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# Update on the Treatment of Liver Cancer

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*Learn about:*

- Types of liver cancer
- Treatment options
- Managing side effects
- Your support team



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# Update on the Treatment of Liver Cancer

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# New medications are offering hope to people with liver cancer.

**L**iver cancer affects nearly 22,000 people in the United States. Until recently, the U. S. Food and Drug Administration (FDA) had not approved any medications specifically for liver cancer. To treat it, doctors mostly had been prescribing chemotherapy intended for other types of cancer. But in late 2007, the drug sorafenib (Nexavar) was approved by the FDA for people

with **hepatocellular carcinoma**—the most common form of liver cancer—when it cannot be treated with surgery. Sorafenib, which was previously approved only for people with kidney cancer, offers renewed hope for people living with this type of liver cancer.

## Types of Liver Cancer

When cancer appears in the liver, it is usually the result of a tumor that has originated in another site, such as the breast. It is less common for liver cancer to be a primary tumor—that is, a tumor that begins in the liver. There are three types of primary liver cancer:

- **Hepatocellular carcinoma** is the most common type of liver



cancer, accounting for about 90 percent of liver cancers. Some hepatocellular carcinomas spread tentacle-like growths throughout the liver. Others start as one tumor that may spread to other parts of the liver. Still others start as small swellings or masses in several parts of the liver.

- ***Cholangiocarcinoma***, also known as bile duct cancer, develops from cells in the bile duct of the liver. The bile duct is a tube that connects the liver to the small intestine. About nine percent of liver cancers are cholangiocarcinomas.
- ***Angiosarcoma*** is the rarest form of liver cancer, accounting for only about one percent of liver cancers. Angiosarcoma develops from the blood vessels of the liver.

## Challenges of Treating Liver Cancer

Close to two thirds of all people with hepatocellular carcinoma have underlying severe liver damage, called **cirrhosis**. Cirrhosis

## Risk Factors for Liver Cancer

The following factors can increase a person's risk of developing liver cancer:

- ***Viral hepatitis***: This virus—most commonly hepatitis B and C—infected the liver. People infected with the hepatitis B or C virus have an increased risk of developing liver cancer.
- ***Cirrhosis***: A condition in which the liver becomes damaged and scar tissue forms. In the United States, excessive use of alcohol is the leading cause of cirrhosis. Other causes include viral hepatitis, obesity, hemochromatosis (a buildup of iron in the liver), and other rare types of liver disease.
- ***Age***: Liver cancer occurs most often in people aged 60 or older.
- ***Gender***: Men are more likely to develop liver cancer than women.
- ***Environmental factors***: Exposure to certain chemicals can lead to liver cancer.

# Symptoms of Liver Cancer

**M**any people with liver cancer do not experience any symptoms. Symptoms that may occur include:

- Pain, particularly at the upper right portion of the abdomen or near the right shoulder blade
- Weight loss
- A hard lump under the right ribs
- Weakness or fatigue

Many people with liver cancer also experience symptoms of cirrhosis, including:

- A swollen abdomen
- Confusion
- Bleeding

is most often associated with infection with hepatitis B or C, excessive use of alcohol, and obesity, among other causes.

Cirrhosis can affect many areas of the body. It can block blood flow through the liver, causing swelling of the legs, a buildup of fluid in the abdomen, and, occasionally, bleeding from the upper gastrointestinal tract. In the past, these side effects made treating liver cancer challenging, because the chemotherapy used to treat liver cancer can make them worse.

## Treatments for Liver Cancer

Liver cancer is usually treated by a team of experts, such as a hepatologist (an expert in the treatment of liver disease), a surgeon (to perform surgical procedures), a medical oncologist (to coordinate all aspects of cancer care), and a radiologist (to locate the tumors in the liver and determine whether they have spread to other organs). Working together, the members of the team set up a treatment plan based on a number of factors, including:

- whether the tumor is in one area of the liver or has spread throughout the liver;
- whether the cancer has spread beyond the liver;
- how much damage the tumor has done to the liver;
- what, if any, underlying liver damage the patient has in addition to the cancer.

