

# COMPARATIVE EFFECTIVENESS STUDY OF 3% DIMETHICONE BARRIER CLOTHS V. STANDARD OF CARE PRODUCTS IN INCONTINENCE CARE IN AUSTRIA



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## Abstract

### Background:

Reduced mobility combined with incontinence presents a major problem in nursing. Common complications include skin issues such as incontinence-associated-dermatitis (IAD), pressure ulcers, and other skin wounds. Appropriate skin care is one of the most important factors in the prevention of this painful and costly condition. More frequently, products containing dimethicone are used to prevent skin irritation and complications caused by stool and urine, in attempt to alleviate the severe results of such problems.

**Intervention:** In this 2010 study, two research questions were addressed: 1) *is it possible to enhance quality of the skin by treating the patient with 3% dimethicone barrier cloths<sup>2</sup> in comparison with classical creams and lotions?*; 2) *is nursing staff satisfied with these products as a treatment for incontinent patients?* Long-term comparisons between traditional skin care products (cream & lotion) and a 3% dimethicone barrier cloth were made. The study was conducted in a Vienna hospital internal station. Subjects were selected due to lack of continence, either stool or urine.

During Phase 1, 27 patients (Group 1/G1: control group) were treated with the classical treatment (crèmes and lotions) for an average of 21 days. During Phase 2, (G2: intervention group), 23 patients were treated with 3% dimethicone barrier cloths for an average of 17 days. Compliance to incontinence care protocols was similarly enforced in both phases.

Excretion, mobility, and skin status (erythema, wounds) were accounted for. In addition, nursing staff satisfaction was assessed.

### Results:

Greater improvement in skin status was seen in the patients in G2 versus those in G1, especially with regard to wounds (# of wounds, G2 at start=6; G2 at end=0). This is especially interesting considering the increased immobility in this group. With regard to staff perception, 15 of 19 staff surveyed said they were satisfied or very satisfied with the 3% dimethicone barrier cloths; 18 of 19 surveyed said they found these cloths easy to use.

### Conclusion:

The results of this study indicate positive effects of the 3% dimethicone barrier cloths, including patients with limited mobility and existing wounds due to incontinence.

## Methods

### Description of sample

Both groups were almost the same size and comparable.

- Group 1 (G1)=Control group, treated with conventional creams and lotions (n=27);
- Group 2 (G2)=Intervention Group, treated with the 3% dimethicone barrier cloths, n=23).

### Excretion

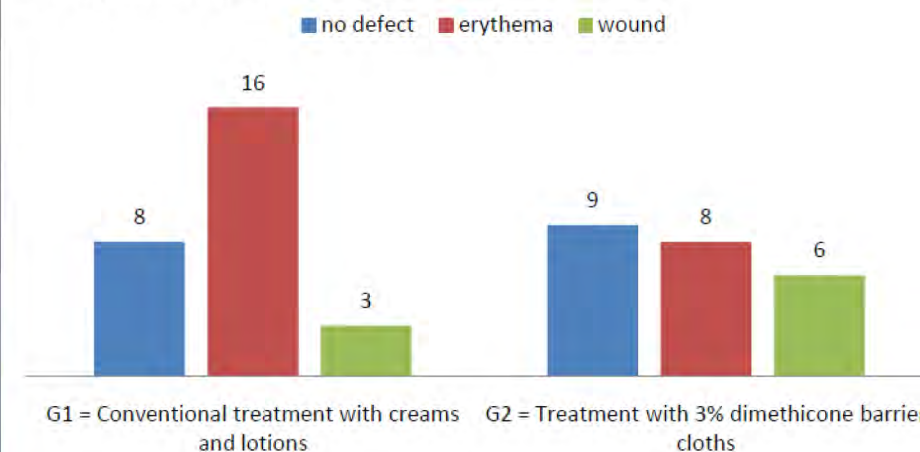
Both groups were initially in a comparable condition in terms of types of excretion. In group G2, however, the occurrence of urine and stool incontinence was higher (22 subjects in G1 v. 20 subjects in G1).

### Norton Scale: Pressure Ulcer Risk

At Baseline, both groups showed nearly the same mean value for risk of pressure ulcer on the Norton scale. There were slightly higher minimum and maximum rates in group G1. (G1, Norton scale between 11 - 25 (mean 16.56); G2, Norton scale between 9 - 23 (mean 15.45). )

### Erythema, Wounds, and other Defects of Skin Condition (Graph 1)

Defects including wounds and erythema<sup>3</sup> were measured at the beginning and the end of the study. The graph below shows the number of defects, erythema, and wounds at the beginning of the study in each group. There were more patients with erythema in G1 at beginning.

