BY NICOLE A. COLWELL, MD

Bridging Oncology and Dermatology: Integrating Dermatologic Toxicity Management Into Routine Cancer Care

An estimated 50% of patients with cancer experience disruptions in treatment due to dermatologic toxicity.

Anticancer treatment strategies have grown in number and complexity in recent decades, as have the toxicity profiles associated with these therapeutic agents. The increasing use of novel cancer therapies—including molecular targeted therapies, immunotherapies, hormonal therapies, and combinations of these—has introduced new dermatologic toxicities that differ significantly from those observed with traditional cytotoxic chemotherapy. Although these treatments have revolutionized cancer care, they frequently result in dermatologic complications such as hand-foot skin reaction, acneiform rash/papulopustular eruption, xerosis, pruritus, mucositis, alopecia, nail changes, and more. These conditions not only cause physical discomfort but also contribute to emotional distress, financial burdens, and psychosocial challenges for patients. More severe dermatologic adverse events (AEs) can necessitate pauses in potentially lifesaving cancer treatment.

Recent efforts have been made to systematically approach the prevention, diagnosis, and management of these toxicities by bridging the expertise of dermatologists and oncologists. The first clinic dedicated to providing dermatologic supportive care to patients with cancer was established at Northwestern University in 2006.[1] Since then, the subspecialized field of supportive oncodermatology has emerged to meet the needs of patients undergoing treatment for cancer as well as the expanding survivor population.

Given the growing number of cancer survivors and increased incidence and complexity of dermatologic AEs, there is an urgent need for effective collaboration between oncology and dermatology professionals. Unfortunately, access to dermatologic expertise remains limited, particularly in community oncology settings. Currently, only a few specialized oncodermatology services exist in major academic cancer centers, leaving many community practitioners without timely dermatologic support. Additionally, the rapid expansion of novel oncology therapeutics presents a learning curve for all clinicians, including dermatologists practicing in the community, as new and unique toxicity profiles continue to emerge.

An Unmet Need

Although diagnosis and symptom severity will vary, most patients receiving cancer therapy will experience a dermatologic AE at some point during their treatment course (see **Table 1**). Timely evaluation by an experienced dermatologist can mitigate (or even prevent) many cutaneous toxicities, allowing patients to adhere to treatment plans where they may have otherwise interrupted therapy. Maintaining dose intensity is important to optimize outcomes for patients receiving chemotherapy and targeted treatment.[3-5] Evidence demonstrates that patients with a cutaneous toxicity who see a dermatologist are less likely to experience treatment interruption.[6-8] Given that an estimated 50% of patients with cancer experience disruptions in treatment due to dermatologic toxicity,[9] supportive oncodermatology services are necessary for maximizing clinical outcomes and improving quality of life for patients receiving treatment for cancer. With an estimated 2,001,140 new cases of cancer diagnosed in the US in 2024,[10] the need for accessible supportive oncodermatology services cannot be overstated.

67% of patients receiving treatment for cancer felt that their dermatologic toxicities were worse than what they had expected.

84% were not referred to a dermatologist.

54% thought they would have felt better had they been referred to a dermatologist earlier or from the beginning.[2]

"Almost each patient has a dermatologic [adverse] effect at the end of the treatment or has experienced [a toxicity] during the treatment, and they are all very interfering."

—Vice Chair, Oncoderm Study Group, MASCC

You can listen to the episode **Supportive Oncodermatology: Managing Skin, Hair, and Nail Toxicities in Cancer Care** on **Apple Podcasts**

Table 1. Anticancer Therapies and Prevalence of Select Dermatologic Toxicities

TREATMENT TYPE	PREVALENCE (% OF PATIENTS)
PD-1 inhibitors	75% experience cutaneous immune-related adverse events[11,12]
Targeted therapies	75% experience some form of skin toxicity[6]
Capecitabine	50%-60% experience hand-foot syndrome[11]
Carboplatin	27% experience hypersensitivity reactions[13]
Taxanes	50% experience hypersensitivity reactions[13]
Allogeneic bone marrow transplant	40%-70% experience graft-vs-host disease (cutaneous manifestations most common)[14-16]
Radiation therapy	95% experience some form of skin toxicity[17]

"A Practice Within a Practice"

The opportunity for prompt evaluation by an oncodermatology specialist is necessary for several reasons. Urgent oncodermatology consultation can:

- Confirm the diagnosis of cutaneous toxicity, including grading severity (which informs real-time decision-making for cancer treatment).
- Assess whether the condition is likely related to cancer treatment and, if it is, guide the decision to continue, hold, or discontinue cancer therapy.
- Enable patients to avoid reflex steroid treatment, which can mask symptom manifestation and thus confound dermatologic diagnosis and severity assessment.
- Provide nuanced, individualized recommendations to patients experiencing dermatologic AEs.