### SURGICAL OPTIONS

Liver cancer can be treated with two types of surgery. The first type is called a **hepatectomy**—surgical removal of the part of the liver that has been affected by cancer. This procedure can only be performed in people who do not have severe liver damage and whose cancer has not spread widely throughout the liver. The area of the liver not affected by cancer must be functioning well, which can be determined by lab tests. Generally, this type of surgery works best in patients whose tumors are small.

The other surgical option for some people with liver cancer is a **liver transplant**. Transplants are generally done only in people who have small tumors that cannot be removed completely because of their location or because they have penetrated the major blood vessels in the liver. Liver transplantation also requires that a suitable donor with a healthy liver can be found.

It is very important to be examined by a liver cancer expert to determine whether hepatectomy or a liver transplant is an



option, as only a small percentage of people with liver cancer are candidates for a surgical procedure.

### **RADIATION TREATMENT**

For liver cancer that cannot be removed surgically, doctors are now using an internal form of radiation called TheraSphere. This treatment consists of tiny radioactive beads inserted into the liver using a catheter—a long, flexible plastic tube. The catheter is placed into a major blood vessel in the leg and moved up through the blood vessel to the hepatic artery, one of two main blood vessels that feeds the liver. Then the TheraSphere beads are infused through the catheter directly into the tumor’s blood supply. Patients remain awake during this procedure, which is usually performed in a hospital’s radiology suite.

### **CHEMOTHERAPY**

Chemotherapy is often used to treat liver cancer. Some patients may be candidates for a procedure called **chemoembolization**, in which chemotherapy is injected directly into the tumor, and a special material is injected into certain blood vessels to block blood flow to the tumor. (The idea is to kill the tumor in two ways: by delivering a high concentration of chemotherapy directly to the tumor while cutting off the tumor’s blood supply.) However, most patients are given systemic treatments, such as standard chemotherapy (in which one drug or a combination of drugs is given through the bloodstream to the whole body) or one of the newer **targeted treatments**, described below.

### **TARGETED TREATMENTS**

Unlike chemotherapy, targeted treatments attack specific molecules and cell mechanisms thought to be important for cancer cell survival and growth. This specific targeting helps to spare healthy tissues and causes less severe side effects. These types of medications are a welcome development in the treatment of liver cancer. The drug sorafenib, which was

mentioned earlier, is a targeted treatment. Two other targeted treatments, bevacizumab (Avastin) and erlotinib (Tarceva), are not yet approved for treating liver cancer, but they are showing promise in clinical trials.

**Sorafenib** The recently approved drug sorafenib is a pill that helps stop cancer by blocking the action of a substance called **vascular endothelial growth factor**, or **VEGF**. This protein

stimulates the growth of new blood vessels that feed tumors. When tumor cells spread through the body, they release VEGF to create new blood vessels. These blood vessels supply oxygen, minerals, and other nutrients to feed the tumor.

Sorafenib also blocks the action of platelet-derived growth factor (PDGF). Like VEGF, PDGF is a protein that plays an important

role in the growth of new blood vessels that feed tumors. By preventing the formation of these blood vessels, sorafenib slows or stops the growth of tumors.

Sorafenib is also the first drug to target another protein, called RAF kinase, which helps signal cancer cells to grow and multiply. Researchers suspect that these multiple actions are what make the drug so effective at slowing the advancement of cancer.

Sorafenib was approved because a large clinical trial showed that the drug lengthened the lives of people with liver cancer. Currently, other clinical trials are studying a combination of sorafenib and doxorubicin (Adriamycin and others) to see whether the combination is more effective than sorafenib alone. Researchers are trying to find out whether sorafenib



# The Importance of Clinical Trials

There's no question that clinical trials have led to advances in cancer treatment, creating a brighter future for people with cancer. Clinical trials are the standard by which we measure the worth of new treatments and their impact on quality of life as patients go through those treatments. For this reason, doctors and researchers urge people with cancer to take part.

Your doctor can guide you in making a decision about whether a clinical trial is right for you. Here are a few things you should know:

- Often, people who take part in clinical trials gain access to and benefit from new treatments.
- Before you participate in a clinical trial, you will be fully informed as to the risks and benefits of the trial.
- No patient receives a placebo (a look-alike medication containing no active ingredient) when there is a standard treatment available for the disease. Most clinical trials are designed to test a new treatment against a standard treatment to find out whether the new treatment has any added benefit.
- You can stop taking part in a clinical trial at any time for any reason.

can benefit people whose liver tumors were treated with surgery but are likely to return.

