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# Minimally Invasive Radiofrequency Ablation Equally Effective As Surgical Resection for Small Liver Tumors

## Interventional Radiology Procedure May Challenge Surgery As First-Line Treatment For Patients With Early-Stage Liver Cancer

Toronto, Ontario (March 31, 2006) -- Three-year data shows that radiofrequency ablation is as effective as surgical resection for overall survival and tumor recurrence, for the treatment of single small hepatocellular carcinoma in patients with liver cirrhosis, according to a study presented today at the Society of Interventional Radiology's 31<sup>st</sup> Annual Scientific Meeting. Surgical resection is considered the first-line treatment for patients with small uninodular hepatocellular carcinoma and well-compensated liver cirrhosis, i.e., patients who still have good liver function. Radiofrequency ablation is a much less invasive technique in which imaging is used to guide a needle through the skin and into the tumor, and then heat is applied, killing the cancerous cells and sparing the healthy tissue. One-hundred-sixty-two patients with 38 surgical cases and 124 radiofrequency ablation cases were evaluated in this matched, case-control study. Overall survival rates were 72 percent at 3 years in the radiofrequency ablation group, versus 65 percent at 3 years in the surgical resection group.

"Radiofrequency ablation is increasingly accepted as the best treatment option for patients with early-stage hepatocellular carcinoma when surgical resection is precluded," says interventional radiologist and principal investigator Riccardo Lencioni, M.D., Professor of Radiology at the University of Pisa, Italy. "This study is important because it shows that patients who receive radiofrequency ablation can have the same life expectancy as patients in similar condition who undergo surgery."

Radiofrequency energy can be given without affecting the patient's overall health and most people can resume their usual activities in few days. "It is important for the medical community to be aware that this option should be offered as early as possible in the course of this disease," says Lencioni. Hepatocellular carcinoma most frequently occurs in those who have a form of liver disease called cirrhosis. Cirrhosis occurs when the liver becomes diseased and develops scarring, usually over a period of years. The liver attempts to repair, or regenerate itself. This process can lead to the formation of tumors. In the United States, the most common causes of cirrhosis are chronic infection with the liver virus hepatitis B or C, or alcohol abuse. Hepatocellular carcinoma is on the rise in the world, especially because of the increased incidence of hepatitis B and C virus infection. "Although historically surgery has offered the only chance for a cure, most patients with liver cancer can not tolerate surgical resection, because of the limited functional reserve of the liver caused by the co-existing cirrhosis," says Lencioni. "Radiofrequency ablation offers patients a non-surgical option that preserves healthy tissue, is well tolerated and has a short recovery time. It can be repeated as needed to control tumor growth in case of relapse or to treat newly developed tumors." Radiofrequency ablation is one of several treatments in interventional oncology, a rapidly growing area of medicine within interventional radiology.

According to the American Cancer Society, about 18,500 cases of primary liver cancer are diagnosed each year in the United States, and the most common form is hepatocellular carcinoma, a tumor that begins in the main cells of the liver, known as hepatocytes.

### About the Study

The primary endpoint of the study was overall survival. Secondary endpoints were local tumor progression (i.e., within or around the treated area) and tumor recurrence (i.e., development of new tumors). Patients with Child-Pugh class A cirrhosis and uninodular hepatocellular carcinoma smaller than or equal to 5 cm who were treated with hepatic resection (cases) or radiofrequency ablation (controls) were eligible.

Radiofrequency ablation was performed under ultrasound guidance by using 150-W generators and expandable multitined electrodes using the RITA Medical device. Matching criteria were date of diagnosis, age at diagnosis, tumor size, and serum alpha-fetoprotein level. One-hundred-sixty-two patients (38 cases and 124 controls) were matched. Although the local tumor progression rate in the radiofrequency ablation group was higher than in the surgical group, the incidence of tumor recurrences as well as patients' overall survival were similar between the two groups. In particular, overall survival rates were 89% at 1 year, 78% at 2 years, and 65% at 3 years in the resection group; and 97% at 1 year, 84% at 2 years, and 72% at 3 years in the radiofrequency ablation group.

#### Abstract 1021 is available at www.SIRmeeting.org.

## About the Society of Interventional Radiology

Interventional radiologists are board-certified physicians who specialize in minimally invasive, targeted treatments. They use X-rays, MRI and other imaging to advance a catheter in the body, usually in an artery, to treat at the source of the disease nonsurgically. They are certified in both Diagnostic Radiology and Vascular & Interventional Radiology. As the inventors of angioplasty and the catheter-delivered stent, interventional radiologists pioneered minimally invasive modern medicine, and provide treatments that offer less risk, less pain and less recovery time compared to open surgery. More information can be found at www.SIRweb.org.

Local interviews, medical illustrations and broadcast quality video footage are available by contacting SIR's Communications Department at Emily@SIRweb.org or (703) 691-1805.