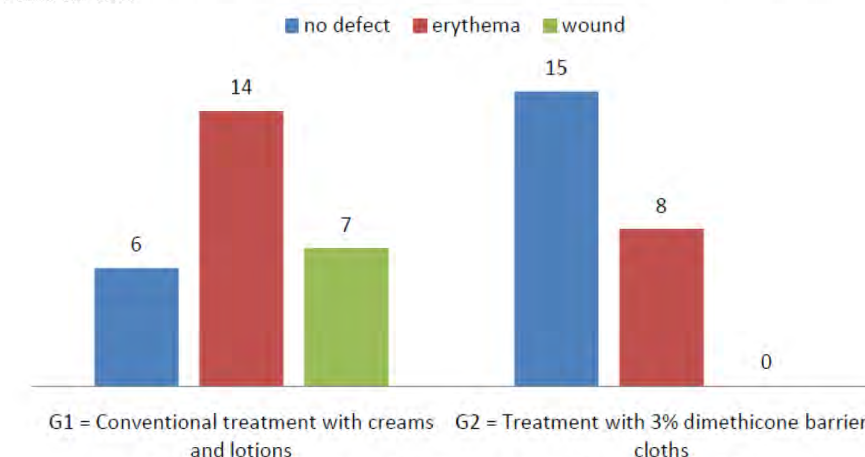


Graph 1: Status of Skin Condition at Start of Study, G1 v. G2

## Results

### Status of skin condition at the end of the study (Graph 2)

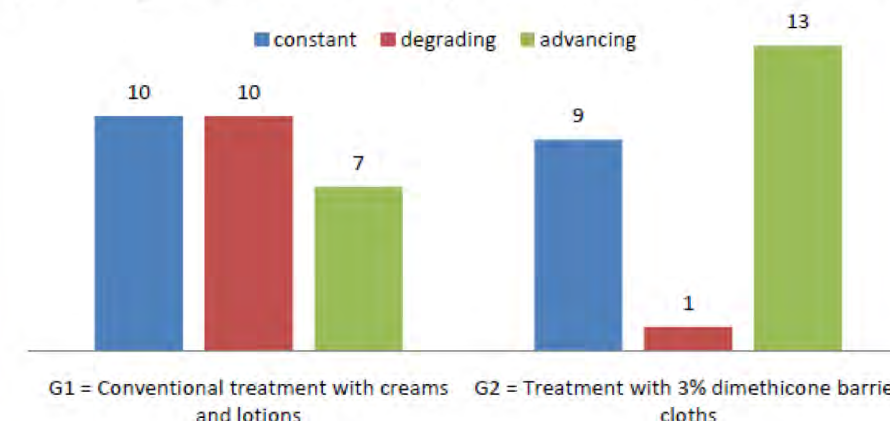
At the end of the study, skin condition in G2 showed a greater degree of improvement than that in G1.



Graph 2: Status of Skin Condition at End of Study, G1 v. G2

### Subjective change: Wound Status Trend

Subjective development shows the change in wound status during the study. If erythema diminishes it is still erythema, however, there may be improvement (advancing) or deterioration (degrading) of the skin condition. Subjective assessment by the nursing staff showed a definite improvement of the skin condition in G2.



Graph 3: Subjective Trend: Wound Status, all wounds

## Conclusions

These two groups were initially comparable in size, skin condition, excretion type and occurrence, skin condition and pressure ulcer risk level as defined by Norton Scale. By the end of the study, it was clear that both skin condition (Graph 2), and, more specifically, wounds (Graph 3) in G2 showed far greater improvement than G1. The positive effect of the 3% dimethicone barrier cloths was demonstrated.

In addition to the improvements in the patient's skin condition, user (nurse) satisfaction was assessed in a multi-point questionnaire. Of 19 nurses surveyed, 74% stated that they were 'satisfied' with the usability of the product. When nurses were asked if they felt the product improved their work routine, 93% reported YES. Through education of the nursing staff on the proper use of the product, the product was applied correctly and consistently. We believe this helped to achieve high efficacy.

This comparative study of traditional skin care with creams and lotions versus treatment with 3% dimethicone barrier cloths resulted in positive changes in the patient's skin condition and staff satisfaction. Improving the condition of the patient's skin may help to alleviate not only the existing wounds, but the start of new wounds, as well as incontinence-associated dermatitis. Investment in modern care products such as 3% dimethicone barrier cloths is justified by the results of this study, and would pass under the perspective of a holistic care approach and thorough profitability test. Other studies on this issue have been conducted since 2001 on a global scale. Data can be obtained from WPM Wund Pflege Management GmbH. Despite these vast data, we need to further the necessary shift in thinking in the care of the incontinent patient with more scientific research and evidence.

### References & Notes

1. Wund Pflege Management GmbH, Österreich, Austria
2. Comfort Shield® Barrier Cloths, Sage Products, Inc., Cary, IL, USA
3. Normal redness is not necessarily a pathological symptom in general, as they cannot give a clear indication of a possible problem. Only in the case of a nonblanchable erythema or another form of damage to the skin (e.g. blisters, or other damage) is considered as critical.