**Bevacizumab** Also being studied in people with liver cancer is bevacizumab. This medication has already been approved by the FDA for the treatment of advanced colon, lung, and breast cancers. Like sorafenib, bevacizumab works by stopping VEGF from stimulating the growth of new blood vessels in tumors.

**Erlotinib** Yet another clinical trial is looking at the effects of a combination of chemotherapy and a targeted treatment called erlotinib. Erlotinib is currently approved for treating advanced lung cancer and pancreatic cancer. It works by blocking

**epidermal growth factor receptor (EGFR).** EGFR helps drive cancer by promoting the growth of cancer cells.

## Managing Side Effects of Treatment

Although targeted treatments generally cause less severe side effects than chemotherapy, some of the new drugs lead to skin problems, such as a rash. In fact, development of a rash can mean that a targeted treatment is working effectively. Often, people who take targeted drugs develop a rash or peeling skin on the hands or feet. But these symptoms can also spread to other parts of the body such as the chest, neck, and sometimes the face.

Usually a rash develops within the first six weeks of starting a targeted treatment. If the rash becomes severe during this time, it may be best to stop taking the medication, something you should discuss with your doctor. If a rash is mild, it can be treated with creams applied directly to the skin. For example, a steroid cream, such as hydrocortisone valerate (Westcort and others), may help reduce the inflammation, pain, and discomfort of a rash. Your doctor may refer you to a dermatologist to help manage your rash. When spending time outdoors, be sure to use sunscreen, particularly if a rash has already developed.

Another side effect experienced by many people with liver cancer is high blood pressure. This is especially true for people who also have liver damage. High blood pressure can be managed with diet, medication, or procedures aimed at removing excess body fluid (which sometimes results from high blood pressure).



People with liver cancer may also experience physical pain. If you experience pain, it is especially important to communicate with your health care team. Pain management is specialized for patients with liver cancer, since certain pain relievers, such as acetaminophen (Tylenol and others), may further damage the liver. When the liver is not functioning well, some pain medications may cause other serious side effects. For these reasons, it is important to work with a pain management team that is knowledgeable about liver cancer so that you get the best treatment possible.

## Communicating With Your Health Care Team

As you are being treated for liver cancer, it's important that you let your health care team know about any symptoms that you experience, such as pain or changes in your appetite or weight. The more detailed and precise you can be, the more it will help them treat you quickly and effectively. Consider keeping

a journal of your symptoms—when they occur, how severe they are, how they feel, and whether you get relief from medications. It's also helpful to let your health care team know about any emotional or practical concerns that arise, such as increased anxiety or difficulty getting insurance coverage. They can provide referrals to organizations such as CancerCare®.



## Your Support Team

When you are diagnosed with liver cancer, you're faced with a series of choices that will have a major effect on your life, and

maybe you're not sure where to turn. But help is available. Your health care team, family members, and friends will likely be an invaluable source of support at this time. You can also turn to these resources:

**Oncology social workers** provide emotional support for people with cancer and their loved ones. These professionals can help you cope with the challenges of a liver cancer diagnosis and guide you to resources. CancerCare offers free counseling from oncology social workers on staff who understand the challenges faced by people living with liver cancer. We can work with you one-on-one to develop strategies for coping.

**Support groups** Many support groups are available for people with liver cancer. Support groups provide a caring environment in which you can share your concerns with others in similar circumstances. Support group members come together to help one another, providing insights and suggestions on ways to cope. At CancerCare, people living with liver cancer and their families can take part in support groups in person, online, or on the telephone.

**Financial help** is offered by a number of organizations, including CancerCare, to help cover cancer-related costs such as transportation to treatment, child care, or work that needs to be done around the home. CancerCare also provides referrals to other organizations that give assistance.

**To learn more about how CancerCare helps, call us at 1-800-813-HOPE (4673) or visit [www.cancer.org](http://www.cancer.org).**

# Frequently Asked Questions

**Q Are there any new drugs for treating cancer of the bile duct?**

**A** Cancer of the bile duct, known as cholangiocarcinoma, is a less common kind of liver cancer. Currently, there are clinical trials testing the combination of chemotherapy and the targeted treatment erlotinib (Tarceva) in people with this type of liver cancer. The treatments for this cancer are still being studied.