The best possible scenario to facilitate timely accessibility of dermatologic expertise is the integration of specialized oncodermatology within the same cancer practice where the patient is receiving cancer treatment. Embedding oncodermatology into routine cancer care can prevent or promptly address dermatology AEs. The oncodermatology clinic would need to be supplied with the appropriate equipment for biopsies and bedside diagnostics.

If integration into an individual cancer practice itself is not possible, on-site access within the same cancer center or physical location can also be helpful. Colocation helps to coordinate care between the oncology and dermatology departments and limits logistical hurdles for patients and caregivers. It is useful to clarify which dermatologists (or dermatology advanced practice providers) are the preferred contacts for supportive oncodermatology and to make their contact information available to the oncologists at that institution. A successful example of this is a cancer center that implemented same-day consultation practices, reserving several daily appointments in the dermatology clinic to address urgent oncology treatment–related issues. As explained in focus groups conducted by the Association of Cancer Care Centers (ACCC), the opportunity for urgent-access appointments allows the cancer team to have oncodermatologic expertise to inform cancer treatment decisions. Another institution has a practice of coscheduling follow-up appointments with oncology and dermatology on the same day, alleviating financial and travel burdens on patients and caregivers. Lastly, one focus group participant shared their success with implementing intra-institution texting between dermatology advanced practice providers and oncologists so that urgent cases could be addressed on a real-time basis.

"Dermatology clinics must be designed differently for success... we depend on a higher number of rooms that are constantly in motion, and we also integrate procedures directly into our clinic visits. Leadership has to have a willingness to set that up."

—Director of Oncodermatology
Harold C. Simmons Comprehensive Cancer Center

You can listen to the episode **A Practice Within a Practice: Integrating Oncodermatology into Comprehensive Cancer Care** on **Apple Podcasts** or **YouTube.**

Off-Site Referrals

When practice integration or colocation are not feasible, referring patients to oncodermatology specialists remains important for managing patients with dermatologic AEs or monitoring those receiving high-risk cancer therapies. Community dermatologists with experience in oncology-related AEs can also play a key role in patient care. Numerous educational resources are available to help general dermatologists expand their knowledge of treatment-related AEs associated with novel cancer therapies (see **Table 2**). Ensuring timely access to dermatologic expertise is essential for supporting oncology treatment decisions. Utilizing digital technol-

ogy to standardize workflows, clinical photography, and documentation can help streamline this process and enhance collaboration between dermatology and oncology teams.

One approach to expanding oncodermatology access in community or geographically remote settings is the use of eConsult and teledermatology services. For example, one site has piloted an eConsult initiative across its medical system, in which oncology teams capture and upload clinical images into the electronic health record (EHR). Dermatologists then promptly review these images, provide recommendations, and determine whether an in-person visit is necessary for further evaluation or biopsy. This process ensures a rapid turnaround, often within 48 hours, allowing those with dermatologic expertise to guide cancer care on a case-by-case basis.

Teledermatology was also identified as a potential solution for community cancer centers where on-site dermatologic expertise is unavailable. Through virtual consultations, oncodermatologists can assess toxicities, offer management recommendations, and guide oncology teams on next steps. These strategies enhance accessibility and expedite care, reducing delays in addressing dermatologic complications of cancer therapies.

A major challenge reported in focus groups concerning off-site oncodermatology referrals is the inconsistency in documentation and referral quality. Oncology providers sometimes struggle to communicate detailed and accurate descriptions of dermatologic adverse events, making it difficult to ensure appropriate triage and diagnosis. Compounding this issue is the fact that patients may not always fully report symptoms, and a full dermatologic exam is often impractical outside a clinic setting. Without standardized documentation, clinical photographs, and clinical context, determining the urgency of a referral can be challenging. Implementing structured protocols, such as standardized photography guidelines and clear triage criteria, could improve referral accuracy. For instance, one site has introduced a dedicated oncodermatology referral order set within the EHR, ensuring that oncology patients are directed to specialized oncodermatologic care rather than being placed in the general dermatology queue, where appointment wait times can often take months. The order set also prompts oncology providers to include critical details about the patient's clinical picture that dermatologists will need for their assessment. This approach streamlines access to subspecialized care and helps ensure that urgent cases are prioritized. By integrating teledermatology and eConsult services with standardized referral workflows, institutions can improve care delivery and clinical outcomes.

