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Does ClimateCare Improve Pressure Ulcer Outcomes After Surgical Closure?

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Background

•Pressure ulcers (PU) are injuries to the skin and underlying tissue that can have significant morbidity with the presence of complications such as dehiscence and necrosis.

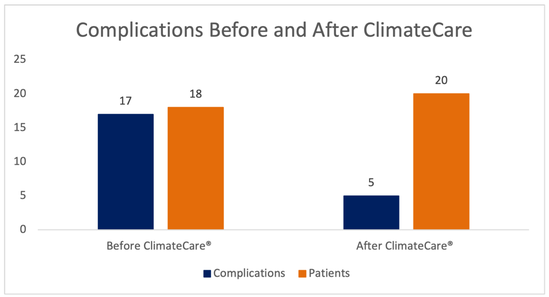
•ClimateCare® is a mattress coverlet system that aims to maintain optimal skin moisture, temperature, and humidity levels at the interface between the patient and the surface to mitigate pressure ulcer risk factors

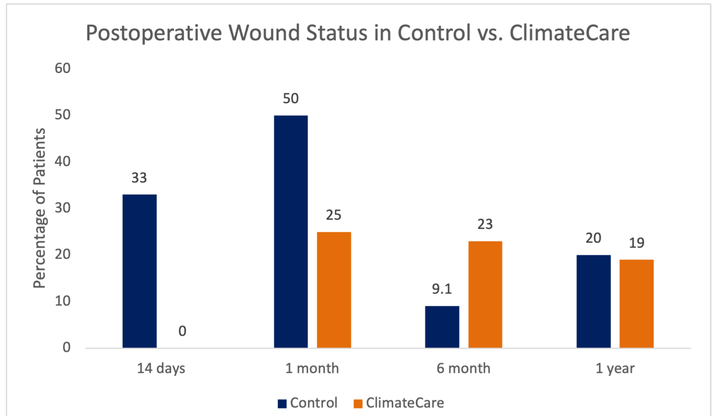
Objective

The objective of this study is to evaluate the effectiveness of ClimateCare® in improving wound outcomes and minimizing complications of pressure ulcers.

Methods

- Patients with a stage III/IV pressure ulcer admitted for surgical closure were included in the randomized-controlled trial. All patients received the Fluid Immersion Simulation system (FIS), either with or without the ClimateCare® treatment based on a convenience sampling method.
- The subjects were monitored for 14 days post-closure (POD-14) for assessment of wound status and complications, including moisture, maceration, drainage, dehiscence, epidermolysis, necrosis, and demarcation.





Post-operative Data: ClimateCare vs. Control

	ClimateCare	Control	P-value
Complications at POD-14, pts (%)	3 (15)	10 (56)	0.004
Type of Complication, n (%)			0.032
Moist Area	0 (0)	1 (5.9)	
Congestion	1 (20)	1 (5.9)	
Maceration	0 (0)	5 (29)	
Minor dehiscence	0 (0)	7 (41)	
Major dehiscence	0 (0)	1 (5.9)	
Epidermolysis	1 (20)	0 (0)	
Drainage	1 (20)	2 (12)	
Skin necrosis	2 (40)	0 (0)	
Number of Complications, n (%)			
1 complication	1 (33)	4 (40)	
2 complications	2 (67)	5 (50)	
3 complications	0 (0)	1 (10)	
Wound Status at POD-14			
Open	0 (0)	4 (33)	0.006
Wound Status at 1-month			
Open	4 (25)	6 (50)	0.086
Wound Status at 6-month			
Open	2 (13)	2 (9.1)	0.391
Wound Status at 1-year			
Open	3 (19)	2 (20)	0.469

Table 1: Outcomes of ClimateCare intervention: complications and wound status

Results

- A total of 32 patients completed the study, where 18 patients received the ClimateCare® treatment and 14 patients did not.
- In the control group, 71% of patients had complications while 17% had complications in the ClimateCare® group (P=.001).
- 33% of patients without the ClimateCare® had open wounds, while no patients who received ClimateCare® treatment had open wounds (P=.011).
- Patient acceptability regarding treatment comfort, difficulty with mobilization, and pain at surgical site were not significantly different between ClimateCare® and control groups.

Conclusions

- Our findings suggest that the ClimateCare® treatment in conjunction with the FIS may be effective in decreasing risk of postoperative complications and emphasize the importance of moisture control and pressure offloading in patients.
- Future studies should be conducted to characterize the effects of ClimateCare® in minimizing the risk of complications following wound closure.

References

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