



Superficial Radiation Therapy for the treatment of non-melanoma skin cancer

The Skin Cancer Prevention Working Group (SCPWG) is committed to ensuring appropriate, accessible, and equitable care for the treatment of all skin cancers including non-melanoma skin cancers (NMSC). Modern treatment modalities include (Mohs micrographic) surgery, curettage and electrodesiccation, cryotherapy, localized chemotherapeutics (5-fluorouracil, imiquimod), photodynamic therapy, radiation therapy, hedgehog inhibitors (for basal cell carcinomas) and immune checkpoint inhibitors (e.g., cemiplimab).

The SCPWG agrees with current data and consensus guidelines put forth by the American Academy of Dermatology (AAD) and National Comprehensive Cancer Network (NCCN) that, for a majority of NMSCs, current first-line treatment continues to be surgical removal and/or destruction of histologically-confirmed tumors.

An important consideration is that not all patients are prime candidates for surgical intervention. This may be due to patient characteristics including advanced age, comorbidities such as vascular insufficiency or diabetes that may compromise normal wound healing, or conditions that require continual anticoagulation therapy that may complicate more complex ambulatory surgical procedures. Anatomic location of the tumor (e.g., bony/cartilaginous areas of the nasal ala or ear, perioral and periorbital areas, and skin of the lower extremities below the knee) may also dissuade from surgery. Additional consideration must also be given for post-procedural complications wherein surgical site infections range from 2.3-8.3% for Mohs micrographic surgery and wide local excision performed on the lower extremities.

Developing a treatment regimen is further complicated by lack of a definitive, widely-accepted treatment algorithm for NMSC if surgical removal is not viable. In these cases, the SCPWG endorses thorough discussion with patients regarding risks, benefits, and alternatives of all treatment options including surgical and non-surgical management.

Superficial radiation therapy (SRT) may serve as a potential alternative to surgical management for smaller and thinner NMSCs (including basal cell carcinoma (BCC), cutaneous squamous cell carcinoma (cSCC), cSCC in situ), especially those on more surgically-challenging anatomic locations noted above. In these instances, SRT may provide equivalent cure rates with similar, if not improved, cosmesis. Studies have found that the penumbra surrounding SRT treatment areas is only 1mm. When combined with the use of ultrasound guided techniques to improve delineation of tumor margins, SRT and its technological advancement may allow for more precise targeting of the tumor burden compared to other radiation treatment modalities.

The SCPWG recognizes that SRT may not always be an appropriate treatment, especially for NSMC with deeper invasion or perineural/lymphovascular involvement, tumors with more aggressive clinicopathologic features, areas previously treated with other forms of radiation therapy, or in patients with prior solid organ transplant. The SCPWG acknowledges that additional consideration should be given to the physical, mental, and financial costs of NMSC management and, in conjunction with our NMSC patients, treatment plans can be created to address their individualized needs and preferences.

The SCPWG supports use of SRT for the treatment of appropriate NMSCs and/or patient cases. Furthermore, the SCPWG supports increased prospective, randomized-controlled trials of SRT alone and in combination with surgical and non-surgical treatment modalities of NMSC to optimize patient outcomes.

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