The Power of Prophylaxis

Prophylactic management of dermatologic AEs during cancer treatment can prevent or reduce the severity of cutaneous toxicities and subsequent need for dose reductions, treatment interruptions, or drug discontinuation. Implementing proactive measures before the onset of symptoms can mitigate these risks, increasing the likelihood that patients can tolerate therapy successfully.

Anticipatory guidance prior to treatment initiation allows clinicians to inform patients about potential adverse events, expected timelines for onset, and strategies for prevention and management. This approach fosters patient engagement, reduces anxiety, and promotes adherence to recommended prophylactic regimens. By setting realistic expectations and establishing lines of communication early, cancer care teams can empower patients to recognize and address initial signs of cutaneous toxicity. Patients often hesitate to disclose emerging signs of dermatologic toxicity for fear of the need to interrupt treatment. When patients are advised that early recognition can reduce the severity of many toxicities and therefore prevent treatment interruptions, they are much more comfortable communicating with the care team about AEs involving the skin, hair, or nails.

Proper and consistent skin care practices at home can significantly reduce the severity of many dermatologic AEs. Patients should be advised to use gentle, fragrance-free cleansers and moisturizers to maintain skin hydration and barrier function. Sun protection is also critical, as photosensitivity is a common adverse event associated with many oncologic therapies. Certain treatment-specific interventions (eg, prophylactic application of topical antibiotics) may be beneficial depending on the treatment regimen. A meta-analysis evaluated the ability of prophylactic antibiotics to reduce the risk of acneiform rash associated with anti-EGFR agents. The study data showed that moderate to severe toxicities (grades 2-4) were reduced by nearly two-thirds.[18] Other evidence-based strategies are emerging in the literature, such as antihistamine prophylaxis for rash associated with the PI3Kα inhibitor alpelisib.[19] More recently, data from the first interim analysis of the phase 2 COCOON study (NCT06120140) demonstrate that a proactive dermatologic regimen along with amivantamab-vmjw and lazertinib can significantly reduce the frequency of both skin- and nail-related adverse events associated with EGFR inhibitors.[20] Oncology providers can find a list of useful skin care recommendations for all patients at risk for dermatologic toxicity in the ACCC publication "Preventing and Managing Common Dermatologic Toxicities: A Guide for Clinicians."

> The incidence of severe skin toxicities in patients receiving proactive management was reduced by 50% compared with patients receiving reactive management, underscoring the importance of early intervention.[21]

For patients receiving high-risk therapies, automatic referral to oncodermatology can be a valuable component of prophylactic management. EGFR inhibitors, for instance, are well known for their high incidence of dermatologic toxicities, including acneiform rash, xerosis, and pruritus. Early dermatologic consultation can provide tailored recommendations for prophylaxis, such as preemptive topical or systemic therapies, to minimize complications and improve adherence to cancer treatment. In a study of

95 patients receiving targeted therapy affecting the cell growth pathway, 48 followed a proactive skin care regimen, and 47 received reactive treatment after symptoms developed. The incidence of severe skin toxicities in the proactive group was reduced by 50% compared with the reactive group, underscoring the importance of early intervention. [21] Moreover, dermatology consultation prior to receiving cancer therapy has led to reduced interruption of oncology treatment.[22]

Although proactive management is essential, it is equally important to strike a balance between providing comprehensive anticipatory guidance and avoiding overwhelming patients who are already navigating complex treatment regimens. Clinicians should tailor their recommendations based on individual risk factors, treatment type, and patient preferences. Clear, concise education with actionable steps can help patients feel supported without becoming overburdened by excessive instructions. By integrating automatic referral (when appropriate) and prophylactic skin care into routine oncology care, clinicians can optimize treatment tolerance while improving patients' overall experience.

