

LIVER CANCER

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Liver Cancer

Liver cancer can be classified in two ways: primary (cancer that begins in liver tissue) or secondary (cancer that spreads to the liver after starting in some other location).

WHAT DOES THE LIVER DO?

The liver is one of the most important organs in the body. The liver is divided into lobes and acts as a filter, cleansing the blood of harmful substances that are later passed out of the body as waste. The liver also makes bile, which helps digest fat, makes numerous proteins used by the body for many things, and stores glycogen (sugar), which provides the body with energy.

WHAT ARE THE RISK FACTORS ASSOCIATED WITH LIVER CANCER?

Some risk factors for liver cancer are:

- Other liver diseases, including hepatitis B or C (viral diseases that attack the liver) or cirrhosis (a disease that causes scarring)
- A family history of hepatitis or liver cancer (someone in your family has it)
- Obesity
- Gender (men are more likely to get liver cancer than women are)

WHAT ARE THE SYMPTOMS OF LIVER CANCER?

Early in the development of liver disease, there may be no symptoms at all. The following signs occur when the liver swells.

Please note: liver cancer is only one reason that livers can swell.

- A lump below the rib cage on the right side of the abdomen
- Pain near the right shoulder or on the right side of the abdomen
- Jaundice (a disease that causes skin to yellow)
- Unexplained weight loss
- Fatigue
- Nausea
- Loss of appetite
- Dark-colored urine
- Bloating

HOW IS LIVER CANCER DIAGNOSED?

A doctor may suspect liver cancer if lumps or other symptoms are found during a physical examination. Other tests may be ordered, including:

- Blood tests, including a serum marker test and liver enzymes. The serum marker test measures the amounts of certain substances linked to cancer. For liver cancer, cirrhosis, and hepatitis, the substance alpha-fetoprotein (AFP) may show up in higher levels. Liver enzymes are often elevated, indicating an underlying liver problem.
- Ultrasound (sonography), a procedure that transmits high-frequency sound waves through the body. The echoes are transformed into video or photographs of the internal soft tissue structures of the body.
- Computed tomography (CT scan), a special type of X-ray that takes detailed images of organs
- Magnetic resonance imaging (MRI), a test that produces very clear images of the human body using a large magnet, radio waves, and a computer
- Angiogram, a test that uses dye injected into an artery to show liver tissue and any tumors
- Laparoscopy, which uses a thin tube with a light (laparoscope) to observe the liver and other organs inside the abdominal cavity. A biopsy (removal of tissue for study under a microscope) may be done using a laparoscope. A biopsy is the most reliable way to determine cancer.

WHAT ARE THE STAGES OF LIVER CANCER?

One of the biggest concerns about cancer is whether the cancer has spread (metastasized) beyond its original location. In a process called staging, the doctor assigns a number (I through IV) to the cancer diagnosis. The higher the number, the more the cancer has spread. Cancers are also categorized by how they can be treated, i.e., whether it can be removed by surgery.

Liver cancer stages include the following:

- **Stage I:** One tumor is found in the liver only.
- **Stage II:** One tumor is found, but it has spread to the blood vessels, OR more than one tumor is present, but they are all smaller than 5 cm.
- **Stage III:** In Stage III liver cancer, there is more than one tumor larger than 5 cm, OR the cancer has moved beyond the liver to blood vessels, another organ, or to the lymph nodes.
- **Stage IV:** the cancer has spread to other locations in the body, such as the lungs or bones, as well as blood vessels or lymph nodes.

Liver cancer may also be categorized as recurrent, if it comes back. Recurrent liver cancer could come back in the liver or anywhere else in the body.

HOW IS LIVER CANCER TREATED?

Liver cancer may be treated using one or more of three methods: surgery, chemotherapy, and percutaneous ethanol injection.

Certain factors can affect treatment and prognosis (chance of recovery) for a person with liver cancer. These factors include the person's general health, the way that the liver itself is functioning, the stage of the cancer, and the levels of alpha-fetoprotein.

Surgical treatments

- Radiofrequency ablation: using a probe with electrodes that kills cancerous tissue
- Partial hepatectomy: removing part of the liver, ranging from a smaller wedge to an entire lobe
- Total hepatectomy and liver transplant: removing the whole liver and replacing it with one from an organ donor

Chemotherapy

Chemotherapy uses drugs to kill cancer cells or to prevent them from reproducing. Chemotherapy may be systemic (pills or injections that travel through the entire body).

Another type of chemotherapy for liver cancer is known as chemoembolization of the hepatic artery, in which the chemotherapy drug is combined with another substance to block the artery. The purpose of this therapy is to starve the tumor of blood in order to kill it, and to apply chemotherapy directly to the tumor. The liver's blood flow is maintained by the hepatic portal vein.

Percutaneous ethanol injection

This therapy involves an injection of ethanol (alcohol) into a tumor to destroy the cancer. This therapy is not used very often.

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