

Re-evaluating Skin Care Restrictions in Radiation Oncology: Evidence Over Tradition

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Abstract

Background: Traditional skin care restrictions during radiotherapy, including avoiding topical products before treatment and discontinuing deodorants, remain common despite advances in radiotherapy and limited evidence supporting these recommendations. This study evaluated the skin care practices of Iranian radiation oncologists and compared them with current evidence. **Methods:** An anonymous online cross-sectional survey was conducted among members of the Iranian Society of Radiation Oncology (ISRO). The questionnaire assessed recommendations regarding topical product use before radiotherapy, deodorant and antiperspirant use, and routine skin hygiene. Participants also identified the primary basis for their recommendations. **Results:** Eighty-five radiation oncologists completed the survey. Sixty-seven respondents (79%) recommended avoiding topical products within four hours before radiotherapy, with most citing residency training, senior colleagues, or personal experience rather than published evidence. Only four respondents recommended continuing deodorant and antiperspirant use during treatment, despite current guidelines supporting their safety. In contrast, routine skin hygiene was widely accepted, with only eight respondents advising against washing the irradiated area with mild soap and lukewarm water. **Conclusion:** Traditional skin care restrictions remain common among Iranian radiation oncologists despite limited supporting evidence. Current evidence supports routine skin hygiene and continued use of deodorants and antiperspirants during radiotherapy. Available dosimetric studies also suggest that routine application of topical products does not produce clinically meaningful increases in skin dose. Greater implementation of evidence-based recommendations may reduce unnecessary restrictions and improve patient quality of life during radiotherapy.

Keywords: Radiation therapy, Radiation dermatitis, Skin care, Topical agents, Deodorants, Survey

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Introduction

Radiation oncology has evolved substantially over recent decades owing to remarkable advances in imaging, treatment planning, and radiation delivery techniques. Despite these technological developments, several long-standing clinical recommendations continue to be incorporated into routine practice despite limited contemporary evidence supporting their use. One such example is the routine recommendation that patients avoid topical skin products or modify their usual skin care practices during radiotherapy.

Historically, the rationale for these restrictions has been based on three principal concerns. First, certain topical products particularly creams and ointments with

higher oil content or a thick, non-absorbent consistency have been presumed to act as a bolus when applied immediately before treatment, thereby increasing the radiation dose delivered to the skin [1]. This concern originated during the era of orthovoltage radiotherapy, when lower-energy photon beams lacked the skin-sparing characteristics of modern megavoltage radiation. Second, topical formulations containing metallic compounds, such as zinc oxide, have been hypothesized to increase cutaneous dose deposition through radiation scattering. However, this assumption is largely theoretical. Indeed, a frequently cited dosimetric study demonstrated only a negligible increase in skin dose following application

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of these products, raising questions about the clinical relevance of this concern [2]. Third, patients have traditionally been advised to avoid washing the irradiated area with soap and water because of the belief that skin cleansing might aggravate radiation dermatitis. This recommendation has largely been based on expert opinion rather than empirical evidence, as available clinical studies have consistently shown that routine skin hygiene does not increase the incidence or severity of radiation-induced skin toxicity [3, 4].

Among these proposed mechanisms, concerns regarding the bolus effect and radiation scattering have become deeply embedded in routine radiation oncology practice. Consequently, many clinical trials investigating topical agents for the prevention or treatment of radiation dermatitis have prohibited application of study products within a specified period before treatment, most commonly within four hours of each radiotherapy session. Nevertheless, the available evidence has not convincingly substantiated these precautions [5, 6]. Furthermore, contemporary dosimetric studies have demonstrated that topical preparations applied at thicknesses consistent with routine clinical use do not produce clinically meaningful increases in skin dose through either bolus effects or radiation scattering [7-13].

