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Clinical effectiveness of a multi-layer silicone foam dressing for the prevention pressure injury in critically and semi-critically ill patients

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Introduction

Critically and Semi critically ill patients are at high risk of developing pressure injury (PI), prevention of pressure injury is a challenge because of the high risk for multiple comorbid conditions, immobility and hemodynamic instability. Many of these patients also receive vasopressors to support blood pressure and maintain adequate cardiac output. Unfortunately, the same infusions that control patients' blood pressure also constrict peripheral circulation and deprive the capillary beds that supply the skin of the oxygen and nutrients that it needs. Although standard strategies such as risk assessment, regular repositioning and the use of specialized support surfaces have been widely implemented in hospitals, pressure injuries (PIs) continue to be a challenging health problem for patients and health-care providers.[1-3]

This evidence pool has influenced the experts involved in updating the Clinical Practice Guideline, produced by the National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance, on the prevention and treatment of PIs. The updated Guideline, published in 2014, recommends that, as part of their PI prevention regimens, health-care providers should consider applying prophylactic dressings to bony prominences in anatomical areas that are frequently subjected to friction and shear.

The sacrum is the most common locations for PIs. Given the challenges in PI prevention, there is a growing interest in the use of dressings as an additional prevention strategy.[4] A recent systematic review combining high-quality randomized controlledtrials (RCTs), cohort studies and case series shows clear evidenceof the effectiveness of multilayer soft silicone foam dressings in the prevention of PI development, particularly among immobile ICU patients.[1]

The objective

The study was to evaluate the clinical effectiveness of multi-layer silicone foam dressing to prevent PI development in critically and semi-critically ill patients.

Methods

The quality improvement initiatives of critically and semi-critically ill patients were enrolled at the Siriraj Hospital. Each patient that have risk factors for PI had a multi-layer silicone foam dressing applied to sacrum and addition to standard PI prevention care (PI risk assessment, regular re-positioning, nutritional support, and incontinence management) on admission to the department. The dressings were retained for the duration of the patients' stay in the ICU or Semi ICU. The skin under the dressings was examined daily and the dressings were replaced every time contaminated feces and dressing border rolled up. The 23 patients admitted at general surgical intensive care unit and Semi intensive care unit in Siriraj Hospital. in the quality improvement initiative, excluding loss to follow-up and transfer to another ward, 21 patients were included in the final analysis.

Inclusion and exclusion criteria

The of study included all critically and semi-critically ill patients who were admitted to the General surgical intensive care unit and Semi intensive care unit. Data collection commenced in mid April 2016 and was completed in late July 2016. Patients were excluded if they loss to follow-up and transfer to another ward.

Intervention

1. All patients were admitted to ICU and semi ICU who received assessment risk factor to PI by Siriraj Concurrent Trigger Tool: Modify Early Warning Sign for Pressure Injury Prevention.
2. The multi-layer silicone foam dressing was applied to sacrum of each patient that have risk factors for PI as soon as the patient was admitted to the department and addition to standard PI prevention care (PI risk assessment, regular re-positioning, nutritional support, and incontinence management) on admission to the department. The dressings were retained for the duration of the patients' stay in the ICU or Semi ICU.
3. The skin under the dressings was examined daily and the dressings were replaced every time contaminated feces and dressing border rolled up.
4. Re assesses skin every 24 hour. The daily review involved partially peeling back the adhesive border of the dressings so that the sacrum skin could be visualized, following which the dressing was reapplied. Any PI that developed during the course of the study was reported to maintain the standards guideline.

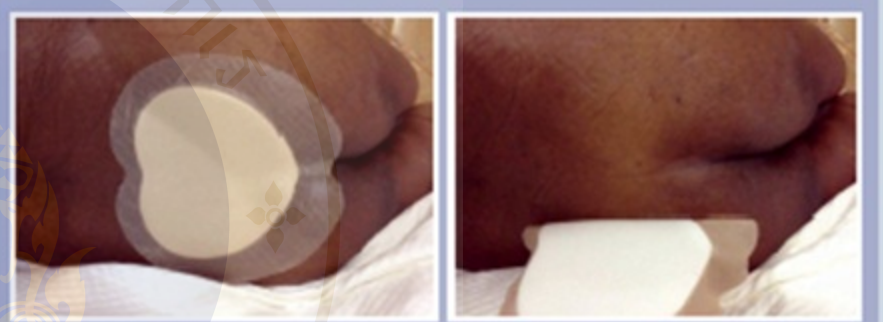

Figure 1 a multi-layer silicone foam dressing applied to sacrum and re assessed

Result

The 23 patients in the quality improvement initiative, excluding loss to follow-up and transfers to another ward, 21 patients were included in the final analysis. There was no difference in key demographic or physiological variables between the studies, apart from a longer length of stay for our study. No patients in the intervention group developed a hospital-acquired sacrum PI during their ICU and semi ICU stay while the multi-layer silicone foam dressing was used. The average length of stay of this study was 7 days.

Conclusion

Conclude, based on results, that a multi-layer silicone foam dressing under investigation was clinically effective in preventing Hospital acquired Pressure injury in ICU and Semi ICU.

Reference

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