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Prospective, Multicenter Lung Cancer Trial Shows Heat Directly Kills Tumors In 93 Percent of Cases

Interventional Radiology Study Also Shows Nonsurgical Technique Offers a 91 Percent Cancer-Specific Survival Rate at Two Years

NEW ORLEANS, Louisiana (April 2, 2005) – After receiving treatment of radiofrequency heat to "cook" and kill their lung tumors, patients had a 91 percent cancer-specific survival rate at one and two years, according to results of a prospective, multicenter trial that was presented today at the Society of Interventional Radiology's 30th Annual Scientific Meeting. The research also showed the radiofrequency ablation (RFA) technique successfully killed the tumor inside the body without surgery in 93 percent of the cases. During radiofrequency ablation, an interventional radiologist inserts a small, energy-delivering probe through the skin, directly into the tumor using imaging for guidance. Heat is delivered through the probe to destroy the tumor cells without significant side effects or damage to nearby normal tissue.

"This research shows that CT-guided radiofrequency ablation effectively destroys cancer cells inside the lung without surgery," says Interventional Radiologist Riccardo Lencioni, M.D., University of Pisa, Italy. He added, "For patients with primary lung cancer or lung metastases from colorectal cancer who are not surgical candidates, this research also shows that the interventional radiofrequency ablation treatment can improve patients' survival without worsening their quality of life."

By the time lung cancer becomes symptomatic, 85 percent of patients are incurable, often due to serious coexisting health conditions or poor respiratory function. Most patients who are diagnosed with non-small cell lung cancer are not surgical candidates at the time of diagnosis. For these patients, minimally invasive interventional radiology procedures can improve survival, reduce pain, and improve quality of life. Interventional radiologists are uniquely skilled in using imaging guidance to deliver targeted cancer treatments throughout the body nonsurgically.

RFA offers a nonsurgical, localized treatment that kills the tumor cells with heat, while sparing nearby healthy lung tissue. Thus, this treatment is much easier on the patient than systemic chemotherapy. Radiofrequency energy can be given without affecting the patient's overall health and most people can resume their usual activities in a few days. It is a safe, minimally invasive tool for local pulmonary tumor control with negligible mortality, little

morbidity, short hospital stay, and positive gain in quality of life. It can also be repeated if necessary or combined with other treatment options.

In this procedure, an interventional radiologist guides a small needle through the skin into the tumor. Through the probe, the radiofrequency energy (similar to microwaves) is transmitted to the tip of the needle, where it produces heat in the tissues. The dead tumor tissue shrinks and slowly forms a scar. RFA is ideal for nonsurgical candidates and those with smaller tumors. The FDA has approved RFA for the treatment of tumors in soft tissue, which includes the lung.

About the Study, Abstract (506)

One-hundred six patients (36 women and 70 men) with 186 malignant tumors that were 3.5 cm in diameter or smaller were enrolled in the prospective, multicenter trial. Thirty-three patients had non-small cell lung cancer, 53 had colorectal cancer metastasis and 20 had metastasis from other primary malignancies; none were surgical candidates. Under conscious sedation, patients underwent RFA treatment and were then followed for up to 27 months.

Research showed no procedure-related deaths occurred. Major complications consisted of: pneumothorax (27) or pleural effusion (4) requiring treatment, pneumonia (2) and atelectasis (1). At a three-month CT evaluation, complete ablation of the tumor occurred in 173 of 186 tumors—a 93 percent primary effectiveness rate. Although overall survival of the primary lung cancer patients was 69 percent at one year and 49 percent at two years, the survival rates increased dramatically to 91 percent for one and two years for cancer-only related deaths. For patients with colorectal cancer metastatic to the lung, cancer-only related deaths were 88 percent at one year and 72 percent at two years.

About Lung Cancer

The lung is the most common site for primary cancer worldwide, and smoking tobacco is the leading risk factor. Approximately 173,770 new cases of lung cancer will be diagnosed in 2005, accounting for 13 percent of all new cancer cases. More Americans die each year from lung cancer than from breast, prostate and colorectal cancers combined.

About Interventional Radiology

An estimated 5,000 people are attending the Society of Interventional Radiology's 30th Annual Scientific Meeting in New Orleans. Interventional radiologists are board-certified physicians who specialize in minimally invasive, targeted treatments performed using imaging for guidance to treat diseases nonsurgically through the blood vessels or through the skin. By combining diagnostic imaging expertise with advanced procedural skills, interventional radiologists perform minimally invasive treatments that have less risk, less pain, and less recovery time than open surgery. Interventional radiologists pioneered minimally invasive modern medicine with the invention of angioplasty and the catheter-delivered stent, which were first used to treat peripheral arterial disease. More information can be found at www.SIRweb.org.

Interviews and medical illustrations are available. Abstracts can be found at www.SIRmeeting.org in the program section and click on scientific sessions.

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