Evaluation of a Protective Barrier Ointment on Patients with a Two Week or Less Inpatient Stay

Priscilla Grant, BSN, RN, HT, CWCN • St. Joseph's/Candler Health System • Savannah, GA

INTRODUCTION

One of the main properties of the skin is its barrier function. It serves as a mechanical, chemical and immunological protective barrier. However, extended exposure to bodily fluids such as urine, stool, perspiration, and wound exudate can lead to over hydration and maceration that weaken this barrier function and render the skin more susceptible to breakdown. Bodily fluids also contain caustic elements such as enzymes and matrix metalloproteinases and other chemicals that further breakdown the skin and prevent wound healing. Moisture related skin damage from unmanaged exposure to caustic bodily fluids has been associated with pain, secondary infection, and delayed wound healing. Reinforcing the barrier function of the skin is essential to maintain skin integrity. Topical skin protectants and barrier products are designed to protect and help relieve chapped or cracked skin and help seal out wetness. The purpose of this case series was to evaluate a skin barrier ointment in an inpatient setting on patients with skin at risk for breakdown with a 2 week or less stay.

METHODS

In this case series, a convenience sample of patients with moisture damaged skin or with skin at risk for breakdown, was selected, at clinician discretion. A barrier ointment was applied onto the skin per the instructions for use and the quality of the skin was assessed and scored. The Braden Pressure Ulcer Risk score was also noted. If a wound was present, it was treated per the standard of care. At each re-application and upon discharge, the quality of the skin was scored and recorded.

Skin Condition Score (SCS)
Dryness
1 = Normal
2 = Dry Skin
3 = Very Dry Skin
Erythema
1 = None
2 = Visible Erythema, <50% app. area
3 = Visible Erythema, >50% app. Area
Breakdown
1 = None
2 = Small Local Area
3 = Extensive

Skin Erythema Score ((SES)Perineal Area ONLY)
0 = Clear, no redness
1 = Slight redness
2 = Moderate redness
3 = Strong redness
4 = Non-intact

CASE PRESENTATIONS

Five patients were evaluated, with an average age of 72.8 ± 4.6 years. Their average length of stay was 9.4 ± 4.2 days and average Braden score of 15.8 ± 0.4.

Patient	Age	Gender	Length Stay (Days)	Race	Comorbidities	Braden Score – Pressure Ulcer Risk
A	72	M	2	Black	Diabetes, Mobility deficit, Congestive heart failure	16
B	80	M	11	Black	Diabetes, Mobility deficit	16
C	74	F	12	White	Mobility deficit, Poor nutritional state, Renal failure	16
D	68	M	12	White	Diabetes, anemia, mobility deficit, incontinence, renal failure	16
E	70	F	10	Black	Diabetes, Mobility deficit, Poor nutritional state	15

Patient A

Patient A was admitted with congestive heart failure. The barrier ointment was applied daily after bathing on both lower legs during his 2 day stay. On initial presentation, shown below, the patient had dry skin with visible erythema on less than 50% of the affected area and no breakdown for an initial SCS of 4. Patient A was discharged before the second assessment; however the nurse stated the leg looked better and there was no erythema or pain. The barrier ointment was sent home with the patient.

Patient B

Patient B was admitted for hyperglycemia. On initial presentation, the barrier ointment was applied to both lower legs due to cellulitis and dry scaly skin. The initial SCS is 6 due to the very dry, erythematous skin. The barrier ointment was applied twice a day. On day 6 post ointment application, there was no redness or pain noted, though the legs were very dry. The patient was discharged before a final assessment.

Initial Day 6

Patient C

Patient C was admitted due to renal failure. On initial presentation, she had with an open blister on the left leg, erythema and dry skin for an initial SCS of 8. The barrier ointment was applied twice a day. On day 5 post ointment application, the erythema had resolved and the edema was controlled. The skin dryness was slowly resolving, leading to a SCS of 6.

Initial Day 5

Patient D

Patient D was admitted for end stage renal failure. The barrier ointment was applied three times a day to the sacral area and an abdominal skin fold. For both areas, the skin was dry, erythematous and had local areas of breakdown, for an initial SCS of 7. Upon initial application, the patient experienced relief from the skin irritation. Unfortunately, the patient was discharged to hospice care, and the barrier ointment was sent home with him. A final assessment was unable to be made.

Patient E

Patient E was admitted with pneumonia. On initial assessment, the skin around a sacral ulcer was dry, erythematous and had some breakdown, yielding an initial SCS of 6 and SES of 2. The patient also noted pain associated with the skin irritation. The barrier ointment along with an antifungal was applied three times a day. On day 10 post ointment application, the redness and skin breakdown had resolved and the skin had returned to normal, yielding a SCS of 3 and SES of 0.

CONCLUSION

For each patient, the nursing staff gave the skin barrier ointment high marks, 10 out of 10, for its ability to protect from incontinence, ease of application and removal and feel of the product. The nursing staff appreciated the ease of removal since it involved less work. Patient A noted some discomfort during application. Patients B, C, D and E did not complain of pain or discomfort caused by the barrier ointment. In fact, patient D reported relief upon application.

REFERENCES

1. Young DL, Chakravarthy D. A controlled laboratory comparison of 4 topical skin creams moisturizing capability on human subjects. J Wound Ostomy Continence Nurs. 2014;41(2):168-174.
2. Lu N, Chandar P, Tempesta D, Vincent C, Bajor J, Mcguiness H. Characteristic differences in barrier and hygroscopic properties between normal and cosmetic dry skin. I. Enhanced barrier analysis with sequential tape-stripping. Int J Cosmet Sci. 2014;36(2):167-74.
3. White RJ, Cutting KF. Interventions to avoid maceration of the skin and wound bed. Br J Nurs. 2003;12(20):1186-201.

*Remedy Basics Barrier Ointment, Medline Industries, Inc., Mundelein, IL

This study was sponsored by:

Educare® wound & skin care education

The clinical education division of MEDLINE