

Radiofrequency ablation safe and effective for reducing pain from bone metastases

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Image-guided radiofrequency ablation (RFA), a minimally invasive cancer treatment which can be performed in the outpatient setting, significantly reduced the level of pain experienced by cancer patients with bone (osseous) metastases, limiting the need for strong narcotic pain management, and supporting improved patient frame of mind, according to results of an American College of Radiology Imaging Network (ACRIN) study published online in the journal *Cancer*.

Each year in United States, more than a million new [cancer](#) cases are diagnosed. Between 30 and 70 percent of these patients will develop a bone metastasis — an often intensely painful condition. Current pain treatments are not effective for all of these patients. Many require increasing doses of narcotics for [pain management](#). RFA is an image-guided technology that uses heat to kill, or ablate, tumor cells. This study, sponsored by the National Cancer Institute (NCI), part of the National Institutes of Health (NIH), demonstrated that RFA, often used to treat liver, kidney and lung cancer tumors, is also a safe and effective pain management tool for patients with bone metastases.

"It is clear that improved palliative treatments must be identified to address the needs of these great many patients. RFA is widely available, covered by most insurance, can be performed in a single outpatient session and often allows patients enhanced interaction with loved ones by reducing use of strong narcotics which can leave them in a medicated state. Also, unlike many other cancer pain management treatments, RFA can be repeated and maintain similar results," said Damian Dupuy, MD,

principal investigator of the study, director of [ablation](#) services at Rhode Island Hospital, and professor of diagnostic imaging at The Warren Alpert Medical School of Brown University.

The researchers studied 55 patients who had a single painful [bone metastasis](#). Each received computed tomography (CT) guided RFA of the tumor. Patients evaluated their pain prior to treatment, then daily for two weeks following the procedure, and again at one month and three months after RFA. The study results showed statistically significant pain reduction at the one and three-month follow-ups for all pain assessment measurements: pain relief, intensity and severity. In all cases, improvement was seen for each measurement, including patient mood, with the most improvement at the one-month interval.

"We know that RFA is a highly effective cancer treatment when surgery is not an option. RFA offers potential advantages over other methods in that cell death is immediate, lesion size can be accurately controlled, lesion temperature can be monitored, and it can be performed under local anesthesia and conscious sedation in the outpatient setting. This is a significant step forward in the pain management of these patients," said Dupuy.

The procedure was found to be safe with few adverse events. RFA can be an alternative for patients who previously received radiation therapy and have reached their maximum radiation dose, but are still experiencing pain.

"Despite advances in radiation technology and development of new medical manipulations, too many cancer patients still experience pain associated with their disease. This study demonstrates the palliative benefits of RFA with minimal treatment-related morbidity. Oncologists have another tool for the management of cancer pain," said Thomas DiPetrillo, clinical director of radiation oncology at Rhode Island

Hospital and associate professor of radiation oncology at The Warren Alpert Medical School of Brown University.

Provided by American Roentgen Ray Society

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