

THE CONCEPT OF REPOSITIONING AS PREVENTIVE MEASURE FOR PRESSURE INJURY IN CRITICAL CARE: AN ANALYSIS OF A VERSE OF 18TH FROM AL-KAHFI

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Abstract	<p><i>Islam emphasizes on prevention is better than cure concept. The holy Quran itself emphasizes on disease prevention based on several verses which upholds the concept as well as curing a disease. Complexity of al-Quran in this field is obvious but the verses clearly depict processes which are scientifically valid during reviews. As an objective, this article aims to explore the concept of preventing pressure injury by focusing on critical care patients whom are commonly admitted to the intensive care unit (ICU). The verse of al-Quran from surah al-Kahfi clearly states regarding this issue indirectly. It has also revealed that Ashab al-Kahfi (people of cave) whom have slept for 309 years, were not complicated with pressure injury which is the most common issue in critically ill or bedridden patient. The study is qualitative in nature in which the researcher will focus on textual and comparative analysis. As an analytical view, the concept of repositioning to prevent pressure injury especially in critical care subject, in the current medical practice, has been closely related to al-Quran verses.</i></p> <p>Keywords: <i>Prevention, Reposition, Critical, Care, Injury.</i></p>
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INTRODUCTION

Based on multidisciplinary consensus conference held in April 2016, the National Pressure Ulcer Advisory Panel (NPUAP) has revised the definition and stages of pressure injury (Laura E. Edsberg et. al., 2016). The term ‘pressure injury’ replaces ‘pressure ulcer’ in the NPUAP Pressure Injury Staging System. The change in terminology more accurately describes pressure injuries to both intact and ulcerated skin. In the previous staging system Stage 1 and Deep Tissue Injury described injured intact skin, while the other stages described open ulcers. This led to confusion because the definitions for each of the stages referred to the injuries as "pressure ulcers".

According to The National Pressure Injury Advisory Panel, a pressure injury is defined as “localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, comorbidities, and condition of the soft tissue”.

The prevalence of pressure injury or ulcer in critical care patient is still significant despite multimodal approach was introduced in intensive care practice. A prospective cohort study in 9 medical-surgical intensive care units (ICU) was conducted in Granada (Spain) showed 16% of 299 patients developed pressure ulcers of at least grade II severity. The incidence density of pressure ulcer was 13.4 cases per 1000 patient-days of ICU stay

and 19.6 cases per 1000 patient days on mechanical ventilation (Francisco Manzano et. al., 2010).

A multicenter study in southern Brazil evaluated 13.6% of 332 patients had pressure ulcer. The most common sites were sacral, calcaneal, ears, and trochanter. The presence of pressure ulcer was strongly related to unfavorable outcomes, for example prolonged duration of Mechanical Ventilation (MV), prolonged ICU stay and increase hospital mortality (D. Becker et. al., 2017). A single center study based on Ethiopia also giving the prevalence of pressure ulcer at rate of 14.9%. The lack of regular positioning and activity, friction/shear, and prolonged hospitalization were risk factors for pressure ulcer (D. Tadele Bereded et. al., 2018).

The Quran revealed the story of *Ashab al-Kahfi* (People of Cave) in surah *al-Kahfi*. It is the 18th surah in the Quran, has 110 verses and is included in the group of surah *Makkiyyah*. It is named as *al-Kahfi* (in Arabic: Cave) and *Ashab al-Kahfi* which means people of cave. Moreover, this name is taken from the story found in the verses 9 to 26 about some of young men who slept in the cave for many years. Apart from the story, there are also some stories in this surah contain lessons that are very useful for human life. In specific, the verse of 18th in surah *al-Kahfi* has stated that during their sleep, they have moved their bodies to the left and right in the cave for hundreds of years.

The literal meaning of 18th verse of surah *al-Kahfi*, Allah Taala says:

﴿وَتَحْسَبُهُمْ آيِقَاطًا وَهُمْ رُقُودٌ وَنُقَلِّبُهُمْ ذَاتَ الْيَمِينِ وَذَاتَ الشِّمَالِ وَكَلْبُهُم بَاسِطٌ ذِرَاعَيْهِ بِالْوَصِيدِ لَوِ اطَّلَعَتْ عَلَيْهِمْ لَوَلَّيْتُ مِنْهُمْ فِرَارًا وَكَلَّمْتُ مِنْهُمْ رُجْبًا﴾

Which means, “And you would have thought them awake, whereas they were asleep. And We turned them on their right and on their left sides, and their dog stretching forth his two forelegs at the entrance [of the Cave or in the space near to the entrance of the Cave (as a guard at the gate)]. Had you happened upon them, you would certainly have turned back from them in flight, and would certainly have been filled with awe of them” (al-Quran. al-Kahfi : 18) (Al-Hilali & Khan, 2001).

From this verse, the miracle of Al-Quran has highlighted the act of repositioning the body during sleep to the right and left sides. This act reflects the condition of prolonged immobilization which had occurred to the *Ashab al-Kahfi* (People of Cave). Based on a literature, the incidence of pressure ulcers from spinal immobilization in trauma patients ranges from 6.8% to 38% (Wietske Ham et. al., 2014).

These patients usually are dependent on mechanical ventilation and managed in critical care units. The need for sedation and ventilation will predispose to the limitation of mobilization during intensive care unit (ICU) stay. Therefore, viewpoint of this article is to analyze the importance of repositioning during prolonged immobilization state that predominantly occurs in intensive care patients.

DISCUSSION: THEORETICAL OVERVIEW

The verses 9 to 26 of Surah *al-Kahfi* explained the story of *Ashab al-Kahfi* (People of the Cave). The explanation from these verses are related to a story that is known by Jews of Madinah, and answered the queries based on known legend. This story also testifies the truthfulness of the messenger; Muhammad peace be upon him. Al-Quran has revealed in detail the duration of their sleep and technique for the time period.

