Low Air Loss for the Prevention of Pressure Injury in Acute Burn Patients: A Pilot Study

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INTRODUCTION
Low air loss support surfaces have been used for the prevention and treatment of pressure injuries (PIs), formerly pressure ulcers, for many years. Incidence rates for an intensive care unit (ICU) may be as high as 38 percent. There is some data to suggest burn patients are particularly at risk of developing PIs based on admission of the Braden Scale for Predicting Pressure Sore Risk (Braden Scale). This pilot study examined, using a high-volume low air loss therapeutic mattress, the incidence of PI in a small group of patients admitted to an acute burn unit. The average hospital-acquired pressure injury (HAPI) can cost a facility $70,000—and possibly more in the burn population—due to multiple comorbidities such as immobility and protein loss.

METHODS
Patients were admitted Jan.-June 2016 to a regional burn center and enrolled. Subjects who would normally be placed on air fluidized therapy were placed instead on a high-volume low air loss surface. General demographic data included age, gender, height, and weight. Medical history, major comorbidities, and pre-albumin were collected along with type, percentage, and degree of burn. All subjects were assessed upon admission for pre-existing pressure injuries, and were followed the length of the admission and reassessed for PI upon discharge. When applicable, the location and stage of the PI was noted. Qualitative survey data was also collected from the nursing staff using the mattress.

RESULTS
Eighteen patients were enrolled in the study. Of those, twelve were male and six were female. The average age was 57 years old. Four of the subjects were not burned but were followed because of complex skin diagnoses such as necrotizing fasciitis and Stevens-Johnson syndrome. Five of the subjects experienced an inhalation burn. Twelve had thermal burns of varying degrees. Of those burned, all had second degree burns and eight had third degree burns.

The length of time on the high volume low air loss surface ranged from 1 to 91 days. The average length of time on the surface was 19.61 days, with total patient days on the surface 353 days. Four patients were admitted with pre-existing pressure injuries. One patient received a hospital-acquired pressure injury.

QUALITATIVE DATA
Staff reported that the low air loss surface:
- Was easy to use
- Allowed patients to be turned easily
- Accommodated all sizes and weights

CONCLUSION
A high-volume low air loss mattress shows promise for the reduction of HAPIs in the burn population. The results of the study warrant further study with a larger sample.

REFERENCES

ABOUT THE AUTHORS
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