Some patients cured by outpatient lung cancer treatment

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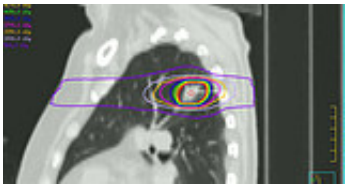

Focal radiation therapy radiation dosage

Many patients with early-stage lung cancers are candidates for a new radiation-only treatment regimen that rarely has side effects and results in a cure in up to 80 percent of patients who have had it.

Stereotactic radiation therapy—also known as focal radiation therapy—is a highly targeted way of delivering radiation to treat cancerous tumors. The technique allows radiation oncologists to deliver radiation from multiple directions—essentially attacking the tumor from 360 degrees. Although it is most often used to treat brain tumors, three-year data from the Radiation Therapy Oncology Group has shown the approach is also an effective alternative to surgery in certain early-stage lung cancers.

"Focal radiation therapy precisely aims radiation at the tumor tissue from approximately 12 directions versus two or three, so surrounding tissue only gets a fraction of the radiation exposure. This helps protect

otherwise healthy tissue," explains William Barrett, MD, medical director for the UC Health Barrett Cancer Center and chair of radiation oncology at the University of Cincinnati College of Medicine.

UC Health's radiation oncology team has applied focal radiation therapy treatment to approximately 60 patients with early-stage lung cancers since 2004. Barrett says approximately 80 percent of local patients have remained cancer-free two years post treatment with focal therapy alone.

Focal radiation therapy delivery systems are equipped with respiratory gating technology to increase the accuracy and precision of radiation treatments. Radiation oncologists define a physical set of parameters—similar to the strike zone in baseball—for when it is safe to deliver quick doses of radiation, based on the patient's breathing patterns.

"As patients breathe, lung tumors can move in and out of the treatment field, leaving healthy tissue exposed and compromising the effectiveness of the intended radiation treatment," explains Barrett. "With focal radiation therapy, the system shuts off if the patient's tumor moves out of the defined treatment field, then restarts when the tumor enters the established parameters again."

This, says Barrett, allows radiation oncologists to safely deliver higher dosages of radiation in fewer sessions. Focal therapy for lung cancer is done most often in three treatments, with each session lasting 45 minutes and in an outpatient facility. Traditional radiation therapy regimens require up to 35 daily treatments.

"When you consider how many people are affected by lung cancer and how potentially lethal the disease can be, this is one of the biggest advances in oncology of the last decade," adds Barrett.

The National Cancer Institute (NCI) estimates there will be 222,520 new cases of lung cancer (non-small cell and small cell combined) diagnosed in 2010. Approximately 157,000 are expected to die from the disease. Lung cancer is the leading cause of cancer death for both men and women. It is also the second most common cancer in Americans (after skin cancer).

Smoking tobacco, heavy alcohol consumption and exposure to secondhand tobacco smoke are thought to increase a person's risk for lung cancer. Research has also shown that exposure to radon, air pollution, asbestos, chromium, nickel, tar and soot can also increase a person's risk, according to the NCI.

Provided by University of Cincinnati