The Quran mentions that they had slept for 309 years. The length of time was 300 plus nine years in lunar years, which is 300 years in solar years and the difference between 100 years and 100 solar years is three years. The long period of their sleep has occurred based on natural phenomenon (Ibn Kathir, 2000).

The verse that should be analyzed is:

﴿وَنُقَلِّبُهُمْ ذَاتَ الْيَمِينِ وَذَاتَ الشِّمَالِ﴾

Which means, “*And We turned them on their right and on their left sides*” (al-Quran. al-Kahfi : 18).

Ibn ‘Abbas said, “If they did not turn over, the earth would have consumed them” (Ibn Kathir, 2000). Therefore, this verse from surah *al-Kahfi* indicates bodies preservation methods during prolonged immobilization (sleeping) by the movement of their bodies from right to left sides and vice versa. Based on the story, people were contemplating that they are awake, but they were asleep instead. People move on their right and on their left sides during sleep and it has been reported that people have several types of body movements during sleep (Johanna Wilde-Frenz et. al., 1983).

As a part of nature, the earth will consume the bodies which are connected to it. However, the wise of God Almighty is able to protect their bodies from the earth. The act of turning or reposition will ensure that their bodies will be preserved as it takes years for them in the cave (Muhammad Sayyid Tantawiyy, 1998; al-Sa’diyy, 2000).

Based on the previous literatures, the frequency of turning position is still debated. Abu Hurayrah RA said, “They had turning twice every year, some narrated once per year and Mujahid said: once every seven years” (Al-Tabariyy, 2001; Al-Qurtubiyy, 2010). Another literature implies that one of repositioning was done on the Day of Ashura (Al-Zamakhshariyy, 2010).

This repositioning will not consume their bodies by the earth’s root, and the sun will not harm them by its high temperature (Tafsir Naisaburi, 1995). The point of view in this analytical thinking is, the method of repositioning or turning from one side to another should occur in a frequent manner. This method has been mentioned by Al-Quran as the preventive measure of avoiding the pressure ulcer or injury due to the consequences of prolonged immobilization (i.e. prolonged sleep for 309 years).

PREVENTIVE MEASURE

Studies have revealed an association between pressure ulcer and increased risk of morbidity and mortality. Pressure ulcers make a significant independent contribution to excess length of hospitalization beyond what might be expected based on admission diagnosis (Graves N et. al., 2005). Pressure ulcer can also lead to serious infectious complications, like bacteremia and sepsis (Krupp AE et. al., 2015).

Because of the adverse effects associated with pressure ulcer, prevention during critical care management is important. There are multiple factors that contribute to increase of the probability of pressure ulcer development. The most frequently risk factors included are three primary domains of mobility/activity, perfusion (including diabetes) and skin/pressure ulcer status (Susanne Coleman et. al., 2013).

The evidence-based care bundle was introduced for critical care includes five core measures: Risk Assessment, Skin Assessment, Support Surfaces, Nutrition and Repositioning. Each of these elements is essential in clinical practice. An effective team including nurses and doctors should be assembled and given the appropriate education and training to execute the care bundle in their ICU. In order for care bundle in critical care to be succeeded, compliance with all the requirements of the care bundle must be strictly observed (Xiao-Lin Zuo et. al., 2015).

Repositioning of the patient to off-load areas of high pressure is an important component of pressure ulcer preventive measure. An evidence-based analysis recently recommended turning the patient at least once every 2 hours on standard foam mattress and once every 4 hours on pressure redistribution mattress (Joyce M. Black et. al., 2011). A systematic review found that repositioning every 3 hours using a 30-degree lateral tilt was more effective than repositioning every 6 hours using a 90-degree lateral rotation in reducing the incidence of pressure ulcer (Moore et. al., 2014). However, most of studies done were unable to reach a conclusion on the effective duration for repositioning patients to prevent the development of pressure ulcer (H-S Jocelyn Chew et. al., 2018).

Continuous bedside pressure mapping (CBPM) has been used to assist pressure ulcer prevention strategies in ICU patients by identifying the magnitude of pressure experienced by various body pressure points and helping to improve the positioning of the body to minimize pressure. The technology empowers clinicians with real-time feedback on repositioning strategies and helps to off-load the at-risk body surface areas after turning (Kozue Sakai et. al., 2009; Cremasco MF et. al., 2013).

When repositioning, the patient's body should be turned laterally 30-degree and the head of the bed elevated no higher than 30-degree to prevent pressure on the coccyx. However, this position may precipitate ventilator-associated pneumonia (VAP) in intubated patients and patients receiving enteral feeding. It is suggested that the head of the bed should be elevated higher than 30-degree to prevent VAP in at risk groups.

Frequently, intubated patients may be restrained or treated with sedatives to prevent removal of the endotracheal tube which may prevent the patient from mobilization. However, caution should be taken into account in hemodynamically unstable patient, as lateral position changes may not be tolerated by the patient (Burk RS et. al., 2012).

CONCLUSION

In conclusion, patient reposition in critical care is a part of care bundle in ICU. To ensure compliance with the care bundle, the adherence of healthcare personnel to this preventive measure should be periodically audited. Furthermore, the implementation of patient repositioning in critical care is essential to reduce the morbidity and mortality secondary to pressure injury.

The glorious Quran mentions regarding this preventive measure practiced more than 1400 years ago and the evaluation of this method was done later on. This revelation emphasizes that Al-Quran has truly originated from the word of God and it has been correlated with the modern science and practice. Therefore, this verse of 18th from surah *al-Kahfi* indirectly emphasizes the concept of repositioning as preventive measure in preventing pressure injury, that can be applied in critical care patients.

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