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## **Freezing Kidney Cancer: Hot Treatment May Become New Gold Standard for Destroying Small Tumors in Selected Patients** ***More Than 75 Percent of Patients Diagnosed Have Small Renal Cell Tumors; Safe Interventional Radiology Treatment Shown Near 100 Percent Effective in Destroying Localized Tumors, Says Johns Hopkins Study***

SAN DIEGO, Calif. (March 9, 2009)—Freezing kidney tumors—using a safe minimally invasive interventional radiology treatment that kills the cancer 100 percent effectively without surgery could become the gold standard or first treatment option for all individuals with tumors that are 4 centimeters in size or smaller. And, this treatment—interventional cryoablation—is a viable option for people with larger tumors, according to two studies presented at the Society of Interventional Radiology’s 34th Annual Scientific Meeting.

“This noncomparative study shows that interventional cryoablation is as effective as laparoscopic surgery (partial nephrectomy), the current gold standard treatment, and laparoscopic cryoablation surgery for treating renal cell carcinoma. Our study has a short follow-up of nearly three years compared to the surgical options,” said Christos Georgiades, M.D., Ph.D., interventional radiologist at Johns Hopkins Hospital in Baltimore, Md. “This data is compelling and should be followed up with a multicenter, randomized controlled trial to compare the efficacy of interventional cryoablation to laparoscopic surgery. We can eliminate a cancer—that once it metastasizes can be notoriously difficult to treat and has a low chance of cure—with a simple outpatient procedure. Eliminating cancer at such an early stage is truly significant news for kidney cancer patients, especially for those who don’t have surgical options or limited renal function,” he added.

It’s important that individuals realize all their treatment options—especially since the incidence of kidney cancer has been steadily increasing in this country over the past 30 years, said Georgiades. Approximately 54,000 people are diagnosed with kidney cancer each year—with nearly 13,000 dying from it annually, according to recent statistics. Most people with this cancer are older, and the overall lifetime risk of getting kidney cancer is about 1 in 75—with men at higher risk than women. More than 75 percent of individuals who are diagnosed with kidney cancer have small tumors that are discovered incidentally. “Cryoablation is a great treatment option that doctors should discuss with patients early on,” he explained.

The Hopkins studies, examining the safety and efficacy of percutaneous (no incision) cryoablation, show the treatment’s powerful results. “Based on the results of our three-year study, we have shown that interventional cryoablation for kidney cancer is an option for patients whose tumors are 4 centimeters or smaller. It should be a viable option for patients whose cancer is even larger than that. And, ablation (or freezing) is a very effective option for patients who cannot or do not want to have surgery,” noted Georgiades. Cryoablation’s efficacy rate—the ratio of how many patients’ renal cell carcinoma was destroyed completely for localized tumors by size—is 100 percent up to 4 centimeters (about 2 inches) and nearly 100 percent up to 7 centimeters (about 3 inches). Three localized 10-centimeter (about 4 inches) tumors—large tumors that are typically removed surgically—were treated; in two cases the tumor was successfully killed.

“This news is especially significant for individuals with small tumors, since more than 75 percent of patients who are diagnosed with kidney cancer have tumors that are 4 centimeters or less in size,” said Georgiades. “These individuals can have their tumors treated completely, effectively, without surgery, with quicker recovery and mostly on an outpatient basis. As far as completely eradicating the cancer in the kidney, these results come as close to it as possible,” he noted. “At Hopkins, interventional cryoablation is the first-line treatment for small tumors. Most of our patients go home the same day they receive treatment with minimal limitation on regular activities. With laparoscopic kidney surgery, a patient remains in the

hospital for several days and recovery time can be from two to four weeks,” he added. “Our studies highlight how effective interventional radiology treatments can be—not just for kidney cancer—but for other kinds of cancers and other diseases as well. Interventional radiology treatments will have a significant impact on the overall survival and benefits that patients can have from avoiding surgery,” said Georgiades.

“There is no question that interventional cryoablation, which uses imaging to pinpoint tumors and probes to penetrate the skin to deliver freezing cold directly to a diseased tumor, kills the primary cancer. This interventional treatment is not a widely known procedure yet, even to other doctors, and some patients are going to have to pursue it on their own,” said Georgiades. The treatment is widely available in the United States at all major institutions and some smaller institutions as well; it is usually covered by health insurance.

Researchers followed kidney cancer patients who had received cryoablation for three years—well beyond the established and well-accepted one-year benchmark within the medical community to gauge the success of a kidney tumor treatment option—since most local recurrences would be visible within a year with a CT scan or MRI. The use of percutaneous cryoablation is an excellent option for patients who have other diseases that make surgery very high risk, cannot undergo anesthesia, have borderline kidney function, may only have one kidney or multiple recurring tumors or do not have any other option, said Georgiades. “There may be a bias in the medical community—among surgeons, primary care doctors and urologists—that cryoablation works only for certain patients with small tumors. This is not the case,” emphasized Georgiades.

