

# Single-fraction RT as effective as multiple-fraction RT for palliation of bone metastases

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Standardizing prescribing practices for single-fraction radiation therapy (SFRT) for palliation of bone metastases could lead to cost savings and improvement in patients' quality of life, according to a study published in the August 1, 2014 edition of the *International Journal of Radiation Oncology • Biology • Physics (Red Journal)*, the official scientific journal of the American Society for Radiation Oncology (ASTRO).

Bone metastases are a common manifestation of distant spread of disease, occurring most frequently with prostate, breast and lung cancers. Of these patients, two-thirds develop [bone metastases](#) to the spine, pelvis or extremities. Radiation therapy is an effective form of palliative treatment for bone metastases. There are more than 25 randomized controlled trials demonstrating that SFRT provides the same amount of pain control as multiple-fraction radiation therapy (MFRT); however, there is low use internationally of SFRT for bone metastases.

"Use of Single- versus Multiple-Fraction Palliative Radiation Therapy for Bone Metastases: Population-Based Analysis of 16,898 Courses in a Canadian Province," is one of the largest, current studies on the use of SFRT. The study was designed to determine the use of SFRT in British Columbia, a publicly funded health care system where there is no financial incentive for extended fractionation and all radiation therapy is provided by the BC Cancer Agency with no direct cost to patients.

Patients who received palliative radiation therapy for bone metastases, regardless of the primary cancer site at diagnosis, from 2007 to 2011

were identified using the BC Cancer Agency's Cancer Agency Information System (CAIS). During the study period, 8,601 patients received 16,898 courses of radiation therapy. Patients who received re-irradiation for bone metastases were included, and patients who received more than one course of radiation therapy were considered independently for each course (patients could be counted more than once). Radiation therapy fractionation was divided into two categories: SFRT or MFRT. The most common primary disease site was breast (23.4 percent), and the most frequently treated bony metastatic site was the spine (42.2 percent).

SFRT was used to treat bone metastases in 49.2 percent (7,097) of the radiation therapy courses. SFRT was most commonly used to treat bone metastases that originated from hematological (56.6 percent) and prostate (56.1 percent) cancers; the most common bony metastatic sites treated with SFRT were the ribs (83 percent) and extremity (66.4 percent).

There was a significant variation in the use of SFRT by each of the five cancer centers operated by the BC Cancer Agency during the time of the study, with a range of 25.5 percent to 73.4 percent (p

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