

# A Pilot Study to Evaluate the Validity of Skin Care Protocols Followed by Women with Breast Cancer Receiving External Radiation

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## Abstract

Women with breast cancer receiving external radiation are often instructed to avoid aluminum-based deodorant on the treated side and not to apply skin care products in the radiation field four hours prior to treatment. The rationale for these instructions is to prevent severe skin reactions. If allowing a woman to use her deodorant and skin care products on a convenient schedule has no significant effect on skin reactions, then eliminating these instructions will be less disruptive to her normal hygiene routine. A pilot study was conducted in a community hospital's radiation department. Thirty women were allowed to use their aluminum-based deodorant on their usual schedule and 100% aloe vera gel with minimal restrictions. Post-treatment survey responses indicated that these women found the schedule of aloe vera application convenient and felt it was important to use their own deodorant. The control group consisted of 30 women treated during the same time period who were given the department's standard skin care instructions. The results showed no major clinical difference in time to onset and the maximum severity of skin reactions between the two groups.

## Background

- It is generally believed that skin care products present during radiation treatment can increase the severity of skin reactions.
- The practice of avoiding aluminum-based deodorant and other skin care products in the radiation treatment field is not supported by research.

## Methods

- Thirty women treated between October, 2005 and December, 2006 were given skin care instructions which included using their aluminum-based deodorant and applying 100% aloe vera gel 1-3 times per day with one application of aloe within a half hour of treatment.
- Criteria included informed consent, diagnosis of Stage 0, I or II breast cancer, treatment with external radiation, no lymph nodes directly treated, and Zubrod performance status of 0-2.
- Skin was assessed twice a week during treatment and at 2, 4, and 6 weeks post-treatment using the Skin Toxicity Assessment Tool (Berthelet et al., 2004).
- Subjects completed a written survey at the end of treatment evaluating the convenience of the aloe vera schedule and the importance of using their own deodorant.
- A convenience sample of 30 women treated during the same time period and meeting the same criteria served as the control group.
- The comparison group was given the department's standard skin care instructions (no deodorant and no skin care products applied within 4 hours prior to treatment) and data was collected from a retrospective chart audit.
- Time to onset and maximum severity of skin reactions were compared between the two groups.

## Results

- Mean Age: Experimental group (E) 64.3; Control group (C) 58.3.
- Race: Caucasian with the exception of one.

### Days to Onset of Erythema by Treatment Fraction

Group	#	Median	Mean
C	30	12.00	13.07
E	29	13.00	12.90

### Maximum Erythema (Redness) By Grade

	Group		
	C	E	Total
No erythema (Grade 0)	0 0%	1 3.3%	1
Faint, transient erythema (Grade 1)	15 50%	17 56.7%	32
Bright erythema (Grade 2)	15 50%	12 40%	27
<b>Total</b>	<b>30</b>	<b>30</b>	<b>60</b>

### Reported symptoms (E)

	Freq	%
Burning	24	20%
Itching	19	63%
Pulling	9	30%
Tenderness	14	47%
Other	4	13%

## Findings and Conclusions

- The results showed no major clinical difference when comparing severity and onset of skin erythema between the two groups.
- Itching and tenderness were the most frequently reported symptoms in the experimental group—although not specifically measured in the control group, these were the most common symptoms documented in the retrospective chart audit.
- Results supported previous findings of Burch et al. and Meegan & Haycocks (1997).
- 93% in the experimental group stated that the aloe vera schedule was convenient; 77% felt it was important to use their own deodorant with some reasons given as follows: "can't go to work without deodorant," "social reasons," "it's the only one that works for me."
- Study limitations include small sample size, lack of racial diversity, single site, and lack of randomization between study groups.



Grade II Skin reaction in irradiated right breast after 6 weeks of treatment.

## Implications for Nursing

- The practice of banning aluminum-based deodorant during treatment and not allowing application of other skin products for four hours prior to treatment in these patients is not supported by evidence.
- Minimizing disruption in a woman's normal hygiene routine can decrease anxiety and increase coping at a time of extreme stress.
- Further research may be warranted using a larger sample size and randomization between study groups at more than one site.