
RSNA Press Release

Radiologists Offer Non-Surgical Treatment for Early-Stage Liver Cancer

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OAK BROOK, Ill. (Feb. 16, 2005) - Radiofrequency (RF) ablation offers an effective first-line treatment for some liver cancer patients who are excluded from surgery, according to two studies appearing in the March issue of the journal *Radiology*.

"I believe that this treatment will soon enter into the guidelines for the clinical management of liver cancer patients," said the first study's lead author, Riccardo Lencioni, M.D., a radiology professor at the University of Pisa in Italy.

Liver cancer is the most common organ malignancy worldwide and generally carries a poor prognosis. Surgical resection — removing the cancerous portion of the liver — is considered the best hope for a cure. Unfortunately, most patients do not qualify for surgery. Liver transplantations are available for a small number of patients, but organ supply is limited, and tumor progression during the prolonged waiting period results in a high dropout rate. Consequently, RF ablation has emerged as an alternative treatment for inoperable liver cancer and may also be useful as a bridge to liver transplantation.

RF ablation is a minimally invasive procedure where an interventional radiologist uses an image-guided electrode needle to deliver heat directly to tumors, in effect "cooking" them.

Dr. Lencioni and colleagues performed RF ablation on 187 early-stage liver cancer patients with cirrhosis who were not candidates for surgery. People with cirrhosis or Hepatitis B or C virus infections are at increased risk of developing liver cancer. Fewer than 5 percent of liver-cancer patients with cirrhosis qualify for surgical liver resection, and the liver donor shortage limits transplant availability.

"RF ablation was shown to be a safe therapeutic option, with no treatment-induced mortality and a complication rate below 2 percent," Dr. Lencioni said.

At A Glance

- RF ablation successfully treats small liver tumors.
- Most liver cancer patients do not qualify for surgery.
- People with chronic hepatitis or cirrhosis are at increased risk for developing liver cancer.
- Survival rates of patients treated with RF ablation are comparable to those of surgical resection patients.

Ninety-seven percent of the patients survived one year, 71 percent survived three years, and 48 percent survived five years, which is comparable to results obtained with surgical resection in this type of patient. The results also indicate that RF ablation patient survival is dependent on the type of cirrhosis and number of tumors present.

"The results that we have reported are very promising," Dr. Lencioni said. "However, they can only be obtained when the diagnosis of liver cancer is made at an early, asymptomatic stage. It is of the utmost importance that all patients with chronic hepatitis or cirrhosis — who are known to be at risk to develop liver cancer — are carefully monitored for timely detection of the emergence of a tumor."

Ablation Success Confirmed by Pathologic Examination

A second study published in the March issue of *Radiology* further demonstrates the effectiveness of RF ablation to treat liver tumors.

"We have unequivocally demonstrated that RF ablation is highly capable of complete tumor destruction for small liver cancer nodules," said David S.K. Lu, M.D., professor of radiology and director of the image-guided tumor ablation program at the David Geffen School of Medicine at UCLA.

In this study, UCLA researchers used RF ablation to treat 47 liver cancer nodules in 24 patients who were waiting for liver transplantation. After transplantation, pathologic examinations of the diseased livers were performed to retrospectively evaluate RF ablation's effectiveness.

The researchers found that 74 percent of the tumors were successfully treated by ablation. The procedure proved more successful with smaller tumors than with larger tumors, with a success rate of 83 percent when treating tumors 3 centimeters or smaller.

According to Dr. Lu, not all tumors are amenable to such treatments. "It is important to discuss treatment options with a hepatologist or oncologist and to seek consultation with an interventional radiologist experienced in tumor ablation," he said.

For interviews or copies of either study, contact RSNA Media Relations at (630) 590-7762.

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Radiology is a monthly scientific journal devoted to clinical radiology and allied sciences. The journal is edited by Anthony V. Proto, M.D., School of Medicine, Virginia Commonwealth University, Richmond, Va. *Radiology* is owned and published by the Radiological Society of North America, Inc. (radiology.rsna.org)

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"Early-Stage Hepatocellular Carcinoma in Patients with Cirrhosis: Long-term Results of Percutaneous Image-guided Radiofrequency Ablation." Collaborating with Dr. Lencioni on this paper were Dania Cioni, M.D., Laura Crocetti, M.D., Chiara Franchini, M.D., Clotilde Della Pina, M.D., Jacopo Lera, M.D., and Carlo Bartolozzi, M.D.

"Radiofrequency Ablation of Hepatocellular Carcinoma: Treatment Success as Defined by Histologic

Examination of the Explanted Liver." Collaborating with Dr. Lu on this paper were Nam C. Yu, M.D., Steven S. Raman, M.D., Piyaporn Limanond, M.D., Charles Lassman, M.D., Kathryn Murray, B.S., Myron J. Tong, M.D., Ph.D., Rafael G. Amado, M.D., and Ronald W. Busuttil, M.D., Ph.D.