■ CNE Article

Toward Evidence and Theory-Based Skin Care in Radiation Oncology

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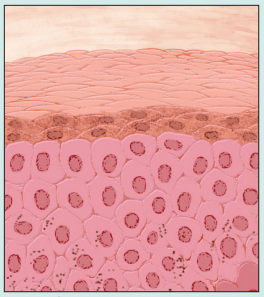

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Dermatitis is a distressing symptom of radiation therapy, and current care guidelines often lack evidence. Using an evidence-based practice (EBP) model, a multidisciplinary group in an academic medical center reviewed the literature to create departmental patient education materials related to skin care that were grounded in evidence. Recommendations not supported by evidence from randomized, controlled trials were viewed within a stress-reduction framework. Until evidence related to the prevention and treatment of radiation dermatitis is more fully developed, skin care recommendations for patients with cancer who receive radiation may need to be based on evidence and theory. In addition, care for patients with radiation dermatitis should encompass strategies aimed at physical and psychosocial stressors.

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One of the most common and unwanted side effects from high-dose external beam radiation therapy is the development of skin reactions, also known as radiation dermatitis or radiodermatitis. Although the exact incidence and prevalence of skin reactions are unknown (Wells & MacBride, 2003), they are an expected toxicity from curative-oriented external beam radiation therapy regimens given to patients with breast, head and neck, rectal or anal, and gynecologic malignancies. In two studies (N = 755), the development of skin reactions was documented in more than 90% of patients receiving treatment (Elliott et al., 2006; Gosselin, Schneider, Plambeck, & Rowe, 2010).

Skin reactions can vary in intensity. Grading is based on common criteria endorsed by groups such as the Radiation Therapy Oncology Group (Cox, Stetz, & Pajak, 1995) and the National Cancer Institute (see Table 1). Although transient grade 1 reactions can emerge after initial treatments, grade 2 or higher reactions generally begin to appear around the second or third week of treatment as the amount of delivered radiation approaches 30 Gy (Archambeau, Pezner, & Wasserman, 1995; Chao, Perez, & Brady, 2001).

Risk factors for the development of more severe, higher grade (3 or 4) skin reactions are treatment- and patient-related (Fernando et al., 1996). Treatment-related factors include the use of combined treatment modalities (e.g., chemoradiation), altered skin integrity within the treatment fields (e.g., surgical incisions), thinner skin within treatment fields (e.g., axilla, neck), and treatment fields that include opposing skin folds (e.g., perineal, gluteal, inframammary) (McQuestion, 2010). Patient-related factors include age (skin is thinner in older adults), poor nutritional status, smoking, and the presence of comorbidities such as diabetes or renal failure (Bentzen & Overgaard, 1994).

Skin reactions are recognized by radiation oncology clinicians as having the potential to negatively impact patients' quality of life (McQuestion, 2006). Higher grade reactions may lead to treatment breaks that can negatively impact overall treatment efficacy (Bese, Hendry, & Jeremic, 2007). Because of their association with altered skin integrity, higher grade reactions can increase the risk for infection (Edwards & Baker, 2005; Farley, 2001). Finally, skin reactions can be painful, itchy, and disruptive. Therefore, efforts to prevent, minimize, or improve management of skin reactions are ongoing within radiation oncology.

The purpose of this article is to describe how a preexisting but unarticulated conceptual framework for skin care recommendations emerged from a multidisciplinary effort to make existing patient education materials in a hospital-based outpatient setting more evidence based. The article also will show how the use of an evidence-based practice (EBP) model helped to articulate a framework for traditional, department-level skin care recommendations not supported by high levels of evidence from randomized, controlled trials (RCTs). Using