Multidisciplinary Care Team Education

Increased awareness and education about dermatologic AE management that is relevant to both dermatology and oncology providers is important given the current lack of widespread access to oncodermatologic expertise. Educational initiatives should be inclusive of oncology nurses, who often serve as the first point of contact in identifying dermatologic AEs, making it essential for them, along with oncologists and other members of the care team, to be well versed in recognizing and addressing these toxicities. Nurses who are trained in identifying early-stage skin toxicities are well suited to refer patients for immediate assessment and possible intervention.[23]

Educational resources must also incorporate diverse imaging to ensure that health care providers can accurately recognize dermatologic conditions in patients of all skin tones. Many dermatologic conditions present differently depending on skin pigmentation, and a lack of diverse reference materials can contribute to delayed or missed diagnoses, potentially worsening patient outcomes. Addressing this gap in educational materials is a critical step toward promoting equitable care.

Institutional or virtual supportive care conferences, which may be purely oncodermatology or multidisciplinary depending on organizational needs, are a helpful forum for patient care discussion, as they greatly facilitate academic and clinical collaboration. One focus group participant communicated the value of holding regular multidisciplinary conferences involving dermatologists, medical oncologists, radiation oncologists, and other specialists as a way to discuss complex cases and share knowledge. At each conference, participants discuss 2 to 6 patient cases for 15 to 20 minutes each, as well as plans for management. Often, a review of the literature is presented, synthesized by a trainee and attending involved in each case. Another site implements weekly dermatopathology case conferences, which include dermatologists and dermatopathologists, to solicit input and advice on various cases. Community cancer centers looking to implement these conferences may consider leveraging videoconferencing with local academic centers or dermatology colleagues interested in collaboration.

As one focus group participant noted, dermatology has many gray areas in terms of grading, treatment, and patient experience of each condition. Overly relying on an algorithmic approach to treatment can be risky, but more standardized protocols would be helpful. Oncology providers may find the ACCC publication "Preventing and Managing Common Dermatologic Toxicities: A Guide for Clinicians" to be a useful starting point to review common (and potentially severe) dermatologic toxicities as well as management strategies, including a clinical algorithm outlining when referral to oncodermatology is appropriate.

Ensuring that all cancer care team members have access to the education and resources they need to address dermatologic AEs will improve timely intervention, reduce patient distress, and optimize overall treatment outcomes. Clinician education can be facilitated through professional societies, visiting lectures, grand rounds presentations by oncodermatologists, and CME conferences and workshops. Membership in the Oncodermatology Society or the MASCC Oncodermatology Study Group are excellent ways to learn more and contribute to the specialty. Clinical practice

Table 2. Oncodermatology Clinical Practice Guidelines and Expert Recommendations

PROFESSIONAL ORGANIZATION	DATE PUBLISHED	DESCRIPTION
American Academy of Dermatology and Radiation Therapy Oncology Group[24]	August 2019	Guidelines for the prevention and treatment of radiation-induced skin reactions
American Society of Clinical Oncology[25]	November 2021	Management of immune-related adverse events in patients treated with immune checkpoint inhibitor therapy
European Society for Medical Oncology[11]	November 2020	Guidelines for prevention and management of dermatologic toxicities related to anticancer agents
Multinational Association of Supportive Care in Cancer[26]	2024	Oncodermatology Study Group clinical practice guidelines for the prevention and management of dermatologic toxicities associated with various anticancer therapies
Oncology Nursing Society[27]	October 2020	Recommendations for the prevention and management of cancer treatment–related skin toxicities

guidelines have been developed in recent years to standardize care for patients who experience dermatologic sequelae associated with anticancer therapies, reflecting the latest evidence and expert consensus regarding optimal clinical practice (see **Table 2**).

Conclusion

As the landscape of anticancer therapy continues to evolve, so does the spectrum of associated dermatologic toxicities. These adverse events are not merely cosmetic concerns but can significantly impact patient quality of life, treatment adherence, and overall clinical outcomes. The emerging field of supportive oncodermatology has made significant strides in addressing these challenges by integrating dermatologic expertise into oncology care. However, substantial gaps remain, particularly in community oncology settings where access to specialized dermatologic care is limited.

As demonstrated through successful institutional models and emerging best practices, integrating oncodermatology into routine cancer care is feasible, beneficial, and highly desired by patients with cancer. Standardized education, clinical guidelines, and structured workflows can further support this integration, ensuring that all patients—regardless of treatment setting—receive the dermatologic care necessary to optimize their oncologic outcomes.

Nicole A Colwell, MD is a senior editor/ medical writer at the Association of Cancer Care Centers (ACCC) in Rockville, Maryland.

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