Palliative Radiotherapy and Oncology Nursing

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Objectives: *To describe indications and expected outcomes for palliative radiotherapy and to highlight opportunities for nurse involvement in palliative radiotherapy.*

Data Source: *Journal articles, clinical guidelines, case studies.*

Conclusion: *Palliative radiotherapy is a safe, effective treatment modality for many symptoms of advanced cancer. Opportunities exist to help patients and families opt for shorter palliative radiotherapy courses when quality of life is the goal.*

Implications for Nursing Practice: *Nurses involved in the care of patients receiving palliative radiotherapy must be aware of the indications and expected outcomes associated with therapy. Nurses can play an important role in the management of symptoms, education, and communication between the team and the patient and family.*

Key Words: *Palliative care, radiotherapy, quality of life, nursing practice*

When delivered with palliative intent, radiotherapy can help patients manage various symptoms of advanced cancer. Palliative radiotherapy is delivered with the primary goals of symptom relief, minimization of side effects, convenience to patient and family, and consideration of cost. In this review, we describe indications for and expected outcomes of palliative radiotherapy, raise issues important to the role of nurses in caring for patients receiving palliative radiotherapy, and describe three case studies highlighting the role of the nurse in patients receiving palliative radiotherapy. To our knowledge, this is the first paper specifically exploring the role of the nurse in caring for patients receiving palliative radiotherapy.

Since the early 1900s, radiation therapy has been used effectively to palliate symptoms of advanced cancer.[1] Over time, developments in radiobiology, physics, imaging, and treatment planning have allowed for clear differentiation between radiotherapy with a goal of radical or curative intent versus palliative intent. Radiotherapy given with palliative intent is most often given to patients with advanced or metastatic cancer with the goal of rapid and durable symptom relief. As

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0749-2081/3004-$36.00/0.
http://dx.doi.org/10.1016/j.soncn.2014.08.006

described by Parker in 1964,[2] radiation delivered with palliative intent must be utilized according to a different set of rules, one in which acute and long-term side effects need to be minimized, and convenience and cost of treatment must be considered. Multiple studies over the past several decades have explored these specific issues, demonstrating the effectiveness of various dose-fractionation schemes in the management of pain from bone metastases, neurologic symptoms from spinal cord compression and brain metastases, and other symptoms related to advanced cancer. A recent population-based study of SEER-Medicare data demonstrated that, among a group of 51,610 patients over the age of 65 diagnosed with stage IV lung, breast, prostate, or colorectal cancer, 41% of the patients received palliative radiotherapy at some point during their illness.[3] It is known that pain and other symptoms of advanced cancer are often under-treated. In this context, it is possible that, even with this high percentage of patients receiving palliative radiotherapy, this modality may be underutilized.

The Center to Advance Palliative Care defines "palliative care" in the following way:

> Palliative care is specialized medical care for people with serious illnesses. It is focused on providing patients with relief from the symptoms, pain, and stress of a serious illness—whatever the diagnosis. The goal is to improve quality of life for both the patient and the family. Palliative care is provided by a team of doctors, nurses, and other specialists who work together with a patient's other doctors to provide an extra layer of support. It is appropriate at any age and at any stage in a serious illness and can be provided along with curative treatment.[4]

When patients are referred for palliative radiotherapy, the patient and family are, by definition, affected with a serious illness that can affect physical and emotional/spiritual quality of life. While palliative radiotherapy can improve symptoms, any recommendations for treatment must be considered in context: prolonged radiation courses may not improve quality of life by adding burdens to patients/families related to side effects, travel, and logistical considerations and the possibility that time traveling to and from a radiotherapy department might detract from a patient's ability to achieve goals toward the end of life. Multiple studies, however, demonstrate that physicians continue to prescribe prolonged palliative radiotherapy treatment courses when a shorter course, even a single fraction of radiotherapy, may be equivalent. A review by Bekelman et al[5] of more than 3,000 patients from the SEER-Medicare database with prostate cancer with bone metastases who received radiotherapy demonstrated that only 3% of all patients received a single fraction of radiation (as compared with multiple fractions), despite evidence that single fraction radiotherapy provides equivalent pain relief. Similarly, Chen and colleagues'[6] study of more than 1,500 patients with metastatic non–small cell lung cancer in the Cancer Care Outcomes Research and Surveillance Consortium (CanCORS) group demonstrated that, while 50% of patients received palliative radiotherapy, only 6% of those patients who received palliative radiotherapy to bone received a single fraction. Several other patterns-of-practice studies in the US and internationally confirm radiation oncologists' reluctance to prescribe single fraction radiotherapy, even when a single fraction may provide equivalent pain relief when compared with multiple fraction regimens.[7] Most radiotherapy centers in the US and around the world do not have dedicated palliative radiotherapy programs; rather, patients referred for palliative radiotherapy are seen within the general flow of the radiation oncology clinic, without specialized focus on patient symptoms or patient and family overall well-being and quality of life. In the past 15 years, though, several new models have emerged, demonstrating the feasibility of including multi-disciplinary evaluation and management for patients referred for palliative radiotherapy.[8-11] It is in this context that we provide a review of palliative radiotherapy and suggestions for further development of the role of the nurse in the evaluation and management of patients referred for palliative radiotherapy.

Palliative Radiotherapy Overview

In the 1920s and 1930s, it was discovered that, when one large dose of radiation was divided into multiple smaller doses of radiation delivered daily, normal tissues were better able to tolerate the dose of radiotherapy.[12] The dose of radiotherapy delivered to a patient is measured in centigray (cGy), formerly known as *rad* or *radiation absorbed dose*. The concept of a "standard fractionation" of 1.8 to 2.0 Gy per day delivered daily over a period of weeks for standard curative radiotherapy comes