A Prospective Randomized, Placebo-Controlled Skin Care Study in Women Diagnosed With Breast Cancer Undergoing Radiation Therapy

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Each year in the United States, about 207,090 women are diagnosed with breast cancer (American Cancer Society, 2010); of them, a subset will receive radiation therapy for cure, control, or palliation. Women undergoing radiation therapy can expect to experience certain acute or late effects. One of the most common side effects along with fatigue is an acute skin reaction that can occur as early as one to two weeks into treatment and take up to one month post-treatment to heal. The challenge for healthcare providers is twofold: (a) patients can access and choose from a variety of skin care products (e.g., Aquaphor®, Beiersdorf, Inc.) and (b) no evidence-based practice guidelines exist.

Acute skin reactions arise from the interaction of ionizing radiation on the normal epithelium. Patients undergoing treatment typically have an entry and exit site from the radiation beam, and the skin becomes irradiated by treatment necessity. Although the reactions are considered a normal part of the treatment experience, they can cause discomfort, pain, and difficulty in performing activities of daily living, as well as interfere with patients’ quality of life. Severe skin reactions may be painful, lead to localized and occasionally systemic infection, and cause permanent scarring (Williams et al., 1996). Other acute effects associated with whole-breast irradiation include transient pain or discomfort in the breast, nipple tenderness or sensitivity, and mild breast edema (Mazanec, 1997).

Women commonly develop skin reactions during radiation therapy. About 87% of women will develop some degree of radiation-induced dermatitis, varying from mild to brisk erythema or moist desquamation (Fisher et al., 2000). The reactions vary in incidence and severity based on the total dose of radiation, treatment volume, daily fraction size, energy and type of radiation, total treatment time, and other individual factors.

The purpose of the current study was to evaluate three commonly used skin care products for women receiving whole-breast radiation therapy against a placebo. The study addressed the following questions: (a) What percentage of women who undergo radiation therapy for breast cancer treatment experience a skin reaction? (b) Does a skin care product compared to placebo reduce the incidence of an acute skin reaction in women receiving radiation therapy for breast cancer?