Ten Years Later: Liver Cancer Treatment Reevaluated

New treatment options for some liver cancers may mean that liver transplants are fading out of style.

Ten years ago, JNCI reported that liver transplants were becoming the treatment option of choice for patients diagnosed with an early stage of a type of liver cancer called hepatocellular carcinoma (HCC) [See JNCI, 1996; 88:632-633.]. Today some scientists believe that the preferred treatment method is shifting again. They suggest that therapies that destroy tumor cells without surgery could leave more healthy liver tissue intact and reduce the need for transplants.

“What’s happening now is that we’re in a transition point as to what’s the proper therapy for these patients,” said John McVicar, M.D., of the University of California in Davis.

When patients today are diagnosed with HCC, doctors typically remove the tumor. However, even after surgery, patients can develop cancer in other parts of their liver. Around 90% of patients who develop HCC also have cirrhosis, a disease that destroys the liver tissue, and 25% have hepatitis B or C infections. Currently, patients with early-stage HCC are placed high on the priority list for liver transplants. The past 10 years have seen a marked increase in 5-year survival for HCC patients, from 30% in the late 1980s to 60% by 2001, perhaps because of more stringent patient selection.

Now some doctors have begun using radiofrequency ablation in place of surgery to treat HCC. Radiofrequency ablation uses radio waves to destroy cancerous tissue. A paper published in the March 2006 Annals of Surgery, by Min-Shan Chen, M.D., of Sun Yat-Sen University in Guangzhou, China, and colleagues reported that radiofrequency ablation was as effective for treating liver cancer as tumor removal.

The 71 HCC patients in Chen and colleagues’ study had lower treatment-related death rates and more healthy liver tissue after radiofrequency ablation. Tumor ablation was successful at rates of 90%–95%, with a local recurrence rate of 5%–10% and a 3-year survival rate of 62%–68%. In comparison, 3-year survival rates for liver transplants, which generally follow surgery, are about 65%–70%. Also, radiofrequency ablation allowed doctors to treat patients quickly (they don’t have to wait for a liver) and monitor them to determine if a transplant is necessary later.

“Until recently, radiofrequency ablation was thought to delay the progression of the tumor, in a window of time before it got too big. [Chen et al., Annals of Surgery] showed that there was essentially no difference in outcome, that it is just as effective as curing the disease,” McVicar said. He thinks the paper illustrates that radiofrequency ablation may work as a substitute for a liver transplant in some patients.

Others are more cautious. “The study is encouraging but the follow-up is relatively short,” says Richard Schulick, M.D., of Johns Hopkins University in Baltimore. “I think further work needs to be done.”

Like Schulick, Richard Freeman, M.D., of Tufts University in Boston, doesn’t think that the use of liver transplants for early stage liver cancer will stop anytime soon. “It’s possible in patients who don’t have active hepatitis if you control the virus to reduce the risk of future cancer. But the studies I’ve seen are very preliminary, and I certainly wouldn’t say we could be sure that radiofrequency ablation alone would be sufficient,” he said.

Freeman and McVicar agree that the demand for liver transplants is so high that the transplant number won’t go down in the future—the waiting time for a liver averages about 1.5 years, barring emergency situations. But survival rates may increase because of doctors’ ability to prioritize who will fare better with a liver transplant and who will not.

As of yet, there hasn’t been a head-to-head comparison of the methods in a randomized controlled trial. But in the future, radiofrequency and liver transplants may be used together, Schulick said. Patients may be stabilized with radiofrequency ablation until a liver is available. Or the ablation therapy may prove most viable for a certain subgroup of HCC patients.

“We don’t yet know what the exact role for radiofrequency ablation is. It doesn’t have to be an either–or
situation. Sometimes patients would benefit with ablation that would delay the need for transplantation for 5 or 7 years. Or maybe we find out they don’t ever need a transplant,” said Schulick.

For now, McVicar resolves conflict over treatment options by individualizing treatment plans for each patient, “[New data] are going to upset the whole paradigm that we’ve had before. It’s difficult to tell whether that’s going to be translated into the type of resection [surgery or ablation] used. It’s something I struggle with. We just don’t know.”

—Ariel Whitworth