patients at risk – even in the best circumstances. However, the acknowledgment that some pressure ulcers are inevitable should never deter the implementation of risk assessment, skin examination, preventive interventions, or the search for new technologies to prevent this end result.

4.1. Recommendations

1. Further study is needed to determine the degree to which resources and intrinsic factors contribute to pressure ulcer development and the associated implications for clinical practice. Not all intrinsic factors may be included in current risk assessment tools, nor can they always be revised.
2. Further research is needed to provide the scientific evidence which supports pressure ulcer prevention interventions, and to guide critical-thinking and decision-making of healthcare providers when deviations from the interventions are recognized.
3. Continued study is needed to support the creation of an expanded list of risk factors that are more predictive of pressure ulcer development. While many wound experts concur that some pressure ulcers are unpreventable, the accurate identification of these wounds is made after appropriate measures have failed.
4. Clinical practice guidelines should be formulated to address patient management when death is expected and the goals of treatment should incorporate comfort measures and family support.
5. In the current healthcare conditions, accurate documentation of preventive measures directed at the reduction of risk is proposed. The clinician should also document the clinical explanations why preventives measures are not appropriate or feasible, such as severe pain or patient refusal. If the pressure ulcer is established to be unavoidable, the rationale must be evident.

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