**Q I have a rare kind of liver cancer called fibrolamellar carcinoma. What kind of treatment is recommended for this type of cancer?**

**A** Fibrolamellar carcinoma is a rare type of hepatocellular carcinoma that is most often seen in people between the ages of 20 and 40. Generally, the treatment for fibrolamellar carcinoma is the same as the treatment for the more common forms of hepatocellular carcinoma. Options include surgery, liver transplant, chemoembolization, sorafenib (Nexavar), and clinical trials. If the tumor is successfully treated but returns, this form of liver cancer tends to grow very slowly.

**Q Is sorafenib useful in treating early-stage hepatitis C?**

**A** Not at this time. But in the future, the drug may be tested as a way to possibly prevent liver damage, or cirrhosis, due to hepatitis C from becoming liver cancer. There is also some evidence that certain medications can control the spread of chronic hepatitis C. These medications may reduce the inflammation the virus causes in the liver, which may, in turn, reduce the risk of cancer developing in the liver. If a person has the hepatitis virus and is then diagnosed with liver cancer, he or she can be treated with a combination of anti-viral and anti-tumor medications.

# Glossary

**chemoembolization** A procedure used to deliver chemotherapy directly to the liver. Chemotherapy is injected directly into the tumor, and a special material is injected into certain blood vessels to block blood flow to the tumor. The idea is to kill the tumor in two ways: by giving a high concentration of chemotherapy directly into the tumor while cutting off the blood supply to the tumor. The procedure generally takes about two hours.

**cirrhosis** Damage to the liver, resulting in scar tissue. Cirrhosis may be caused by infection with hepatitis B or C, excessive use of alcohol, obesity, or other factors.

**epidermal growth factor receptor (EGFR)** A protein located on the surface of some cancer cells. When a substance called epidermal growth factor attaches to EGFR, the receptor sends a signal into the cell telling it to divide, promoting the growth of the cancer.

**hepatectomy** Surgical removal of the part of the liver that has been affected by cancer.

**hepatocellular carcinoma** The most common type of liver cancer.

**liver transplant** Partial or complete surgical replacement of a diseased or cancerous liver with a healthy liver from a suitable donor.

**targeted treatments** Unlike chemotherapy, targeted treatments attack specific molecules and cell mechanisms thought to be important for cancer cell survival and growth. This specific targeting helps to spare healthy tissues and causes less severe side effects.

**vascular endothelial growth factor (VEGF)** A substance that stimulates the growth of new blood vessels that feed tumors.

# Resources

## **CancerCare**

Services: 1-800-813-HOPE (4673)

[www.cancer.org](http://www.cancer.org)

## **American Cancer Society**

1-800-227-2345

[www.cancer.org](http://www.cancer.org)

## **American Liver Foundation**

1-800-465-4837

[www.liverfoundation.org](http://www.liverfoundation.org)

## **Cancer.Net**

Patient information from the American Society of Clinical Oncology

[www.cancer.net](http://www.cancer.net)

## **National Cancer Institute**

Cancer Information Service

1-800-422-6237

[www.cancer.gov](http://www.cancer.gov)

## **National Coalition for Cancer Survivorship**

See especially their Cancer Survival Toolbox®

1-877-650-9127

[www.canceradvocacy.org](http://www.canceradvocacy.org)

## **National Organization for Rare Disorders**

1-203-744-0100

[www.rarediseases.org](http://www.rarediseases.org)

## **The Wellness Community**

1-888-793-9355

[www.thewellnesscommunity.org](http://www.thewellnesscommunity.org)

*To find out about clinical trials:*

## **Coalition of National Cancer Cooperative Groups**

[www.CancerTrialsHelp.org](http://www.CancerTrialsHelp.org)

## **National Cancer Institute**

[www.cancer.gov/clinicaltrials](http://www.cancer.gov/clinicaltrials)



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All people depicted in the photographs in this booklet are models and are used for illustrative purposes only.

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- Education and practical help
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**1-800-813-HOPE (4673)**

**[www.cancer.org](http://www.cancer.org)**