“Traditionally, laparoscopic surgery has been the main treatment option for all renal cell cancers; it literally cuts the cancer out. The good news is that individuals with limited renal function no longer need to have a kidney partially or completely removed to treat their cancer,” noted Georgiades. When comparing the rate of complications between percutaneous cryoablation and surgery, Georgiades said that none of the patients who had cryoablation developed new or metastatic disease and they had fewer complications. The minimally invasive nature of interventional cryoablation means that it can be performed with minimal blood loss and without an incision, just a tiny hole in the skin. The interventional radiology treatment translates into significantly less pain, a shorter hospital stay and more rapid recovery. This safe treatment can be repeated, if necessary. The most common complication is a bruise around the kidney that goes away by itself, he said.

In studying cryoablation’s efficacy, researchers looked at 90 tumors in 84 patients. Efficacy was determined based on a tumor’s size at 3-, 6- and 12-month clinic visits and then yearly—with follow-up imaging with CT or MRI scans. Both efficacy and three-year survival rates approach 100 percent overall.

In studying cryoablation’s safety, Georgiades studied the results of 101 percutaneous cryoablations on 91 patients who either couldn’t undergo surgery or elected the interventional radiology treatment. Using computed tomography (CT) imaging, researchers could view tumors and probes in real time. Interventional cryoablation “has an excellent safety profile,” said Georgiades.

Cryoablation is typically performed under light anesthesia, known as sedation, by an interventional radiologist who has consulted with the patient’s urologist. One or more hollow needles are inserted through the skin directly into a tumor. Interventional radiologists can observe and guide the insertion by combined use of ultrasound and CT. The needle, or cryoprobe, is filled with argon gas, which creates an ice ball, which rapidly freezes the tumor. The tumor is then thawed by replacing the argon with helium. The procedure consists of two freezing and one thawing cycle, seeking a frozen margin beyond the tumor edge to ensure death of the entire tumor. After the cryoprobe is removed, a small bandage is placed over the skin puncture site. Cryoablation, which can also be referred to as cryo or cryotherapy, is approved by the Food and Drug Administration for treating soft tissue tumors, such as renal cell cancer.

More information about kidney cancer, cryoablation and interventional radiology can be found online at [www.SIRweb.org](http://www.SIRweb.org).

*Abstract 18: “Percutaneous Cryoablation for Renal Cell Carcinoma: Safety,” K. Hong, J. Geschwind, C. Georgiades, Johns Hopkins University—vascular and interventional radiology, Baltimore, Md.; R. Rodriguez, Johns Hopkins University—urology, Baltimore, Md.; and Z. Cizman, Jefferson University, Philadelphia, Pa., SIR 34th Annual Scientific Meeting March 7–12, 2009.*

*Abstract 19, “Percutaneous Cryoablation for Renal Cell Carcinoma: Efficacy,” K. Hong, J. Geschwind, C. Georgiades, Johns Hopkins University—vascular and interventional radiology, Baltimore, Md.; R. Rodriguez, Johns Hopkins University—urology, Baltimore, Md.; and Z. Cizman, Johns Hopkins University—vascular and interventional radiology, Baltimore, Md., and Jefferson University, Philadelphia, Pa., SIR 34th Annual Scientific Meeting March 7–12, 2009. Both abstracts can be found at [www.SIRmeeting.org](http://www.SIRmeeting.org).*

### **About Kidney Cancer**

Kidney cancer is the eighth most common cancer in men and the tenth in women. The most common type of kidney cancer is renal cell carcinoma, which forms in the lining of the renal tubules in the kidney that filter the blood and produce urine. Approximately 85 percent of kidney tumors are renal cell carcinomas.

More than 32,000 Americans each year are diagnosed with kidney cancer—many of them don't have symptoms. Typically, those with kidney cancer are past the age of 40 and are twice as likely to be men. Other risk factors include smoking, obesity, high blood pressure, long-term dialysis and Von Hippel-Lindau syndrome.

### **About the Society of Interventional Radiology**

Interventional radiologists are physicians who specialize in minimally invasive, targeted treatments. They offer the most in-depth knowledge of the least invasive treatments available coupled with diagnostic and clinical experience across all specialties. They use X-ray, MRI and other imaging to advance a catheter in the body, usually in an artery, to treat at the source of the disease internally. As the inventors of angioplasty and the catheter-delivered stent, which were first used in the legs to treat peripheral arterial disease, interventional radiologists pioneered minimally invasive modern medicine. Today, interventional oncology is a growing specialty area of interventional radiology. Interventional radiologists can deliver treatments for cancer directly to the tumor without significant side effects or damage to nearby normal tissue.

Many conditions that once required surgery can be treated less invasively by interventional radiologists. Interventional radiology treatments offer less risk, less pain and less recovery time compared to open surgery. Visit [www.SIRweb.org](http://www.SIRweb.org).

An estimated 5,300 people are attending the Society of Interventional Radiology's 34th Annual Scientific Meeting in San Diego.

*Local interviews and broadcast-quality video footage are available by contacting SIR's communications department at [mverrillo@SIRweb.org](mailto:mverrillo@SIRweb.org).*