



Focus on oncology: the role of palliative radiation therapy in patients with pancreatic cancer

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Submitted Nov 17, 2023. Accepted for publication Nov 23, 2023. Published online Nov 23, 2023.

doi: 10.21037/apm-23-585

View this article at: <https://dx.doi.org/10.21037/apm-23-585>

The September 2023 issues of *Annals of Palliative Medicine* featured 3 Original Articles, 6 Editorials, 4 Editorial Commentary Articles, 14 Review Articles, and 1 Case Report, along with several Letters to the Editor and articles on the most downloaded articles published in *Annals of Palliative Medicine* in 2022 and the top reviewers for the journal in 2022.

Among the rich content in the September 2023 issue, there is a strong oncology research presence, with Original Research articles on (I) pancreatic cancer and (II) the relationship between palliative radiation therapy and opioid prescribing patterns; Review Articles on (I) the management of cancer pain in pregnancy, (II) spiritual care in adult patients with cancer, (III) advancing conversations to facilitate coping in patients with gastrointestinal malignancies, (IV) the use of total parenteral nutrition for patients with gastrointestinal cancers and (V) fistula management in head and neck malignancies; an Editorial Commentary on the role of stereotactic body radiation therapy (SBRT) for vertebral body metastases; an active Oncology Nursing collection of articles on the growth and development of oncology nursing around the world and policy and leadership articles pertaining to oncology nursing; and two Letters to the Editor regarding lattice radiotherapy. This Message From the Editor-in-Chief focuses on an original research article assessing the palliative response of radiation therapy in patients with advanced pancreatic cancer.

Liu and Lefresne report on a provincial, population-based study on palliative radiotherapy in pancreatic cancer (1). Pancreatic cancer is consistently among the top causes of cancer deaths worldwide (2), and it is expected that

pancreatic cancer will lead to more deaths than all other cancers except lung cancer by the end of this decade (3). Pancreatic cancer notoriously presents commonly in late stages, which often results in a significant symptomatic burden for patients prior to and at the time of their cancer diagnosis. Symptoms such as pain, early satiety, nausea, obstruction, and jaundice commonly occur and are associated with a significant decline in patient quality of life in this patient population (4).

Radiotherapy has consistently been proven effective in palliation of a plethora of symptoms from advanced cancers with limited toxicity. Numerous articles in *Annals of Palliative Medicine* alone, including some dating back a decade to the founding of the journal, have detailed how radiation therapy can improve pain caused by local tumor invasion or compression and by sites of bone or visceral metastases, improve neurologic signs and symptoms caused by brain and spine metastases, ameliorate cough and dyspnea from advanced thoracic malignancies, and stop bleeding or resolve obstruction symptoms from tumors (5,6).

Specifically for pancreatic cancer, radiation therapy has played a long, albeit controversial, role in the adjuvant setting for early stage and locally advanced patients, as well as an increasing role in the neoadjuvant setting and the definitive setting among patients who are medically or technically inoperable (7). However, the role of palliative radiation therapy, while well characterized for other common cancers in locally advanced and metastatic stages, has been more limitedly reported for pancreatic cancer.

Liu and Lefresne assessed 100 patients with pancreatic adenocarcinoma referred from 2006 to 2013 for palliative

radiotherapy to BC Cancer in Vancouver, the sole provider of radiation therapy for the province. Patients were most commonly referred for palliation of pain and were predominantly of good performance status (Eastern Cooperative Oncology Group score 0–1 in 82%) and relatively recently diagnosed with their malignancy (91% had received only one line of chemotherapy), with only one-third having distant metastatic disease. Radiation therapy was most commonly delivered using 3D conformal techniques (57%) and in 10 or fewer fractions (58%). Most patients completed their radiotherapy course as planned, with 15 patients having their treatment discontinued before the intended course completion due to toxicity (7%) or other reasons (8%), such as worsening performance status or tumor progression.

The investigators found that radiation therapy was effective for a multitude of indications. Specifically, most patients (75%) achieved a partial or complete response of their symptoms to radiation therapy, including achieving hemostasis in 73%, improved pain in 69%, and improved early satiety and bloating in 59%. Treatment toxicity was generally well tolerated. Although nearly half of patients experienced low grade nausea (30%), fatigue (16%), diarrhea (15%), and/or bloating (6%) from treatment, only 1 patient (1%) developed a grade 3 event (diarrhea), and toxicities would be expected to be even lower in a more modern cohort receiving more advanced radiation therapy modalities like intensity-modulated radiation therapy (IMRT) and SBRT.

Additionally, neither radiation dose nor concurrent chemotherapy were associated with a longer survival on multivariable analysis. As other studies assessing the benefits of palliative radiation therapy in pancreatic cancer similarly showed no increase in survival or local control with higher radiation doses, and higher doses have been reported in this patient population to lead to higher rates of toxicities (8), the findings by Liu and Lefresne support the use of more abbreviated radiation courses, such as 30 Gy in 10 fractions, 20 Gy in 5 fractions, or 24 Gy in 3 fractions. This importance of shorter treatment courses is underscored by the short life expectancy of this population, including a median post-radiotherapy survival of only 5.1 months in the BC Cancer analysis. The authors call for future prospective studies to evaluate the optimal radiation therapy dose fractionation to optimize symptom improvement and minimize toxicities in patients with symptoms from pancreatic cancer.

Although the study by Liu and Lefresne is retrospective

with correlating challenges in assessing symptom responses, and patients had inconsistent follow-up after radiotherapy with correlating limitations in making local control assessments, their analysis significantly advances the understanding of the potential benefits of palliative radiotherapy in patients with pancreatic cancer. Their study, the largest palliative radiotherapy experience ever reported in this patient population, shows radiation therapy to be an effective treatment modality for the management of common and potentially life-threatening morbidities associated with pancreatic cancer, including pain, gastrointestinal bleeding, and other abdominal symptoms.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Annals of Palliative Medicine*. The article did not undergo external peer review.

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at <https://apm.amegroups.com/article/view/10.21037/apm-23-585/coif>). The author serves as Editor-in-Chief of *Annals of Palliative Medicine*. The author has no other conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Cite this article as: Simone CB 2nd. Focus on oncology: the role of palliative radiation therapy in patients with pancreatic cancer. *Ann Palliat Med* 2023;12(6):1122-1124. doi: 10.21037/apm-23-585