Materials and Methods

To evaluate whether these traditional recommendations remain prevalent in contemporary practice, we conducted an anonymous online survey of Iranian radiation oncologists regarding their routine skin care recommendations during radiotherapy. The author-developed questionnaire was distributed through a professional online platform that includes nearly all members of the Iranian Society of Radiation Oncology (ISRO). No identifying information was collected. The survey explored three principal domains: (1) the use of topical agents shortly before radiotherapy sessions, (2) continuation of deodorant and antiperspirant use during treatment, and (3) maintenance of routine skin hygiene, defined as washing the irradiated area with lukewarm water and mild soap. For each domain, respondents were also asked to identify the primary basis for their recommendation, including published scientific evidence, instruction received during residency training or from senior colleagues, or personal clinical experience. Responses were recorded using a five-point Likert scale ranging from “completely agree” to “completely disagree.”

Results

A total of 85 radiation oncologists completed the survey. Of these, 56 had fewer than 10 years of clinical experience, 21 had 10–20 years of experience, and 8 had more than 20 years of experience. Sixty-seven respondents (79%) agreed that patients should avoid applying topical agents within four hours before each radiotherapy session. Notably, most respondents supporting this recommendation indicated that their practice was primarily based on

residency training, guidance from senior colleagues, or personal clinical experience rather than published evidence. Recommendations regarding deodorants and antiperspirants were even more restrictive. Only four respondents indicated that they would advise patients to continue using these products during radiotherapy if they had routinely used them before diagnosis. This finding contrasts with several contemporary studies and international clinical guidelines, which consistently support the safety of deodorant and antiperspirant use during radiotherapy and do not recommend their routine discontinuation [14–17]. In contrast, recommendations regarding routine skin hygiene appeared more closely aligned with current evidence. Only eight respondents advised patients against washing the irradiated area with lukewarm water and mild soap, suggesting that routine cleansing has become widely accepted among ISRO members in accordance with current guideline recommendations [18].

Discussion

These findings may, at least in part, reflect the absence of a comprehensive synthesis of the available evidence regarding skin care during radiotherapy, particularly concerning the application of topical products immediately before treatment sessions. Although several contemporary reviews and clinical practice guidelines provide detailed recommendations on skin care during radiotherapy [19], specific guidance regarding the timing of topical product application remains relatively limited and occasionally inconsistent. For example, Iacovelli et al. recommended avoiding both metal-containing topical products and the application of any topical agent to the treatment field within 1–4 hours before each radiotherapy fraction [20]. However, these recommendations were presented without a detailed discussion of the supporting evidence. In contrast, the recent ESTRO RTT Committee practice guideline adopts a less restrictive approach, indicating that moisturizers, including creams and lotions, may be applied shortly before radiotherapy, while acknowledging that the available evidence remains limited. This recommendation is based primarily on the dosimetric findings reported by Burch et al. [17].

Limitations

Our survey has several limitations. The findings are based on self-reported practices, included only Iranian radiation oncologists, and did not evaluate actual clinical behavior or institutional protocols. Furthermore, the response rate could not be determined because the survey was distributed through a professional online community rather than to a predefined sampling frame. Consequently, the results may not be fully generalizable to other countries or practice settings. Nevertheless, they provide valuable insight into the persistence of traditional recommendations despite evolving scientific evidence.

In conclusion, our findings suggest that traditional restrictions regarding skin care during radiotherapy remain common among Iranian radiation oncologists. Current

evidence supports the safety of routine skin hygiene and the continued use of deodorants and antiperspirants during radiotherapy. By contrast, evidence regarding the application of other topical products including creams, lotions, and gels immediately before treatment remains comparatively limited but does not demonstrate a clinically meaningful increase in skin dose or unacceptable risk. Consequently, routine restrictions on these products, whether prescribed prophylactically to prevent radiation dermatitis or therapeutically to relieve symptoms, should be reconsidered. In the absence of convincing evidence supporting such prohibitions, these recommendations may unnecessarily increase patient anxiety and compromise quality of life during cancer treatment. To address this knowledge gap, we are conducting a comprehensive review of the dosimetric and clinical evidence regarding topical product use during radiotherapy, with particular emphasis on application immediately before treatment sessions.

Conflict of Interest

Author declares no conflict of interest.

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